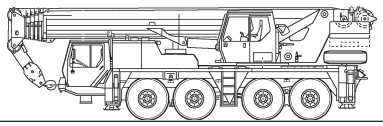
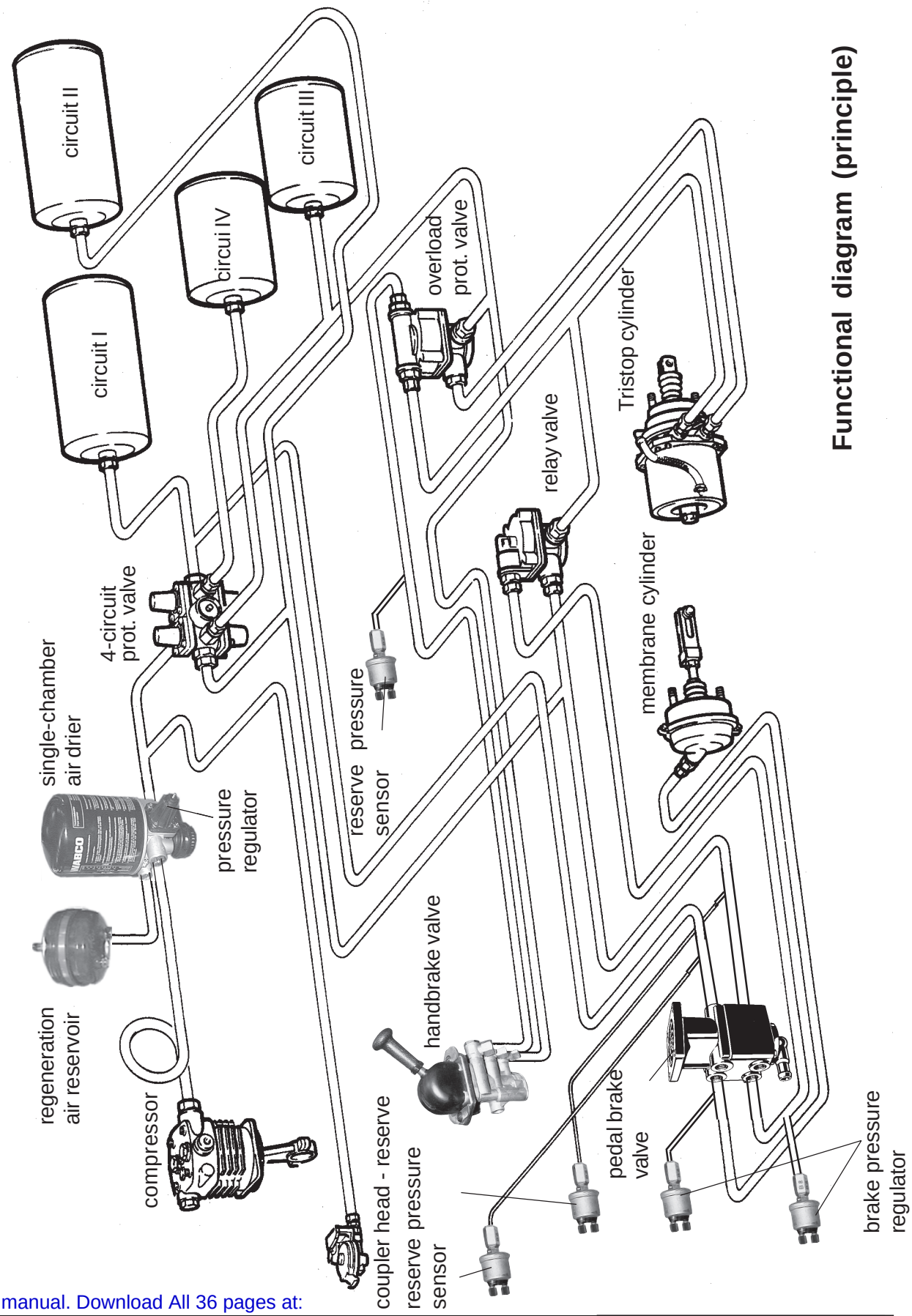


Functional diagram (principle)

Pneumatic brake system



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Functional outline on circuit diagram pneumatic system

Item	Designation	Function	s. fig.	Plan sheet
1	Compressor	Supply of pneumatic brake system and secondary consumers	9.1	3
1.1	Coupler head	Connection facility for external supply	9.7	3
2	Tyre inflation valve	Connection facility for tyre inflation hose (up to approx 11 bar)	9.2	3
3	Single-chamber air-drier	Drying of the air supplied by the compressor	9.2	3
3.1	Pressure regulator	Adjustment of the cut-off pressure 8,5 ± 0,2 bar	9.2	3
3.2	Heating cartridge (=F+F4-Y4)	In function upon engine "Start" below approx. 7 °C, cut-off at approx. 30 °C (thermostatic control)	9.2	3
4	Air reservoir (10 l)	Reservoir for the regeneration procedure in the air drier (3)	9.2	3
5	Four-circuit protection valve	Pressure protection for the intact service circuits at the failure of a circuit	9.16	3
6	Air reservoir (60 l)	Reservoir for service brake circuit I	9.17	4
7	Air reservoir (40 l)	Reservoir for service brake service II	9.17	4
8	Air reservoir (20 l)	Reservoir for handbrake circuit III	9.17	4
9	Air reservoir (20 l)	Reservoir for secondary consumer circuit IV	9.23	4
10	Pressure sensor (=H+H0-B5)	Sensor for the bar graph display of the reserve pressure of service brake circuit I.	9.5	5
11	Pressure sensor (=H+H0-B6)	Sensor for the bargraph display of the reserve pressure of service brake circuit II.	9.5	5
12	Pressure sensor (=P+P26-B7)	Sensor for the bar graph display for handbrake circuit III.	9.3	5
Service brake system				
13	Pedal brake valve	Control of the brake relay valves (17) for brake circuit I and (18) for brake circuit II	9.5	5
14	Pressure sensor (=H+H0-B8)	Sensor for the bar graph display for brake circuit I	9.5	5
15	Manometr. switch (=F+F4-S116)	Sensor for stop light indicator of the service brake operating point from 0,5 bar (Ö = break contact)	9.5	5
16	Pressure sensor (=F+F4-B9)	Sensor for bar graph display of the brake pressure for brake circuit II	9.3	5
17	Brake relay valve	Control of the service brake circuit I for axle 1	9.15	6
18	Brake relay valve	Control of the service brake circuit II for axle 2	9.17	6
19	Pressure relief valve	Reduction of the brake pressure at axle 1 (brake circuit I) to max. 7,5 bar	9.15	6
20	ABV solenoid valve (=F+F4-Y41)	Locking prevention of the left wheel at axle 1 during braking by modification of the brake pressure dependent on the control signals of the electronic	9.18	6
21	ABV solenoid valve (=F+F4-Y42)	Locking prevention of the right wheel at axle 1 during braking by modification of the brake pressure dependent on control signals of the electronic	9.21	6

