

Link do produktu: <https://www.specdiag.pl/instrukcje-serwisowe-dokumentacja-warsztatowa-bobcat-x320-x322-320-320L-322-dtr-service-manual-p-1475.html>



Instrukcje serwisowe + dokumentacja warsztatowa Bobcat X320 x322 320 320L 322 - DTR + service manual

Cena **300,00 zł**

Opis produktu

Bobcat - instrukcje napraw - schematy - DTR - dokumentacja serwisowa Bobcat

Bobcat X 320 + Bobcat X 322 - 320 320L 322 - instrukcje napraw + schematy + DTR - service manuals + diagrams + operation manuals

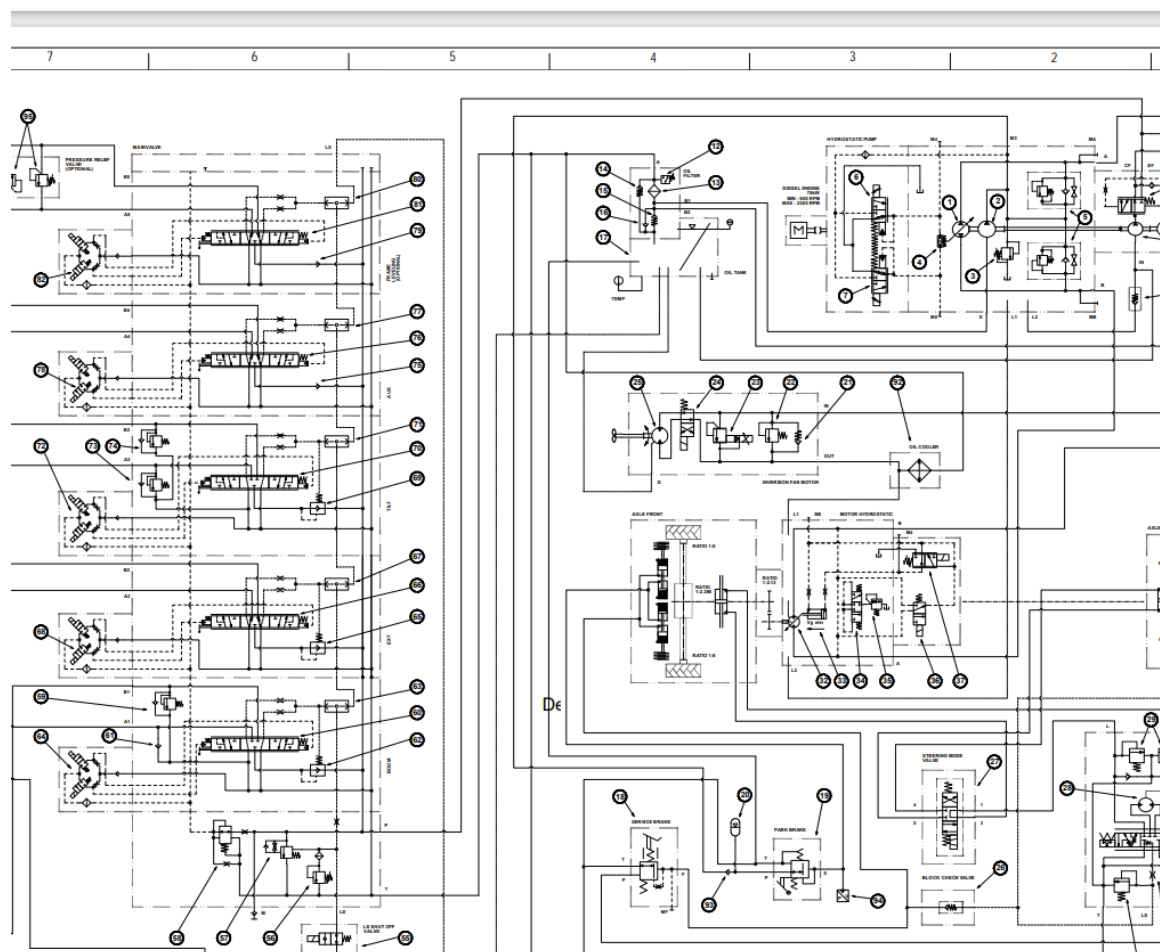
Instrukcje serwisowe + dokumentacja warsztatowa Bobcat X320 + Bobcat X322 + Bobcat 320 + Bobcat 320L + Bobcat 322

DTR (operation manual) + Warsztatowe instrukcje napraw (service manuals)

