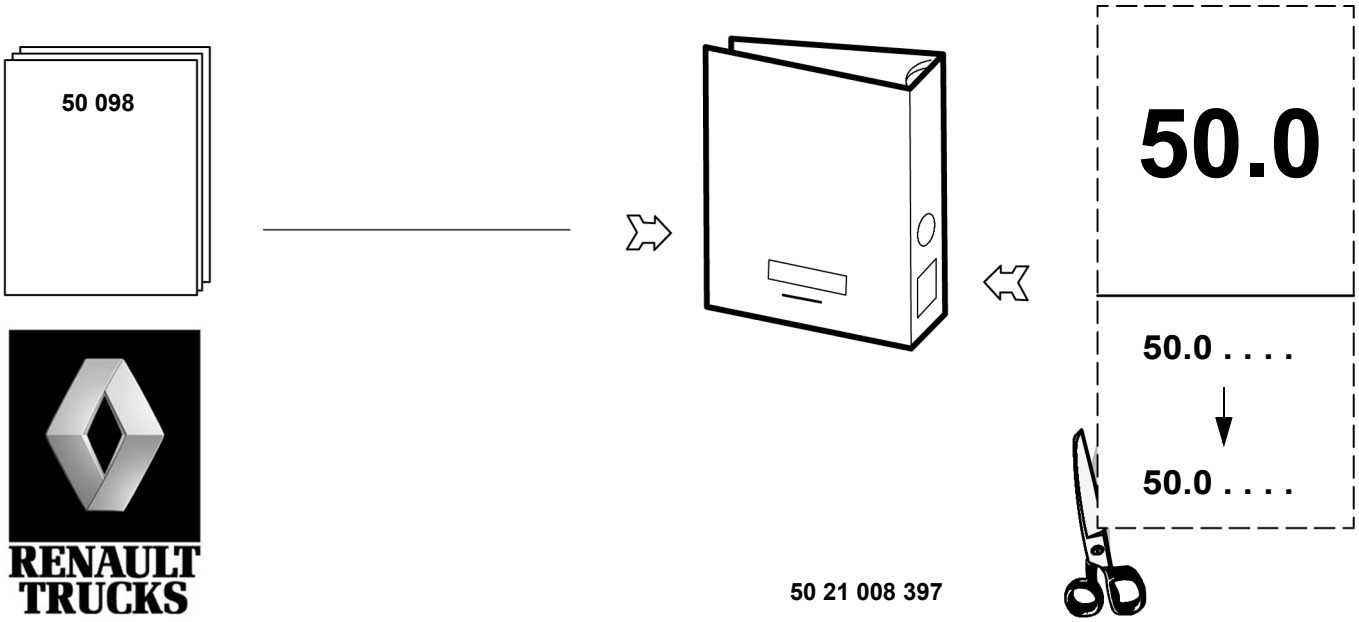
50 098 - GB - 06/2003

BRAKES

RANGE	FAMILY	VARIANT
MIDLUM 4X2	-	-

The above information may change in the course of time. Only the "Consult" section of the workshop manuals repertory in standard N° 10320 serves as reference.



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GENERALITIES

Warnings

In this document, safety instructions are symbolized as follows:

DANGER! NON-OBSERVANCE OF THE PROCEDURE DESCRIBED OR LACK OF CARE OR ATTENTION RISK CAUSING SERIOUS INJURY OR EVEN DEATH.

WARNING! Any different or inappropriate working method risks causing damage to the product.

NOTE! Draws attention to particular or important points of the method.

Environment

Comply with the regulations in force relative to the recovery and treatment of used parts and waste.

Conventional symbols

Fitting

	Tighten to torque (Nm) (left-hand thread)		Tighten by indicated value
	Tighten to torque (Nm) (right-hand thread)		Loosen by indicated value
	Tightening torque with lubricated threaded hardware		

Dimensioning

	Tightening		... Greater than or equal to ...
	Equal to		Wear limit
	... Less than ...		Machining limit or dimension
	... Greater than ...		Maximum out-of-true
	... Less than or equal to ...		Maximum parallelism error

Repair

	Force to be exerted in the direction shown (hammer - press)		Smear or coat (see "Consumables" table)
	Heat or cool: Temperature in degrees Celsius (e.g. + 80 °C)		Fill to level (see "Technical Data" and "Consumables" table)
	Weld bead		Grease or oil (see "Consumables" table)
	Repair time - Heating time		Mark - Assemble according to marking

Adjustment

	Rotating friction torque		Turn anti-clockwise
	Turn in alternate directions		Turn anti-clockwise (the figure shows the number of turns)
	Turn clockwise		Turn clockwise (the figure shows the number of turns)
	Place in contact		Move in the direction shown
	Dimension to be assured (mm)		

Various information

	Exhaust - Outlet		Operation with a sequence
	Intake - Inlet		Involves
	Weight in kg (example: 275 kg)		Return to numbered operation - Connected with numbered operation
	Depending on versions or options		Withdraw - Delete
	Wrong		Direction of disassembly (the arrow shows the direction)
	Correct		Direction of assembly (the arrow shows the direction)
	Injection		... to ...
	Repair dimension		Inspect - Check condition of part
	Part to be replaced		Danger for persons, vehicle or equipment

TECHNICAL DATA

Tightening torques

Definition

There are several types of tightening:
- Tightening to torque (in **Nm)**
- Tightening to angle (en °)
- Tightening to torque-angle (en **Nm + °)**

Torques given in **Nm. are nominal torques (average value calculated on the basis of the minimum torque and the maximum torque).**
The tightening precision class defines the tolerance of this torque in percent as a function of the nominal torque applied.

Tightening precision classes:
- **Class I: Special threaded hardware (tolerances ± 10% of the final torque).**
- **Class II: Reserved for precise tightening (tolerance ± 10% of the nominal torque).**
- **Class III: Reserved for normal standard tightening (tolerance ± 20% of the nominal torque)**

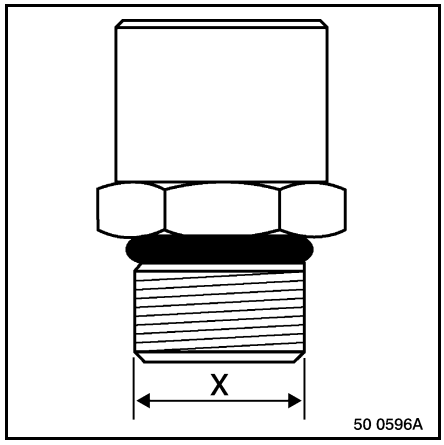
For standard threaded hardware indicated in the table below, use tightening class **III).**
For other torques, see the following page(s).

Unless indicated otherwise, fit the nut and bolt hardware dry (without oiling).

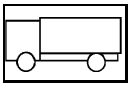
Tightening torques for conventional nut and bolt hardware to "metric system" standard 01.504.002		
Diameter and pitch of nuts and bolts	**Quality class 8.8**	**Quality class 10.9**
	Tightening class III (± 20 %)	**Tightening class III (± 20 %)**
6 x 1.00	7.4	10.8
7 x 1.00	12.1	17.8
8 x 1.00	19.2	28.2
8 x 1.25	17.9	26.3
10 x 1.00	39.4	58
10 x 1.25	37.4	55
10 x 1.50	35.4	52
12 x 1.25	67	98
12 x 1.50	64	94
12 x 1.75	61	90
14 x 1.50	105	155
14 x 2.00	98	143
16 x 1.50	161	237
16 x 2.00	151	222
18 x 1.50	235	346
18 x 2.50	210	308
20 x 1.50	328	481
20 x 2.50	296	435
22 x 1.50	444	652
22 x 2.50	406	596

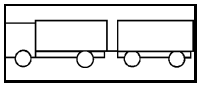
Tightening of unions

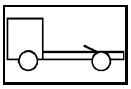
dia. X	Tightening torque
1/8 gaz	**9** ± **1** Nm
M 10x100	**9** ± **1** Nm
M 12x150	**15** ± **3** Nm
M 14x150	**15** ± **3** Nm
M 16x150	**25** ± **5** Nm
M 22x150	**25** ± **5** Nm

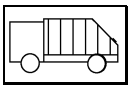


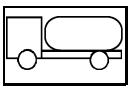
Vehicle axle spread identification

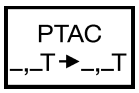

Solo rigid


Drawbar rigid

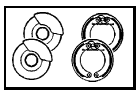

Tractor

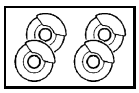

Municipal vehicle

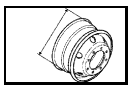

Tanker

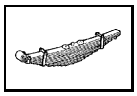


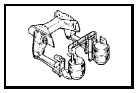
Plated gross vehicle weight "GVW"