Functional outline on the circuit diagram pneumatic system

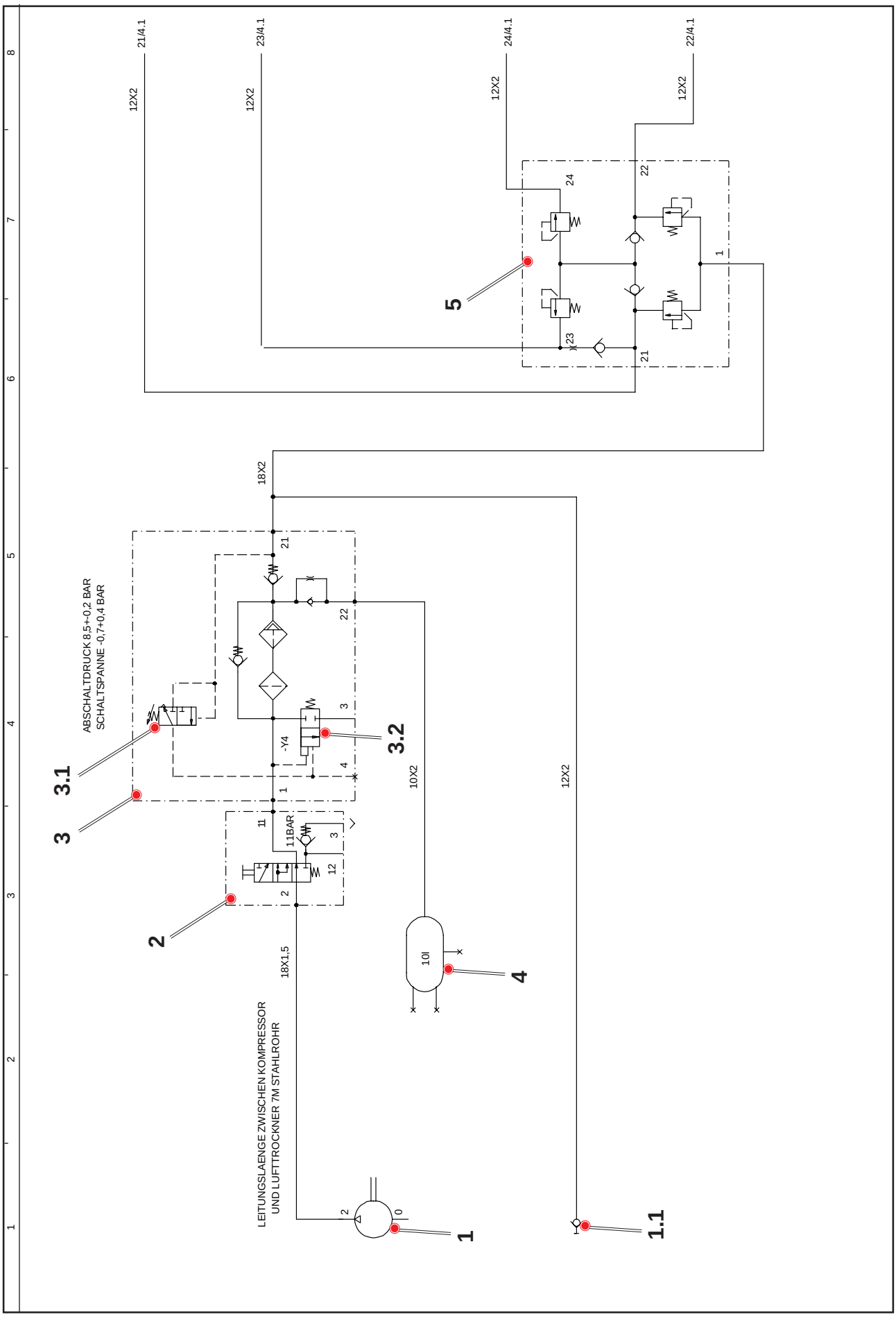
Item.	Designation	Function	s. fig.	Plan sheet
22	ABV solenoid valve (=F+F4-Y43)	Locking prevention of the left wheel at axle 2 during braking by modification of the brake pressure dependent on control signals of the electronic	9.19	6
23	ABV solenoid valve (=F+F4-Y44)	Locking prevention of the right wheel at axle 2 during braking by modification of the brake pressure dependent on control signals of the electronic	9.20	6
24	Diaphragm brake cylinder	Actuation of the wheel brakes on axle 1	9.24	6
25	Combined brake cylinders	Actuation of the wheel brakes via the diaphragm section of combined cylinders on axles 1 and 2	9.25	6
26	Shuttle valve	Control of the relay valves (17) and (18) of brake valve (13) or (50)	9.15/ 9.17	6
26A	Shuttle valve	Control of the combined brake cylinders (25) on axle 2 of relay valves (18) or ASR solenoid valve (49)	9.17	6
Handbrake system				
27	Handbrake valve	Control of the overload protection valves (29/30)	9.4	5
28	Control switch (=H+H0-S114)	Sensor for handbrake control operating point at 5.5 bar (S = make contact)	9.3	5
29	Overload protection valve	a) Deaeration of the spring-loaded section of the combined cylinders (25) of axle 2 at control by the handbrake valve b) A simultaneous actutation of both brake systems results in an aeration of the spring-loaded section to prevent brake force addition.	9.16	6
30	Overload protection valve	a) Deaeration of the spring-loaded section of the combined cylinders (25) of axle 1 at control by the handbrake valve b) as described at 29b)	9.15	6
31	Conduit filter	Filtering of the compressed air	9.23	7
32	Dir. solenoid valve (=F+F4-Y35)	Control of the working cylinders (33) at actuation "engine brake ON"	9.10	7
33	Working cylinder	Actuation of the locking flap in the exhaust pipe **by resilience** at function "engine brake ON"	9.1	7
34	Dir. solenoid valve (=F+F4-Y21)	Control of the working cylinder (35) at control "release of rear-axle lock"	9.10	7
35	Working cylinder with monitor. switch	Locking of rear-axle steering (locking) by resilience a) released (=F+F4-S131) b) locked (=F+F4-S151)	9.22	7
36	Dir. solenoid valve (=F+F4-Y7)	Control of working cylinders (37) at control "transv. differ. lock ON" (on axles 1 and 2)	9.10	7
37	Working cylinder with monitor. switch	Activation of the transv. differ. lock on axle 1 (-S122) and axle 2 (-S123)	9.13/ 9.14	7
38	Dir. solenoid valve (=F+F4-Y5)	Control of working cylinders (39) at actuation "all-wheel ON"	9.10	7