Wszystkie serie

	(0.88 ci / rev)				
High engine idle	(26) CHECK VALVE; Service Brake:		(49) HOLDING VALVE – Stabilizer - Rod:		(76) AUXILIARY SECTIC
	30 kPa (0.3 bar) (4.5 psi)		4000 kPa (40 bar) (580 psi)		(77) SHUTTLE VALVE –
	(27) SOLENOID ACTIVATED DIRECTIONAL		(50) PRESSURE SENSER – Stabilizer – Base (2)		(78) AUXILIARY SPOOL
E - HIGH	CONTROL VALVE – Steering Mode				(79) CHECK VALVE
50 Bar) (6527 psi)	(28) STEERING GEROTOR – Safety Valve				(80) SHUTTLE VALVE –
CTIONAL	(29) RELIEF VALVE – Steering (2):		(51) SOLENOID ACTIVATED DIRECTIONAL CONTROL		(81) FRAME LEVELLING
	23500 kPa (235 bar) (3408 psi)		VALVE – Right Stabilizer		(82) FRAME LEVELLING
CTIONAL	(30) RELIEF VALVE – Steering:		(52) SOLENOID ACTIVATED DIRECTIONAL CONTROL		(83) PILOT UNLOADING
	17500 kPa (175 bar) (2538 psi)		VALVE – LS Unload Valve		(If Equipped): 16000
	(31) ORIFICE: 6 mm (0.02 in)		(53) SOLENOID ACTIVATED DIRECTIONAL CONTROL		(84) CHECK VALVE – Se
			VALVE – Left Stabilizer		4
	(32) HYDROSTATIC PUMP: Variable Displacement				(85) PRESSURE SENSO
	20 kph = 64 - 160 ccm / rev (3.90 – 9.76 ci / rev)		(54) HAND PUMP – Emergency Lowering /		PRESSURE SENSO
	25 kph = 51 - 160 ccm / rev (3.11 – 9.76 ci / rev)		Retracting (Optional)		Equipped)
	30 kph = 42 - 160 ccm / rev (2.56 – 9.76 ci / rev)		(55) SOLENOID ACTIVATED DIRECTIONAL		(87) ACCUMULATOR –
			CONTROL VALVE – Safety Valve		0.5 L / min (0.13 gpi
	(33) SERVO PISTON				(88) ORIFICE: 0.8 mm (0
Pass:	(34) SHUTTLE VALVE - Drain		(56) RELIEF VALVE: 24000 kPa (240 bar)		(89) MANUALLY ACTIVA
psi)			(3481 psi) – tested at the "P" port		VALVE (Optional)
ilic Filter;	(35) SOLENOID ACTIVATED DIRECTIONAL		(57) BY-PASS VALVE: 850 kPa (8.5 bar) (123 psi)		(90) CHECK VALVE (2) (
i)	CONTROL VALVE – Safety Valve				SOLENOID ACTIVA
)	(36) FLUSHING VALVE: 15 L / min (3.96 gpm)		(58) PILOT OIL SUPPLY VALVE: 1000 - 1500 kPa		Quick Tach / Front A
	1600 kPa (16 bar) (232 psi)		(10 - 15 bar) (145 - 218 psi)		(92) OIL COOLER
PASS	(37) SOLENOID ACTIVATED DIRECTIONAL		(59) ANTICAVITATION/WORK PORT RELIEF VALVE		(93) CHECK VALVE (If E
6 psi)	CONTROL VALVE – Defeat Valve		– Boom Up: 26500 kPa (265 bar) (3844 psi)		(94) BRAKE PRESSURE
	(38) HOLDING VALVE – Frame Levelling - Base:		(60) BOOM SECTION – Control Valve		14
	28000 kPa (280 bar) (4061 psi)		(61) ANTICAVITATION VALVE– Boom Down)		(95) RELIEF VALVE: 210
			(62) PRESSURE COMPENSATOR – Boom Section:		
	(39) HOLDING VALVE – Frame Levelling - Rod:		750 kPa (7.5 bar) (109 psi)		
	28000 kPa (280 bar) (4061 psi)		(63) SHUTTLE VALVE – Boom Section		
8 U.S. gal)	(40) HOLDING VALVE – Extension - Base:		(64) BOOM SPOOL PILOT		
) psi)	25000 kPa (250 bar) (3626 psi)				
	(41) HOLDING VALVE – Extension - Rod:		(65) PRESSURE COMPENSATOR – Extension		
psi)	25000 kPa (250 bar) (3626 psi)		Section: 750 kPa (7.5 bar) (109 psi)		
(If Equipped):	(42) PILOT VALVE - Base		(66) EXTENSION SECTION – Control Valve		
5 bar) (218 psi)	(43) PILOT VALVE - Rod		(67) SHUTTLE VALVE – Extension Section		
			(68) EXTENSION SPOOL PILOT		
	(44) HOLDING VALVE – Tilt:		(69) PRESSURE COMPENSATOR – Tilt Section:		
(2538 psi)	21000 kPa (210 bar) (3046 psi)		750 kPa (7.5 bar) (109 psi)		
	(45) HOLDING VALVE – Self Level:		(70) TILT SECTION – Control Valve		
	25000 kPa (250 bar) (3626 psi)		(71) SHUTTLE VALVE – Tilt Section		
			(72) TILT SPOOL PILOT		

NOTE: Unless otherwise specified spr
significant pressure value.



LUBRICATING THE TELESCOPIC HANDLER (CONT'D)

Front Pads Lubrication

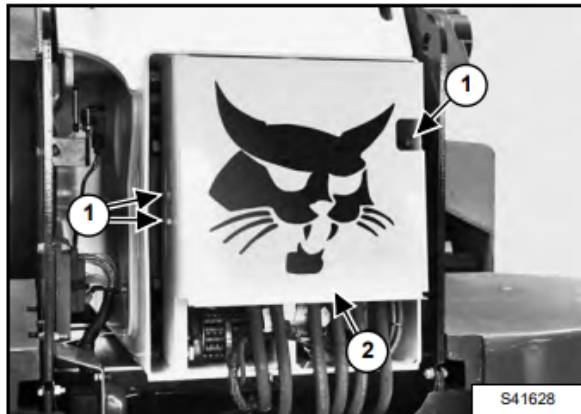
Fully extend and lower the boom.

Put the Travel Direction Control in neutral. Make sure the parking brake is engaged. Stop the engine and exit the telescopic handler. (See the Operation & Maintenance Manual for more information)

Use a brush to lubricate the outside of the inner booms.

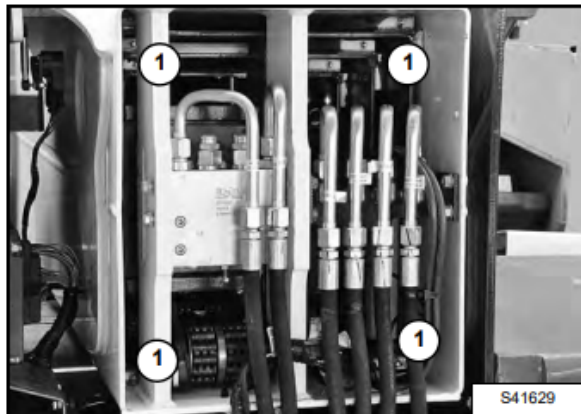
Rear Pads Lubrication

Figure 10-120-24



Loosen the three bolts (Item 1) and remove the cover (Item 2) [Figure 10-120-24] from the back of the boom.

Figure 10-120-25



Rear pads (Item 1) (twelve locations) [Figure 10-120-25].

To lubricate the rear pads that are not accessible in the above step:

Partially extend and fully lower the boom.

Put the Travel Direction Control in neutral. Make sure the parking brake is engaged. Stop the engine and exit the telescopic handler. (See the Operation & Maintenance Manual for more information)

Use a brush to lubricate the inside of the booms.

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LUBRICATING THE TELESCOPIC HANDLER

Lubrication Locations

Lubricate as specified in the SERVICE SCHEDULE for the best performance of the machine. (See SERVICE SCHEDULE on Page 10-50-1.)

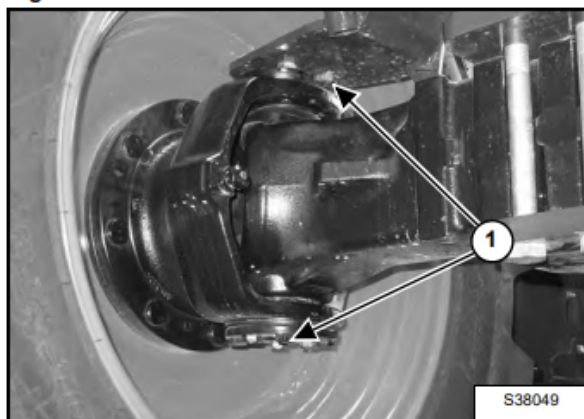
Record the operating hours each time you lubricate so that it is performed at the correct interval.

Always use a good quality lithium based multipurpose grease. Apply lubricant until extra grease shows.

Remove the attachment from the telescopic handler before lubricating. (See Operation & Maintenance Manual for the correct procedure.)