Vehicle equipped with disc brakes at front and drum brakes at rear


Vehicle equipped with disc brakes at front and rear

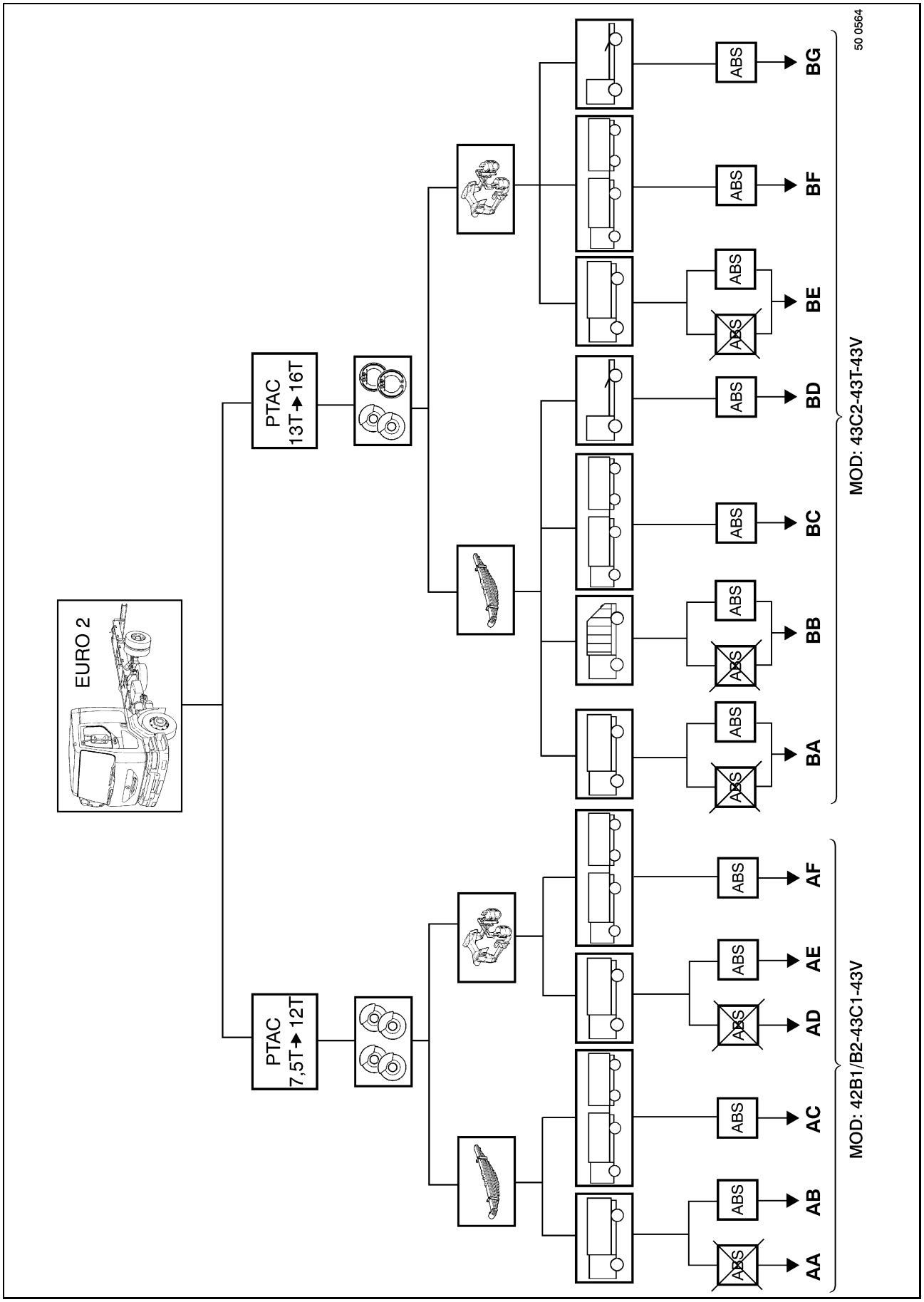

Wheel rim dimensions

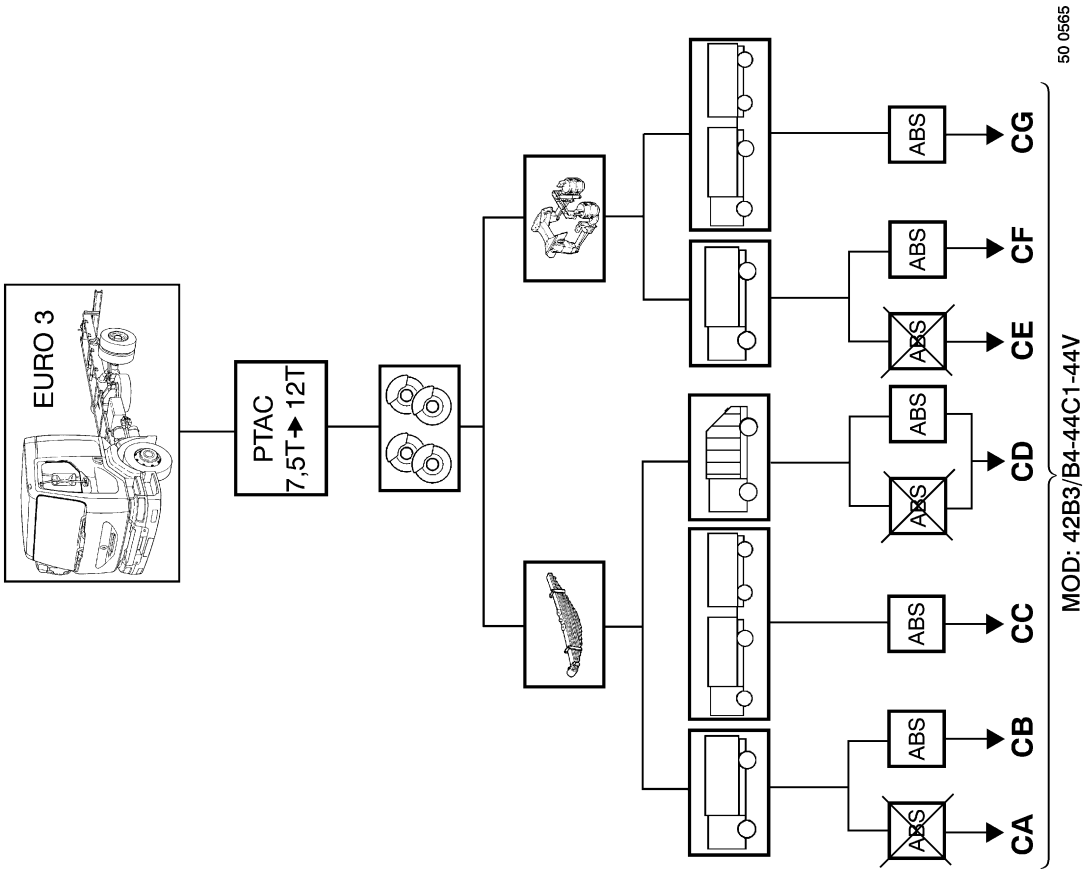

Vehicle equipped with rear mechanical suspension

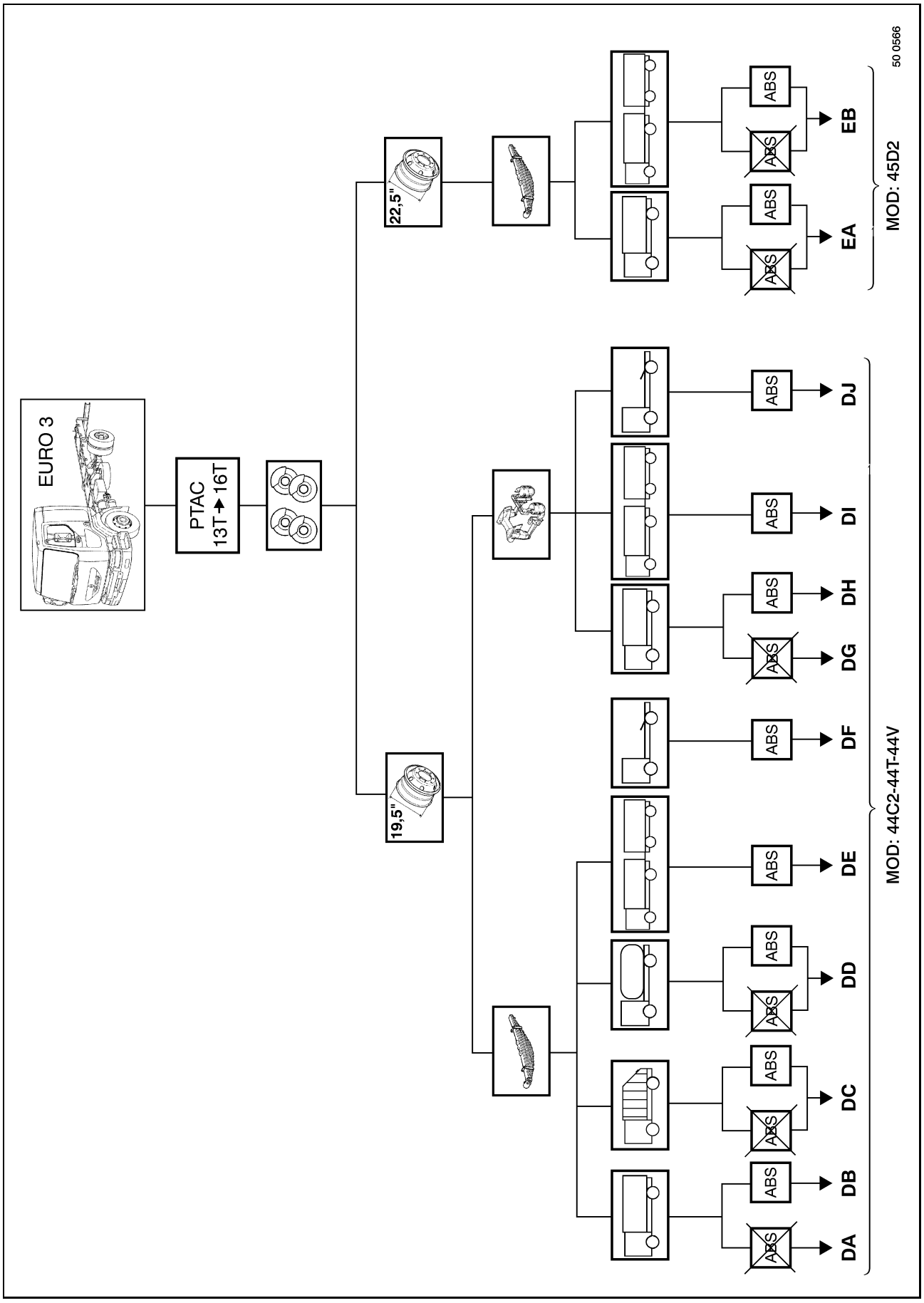

Vehicle equipped with rear air suspension

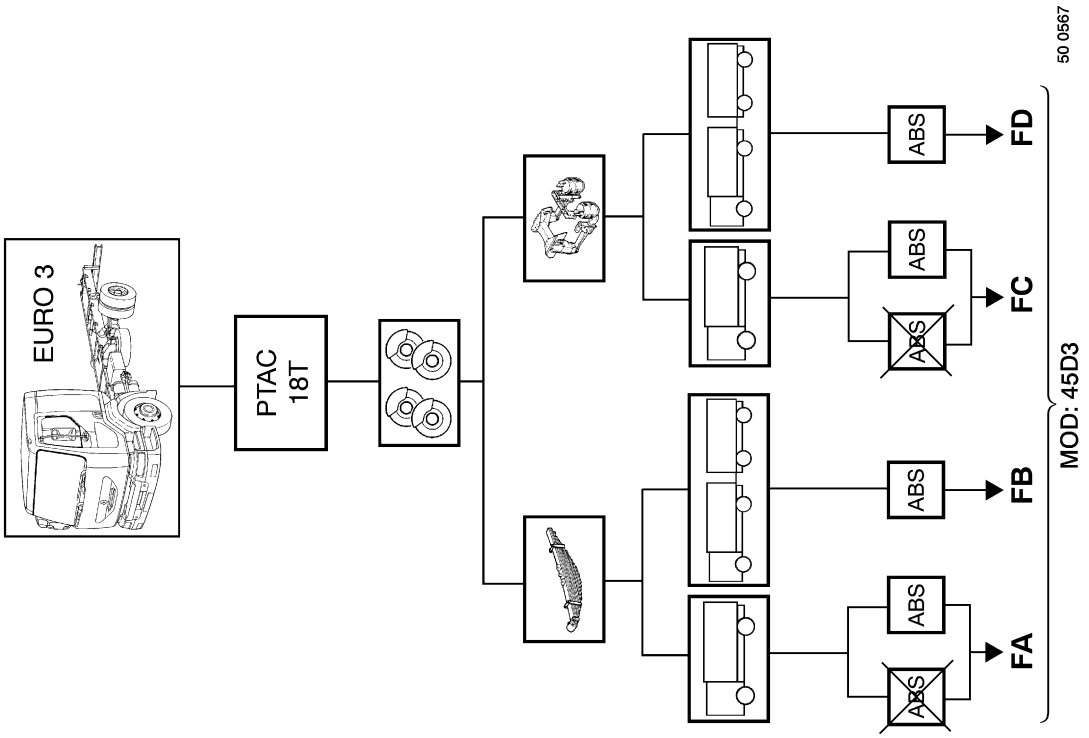
Vehicle without "ABS" anti-lock braking system

Vehicle with "ABS" anti-lock braking system


EURO 2
PTAC 7,5T→12T
PTAC 13T→16T
ABS
AA
AB
AC
AD
AE
AF
BA
BB
BC
BD
BE
BF
BG
MOD: 42B1/B2-43C1-43V
MOD: 43C2-43T-43V
50 0564


EURO 3
PTAC
7,5T→12T
ABS
CA
CB
CC
CD
CE
CF
CG
MOD: 42B3/B4-44C1-44V
50 0565


EURO 3
PTAC
13T → 16T
22,5"
19,5"
ABS
DA
DB
DC
DD
DE
DF
DG
DH
DI
DJ
EA
EB
MOD: 44C2-44T-44V
MOD: 45D2
50 0566


EURO 3
PTAC
18T
ABS
ABS
ABS
ABS
ABS
ABS
FD
FC
FB
FA
MOD: 45D3
50 0567

Technical data

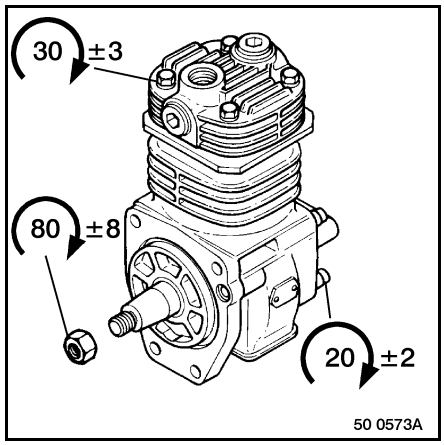
IMPORTANT

These values serve for vehicle testing or diagnostics purposes and cannot be used to check conformity of the vehicle with the legislation in force.
These values are given for appliances on the test bench.

0100 – Air compressor

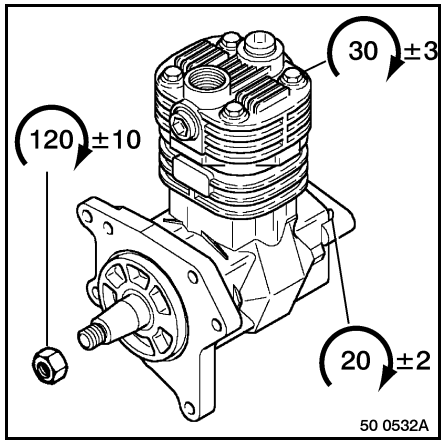
Single-cylinder compressor KNORR LK1554
=> 06/01/2001

Axle spread(s)	**–**
Displacement	**150cm^3**
Port screw-threads **0 - 2**	**M 26x150**



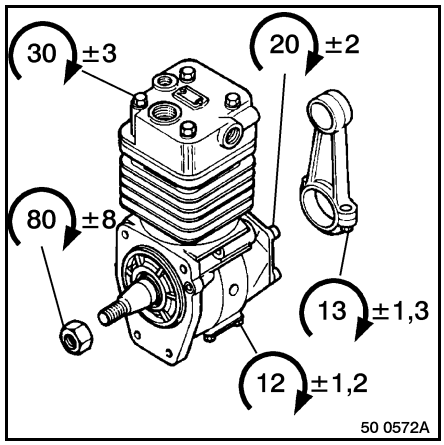
Single-cylinder compressor KNORR LK1567
08/01/2001 =>

Axle spread(s)	**–**
Displacement	**150cm^3**
Port screw-threads **0 - 2**	**M 26x150**



Single-cylinder compressor KNORR LP3861

Axle spread(s)	–
Displacement	**250cm^3**
Port screw-threads **0 - 2**	**M 26x150**
Port screw-threads **91 - 92**	**M 18x150**



0500 – Air dryer

Single-canister air dryer WABCO 4324150380

Axle spread(s)	**AA → AF / CA → CG / DA → DJ / EA, EB / FA → FD**
Cut-out pressure	**10 $^{+\ 0.4}$bar**
Cut-in pressure	**9 $^{+\ 0.4}$bar**
Safety pressure	**25bar**
Port screw-threads	**M 22x150**

Single-canister air dryer KNORR LA8015