Functional outline on circuit diagram pneumatic system

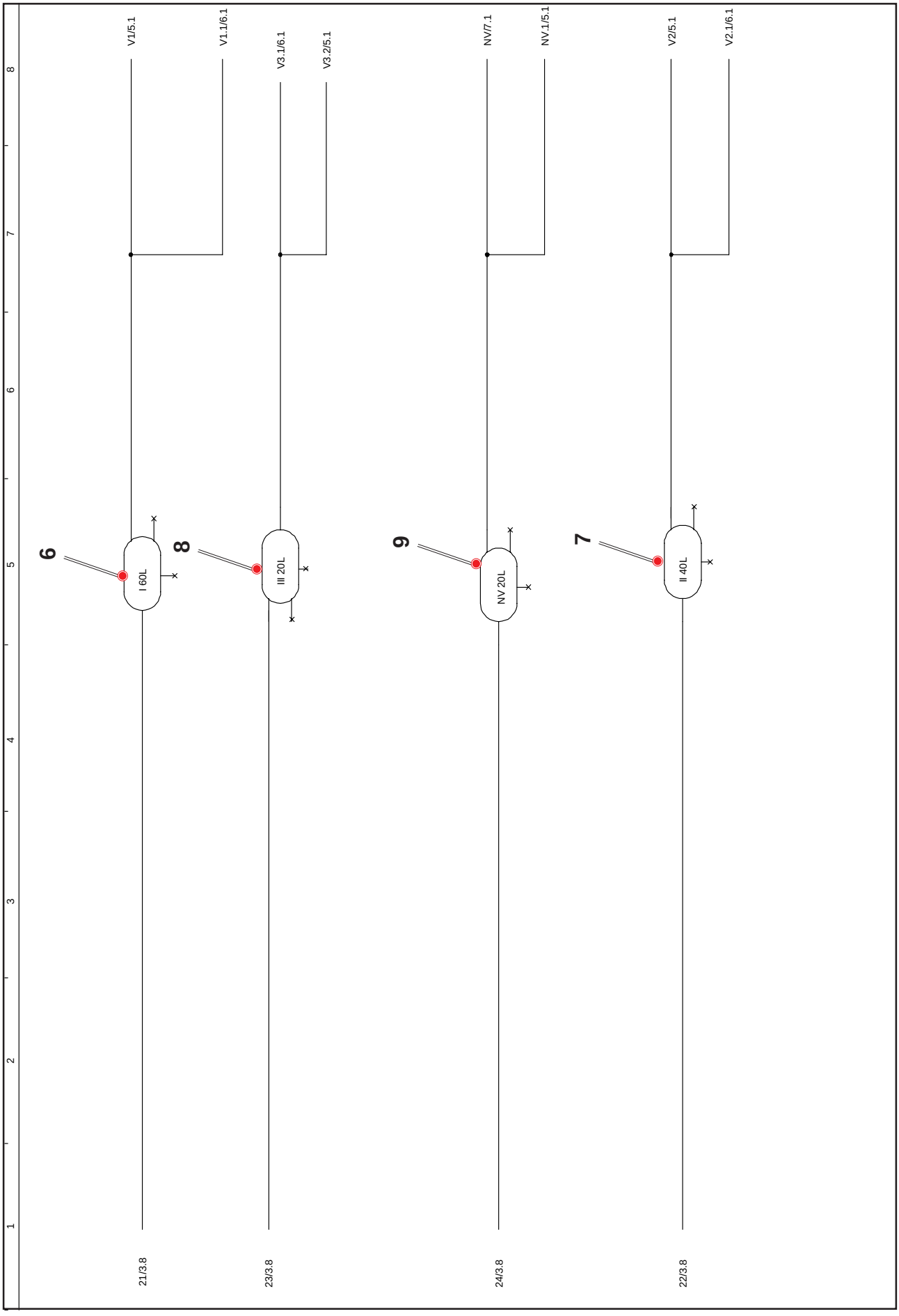
Item	Désignation	Function	s. fig.	Plan sheet
39	Working cylinder w. monitor. switch	All-wheel activation on axle 1 (-S139)	9.11	7
40	Dir. solenoid valve (=F+F4-Y9)	• Valve in neutral position (-Y9a) ⇒ axle locking valves in locked position, i.e. suspension locked • Valve activated (-Y9b) ⇒ axle locking valves released, i.e. suspension activated	9.9	7
41	Dir. solenoid valve (=F+F4-Y3)	Control of control cylinder (42) at inversion to superstructure (crane mode) - only possible at stopped engine and ignition "ON"	9.10	7
42	Control cylinder w. inductive sensor	Activation or deactivation of the hydraulic pump for crane mode (cylinder retracted = pump on) - functional control by proximity switch (-S121)	9.12	7
43	Directional valve (manual operated)	Manual control of working cylinder (44) for steering wheel-adjustment	9.6	5
44	Working cylinder	Adjustment of the stering wheel (reset of the cylinder by resilience)	9.6	5
45	Dir. solenoid valve (=H+H0-Y148)	Release of the handbrake by activation of the overload protection valves 29 and 30 by directional valve (48) and actuation of working cylinder (46) for the inversion to telesteering	9.3	5
46	Control cylinder	Engagement or disengagement of the pinion for telesteering	9.8	5
47	Dir. solenoid valve (=H+H0-Y2)	a) Solenoid (-Y2a) energized when switch on position superstructure and activation of directional valve (48) b) Solenoid (-Y2b) energized when switch on position carrier and activation of directional valve (48) for connection handbrake control circuit with the overlaod protection valves 29 and 30. c) Additional retraction of the control cylinder (42), i.e. cut-off of the pump superstructure.	9.3	5
48	Directional valve (pneumatic oper.)	Connection of the handbrake control circuit with the overload protection valves 29 and 30	9.3	5
49	ASR solenoid valve (=F+F4-Y149)	Release of the reserve air for the supply of ABV solenoid valves -Y43 and -Y44 compressed air in order to brake skidding wheel on axle 2 during the start or displacement	9.9	6
50	Pedal brake valve	Activation of the brake relay valves 17 and 18	9.28	8
51	Overflow valve	Supply of the ventilation of the control cabinet from approx. 7,5 bar	9.28	8
M1	Measuring point	Measuring connection for service brake pressure	9.24/ 9.25/ 9.27	6
M2	Measuring point	Measuring connection for handbrake pressure	9.25/ 9.26	6

Indication:
Item 40 see also at **suspension** (chapter: UW-12)

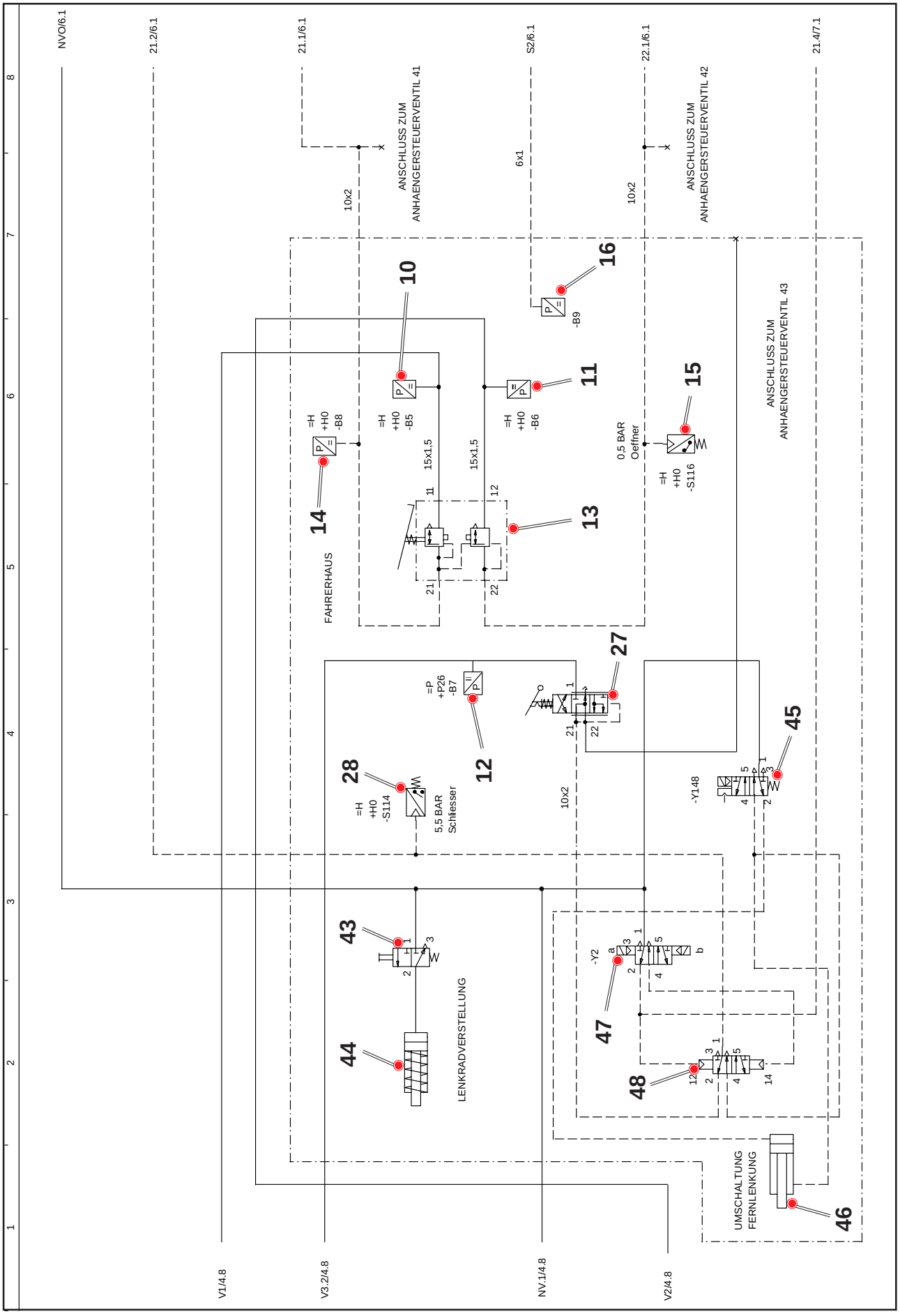
Circuit diagram pneumatic system Ident-No. 983377408 sheet 3