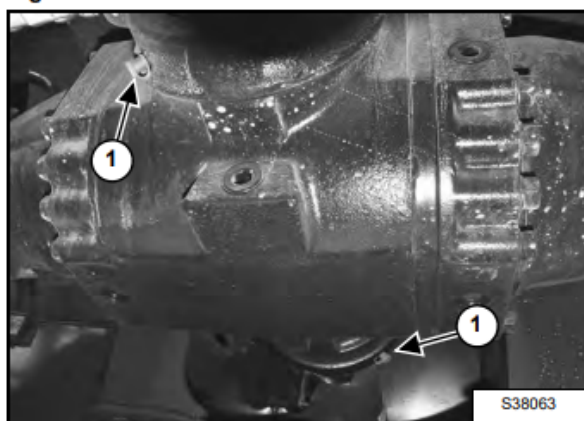
Lubricate the following locations on the telescopic handler:

Figure 10-120-12



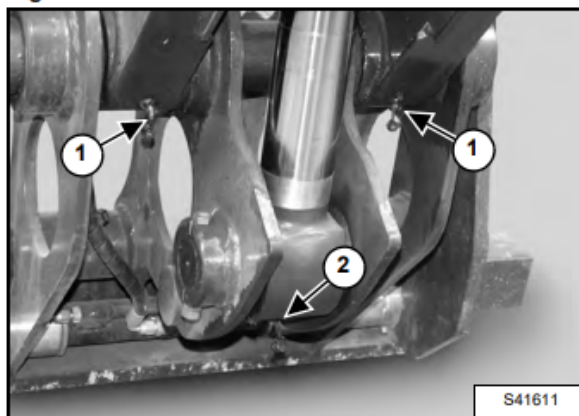
Axle Pivots - Top and bottom (Item 1) [Figure 10-120-12] all four wheels.

Figure 10-120-13



Axle Oscillation - Rear Axle (Item 1) [Figure 10-120-13].

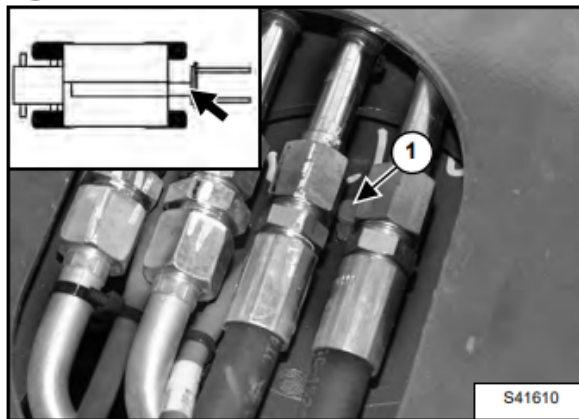
Figure 10-120-14



Attachment carrier pins - Left and right (Item 1) [Figure 10-120-14].

Tilt Cylinder Rod End (Item 2) [Figure 10-120-14].

Figure 10-120-15



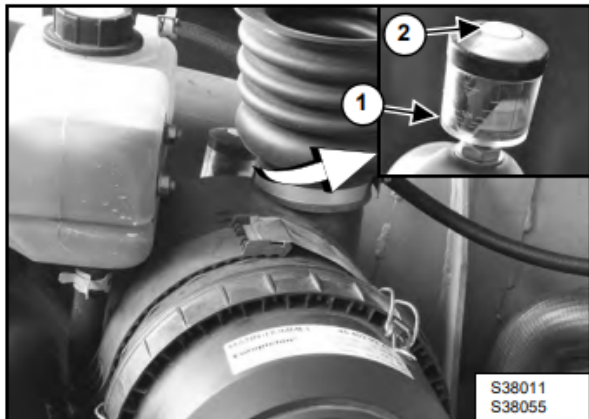
Tilt Cylinder Base End (Item 1) [Figure 10-120-15].

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AIR CLEANER SERVICE

Replacing Filter Elements

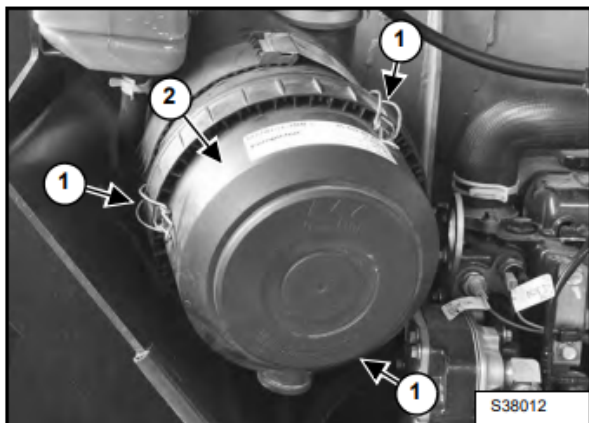
Figure 10-60-6



Replace the large (outer) filter element only when the yellow ring has reached the red zone on the condition indicator (Item 1) [Figure 10-60-6].

NOTE: Before replacing the filter element, push the button on the condition indicator (Item 2) [Figure 10-60-6]. Start the engine. If the yellow ring of the condition indicator does not reach the red zone, do not replace the filter element.

Figure 10-60-7



Loosen the filter housing clamps (Item 1) [Figure 10-60-7].

Remove the dust cover (Item 2) [Figure 10-60-7].

Figure 10-60-8

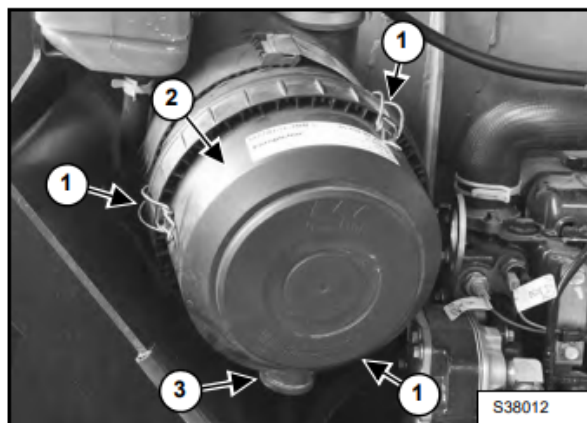


Pull the outer filter element straight out [Figure 10-60-8] and discard.

NOTE: Make sure all sealing surfaces are free of dirt and debris. DO NOT use compressed air.

Install a new outer element.

Figure 10-60-9



Install the dust cover (Item 2) with the dust extractor (Item 3) [Figure 10-60-9] facing down.

Fasten the filter housing clamps (Item 1) [Figure 10-60-9].

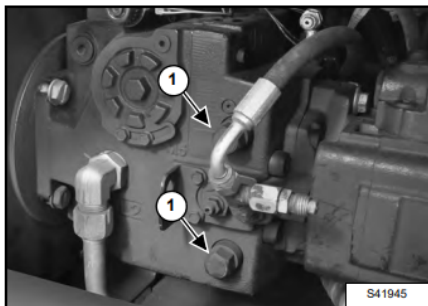
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TOWING THE TELESCOPIC HANDLER (CONT'D)

Procedure (Cont'd)

Raise the engine cover.