Axle spread(s)	**BA, BB, BE**
Cut-out pressure	**8.6 $^{+\ 0.4}$bar**
Cut-in pressure	**7.8$^{+\ 0.4}$bar**
Safety pressure	**15bar**
Port screw-threads	**M 22x150**

Single-canister air dryer KNORR LA8011

Axle spread(s)	**BC, BD, BF, BG**
Cut-out pressure	**8.6$^{+\ 0.4}$bar**
Cut-in pressure	**7.8$^{+\ 0.4}$bar**
Safety pressure	**15bar**
Port screw-threads	**M 22x150**

0800 – Protection valve

Protection valve WABCO 9347141300

Axle spread(s)	**AA → AF / CA → CG / DA → DJ / EA, EB / FA → FD**

Opening pressure

- circuit **21 - 22**	**$7^{-0.3}$ bar**
- circuit **23**	**$7.5^{-0.3}$ bar**
- circuit **24**	**$7^{-0.3}$ bar**
Static closing pressure	**$4.5^{+0.5}$bar**
Port screw-threads **1 - 21 - 22 - 23**	**M 22x150**
Port screw-threads **24**	**M 16x150**

Protection valve KNORR AE4440

Axle spread(s)	**BA, BB, BE**
Axle spread(s)	**BC, BD, BF, BG => 10/02/2001**

Opening pressure

- circuit **21 - 22**	**$7^{-0.3}$ bar**
- circuit **23**	**$7.3^{-0.3}$ bar**
- circuit **24**	**$7^{-0.3}$ bar**
Static closing pressure	**$4.5^{+0.5}$ bar**
Port screw-threads **1**	**M 22x150**
Port screw-threads **21 - 22 - 23 - 24**	**Flanged**

Protection valve KNORR AE4605

Axle spread(s)	**BC, BD, BF, BG 12/02/2001 =>**

Opening pressure

- circuit **21 - 22**	**$7^{-0.3}$ bar**
- circuit **23**	**$7.3^{-0.3}$ bar**
- circuit **24**	**$7^{-0.3}$ bar**
Static closing pressure	**$4.5^{+0.5}$ bar**
Port screw-threads **1**	**M 22x150**
Port screw-threads **21 - 22 - 23 - 24**	**Flanged**

1001 – Front brake air tank

Air tank capacity 15 L

Axle spread(s)	**AA → AF / CA → CG**
Diameter	**200 mm**
Validity time	**15 year(s)**
Port screw-threads	**M 22x150**

Air tank capacity 25 L

Axle spread(s)	**BA → BG / DA → DJ / EA, EB / FA → FD**
Diameter	**250 mm**
Validity time	**15 year(s)**
Port screw-threads	**M 22x150**

1010 – Rear brake air tank

Air tank capacity 15 L

Axle spread(s)	**AA → AF / CA → CG**
Diameter	**200 mm**
Validity time	**15 year(s)**
Port screw-threads	**M 22x150**