Circuit diagram pneumatic system Ident-No. 983377408 sheet 4

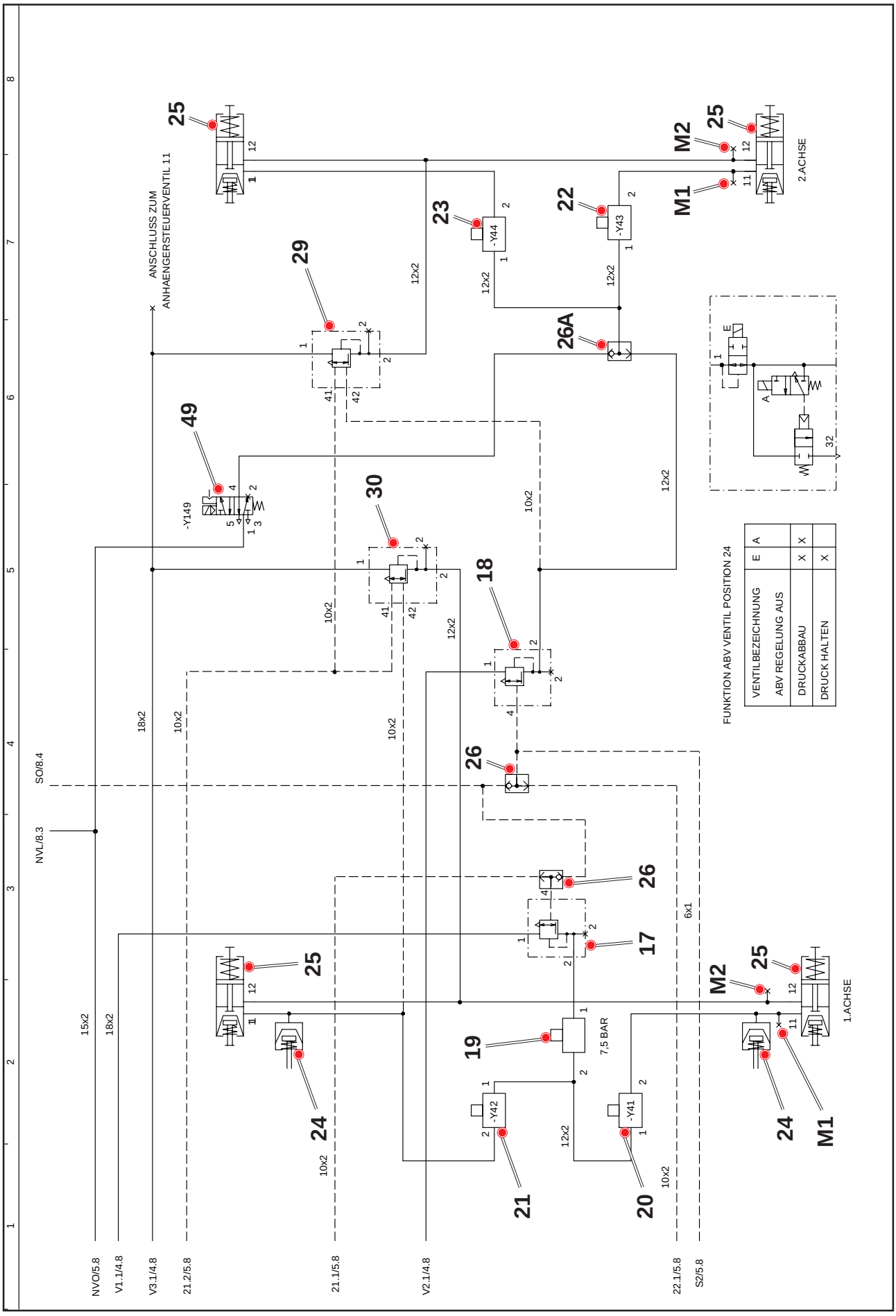


Circuit diagram pneumamtic system Ident-No. 983377408 sheet 5

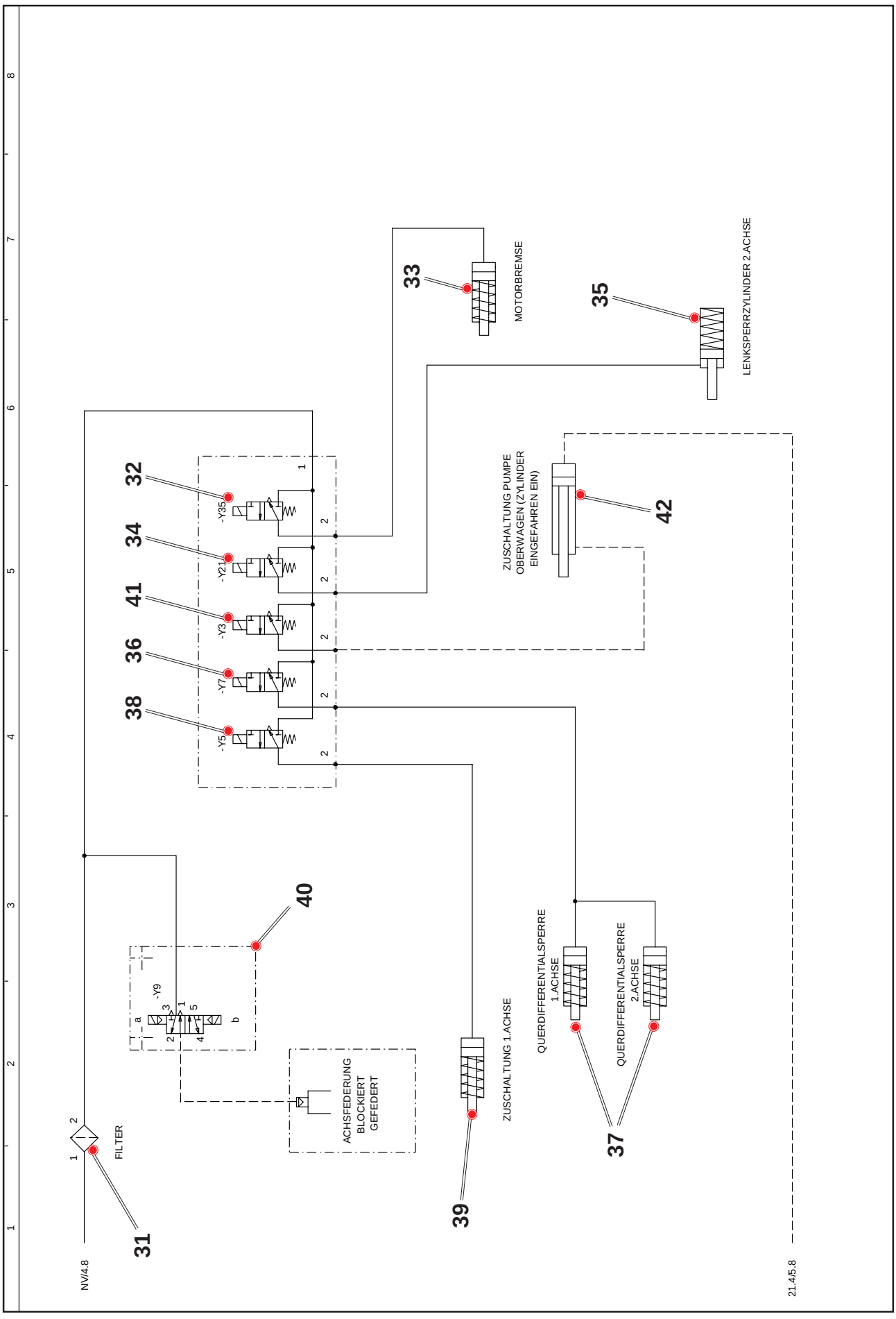


Pneumatic brake system and secondary consumers

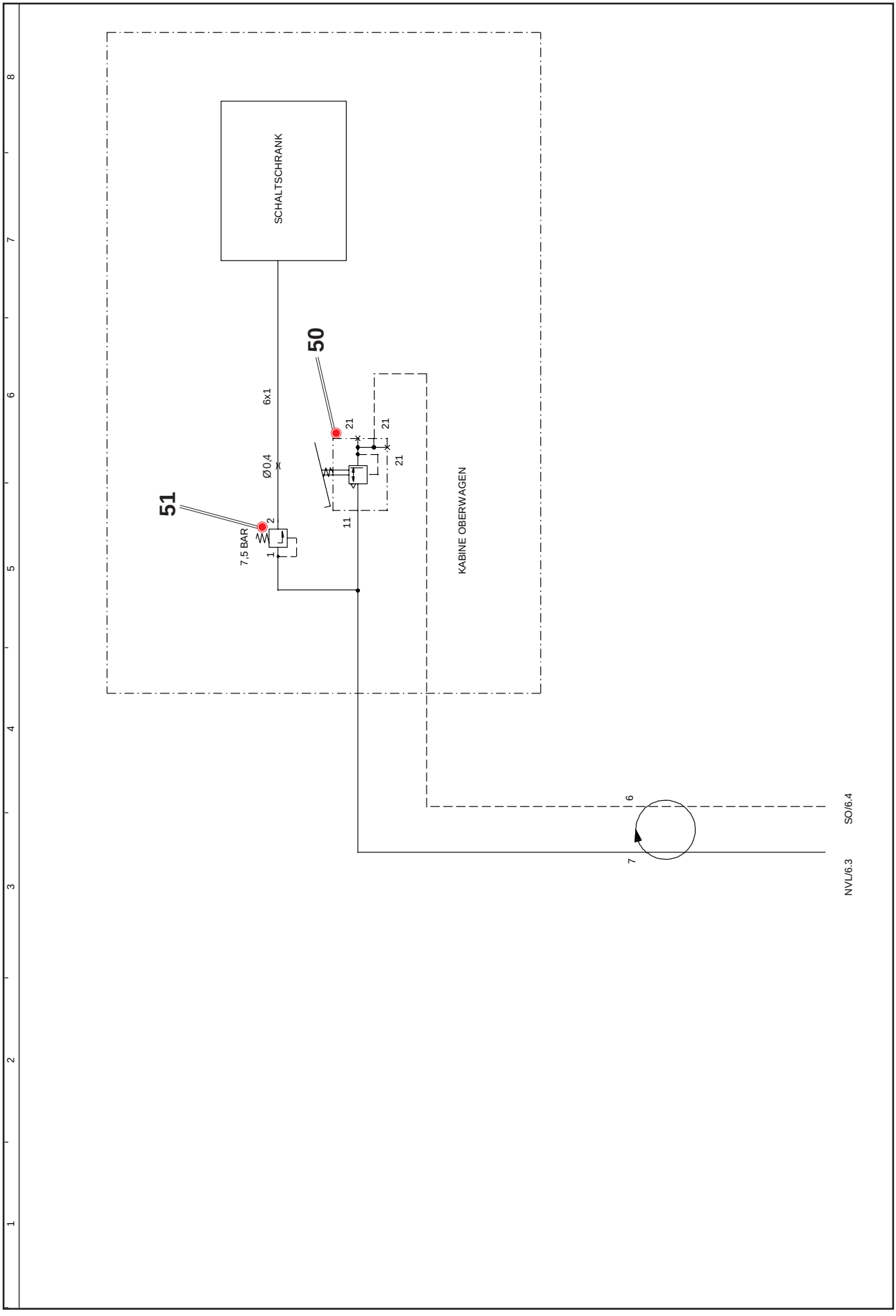
Circuit diagram pneumatic system Ident-No. 983377408 sheet 6