Figure 10-40-3



Locate the two identical multi-function valves (Item 1) [Figure 10-40-3] on the hydrostatic transmission pump.

Loosen the valves (Item 1) [Figure 10-40-3] by turning them three times anticlockwise.

NOTE: Do not turn more than three times. This can result in leakage.

This action will bypass the oil flow of the hydrostatic transmission.

Tow the telescopic handler at a slow speed, not exceeding 5 km/h (3 mph). Do not tow the machine for more than three minutes.

Tighten the valves (Item 1) [Figure 10-40-3] to 70 N·m (52 ft-lb) torque to re-engage the hydrostatic transmission.



UNEXPECTED MACHINE MOVEMENT CAN CAUSE SERIOUS INJURY OR DEATH

- Block wheels to prevent roll away before adjusting screws to bypass the park brake system.
- Return adjustment screws to the operating position before operating the machine.

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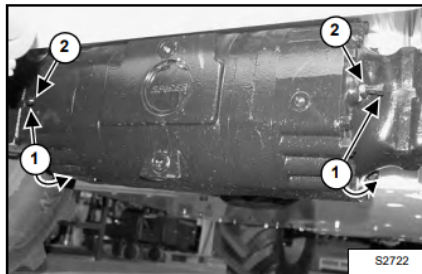
Block the wheels to prevent the machine from rolling.

After towing is completed:

Turn the tow valve (optional) (Item 1) [Figure 10-40-3] clockwise 90° to the OPERATING POSITION.

If the optional tow valve is not installed, reverse the steps described under [Figure 10-40-3].

Figure 10-40-4



To reactivate the park brake, release the four bolts (see (Item 1) [Figure 10-40-4] on the front axle to their original position (turn the two bolts out, 90° at a time, until no resistance can be felt. Repeat this procedure for the two bolts on the opposite side).

Make sure that all four bolts have been turned out until they can easily be loosened by hand. Tighten the locking nuts (Item 2) [Figure 10-40-4].

This will allow the park brake piston to be active again.

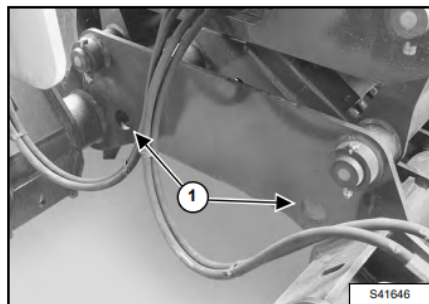
Engage the parking brake and make sure it functions correctly.

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TOWING THE TELESCOPIC HANDLER (CONT'D)

Procedure (Cont'd)

Figure 10-40-5



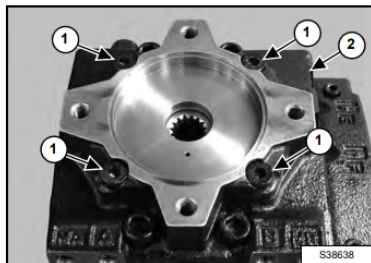
HYDROSTATIC PUMP (CONT'D)

Charge Pump Disassembly

Place the pump on the work surface with the charge pump up.

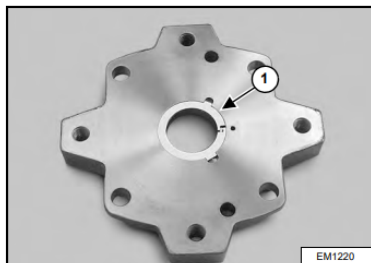
Mark the pump housings for correct assembly.

Figure 30-40-24



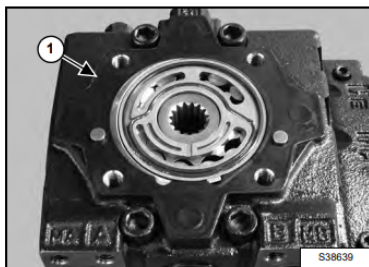
Remove the four bolts (Item 1) and remove the cover (Item 2) [Figure 30-40-24] from the charge pump housing.

Figure 30-40-25



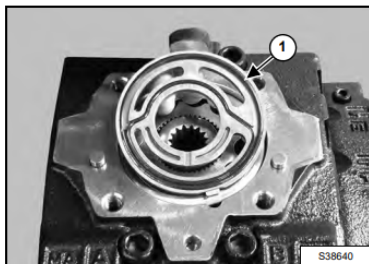
Remove the thrust washer (Item 1) [Figure 30-40-25] from the cover.

Figure 30-40-26



Remove the gasket (Item 1) [Figure 30-40-26] from the charge pump.

Figure 30-40-27



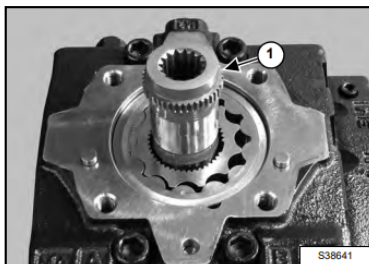
Lift the pressure balance plate (Item 1) [Figure 30-40-27] from the charge pump.

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HYDROSTATIC PUMP (CONT'D)

Charge Pump Disassembly (Cont'd)

Figure 30-40-28



Remove the coupler shaft (Item 1) [Figure 30-40-28].

Figure 30-40-29

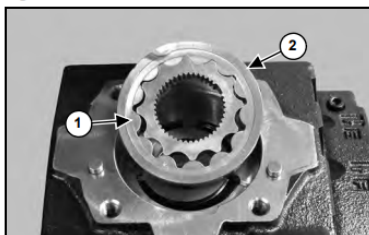
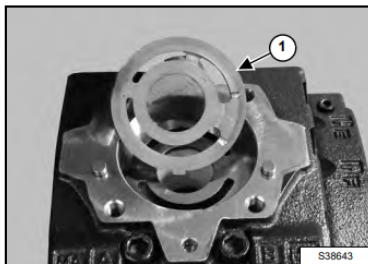
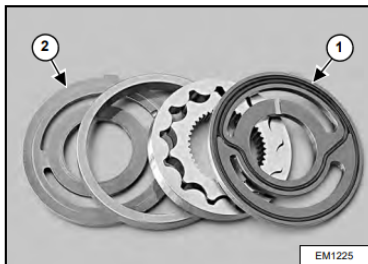


Figure 30-40-30



Remove the valve plate (Item 1) [Figure 30-40-30].