Air tank capacity 25 L

Axle spread(s)	**BA → BG / DA → DJ / EA, EB / FA → FD**
Diameter	**250 mm**
Validity time	**15 year(s)**
Port screw-threads	**M 22x150**

1021 – Trailer brake air tank

Air tank capacity 15 L

Axle spread(s)	**AC, AE, CC, CG, DE, DI, EB, FB, FD**
Diameter	**200 mm**
Validity time	**15 year(s)**
Port screw-threads	**M 22x150**

Air tank capacity 20 L

Axle spread(s)	**BC, BD, BF, BG, DF, DJ**
Diameter	**250 mm**
Validity time	**15 year(s)**
Port screw-threads	**M 22x150**

1050 – Auxiliary equipment air tank

Air tank capacity 30 L

Axle spread(s)	**AD, AE, AF, CE, CF, CG, DG, DH, DI, DJ, FC, FD**
Diameter	**250 mm**
Validity time	**15 year(s)**
Port screw-threads	**M 22x150**

Air tank capacity 30 L

Axle spread(s)	**BE, BF, BG**
Diameter	**300 mm**
Validity time	**15 year(s)**
Port screw-threads	**M 22x150**

2600 – Duplex service brake control valve

Brake valve WABCO 4614945100

Axle spread(s)	**AA → AF**
Difference between 2 sections	**0.3 ± 0.15 bar**
Maximum operating pressure	**10.4bar**
Port screw-threads	**Flanged**

Brake valve WABCO 4614945110

Axle spread(s)	**BA → BG**
Difference between 2 sections	**0.15 ± 0.15 bar**
Maximum operating pressure	**10.4bar**
Port screw-threads	**Flanged**

Brake valve WABCO 4614945322

Axle spread(s)	**CA → CG**
Difference between 2 sections	**0.3 ± 0.15 bar**
Maximum operating pressure	**10.4bar**
Port screw-threads	**Flanged**

Brake valve WABCO 4614945352

Axle spread(s)	**DA → DJ / EA, EB / FA → FD**
Difference between 2 sections	**0.15 ± 0.15 bar**
Maximum operating pressure	**10.4bar**
Port screw-threads	**Flanged**

3000 – Quick release valve

Quick release valve WABCO 9735000450
Front brake circuit

Axle spread(s)	**DA → DJ / EA, EB / FA → FD**
Port screw-threads	**M 22x150**

Quick release valve WABCO 9735000390
Parking brake circuit

Axle spread(s)	**BA → BG**
Port screw-threads	**M 22x150**

Quick release valve WABCO 9735000450
Parking brake circuit

Axle spread(s)	**AA → AF / CA → CG / DA → DJ / EA, EB / FA → FD**
Port screw-threads	**M 22x150**

3100 – Pressure reduction valve

Pressure reduction valve KNORR 1101686000

Axle spread(s)	**BC, BD, BF, BG**
Reduction ratio	**1.5/1**
Maximum operating pressure	**10bar**
Port screw-threads	**M 16x150**

3150 – Adaptation valve

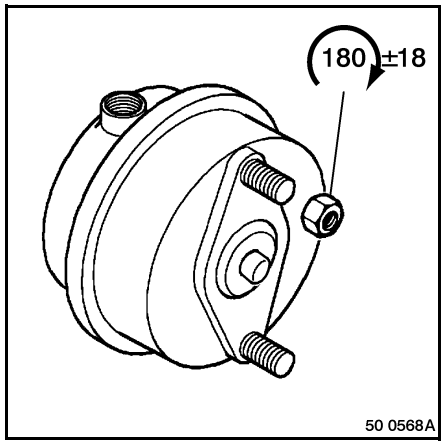
Adaptation valve KNORR DB2145

Axle spread(s)	**BA, BB, BE**
Maximum operating pressure	**10bar**
Port screw-threads	**M 16x150**

3600 – Single diaphragm brake cylinder

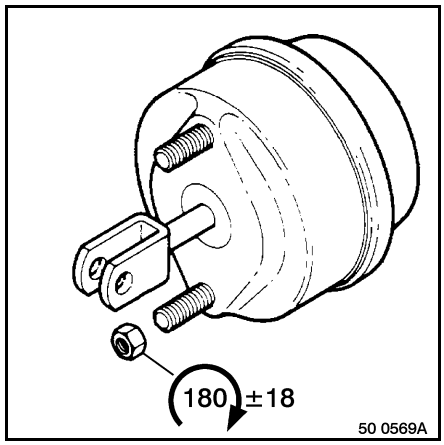
Diaphragm chamber WABCO type "16"

Axle spread(s)	**AA → AF / CA → CF**
Reference	**4235040120**
Active diameters	**146 mm**
Travel	**57mm**
Port screw-threads	**M 16x150**



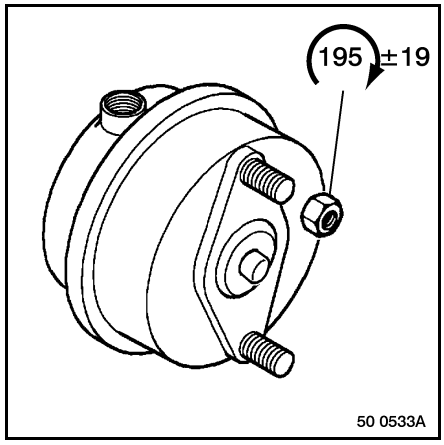
Diaphragm chamber KNORR type "24"

Axle spread(s)	**BA → BG**
Reference	**BZ 3593**
Active diameters	**161 mm**
Travel	**75 mm**
Port screw-threads	**M 16x150**



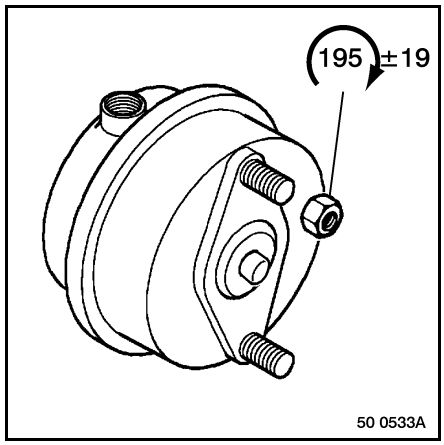
Diaphragm chamber WABCO type "20"

Axle spread(s)	**DA, DB, DE, DG, DH, DI (13-14T)**
Reference	**4235050000**
Active diameters	**152.7 mm**
Travel	**62 mm**
Port screw-threads	**M 16x150**



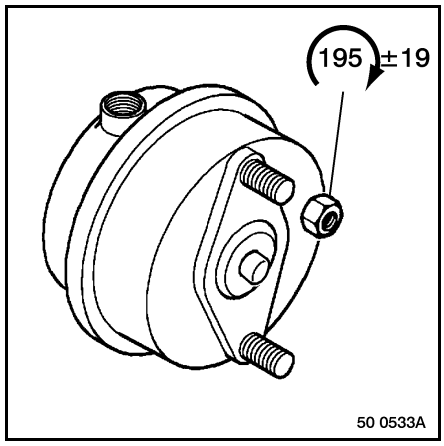
Diaphragm chamber WABCO type "24"

Axle spread(s)	**DA, DB, DE, DG, DH, DI (15-16T)**
Axle spread(s)	**DC, DD, DF, DJ, EA, EB**
Reference	**4235060010**
Active diameters	**160.5 mm**
Travel	**62 mm**
Port screw-threads	**M 16x150**



Diaphragm chamber M.G.M type "20"

Axle spread(s)	**FA → FD**
Reference	**68322891**
Active diameters	**153 mm**
Travel	**75 mm**
Port screw-threads	**M 16x150**



3740 – Air shoe brake

Wedge type brake backplate BOSCH 360x170
Rear brake

Axle spread(s)	**BA → BG**
Fastening	**Nuts + bolts M 16x200**
Tightening torque	**255 ± 25 Nm**

Brake linings

Quality (asbestos-free)	**ABEX 927**
Original thickness	**17 mm**
Minimum permissible thickness	**5 mm**

Lenght

- leading shoe	**362 mm**
- trailing shoe	**270 mm**
Width	**170 mm**

Brake drum

Original inside diameter	**360 mm**
Maximum grinding diameter	**363 mm**
Maximum wear diameter	**364 mm**
Linings/drum clearance	**0.8 mm**

3741 – Air brake caliper

Single-disc brake caliper MERITOR C-Lisa
Front brake

Axle spread(s)	**BA → BG**
Fastening	**Setscrews M 20x150**
Tightening torque	**600 ± 60 Nm**

Brake pads

Quality (asbestos-free)	**TEXTAR T3016**
Original thickness	**25 mm**
Minimum permissible thickness	**10 mm**

Brake disc

Outside diameter	**380 mm**
Original thickness	**45 mm**
Minimum grinding thickness	**42 mm**
Minimum permissible thickness	**41 mm**
Parallelism of tracks	**< 0.05 mm**
Support face/disc inner track buckle	**< 0.25 mm**
Fastening	**Setscrews M 14x150**
Tightening torque	**230 ± 23 Nm**

Single-disc brake caliper WABCO PAN17
Front and rear brakes

Axle spread(s)	**AA → AF / CA → CG**
Fastening	**Setscrews M 14x150**
Tightening torque	**180 ± 18 Nm**

Brake pads

Quality (asbestos-free)	**TEXTAR T3016**
Original thickness	**26 mm**
Minimum permissible thickness	**9 mm**

Brake disc

Outside diameter	**330 mm**
Original thickness	**34 mm**
Minimum permissible thickness	**28 mm**
Parallelism of tracks	**< 0.05 mm**
Support face/disc inner track buckle	**< 0.15 mm**
Front disc fastening	**Setscrews M 14x150**
Tightening torque	**230 ± 23 Nm**
Rear disc fastening	**Wheel studs**