Circuit diagram pneumatic system Ident-No. 983377408 sheet 7

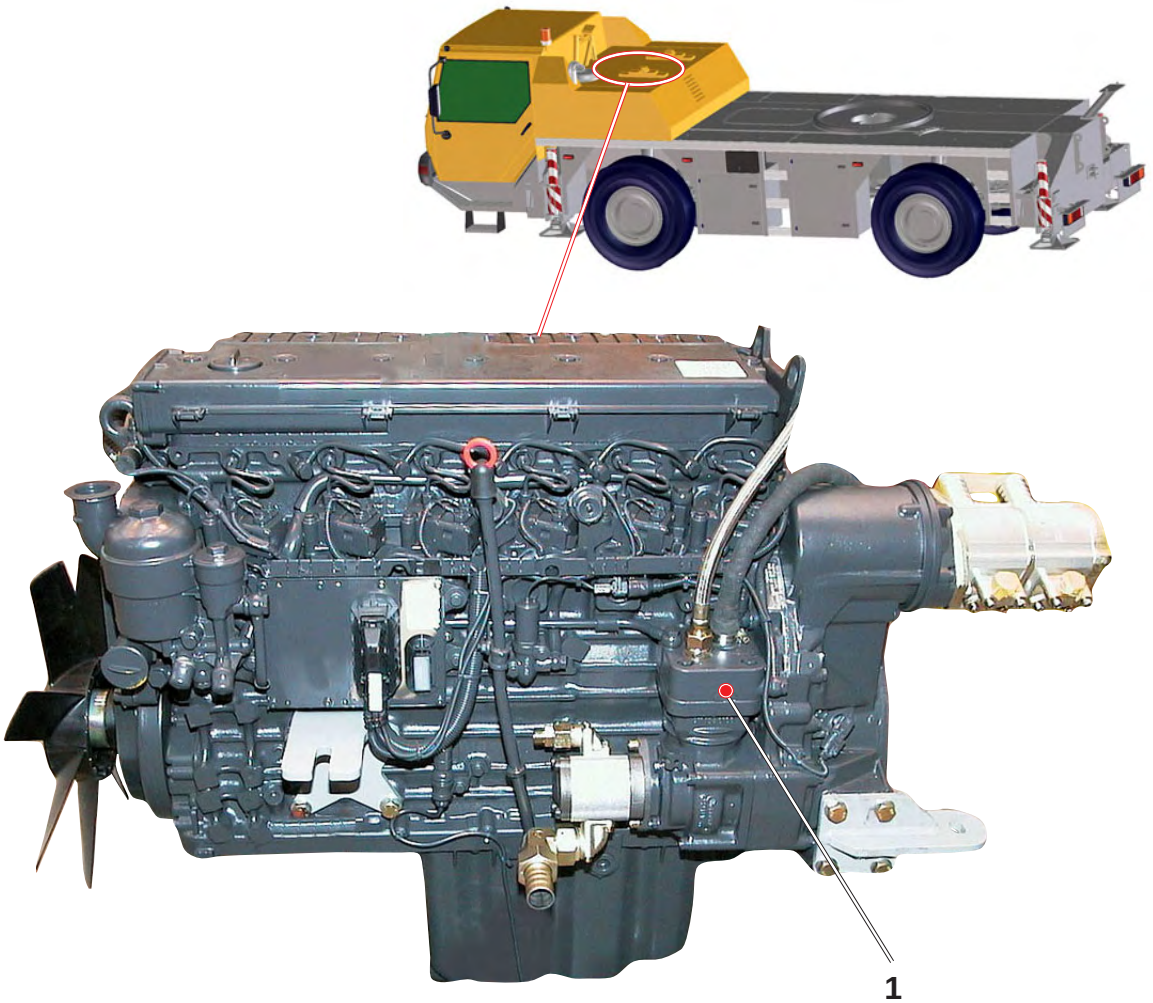


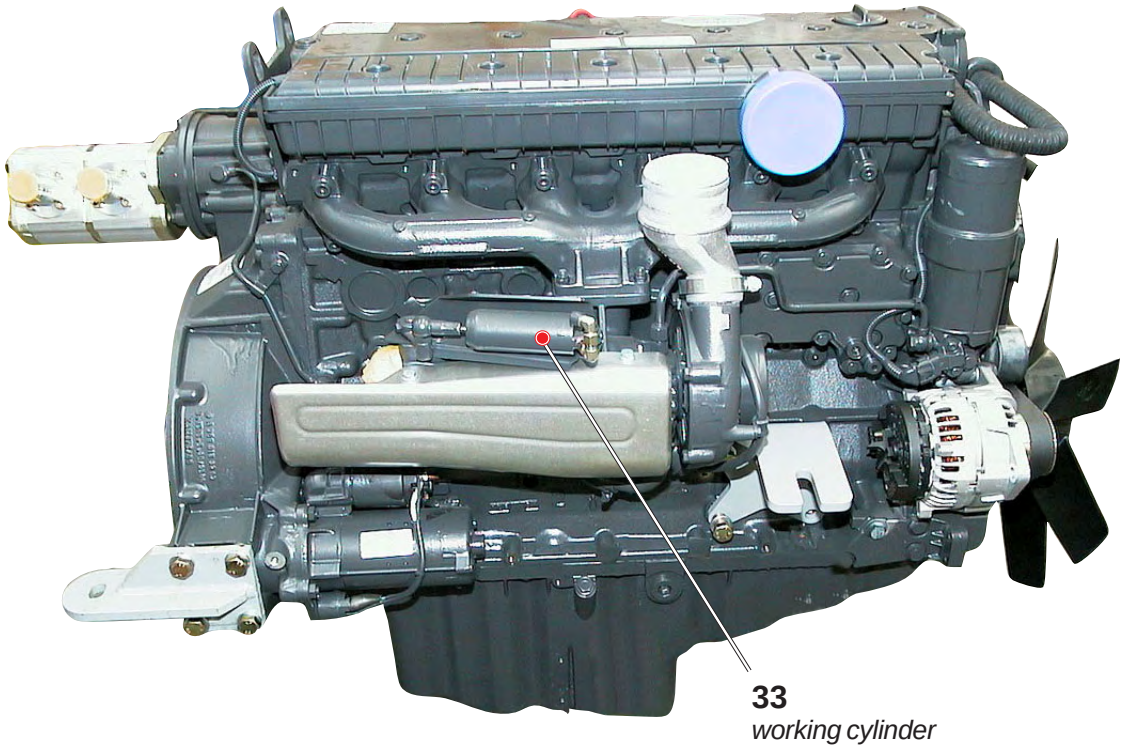
Circuit diagram pneumatic system Ident-No. 983377408 sheet 8



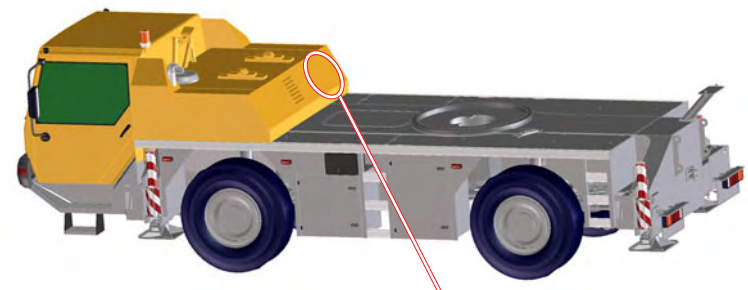
Outline of components - pneumatic system

9.1

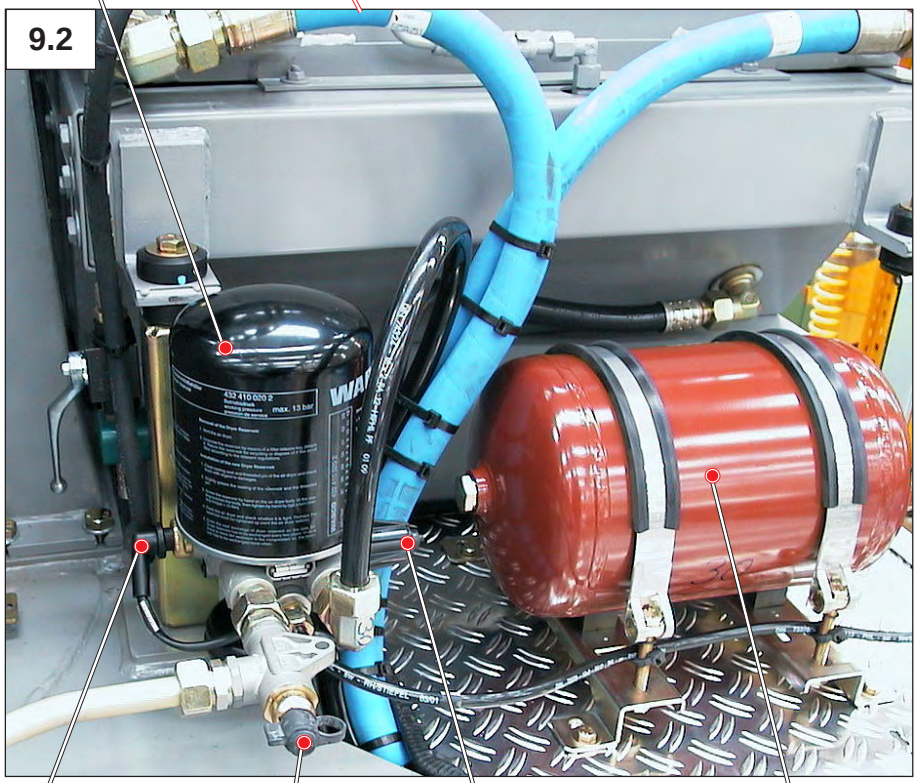




Outline of components - pneumatic system



