

■ Load-sensing valve (LSV) 475 72. Test and Setup Instructions

■ 1st edition

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1 Security Information

WARNING

Testing and setup to be performed by authorised and qualified engineers of a specialist workshop only.

The company's and national accident prevention regulations must be obeyed as applicable.

Before starting any repair work, first read and understand all of this instruction document.

For the settings, refer to the vehicle's brake calculation/ LSV reference plate. The test values in this document are for information only.

Following repair be sure to verify that the unit works correctly!

2 Tools Required



To check the air-controlled LSV controllers in the vehicle and to correct the LSV controller settings, a special tool is required. The tool can be obtained directly from the manufacturer:

E. Babion Maschinenbau
Lübeckerstr. 16
30880 Laatzen, Germany
Tel: + 49 5102 - 4789
Fax: + 49 5102 - 7194

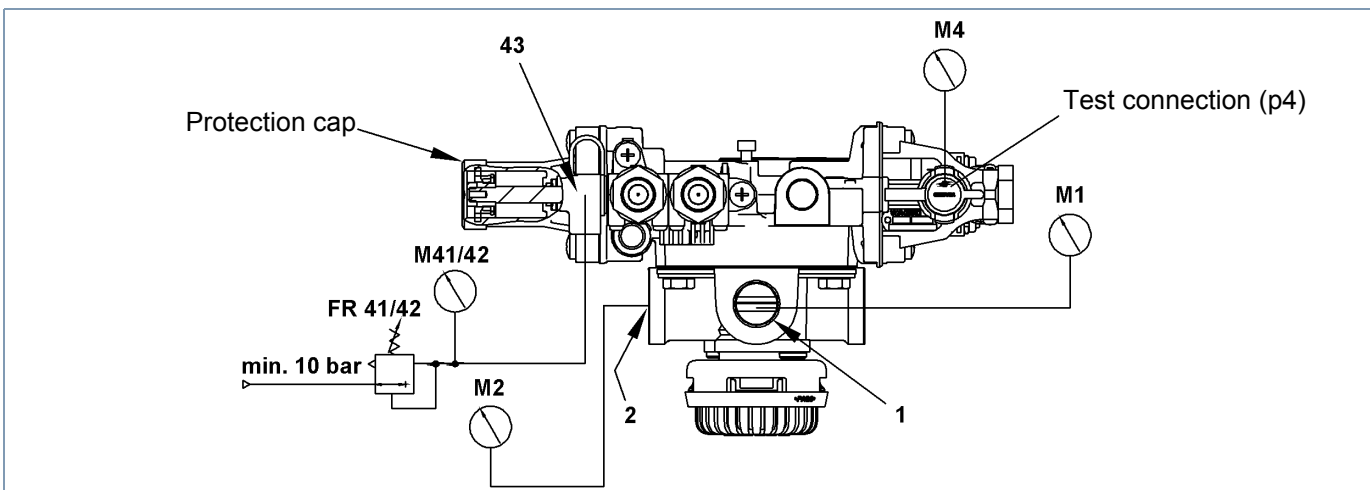
Unladen stop screw:	Safety Torx Plus IPR25
Clamp:	Torx T20 screwdriver
Adjusting screw:	Special tool 899 709 114 2
Pressure adjustment:	LSV tester 435 008 000 0 or a precision control valve.

3 Preparatory Steps



Load-sensing valve (LSV)
475 721 ... 0 /
475 723 ... 0

- Attach pressure gauge M4 to test connection p4.
- Attach pressure gauge M2 to port 2.
- Attach pressure gauge M41/42 and precision control valve FR 41/42 to port 43 (thereby separating the air suspensions bellows from the LSV's control chamber).
- Attach pressure gauge M1 to the test connection of the air reservoir of port 1.
- Ensure a pressure $\geq p_1$ (see table on page 3) is maintained in the air reservoir.
- Remove the protective cap.



4 Setup / Test

For the settings, refer to the reference plate. The text below makes example reference only to the original WABCO settings from the table at the end of the document.

4.1 Characteristic Curve Setup

A (empty)

- Input the bellows pressure p41/42 (port 43) for the empty vehicle (see table p41p42 empty).
- Actuate the brake valve until p4 is as specified in the table.
- Use pressure gauge M2 to check p2.
- Lower p4 and p41/42 (port 43) to 0 bar.
- Just turn the adjusting screw to correct p2 as appropriate:

p2 too low:	Clockwise = increase pressure
p2 too high:	Anticlockwise = reduce pressure

- Repeat steps until p2 is correct.
- ! Following the test, lower p4 and p41/42 to 0 bar!

B (load)

- Input bellows pressure p41/42 (port 43) for the loaded vehicle (see table p41p42 loaded).
- Actuate the brake valve until p4 is as specified in the table.
- Use pressure gauge M2 to check p2.
- Lower p4 and p41/42 (port 43) to 0 bar.

- Set the clamp to correct p2 as appropriate:

p2 too low:	1. Anticlockwise = increase pressure
	2. Turn adjusting screw anticlockwise by the same amount
p2 too high:	1. Clockwise = reduce pressure
	2. Turn adjusting screw clockwise by the same amount

Repeat A and B until p2 are correct at both test points.