Single-disc brake caliper WABCO PAN19
Front and rear brakes

Axle spread(s)	**DA → DJ / EA, EB**
Fastening	**Setscrews M 18x150**
Tightening torque	**390 ± 39 Nm**

Brake pads

Quality (asbestos-free)	**TEXTAR T3016**
Original thickness	**30 mm**
Minimum permissible thickness	**11 mm**

Brake disc

Outside diameter	**375 mm**
Original thickness	**45 mm**
Minimum permissible thickness	**38 mm**
Parallelism of tracks	**< 0.05 mm**
Support face/disc inner track buckle	**< 0.15 mm**
Front disc fastening	**Setscrews M 14x150**
Tightening torque	**230 ± 23 Nm**
Rear disc fastening	**Wheel studs**

Single-disc brake caliper MERITOR D-Elsa2
Front and rear brakes

Axle spread(s)	**FA → FD**
Fastening	**Setscrews M 18x150**
Tightening torque	**390 ± 39 Nm**

Brake pads

Quality (asbestos-free)	**TEXTAR T3016**
Original thickness	**30 mm**
Minimum permissible thickness	**11 mm**

Brake disc

Outside diameter	**434 mm**
Original thickness	**45 mm**
Minimum grinding thickness	**42 mm**
Minimum permissible thickness	**41 mm**
Parallelism of tracks	**< 0.05 mm**
Support face/disc inner track buckle	**< 0.25 mm**
Front disc fastening	**Setscrews M 16x150**
Tightening torque	**330 ± 33 Nm**
Rear disc fastening	**Wheel studs**

4500 – Pressure reducing valve

Pressure reducing valve WABCO 4750150330
For trailer brake air circuit

Axle spread(s)	**AC, AF, CC, CG, DE, DF, DI, DJ, EB, FB, FD**
Supply pressure	**10 bar**
Delivery pressure	**$7^{\pm 0.2}$ bar**
Port screw-threads	**M 16x150**

Pressure reducing valve KNORR AC 157C
For auxiliary equipment air circuit

Axle spread(s)	**AA → AF / CA → CG / DA → DJ / EA, EB / FA → FD**
Supply pressure	**10 bar**
Delivery pressure	**$8^{\pm 0.2}$ bar**
Port screw-threads	**M 16x150**

4700 – Load sensing valve

WABCO 4757200010 lever type load sensing valve

Axle spread(s)	**AA, CA, DA, DC, DD, EA, EB, FA, FB**
Adjustment	**See chapter C**
Port screw-threads **1 - 2**	**M 22x150**
Port screw-threads **4**	**M 16x150**

WABCO 4757205000 lever type load sensing valve

Axle spread(s)	**AB, AC, CB, CC, DB, DE, DF**
Adjustment	**See chapter C**
Port screw-threads **1 - 2**	**M 22x150**
Port screw-threads **4**	**M 16x150**

Air-controlled load sensing valve WABCO 4757210000

Axle spread(s)	**AD, CE**
Adjustment	**See chapter C**
Port screw-threads **1 - 2**	**M 22x150**
Port screw-threads **4 - 41 - 42**	**M 16x150**

Air-controlled load sensing valve WABCO 4757215000

Axle spread(s)	**AE, AF, CF, CG**
Adjustment	**See chapter C**
Port screw-threads **1 - 2**	**M 22x150**
Port screw-threads **4 - 41 - 42**	**M 16x150**

KNORR BR4455 lever type load sensing valve

Axle spread(s)	**BA, BB, BC, BD**
Adjustment	**See chapter C**
Port screw-threads **1**	**M 22x150**
Port screw-threads **2 - 4**	**M 16x150**

Air-controlled load sensing valve WABCO 4757111310

Axle spread(s)	**BE, BF, BG**
Adjustment	**See chapter C**
Port screw-threads **1 - 2**	**M 22x150**
Port screw-threads **4 - 41 - 42**	**M 16x150**

Air-controlled load sensing valve WABCO 4757210110

Axle spread(s)	**DG**
Adjustment	**See chapter C**
Port screw-threads **1 - 2**	**M 22x150**
Port screw-threads **4 - 41 - 42**	**M 16x150**

Air-controlled load sensing valve WABCO 4757215010

Axle spread(s)	**DH, DJ**
Axle spread(s)	**DI variants 10031+11012 / 10032**
Adjustment	**See chapter C**
Port screw-threads **1 - 2**	**M 22x150**
Port screw-threads **4 - 41 - 42**	**M 16x150**

Air-controlled load sensing valve WABCO 4757215020

Axle spread(s)	**DI variants 10031+11035**
Adjustment	**See chapter C**
Port screw-threads **1 - 2**	**M 22x150**
Port screw-threads **4 - 41 - 42**	**M 16x150**

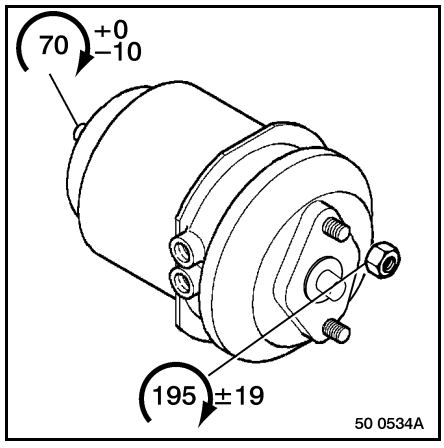
Air-controlled load sensing valve WABCO 4757210120

Axle spread(s)	**FC, FD**
Adjustment	**See chapter C**
Port screw-threads **1 - 2**	**M 22x150**
Port screw-threads **4 - 41 - 42**	**M 16x150**

5000 – Rear brake cylinder

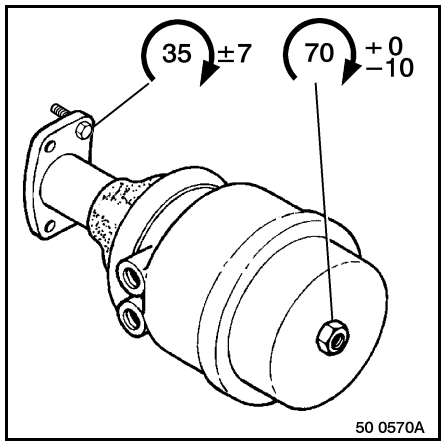
Spring cylinder WABCO type "14/16"

Axle spread(s)	**AA → AF / CA → CG**
Reference	
- left	**9254263000**
- right	**9254263010**
Active diameters	**146/158.5 mm**
Travel	**57 mm**
Neutralizing pressure	**5.5 ± 0.3 bar**
Port screw-threads	**M 22x150**



Spring cylinder KNORR type "16/24"

Axle spread(s)	**BA → BG**
Reference	**BY9321**
Active diameters	**140/175 mm**
Travel	**53 mm**
Neutralizing pressure	**5.1 ± 0.3 bar**
Port screw-threads	**M 16x150**

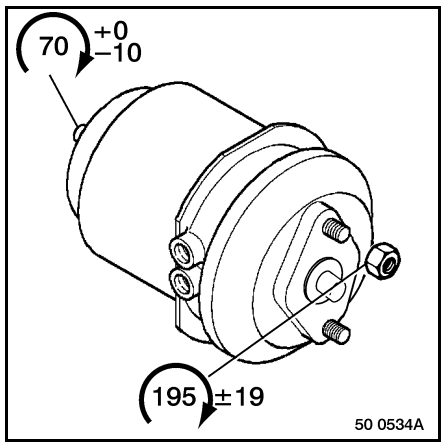


Spring cylinder WABCO type "18/24"

Axle spread(s)	**DA, DB, DE, DG, DH, DI (13-14T)**

Reference

- left	**9254635090**
- right	**9254635100**
Active diameters	**153/173.5 mm**
Travel	**62 mm**
Neutralizing pressure	**5.5 ± 0.3 bar**
Port screw-threads	**M 22x150**

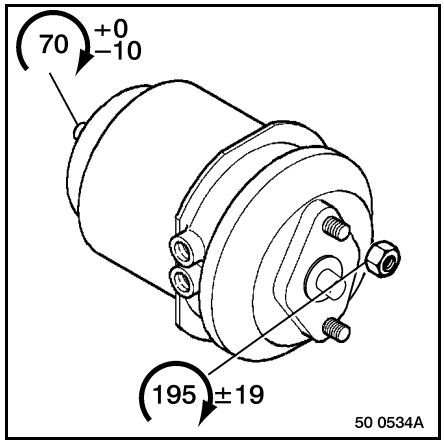


Spring cylinder WABCO type "20/24"

Axle spread(s)	**DA, DB, DE, DG, DH, DI (15-16T)**
Axle spread(s)	**DC, DB, DF, DJ, EA, EB**

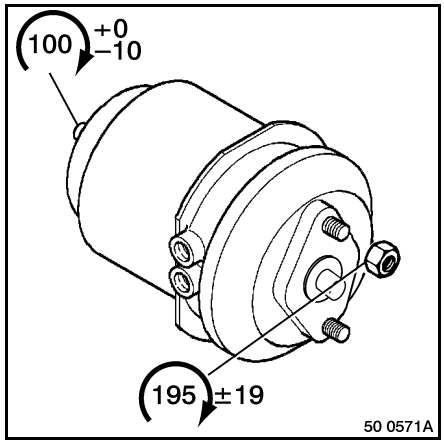
Reference

- left	**9254601090**
- right	**9254601100**
Active diameters	**153/173.5 mm**
Travel	**62 mm**
Neutralizing pressure	**5.5 ± 0.3 bar**
Port screw-threads	**M 22x150**