3
single-chamber air-drier



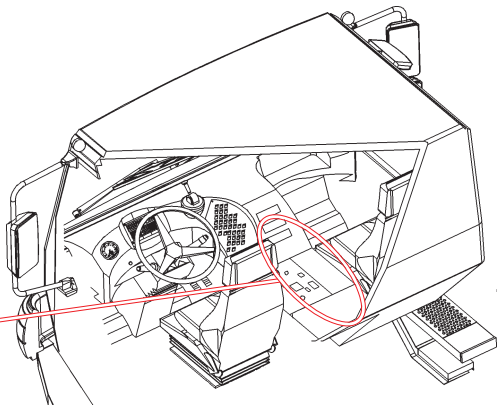
3.2
heating cartridge -Y4

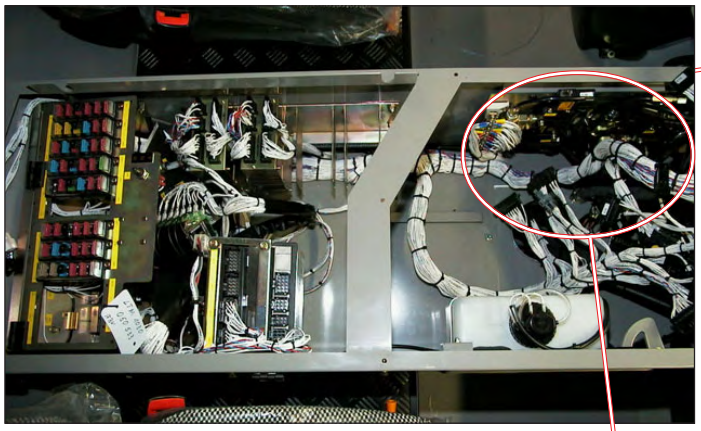
2
tyre inflation valve

3.1
pressure regulator

4
air reservoir

Outline of components - pneumatic system

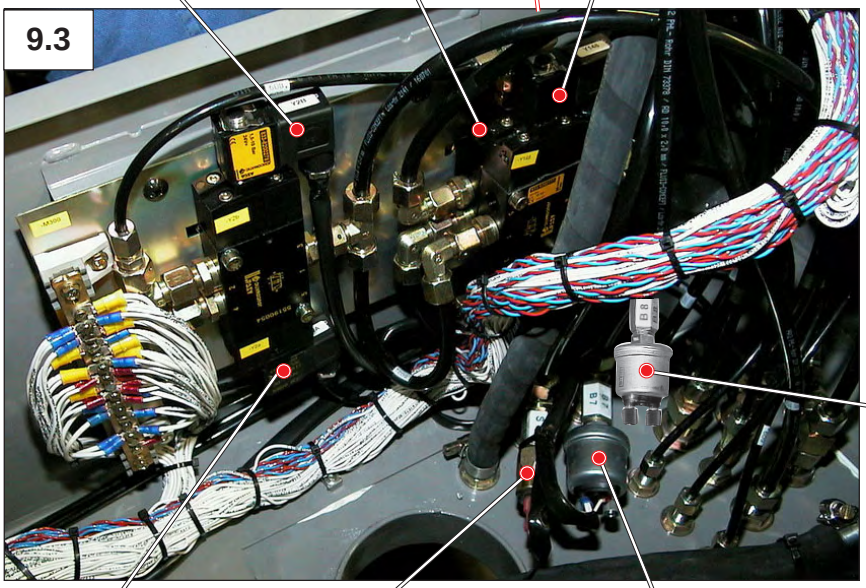




47
-Y2b
inversion
UW mode

48
directional valve
(pneumatic
oper.)