Figure 30-40-31



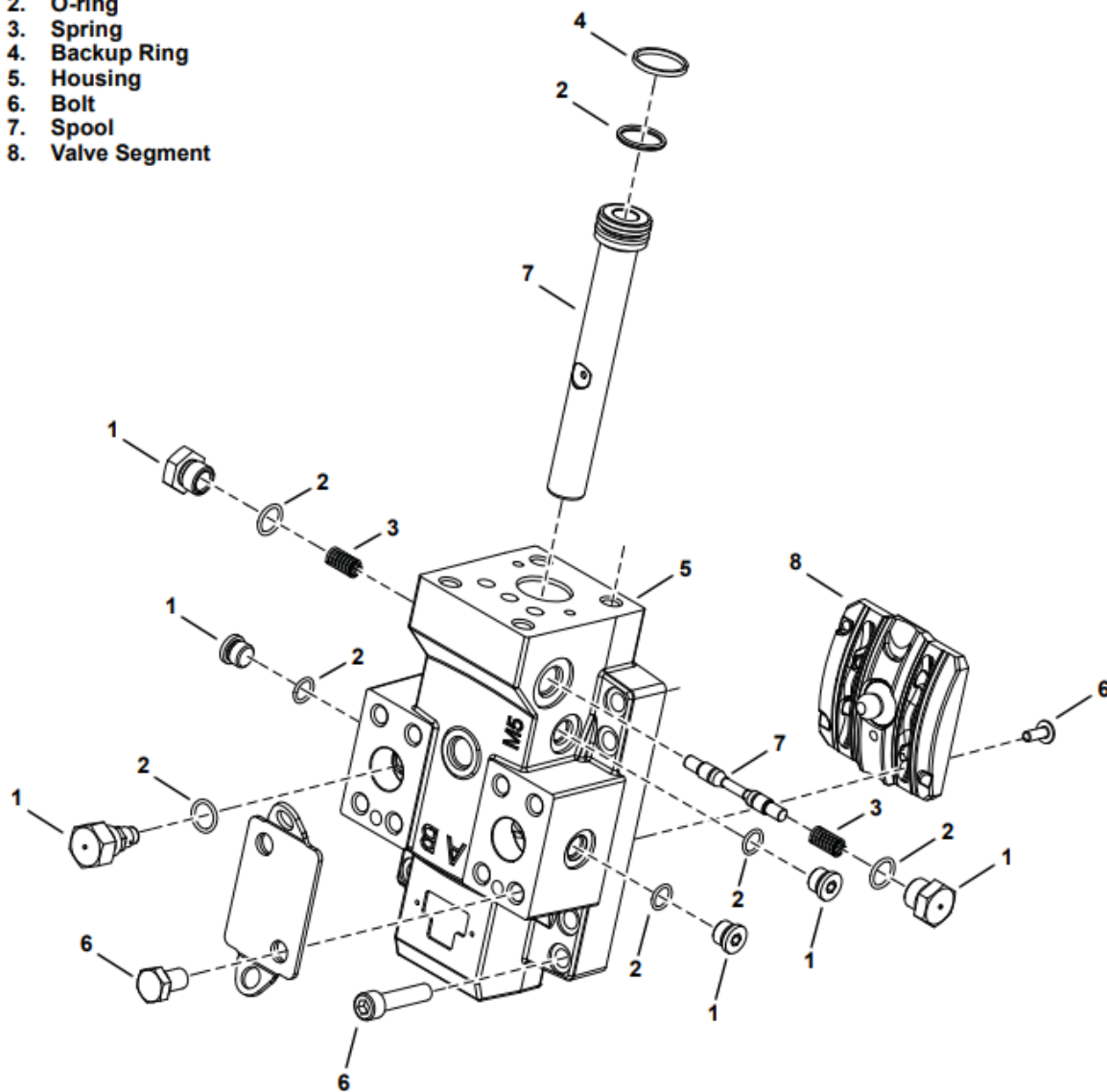
Remove the seal from the pressure balance plate

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HYDROSTATIC DRIVE MOTOR (CONT'D)

Parts Identification (Cont'd)

1. Plug
2. O-ring
3. Spring
4. Backup Ring
5. Housing
6. Bolt
7. Spool
8. Valve Segment



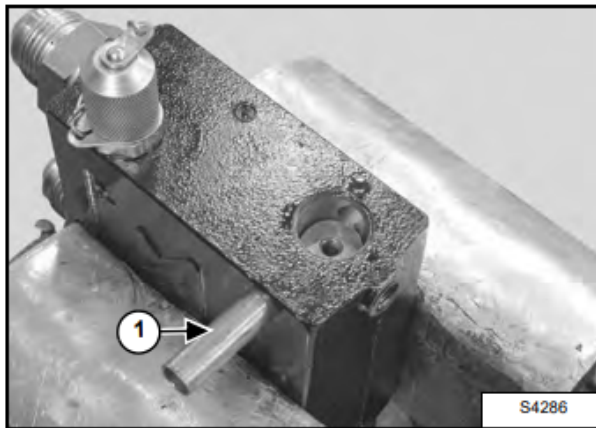
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HYDRAULIC CONTROL VALVE (CONT'D)

Inlet Section Disassembly And Assembly (Cont'd)

Figure 20-150-20



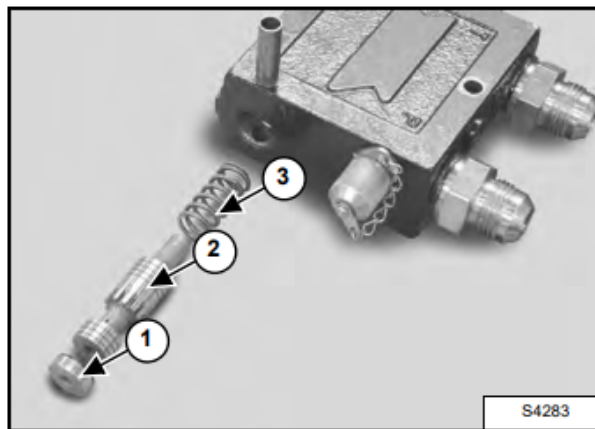
Press the pin (Item 1) [Figure 20-150-20] out such that it no longer blocks the valve.

Figure 20-150-21



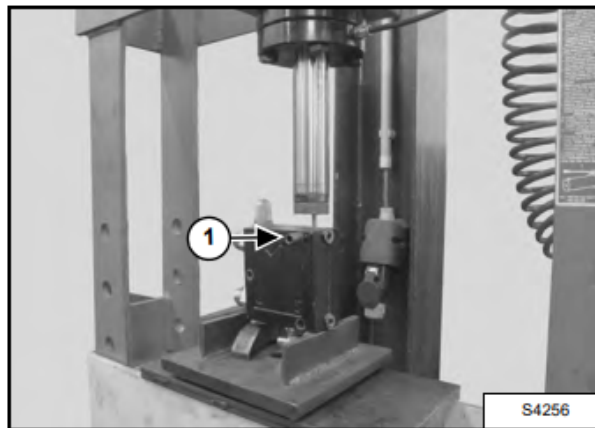
If the valve cannot be removed by hand, install a bolt in the threaded hole and carefully pull the plug (Item 1) [Figure 20-150-22] out with nut and washer as shown in [Figure 20-150-21].