Spring cylinder M.G.M type "16/24"

Axle spread(s)	**FA → FD**
Reference	**–**
Active diameters	**150/173.5 mm**
Travel	**62 mm**
Neutralizing pressure	**5.5 $\pm$ 0.3 bar**
Port screw-threads	**M 16x150**



5500 – Parking brake valve

Parking brake valve WABCO 9617230330 without "test" position

Axle spread(s)	**AA, AB, AD, AE, BA, BB, BE,**
Supply pressure	**10 bar**
Port screw-threads	**M 16x150**

Parking brake valve WABCO 9617231230 with "test" position

Axle spread(s)	**AC, AF, BC, BD, BF, BG**
Supply pressure	**10 bar**
Port screw-threads	**M 16x150**

Parking brake valve WABCO 9617230360 without "test" position

Axle spread(s)	**CA, CB, CD, CE, CF, DA, DB, DC, DD, DG, DH, EA, FA, FC**
Supply pressure	**10 bar**
Port screw-threads	**M 16x150**

Parking brake valve WABCO 9617231340 with "test" position

Axle spread(s)	**CC, CG, DE, DF, DI, DJ, EB, FB, FD**
Supply pressure	**10 bar**
Port screw-threads	**M 16x150**

6700 – Overflow valve

**Overflow valve KNORR 1111503000 with limited return
=> 04/04/2000**

Axle spread(s)	**AD, AE, AF, BE, BF, BG**
Opening pressure	**6.1 $^{+0.5/-0.2}$ bar**
Overflow pressure	**5.5 $\pm$ 0.2 bar**
Port screw-threads	**M 22x150**

**Overflow valve WABCO 4341002530 with limited return
06/04/2000 =>**

Axle spread(s)	**AD, AE, AF, BE, BF, BG, CE, CF, CG, DG, DH, DI, DJ, FC, FD**
Opening pressure	**6.1 $^{+0.5/-0.2}$ bar**
Overflow pressure	**5.5 $\pm$ 0.2 bar**
Port screw-threads	**M 22x150**

6900 – Back pressure valve

Back pressure valve ANOFLEX 699937098

Axle spread(s)	**AA, AB, AD,AE, BA, BB, BE, CA, CB, CD, CE, CF**
Axle spread(s)	**DA, DB, DC, DD, DG, DH, EA, FA, FC**
Port screw-threads	**M 16x150**

Back pressure valve WABCO 4340140110

Axle spread(s)	**AC, AF, BC, BD, BF, BG, CC, CG, DE, DF, DI, DJ, EB, FB, FD**
Port screw-threads	**M 22x150**

7200 – Trailer control valve

Trailer control valve WABCO 973 009 009 0

Axle spread(s)	**AC, AF, CC, CG (7.5T)**
Axle spread(s)	**FB, FD variants 59052**
Pressure lead	**0.6 bar**
Pressure lead adjustment band	**1.2 bar**
Port screw-threads **11 - 12 - 22 - 41 - 42**	**M 22x150**
Port screw-threads **43**	**M 16x150**

Trailer control valve WABCO 973 009 007 0

Axle spread(s)	**AC, AF, CC, CG (10T/12T) – EB (16T)**
Pressure lead	**0.0 bar**
Pressure lead adjustment band	**1.2 bar**
Port screw-threads **11 - 12 - 22 - 41 - 42**	**M 22x150**
Port screw-threads **43**	**M 16x150**

Trailer control valve KNORR AB 2838

Axle spread(s)	**BC, BF**
Pressure lead	**0.4 bar**
Pressure lead adjustment band	**1.5 bar**
Port screw-threads **11 - 12 - 22 - 41 - 42 - 43**	**M 16x150**

Trailer control valve KNORR AB 2860

Axle spread(s)	**BD, BG**
Pressure lead	**0.0 bar**
Pressure lead adjustment band	**1.5 bar**
Port screw-threads **11 - 12 - 22 - 41 - 42 - 43**	**M 16x150**

Trailer control valve WABCO 973 009 008 0

Axle spread(s)	**DE, DF, DI, DJ – EB (14T)**
Axle spread(s)	**FB, FD variants 59020/24/53/78**
Pressure lead	**0.4 bar**
Pressure lead adjustment band	**1.2 bar**
Port screw-threads **11 - 12 - 22 - 41 - 42**	**M 22x150**
Port screw-threads **43**	**M 16x150**

8014/8015/8016/8017 – ABS electrovalve

Electrovalve WABCO type NO

Axle spread(s)	**AB, AC, AE, AF / BA → BG / CB, CC, CD , CF, CG**
Axle spread(s)	**DB → DF ,DH, DI, DJ / EA, EB / FA → FD**
Reference	**4721950160**
Maximum operating pressure	**11 bar**
Operating voltage	**24V**
Port screw-threads	**M 22x150**

8092 – Inverse relay valve

Inverse relay valve KNORR RE 3310
=> 03/11/2001

Axle spread(s)	**BB, DC**
Maximum operating pressure	**10bar**
Port screw-threads	**M 22x150**

Inverse relay valve KNORR RE 3312
05/11/2001 =>

Axle spread(s)	**DC**
Maximum operating pressure	**10 bar**
Port screw-threads	**M 22x150**

8140 – Reversing safety electrolvalve

Electrovalve HONEYWELL type 3/2 NF

Axle spread(s)	**BB, DC**
Reference	**E 131K 06 05**
Operating voltage	**24V**
Electrical resistance	**45Ω**
Port screw-threads	**M 12x150**

Pressure switch and air pressure transmitter

8104 – Air pressure transmitter

Axle spread(s)	**–**
Maximum operating pressure	**16bar**
Connector type	**DIN 2.5**
Code	**A1 2.1**
Installation diameter	**M 16x150**
Tightening torque	**$20^{\pm 4}$ Nm**

8165/8166/8174 – Min. pressure indicator pressure switch
Pressure drop contact

Axle spread(s)	**AA → AF / CA → CG / DA → DJ / EA, EB / FA → FD**
Contact pressure	**$6.0^{\pm 0.6}$ bar**
Axle spread(s)	**BA → BG**
Contact pressure	**$5.2^{0/-0.8}$ bar**
Connector type	**DIN 2.5**
Code	**A4 2.1**
Installation diameter	**M 16x150**
Tightening torque	**$20^{\pm 4}$ Nm**

8178 – Parking indicator pressure switch
Pressure drop contact

Axle spread(s)	**–**
Contact pressure	**0.7 ± 0.07 bar**
Connector type	**DIN 2.5**
Code	**A4 2.1**
Installation diameter	**M 16x150**
Tightening torque	**20 ± 4 Nm**

TOOLS

Generalities

RENAULT TRUCKS divide tools into three categories:

- **General-purpose tools:** proprietary tools.
  - **50 00 26 .... reference number** (possibility of purchasing through the RENAULT TRUCKS Spare Parts department).
  - **4-figure reference number** (tools classified by RENAULT TRUCKS but available from the supplier).

- **Special tools:** specifically created tools distributed by the RENAULT TRUCKS Spare Parts Department.

- **Locally manufactured tools:** these tools are classified differently according to their degree of sophistication:
  - **4-figure reference number** (represented by a drawing): tools that are simple to make without need for special qualification.
  - **50 00 26 .... reference number** (possibility of purchasing through the RENAULT TRUCKS Spare Parts department): a certain amount of skill is needed to make these tools.

Three levels (or echelons) determine their assignment:
- **Level 1:** tools for servicing, maintenance and minor tasks.

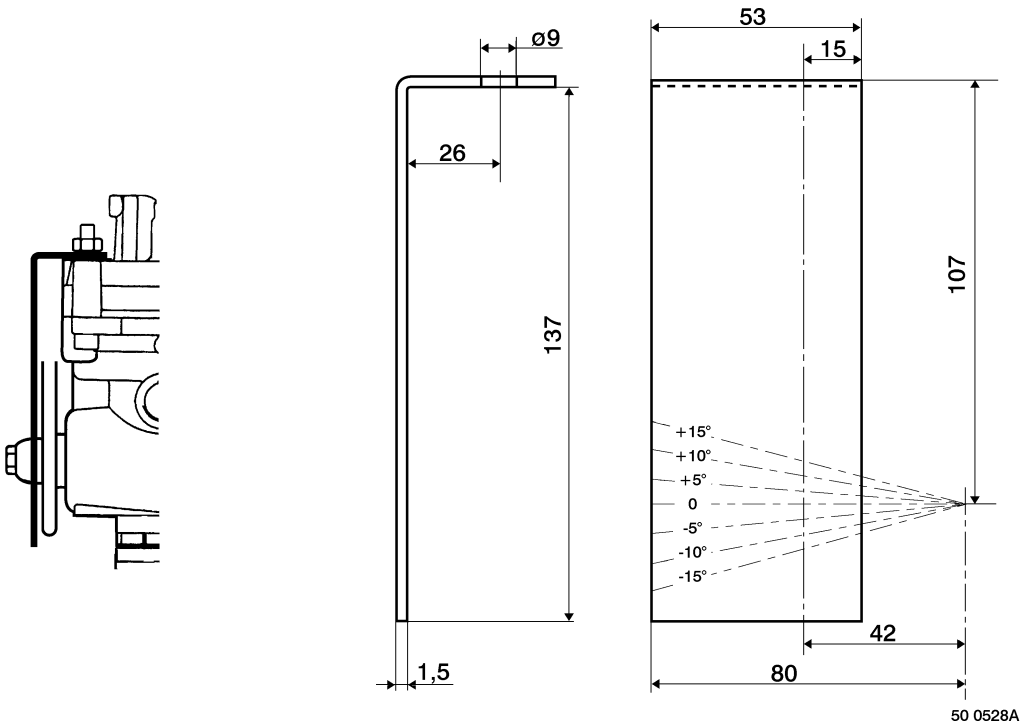
- **Level 2:** tools for major repairs.