45
-Y148
parking brake OW,
1=released, 0=applied



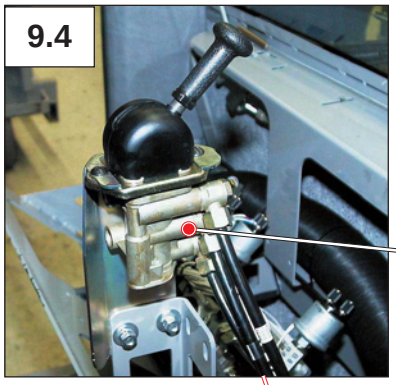
16
pressure sensor -
B9 service brake
circuit 2

47
-Y2a
inversion
OW mode

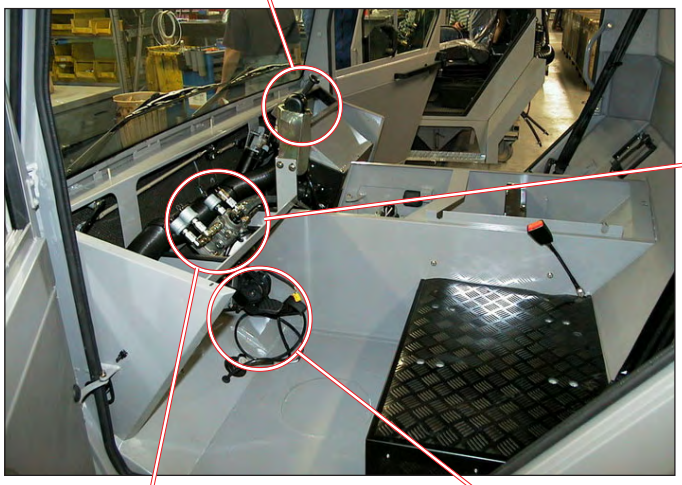
28
manometr. switch -
S114
parking brake
(at p < 5,5bar
brake applied)

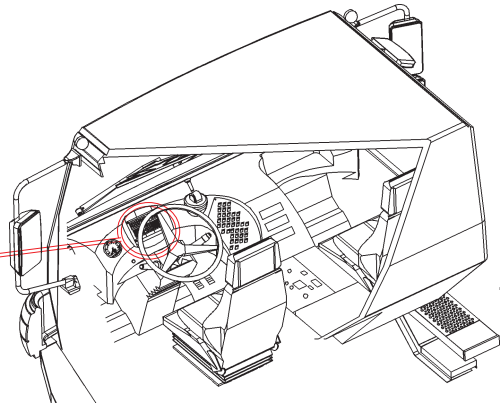
12
pressure sensor -B7
supply parking brake circuit 3