Figure 20-150-22



Remove the plug (Item 1), the spool (Item 2) and the spring (Item 3) [Figure 20-150-22] from the inlet section.

Figure 20-150-23



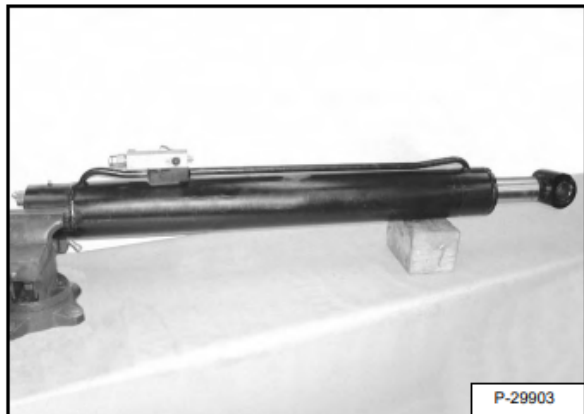
Installation: Use a hydraulic press to carefully install the spring, spool and plug in the hole and reinstall the pin (Item 1) [Figure 20-150-23] to keep the assembly in its place.

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LIFT CYLINDER (CONT'D)

Disassembly

Figure 20-20-11



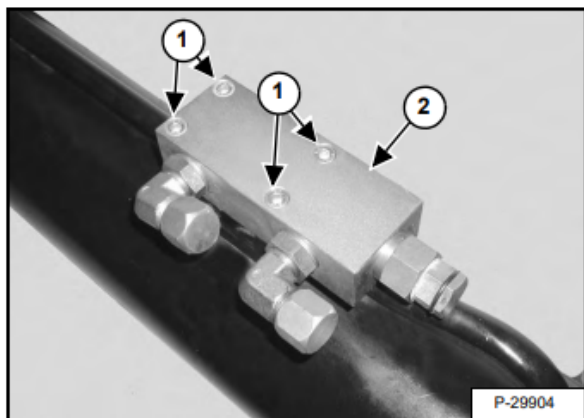
Use the following tools to disassemble the cylinders:

MEL1354-Spanner Wrench

MEL1076-Cylinder Wrench

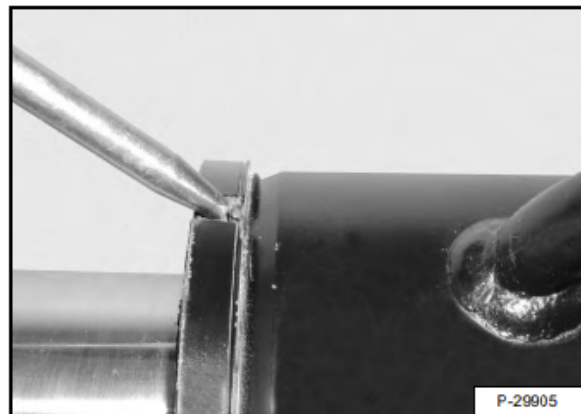
Put the cylinder in a vise [Figure 20-20-11].

Figure 20-20-12



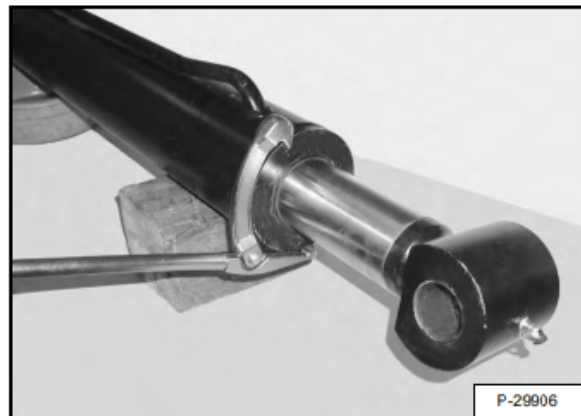
Remove the four bolts (Item 1) and remove the lift lock (Item 2) [Figure 20-20-12].

Figure 20-20-13



Carefully peen the lock ring from the head gland [Figure 20-20-13].