- **Level 3:** tools for refurbishment.

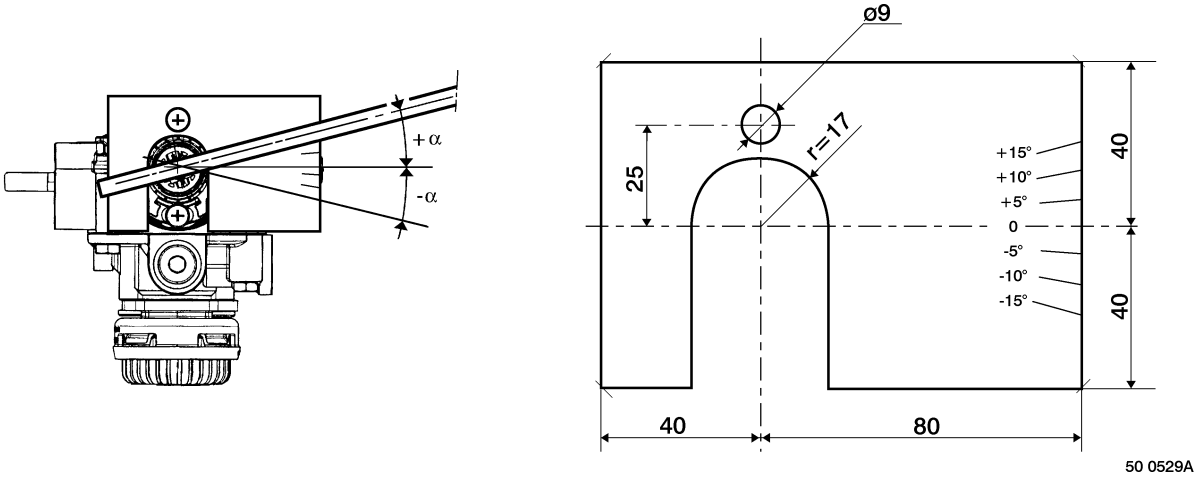
Proprietary tools mentioned in this manual do not appear in the tools list.
These tools are identified in the standard tools manual (MO) by a 4-figure number.

Installation of testing templates

KNORR lever type load sensing valve

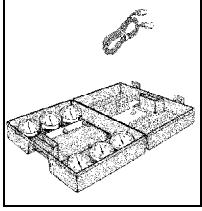


WABCO lever type load sensing valve

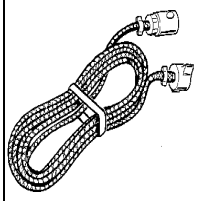
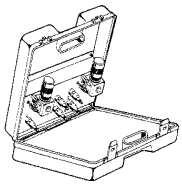


LIST OF TOOLS

General-purpose tools

Illustration	RENAULT TRUCKS Ref.	Designation	Manufacturer reference	Manufacturer code	Level	Qty
	**5000262423**	TEST CASE			1	1

Special Tools

Illustration	RENAULT TRUCKS Ref.	Designation	Manufacturer reference	Manufacturer Code	Level	Qty
	**5000267096**	FLEXIBLE PIPE			1	1
	5000262587	TEMPLATE			1	1
	5000262588	TEMPLATE			1	1
	**5000267093**	TEST CASE			1	1

BRAKING DIAGRAMS

IDENTIFICATION OF BRAKE AIR PIPES

RENAULT TRUCKS. standard

Polyamide braking circuit pipes are identified according to a code using rings of different colours. A colour range indicates the function of the circuit. Two extra colours specify the sub-function of the circuit.

Function codes :

Orange	→	Front service brake
Blue	→	Rear service brake
Green	→	Parking brake
Red	→	Trailer brake
Brown	→	Auxiliary equipment
Without identification	→	Air supply circuit

Sub-function codes :

Function colour only	→	Constant pressure
Yellow	→	Pilot-control pressure
White	→	Delivered pressure

Colour abbreviations :

Bc	→	White
Bu	→	Blue
J	→	Yellow
M	→	Brown
Or	→	Orange
R	→	Red
Ve	→	Green

Marking example :

(M) = Brown
(M-M) = Brown / Brown
(M-J-Bc) = Brown / Yellow / White

CODIFICATION OF APPLIANCE PORTS

D.I.N. - I.S.O. 6786 STANDARDS

The numbering of ports, used by the majority of braking equipment manufacturers, conforms to DIN and ISO standards.
The ports are coded according to their function :

- **0** ..... Air aspiration
- **1** ..... Supply pressure
- **2** ..... Delivered pressure
- **3** ..... Atmospheric air venting
- **4** ..... Control pressure
- **5** ..... Available
- **6** ..... Available
- **7** ..... Antifreezer
- **8** ..... Lubrication
- **9** ..... Water cooling

Some ports include 2 figures.

The **first** figure indicates the function
The **second** figure indicates a sequence number

Example :
41 : Control port N° **1**
42 : Control port N° **2**

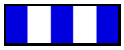
COLOUR KEY TO BRAKING DIAGRAMS

Compressed air supply	

Front service brake circuit

Constant pressure	
Pilot-control pressure	
Delivered pressure	

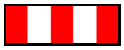
Rear service brake circuit

Constant pressure	
Pilot-control pressure	
Delivered pressure	

Parking brake circuit

Constant pressure	
Pilot-control pressure	
Delivered pressure	

Trailer brake circuit

Constant pressure	
Pilot-control pressure	
Delivered pressure	

Auxiliary equipment circuit

Constant pressure	
Pilot-control pressure	
Delivered pressure	

KEY TO BRAKING DIAGRAMS

Key to appliances

0100 – Air compressor
0500 – Air dryer
0800 – Protection valve
1001 – Front brake air tank
1010 – Rear brake air tank
1021 – Trailer brake air tank
1050 – Auxiliary equipment air tank
2600 – Duplex service brake control valve
3000 – Quick release valve
3100 – Pressure reduction valve
3150 – Adaptation valve
3600 – Single diaphragm brake cylinder
3740 – Air shoe brake
3741 – Air brake caliper
4500 – Pressure reducing valve
4700 – Load sensing valve
5000 – Rear brake cylinder
5500 – Parking brake valve
6700 – Overflow valve
6900 – Back pressure valve
7200 – Trailer control valve
7601 – Supply brake coupling head (red)
7610 – Control brake coupling head (yellow)
8014 – LH front roadwheel ABS electrovalve
8015 – RH front roadwheel ABS electrovalve
8016 – LH rear roadwheel ABS electrovalve
8017 – RH rear roadwheel ABS electrovalve
8092 – Inverse relay valve
8104 – Air pressure transmitter
8115 – Parking brake indicator lamp
8123 – Air pressure alert warning lamp
8140 – Reversing safety electrolvalve

8141 – Air pressure indicator

8165 – Rear brake minimum pressure sensor

8166 – Front brake minimum pressure sensor

8174 – Parking brake or trailer brake minimum pressure sensor

8178 – Parking brake indicator sensor

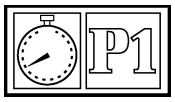
OPTIONAL ASSEMBLY

1 – ABS option (variant **24308**)

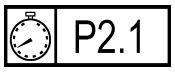
KEY TO CROSS-REFERENCES

12 –To suspension air springs
13 –To clutch servo
14 –To other auxiliary equipment

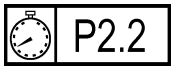
AIR BRAKES TEST POINTS



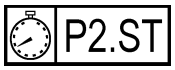
Braking reference point (priority circuit). Load sensing valve port **4**.



Pressure delivered to front axle cylinders.



Pressure delivered to rear axle cylinders (port **11**).



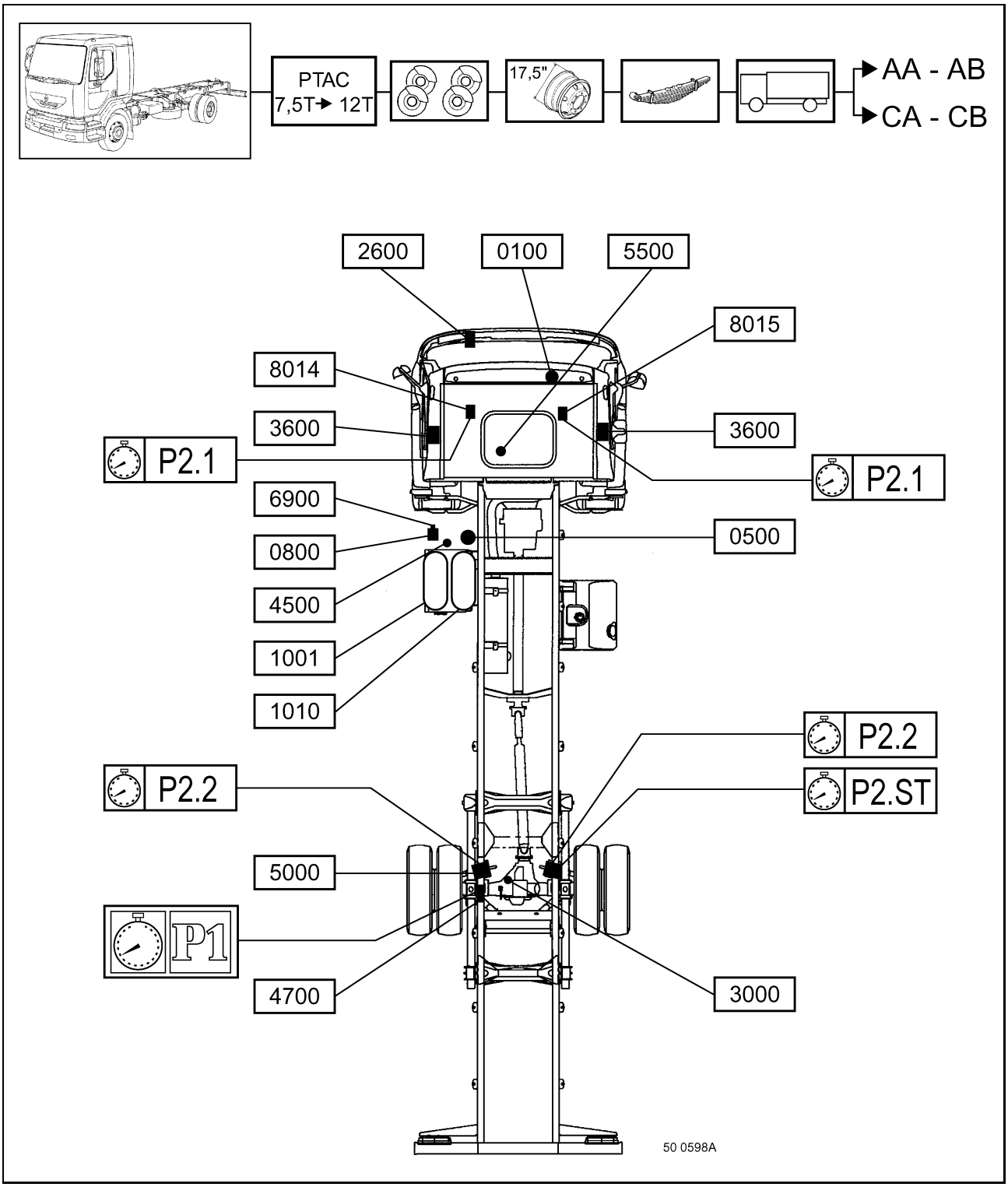
Pressure delivered to parking brake spring cylinders (port **12**).