Outline of components - pneumatic system



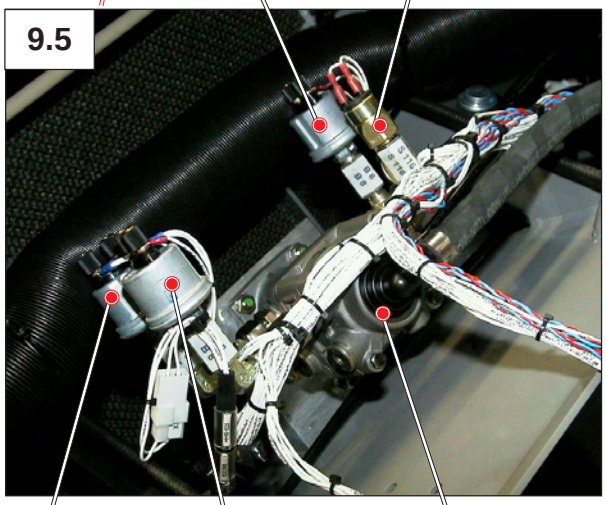
27
handbrake valve

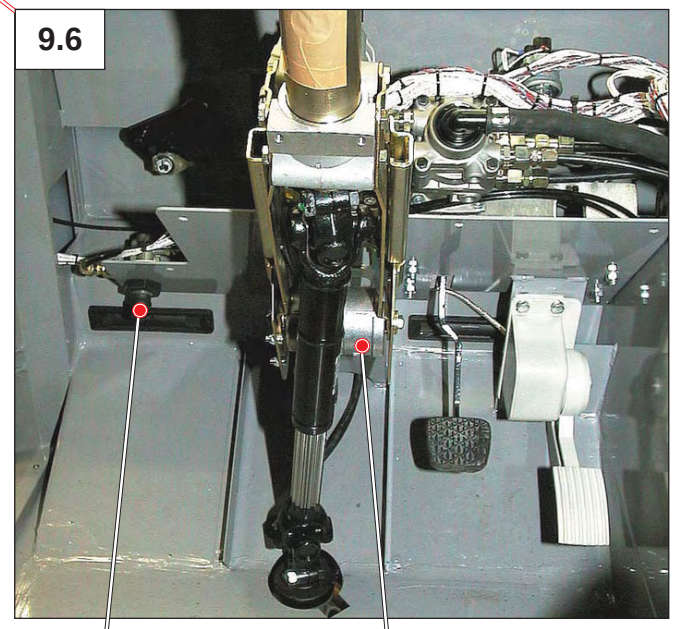




14
-B8
pressure sensor service brake circuit 1

15
-S116
pressure switch stop light ON





10
-B5
pressure sensor supply service brake circuit 1

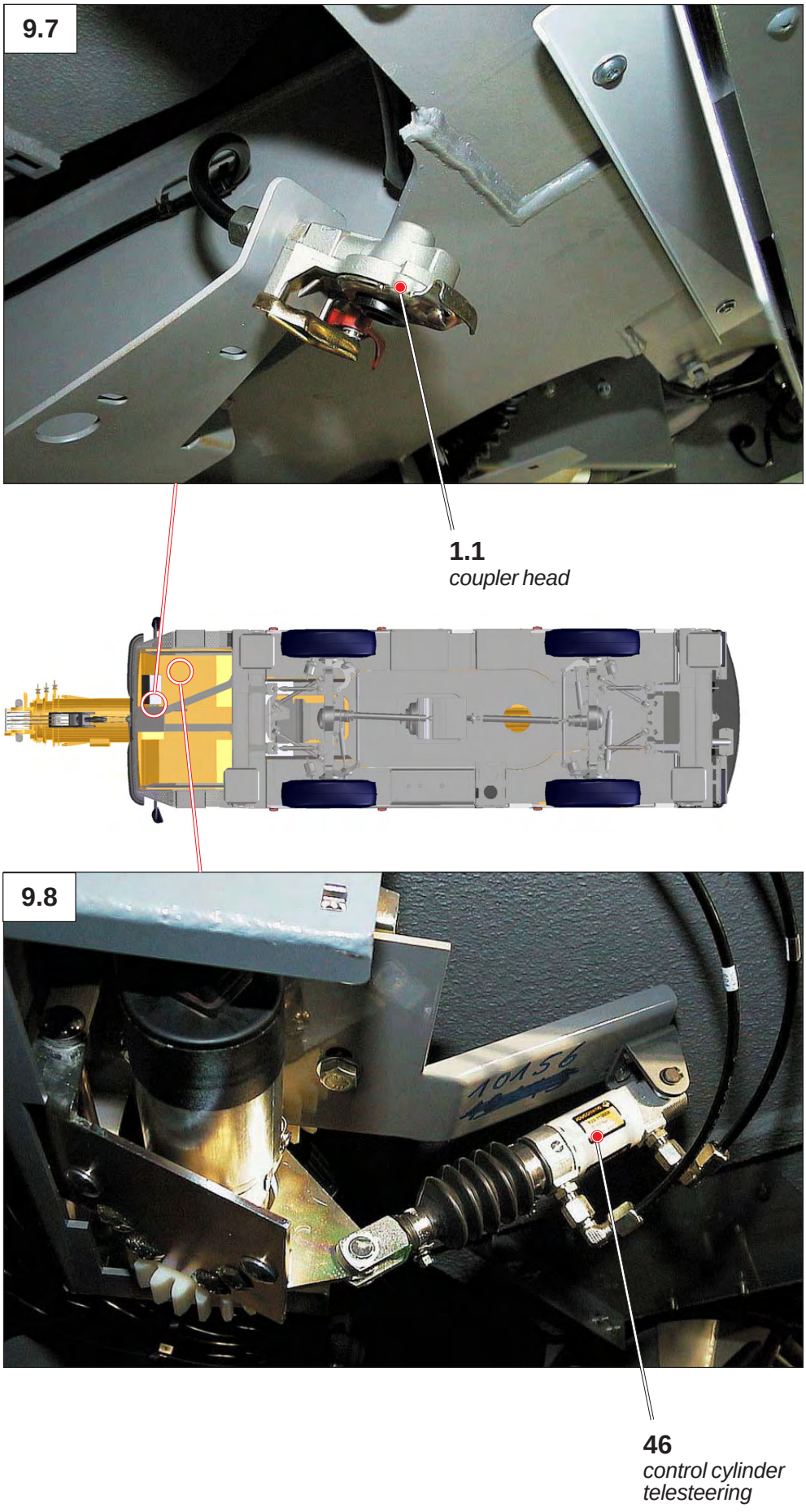
11
-B6
presure sensor supply service brake circuit 2

13
pedal brake valve

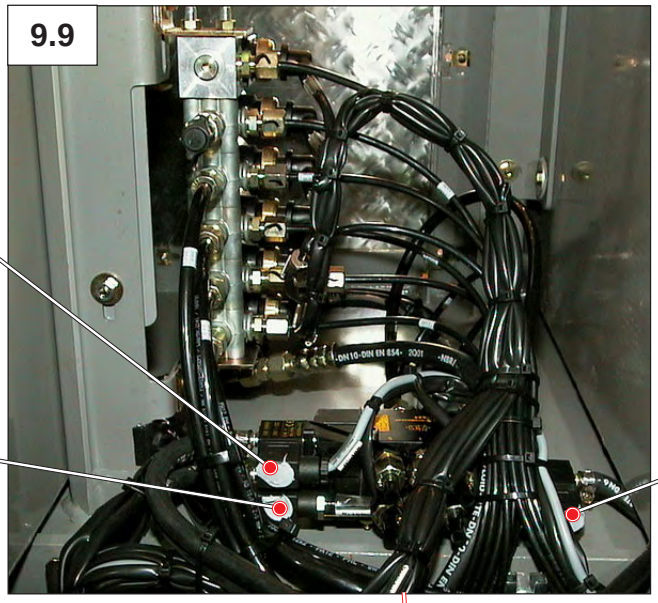
43
directional valve steering wheel adjustment

44
working cylinder steerijg wheel adjustment

Outline of components - pneumatic system



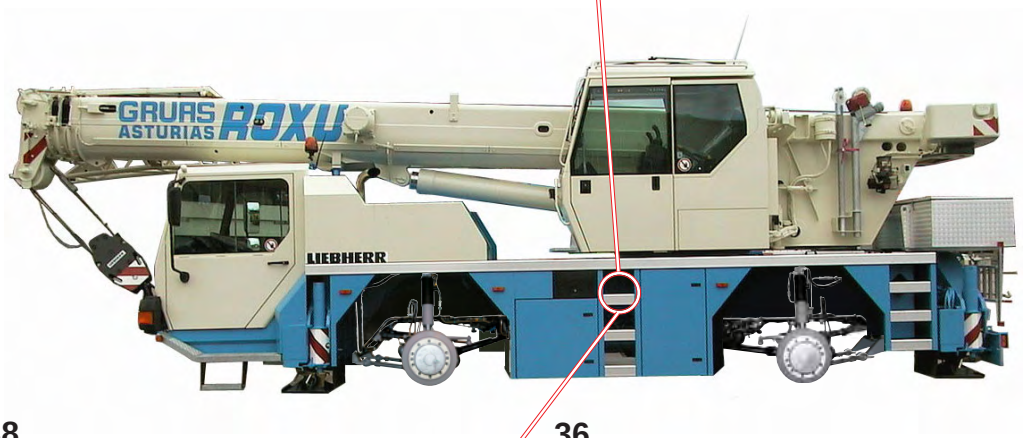
Outline of components - pneumatic system



49
-Y149
control valve ASR braking the skidding wheel on axles 1+2

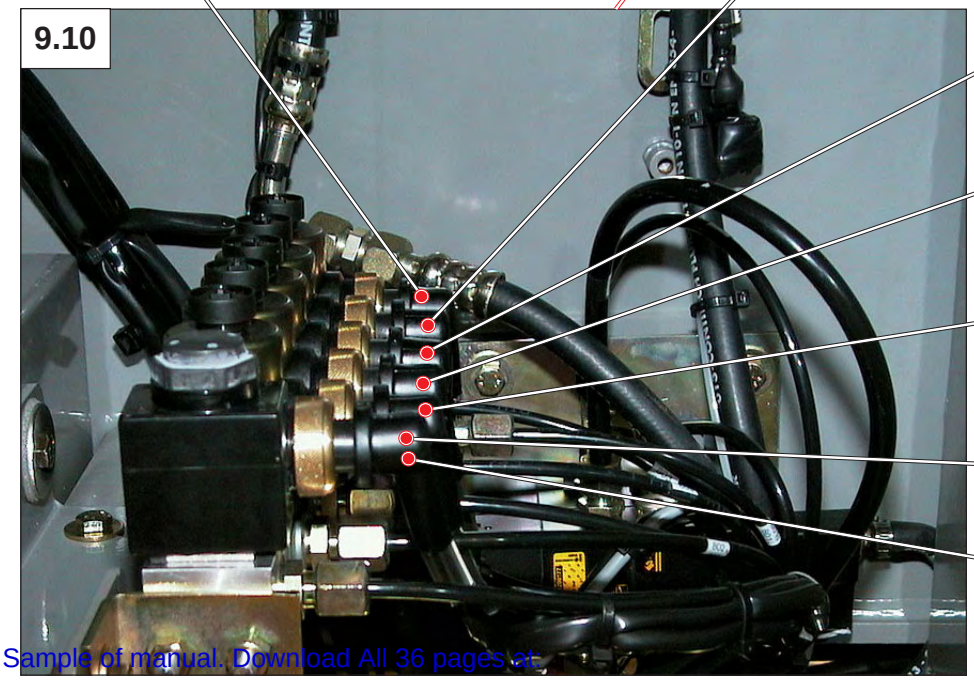
40
-Y9b
suspension, 1 = activated

40
-Y9a
suspension, 1 = locked



38
longit. differential (activation axle 1)
-Y5

36
transv. differential axles 1 + 2, ON
-Y7



41
-Y3
crane hydraulics
1 = ON, 0 = OFF

34
-Y21
rear-axle release
1 = released

32
-Y35
exhaust retarder,
1 = ON, 0 = OFF

-Y1
air flap engine (optional)
and / or
-Y40
axle oscillation (optional)