Figure 20-20-14

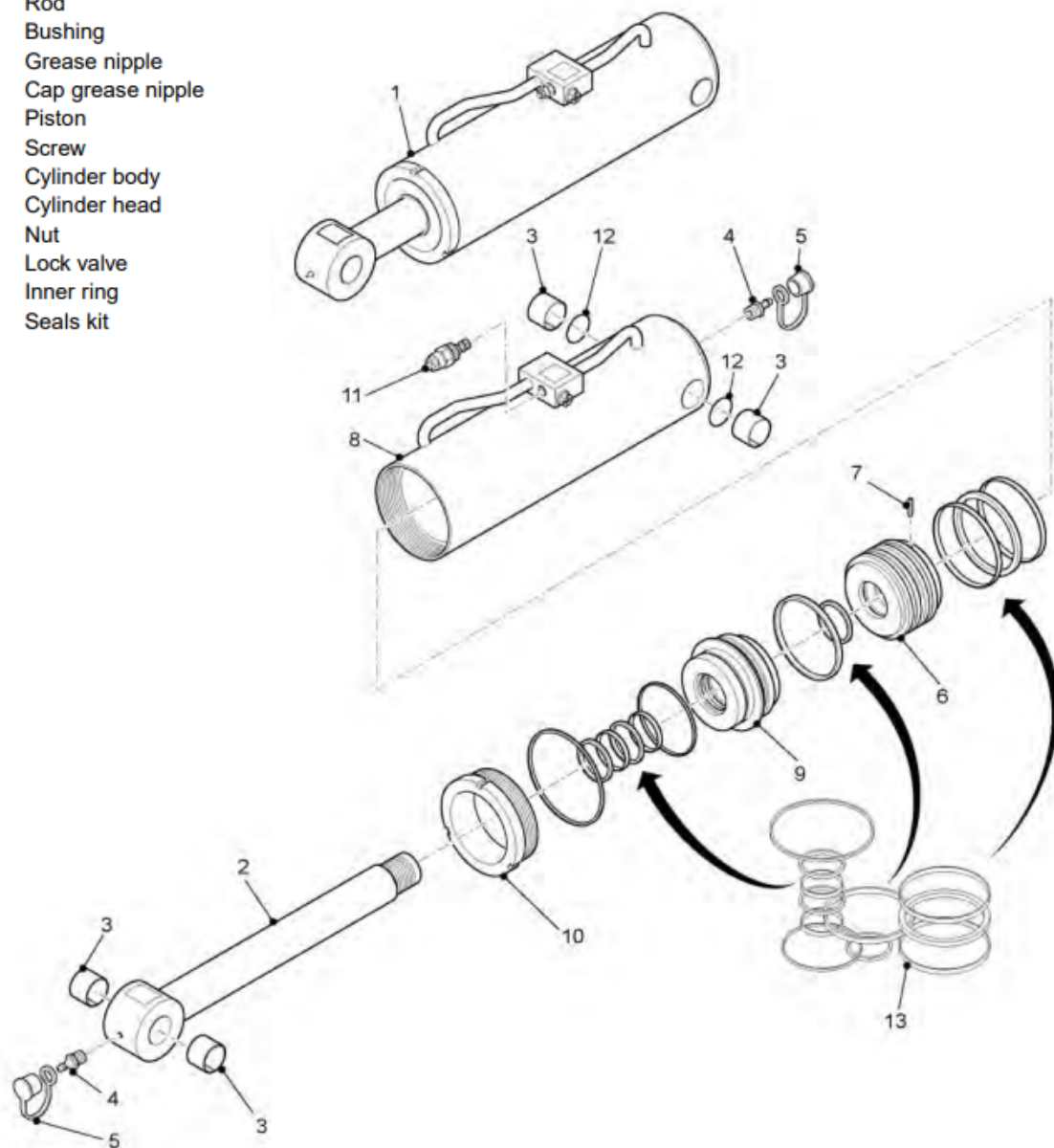


Use a spanner wrench to loosen the head gland [Figure 20-20-14].

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Parts Identification

1. Cylinder assy
2. Rod
3. Bushing
4. Grease nipple
5. Cap grease nipple
6. Piston
7. Screw
8. Cylinder body
9. Cylinder head
10. Nut
11. Lock valve
12. Inner ring
13. Seals kit



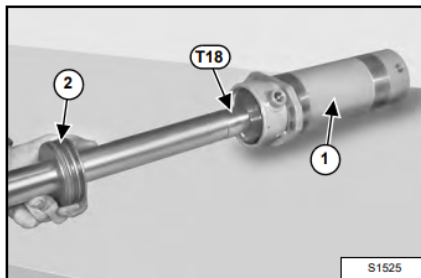
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STEERING CYLINDER (FRONT / REAR) (CONT'D)

Assembly (Cont'd)

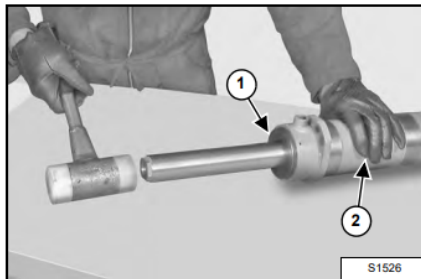
Figure 20-60-24



Apply tool T18 to the shaft on the opposite side of the head and centre it in the cylinder (Item 1) so that the piston (Item 2) [Figure 20-60-24] fits into the cylinder.

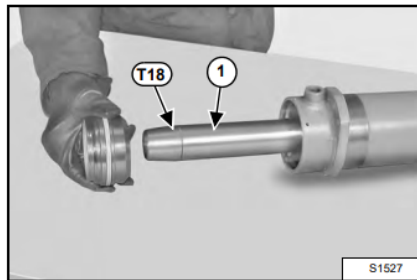
NOTE: Apply a little grease to seals and cylinder.

Figure 20-60-25



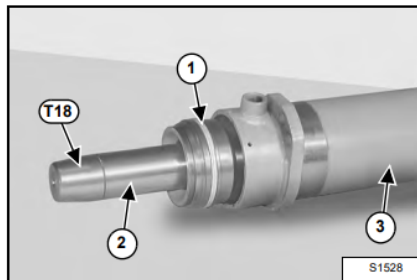
Push the piston (Item 1) into the cylinder (Item 2) [Figure 20-60-25] for 100 mm (4 in). Using a plastic hammer.

Figure 20-60-26



Remove tool T18 and apply it to the opposite side of the piston rod (Item 1) [Figure 20-60-26].

Figure 20-60-27



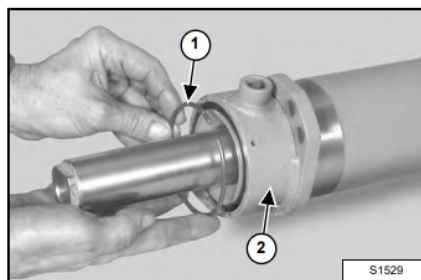
Apply grease to the head seals (Item 1), install the head onto the piston rod (Item 2) and push it onto the cylinder (Item 3) [Figure 20-60-27].

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STEERING CYLINDER (FRONT / REAR) (CONT'D)

Assembly (Cont'd)

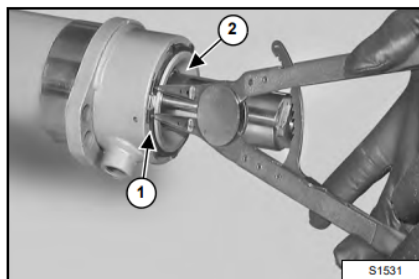
Figure 20-60-28



Insert the stop ring (Item 1) ensuring that it fits into the seat of the cylinder (Item 2) [Figure 20-60-28].

Figure 20-60-29

Figure 20-60-30



install the snap ring (Item 1) on the head (Item 2) [Figure 20-60-30].

NOTE: Make sure that the snap ring (Item 1) [Figure 20-60-30] is securely fastened in its seat.
If necessary, force it into its seat using a drift and a hammer.

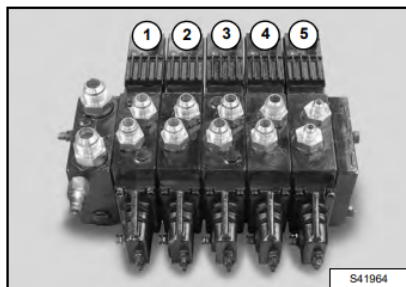
rate

HYDRAULIC CONTROL VALVE (CONT'D)

Valve Section Troubleshooting (Cont'd)

1. Check for diagnostic service codes. (See Operation & Maintenance Manual for the correct procedure.) When no service code is read, go to step 9.

Figure 20-150-3



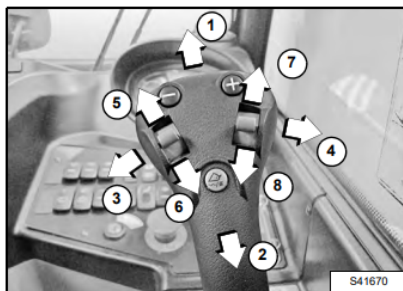
Lifting Valve Section (Item 1), Telescoping Valve Section (Item 2), Tilting Valve Section (Item 3), Auxiliary Valve Section (Item 4), Frame-Levelling Valve Section (Item 5), [Figure 20-150-3].