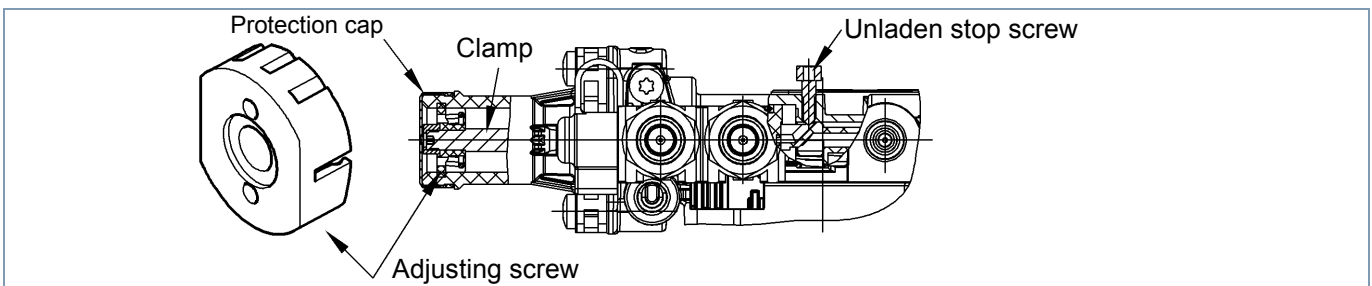
- ! After adjusting the clamp and the screw, first test or set the bottom test point (A)!

4.2 Unladen stop at p41/42 (port 43) = 0 bar

- Actuate the brake valve until p4 is as specified in the table.
- Use pressure gauge M2 to check p2.
- Reduce pressure p4 to 0 bar.
- Set the unladen stop screw to correct p2 as appropriate:

p2 too low:	Clockwise = increase pressure
p2 too high:	Anticlockwise = reduce pressure

- Repeat steps until p2 is correct.
- After pressure adjustment, remember to put the protection cap back on.



5 Test Settings

The table lists WABCO'S test settings. The settings of the actual LSV controller in the vehicle may be different.

The ratings of the vehicle manufacturer (see LSV plate on the vehicle) are mandatory.

Test points 475 721/723 on the rising characteristic curve							
Pressure ratings in bar	p1	p4	1. Characteristic curve				2. Unladen stop
			A		B		Unladen stop (p41/42=0)
			p41 p42 empty	p2 empty ± 0,15	p41 p42 laden	p2 loaded ± 0,3	
LSV relay							
475 721 000 0	10	8	0,90	3,5	3,85	7,0	3,05 + 0,2
475 721 001 0	6	6,0	1,20	2,9	4,15	5,3	2,4 ± 0,1
475 721 002 0	6	6,0	0,7	3,2	2,2	5,3	2,8 ± 0,1
475 721 003 0 *)	8,5	8,0	0,85	2,60	3,90	7,00	2 + 0,2
475 721 004 0	6	6,0	0,90	2,9	2,40	5,3	2,4 ± 0,1
475 721 005 0	10	8,0	0,90	3,50	3,70	7,0	3 ± 0,1
475 721 006 0	6	6,0	1	2,5	3,5	5,3	2 ± 0,1
475 721 007 0	6	6,0	0,8	2,1	2,7	5,3	1,7 ± 0,1
475 721 008 0	10	8,0	0,65	3,50	1,70	7,0	3 ± 0,1
475 721 009 0	10	8,0	0,75	3,50	2,50	7,0	3 ± 0,1
475 721 011 0	10	8	0,80	2,6	4,2	7,0	2,2 ± 0,1
475 721 012 0	10	8	0,85	2,6	5,1	7,0	2,2 ± 0,1
475 721 013 0	7	7,0	1,25	3,0	8,05	6,5	2,6 ± 0,1
475 721 014 0	7	7,0	1,20	3,65	7,00	6,5	3,3 ± 0,1
475 721 015 0	10	8,0	0,85	2,60	5,55	7,0	2,25 ± 0,1
475 721 016 0	10	8,0	1,00	2,60	6,80	7,0	2,25 ± 0,1
LSV relay ABS							
475 721 500 0	10	8	0,90	3,5	3,85	7,0	3,05 + 0,2
475 721 501 0	10	8	0,80	2,6	4,2	7,0	2,2 ± 0,1
475 721 502 0	10	8	0,85	2,6	5,1	7,0	2,2 ± 0,1
475 721 503 0	10	8,0	0,85	2,60	5,55	7,0	2,25 ± 0,1
475 721 504 0	10	8,0	1,00	2,60	6,80	7,0	2,25 ± 0,1
LSV							
		p1	p41p42 empty	p2 empty *) ± 0,15	p41p42 laden	p2 loaded ± 0,3 *)	Unladen stop (p41/42=0)
475 723 000 0		6	1,6	2,25	4	5,25	1,7 ± 0,2
475 723 001 0		6	1,1	2,25	3,5	5,25	1,7 ± 0,2

*) LSV without relay part; p2 therefore to be measured at port 22. To set pressure p41, a separate test connection 463 710 999 0 is required (3/2-way valve with air suspension simulation port). Pressure gauge M1 not applicable