(Table below references to [Figure 20-150-3])

CODE	FUNCTION	REF
W1005	PVG32 lift up/down valve short to battery	1
W1006	PVG32 lift up/down valve short to ground	1
W1028	PVG32 lift up/down valve error, from main valve diagnostic	1
W1205	PVG32 extend/retract valve short to battery	2
W1206	PVG32 extend/retract valve short to ground	2
W1228	PVG32 extend/retract valve in error from main valve diagnostic	2
W1105	PVG32 tilt valve short to battery	3
W1106	PVG32 tilt valve short to ground	3
W1128	PVG32 tilt valve in error, from main valve diagnostic	3
W1305	PVG32 auxiliary valve short to battery	4
W1306	PVG32 auxiliary valve short to ground	4
W1328	PVG32 auxiliary valve in error, from main valve diagnostic	4
W1405	PVG32 frame levelling valve short to battery	5
W1406	PVG32 frame levelling valve short to ground	5
W1428	PVG32 frame levelling valve, in error from main valve diagnostic	5

2. Locate the valve section and solenoid valve to which the service code refers.
3. Disconnect the solenoid valve of the valve which has been diagnosed and plug back in.
4. With adequate room in front of the machine, start the engine and run the engine at low idle (900 rpm). Operate the function which has been diagnosed [Figure 20-150-4]. Move forward and back to see if the function works. Stop the engine.

Figure 20-150-4



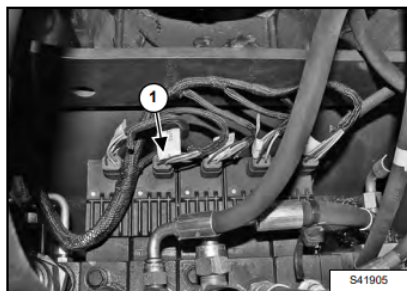
REF	FUNCTION
1	Lower Boom
2	Raise Boom
3	Tilt Backward
4	Tilt Forward
5	Extend Telescopic Boom
6	Retract Telescopic Boom
7	Front Auxiliary Hydraulics A4 (Male Coupler)
8	Front Auxiliary Hydraulics B4 (Female Coupler)

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HYDRAULIC CONTROL VALVE (CONT'D)

Valve Section Troubleshooting (Cont'd)

Figure 20-150-5

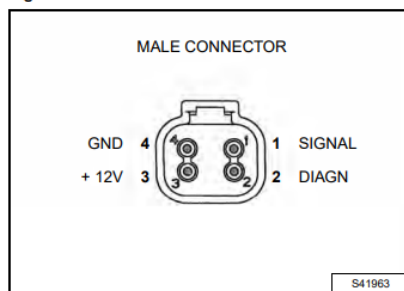


5. Disconnect the solenoid valve connector (Item 1) [Figure 20-150-5] of the section which has been diagnosed on page 20-150-2. (Telescope section shown here.)

Figure 20-150-6

If one of the above voltage readings is not correct, replace the joystick. (See Removal And Installation on Page 20-200-1.)

Figure 20-150-7



7. Use an ohmmeter to check the solenoid. The reading between male connector terminals 1 and 3 [Figure 20-150-7] must be approximately 5 ohm.

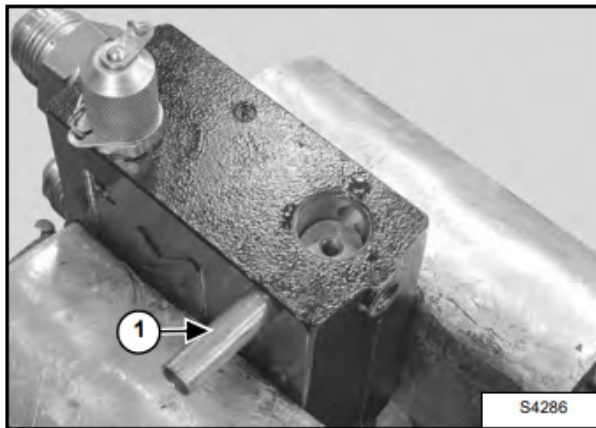
If the solenoid measurement is correct, the error could be hydraulic.

or Resale

HYDRAULIC CONTROL VALVE (CONT'D)

Inlet Section Disassembly And Assembly (Cont'd)

Figure 20-150-20



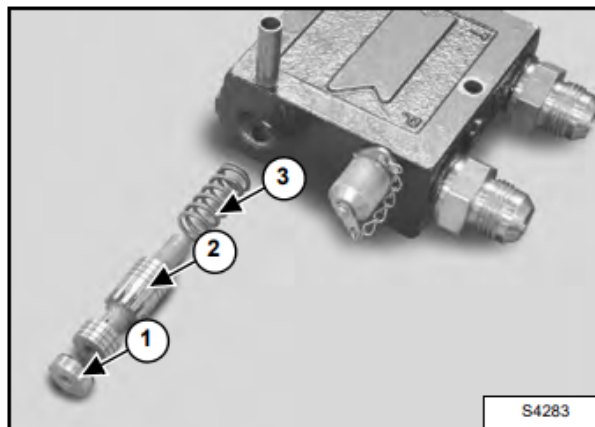
Press the pin (Item 1) [Figure 20-150-20] out such that it no longer blocks the valve.

Figure 20-150-21



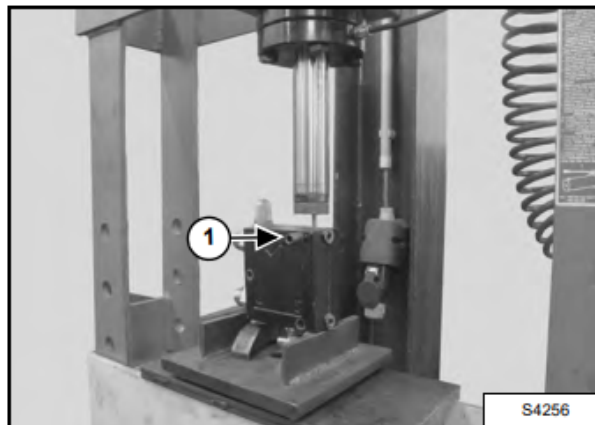
If the valve cannot be removed by hand, install a bolt in the threaded hole and carefully pull the plug (Item 1) [Figure 20-150-22] out with nut and washer as shown in [Figure 20-150-21].

Figure 20-150-22



Remove the plug (Item 1), the spool (Item 2) and the spring (Item 3) [Figure 20-150-22] from the inlet section.

Figure 20-150-23



Installation: Use a hydraulic press to carefully install the spring, spool and plug in the hole and reinstall the pin (Item 1) [Figure 20-150-23] to keep the assembly in its place.

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Kontakt: tel. 696 915 311

Szukasz instrukcji napraw do innego modelu?

Napisz lub zadzwoń do nas mail: motodiagnostyka2010@gmail.com lub tel. 696 915 311