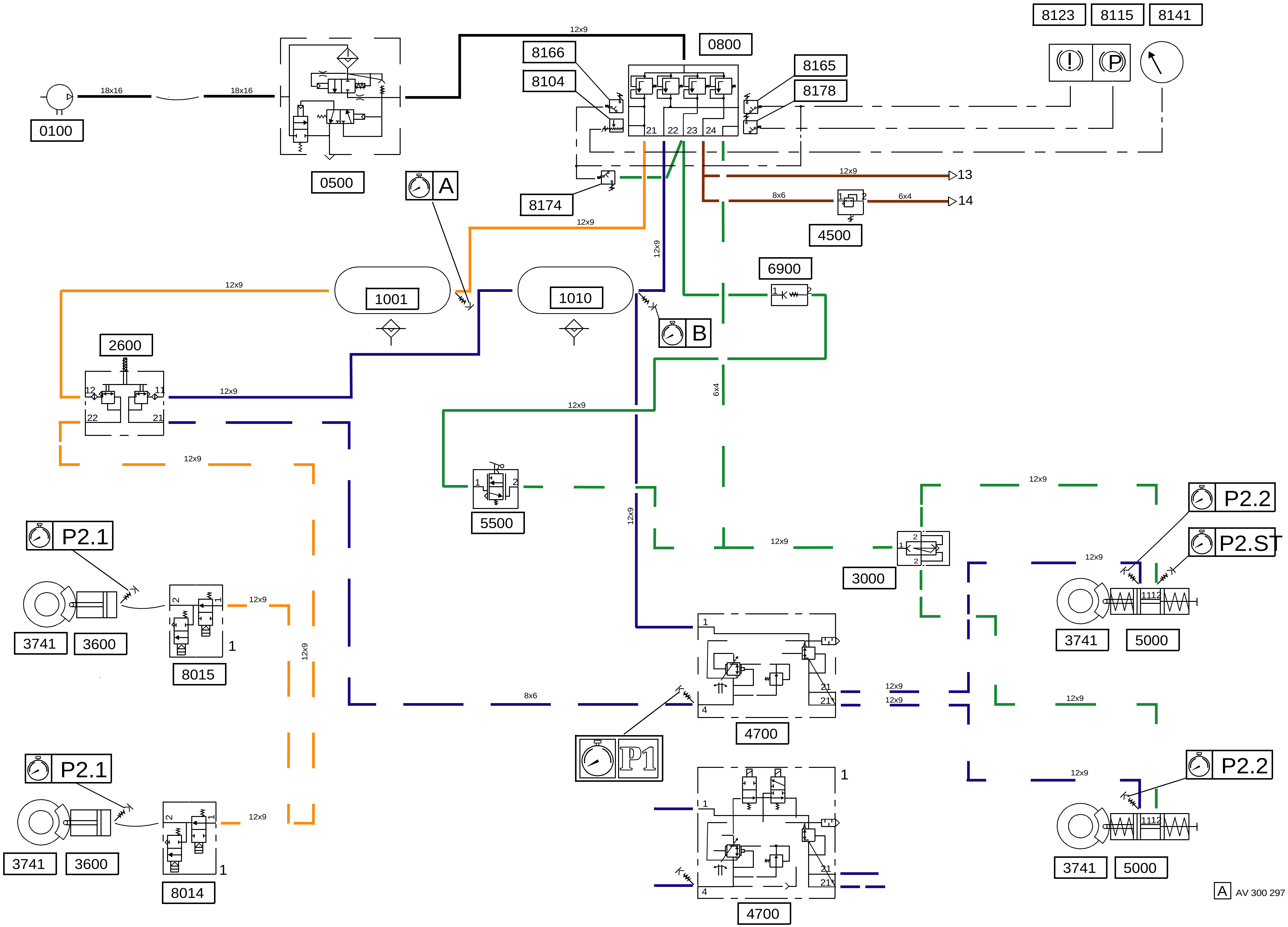
Front service brake air tank pressure.

Rear service brake air tank pressure.

Parking brake air tank pressure.

Location of appliances

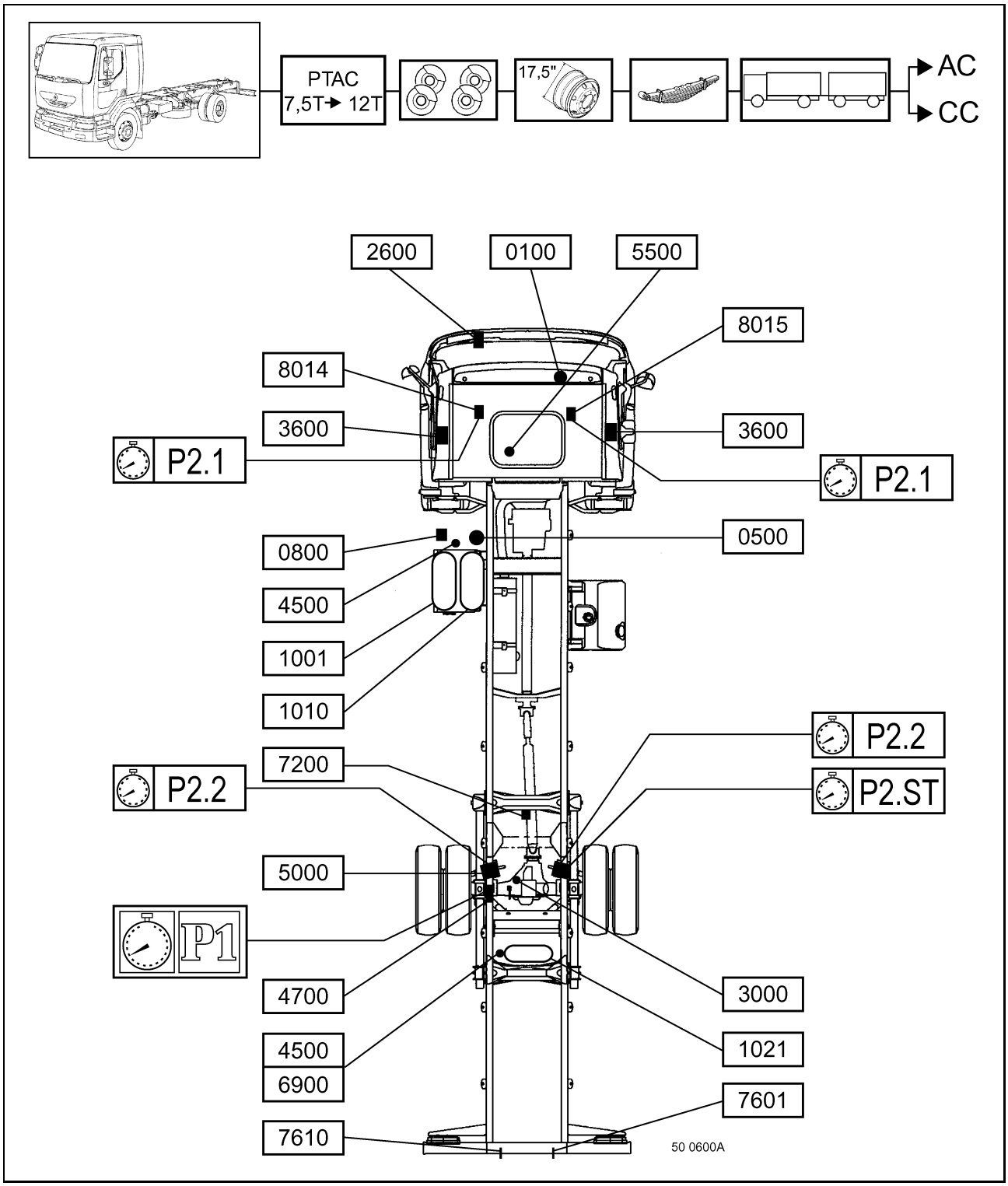


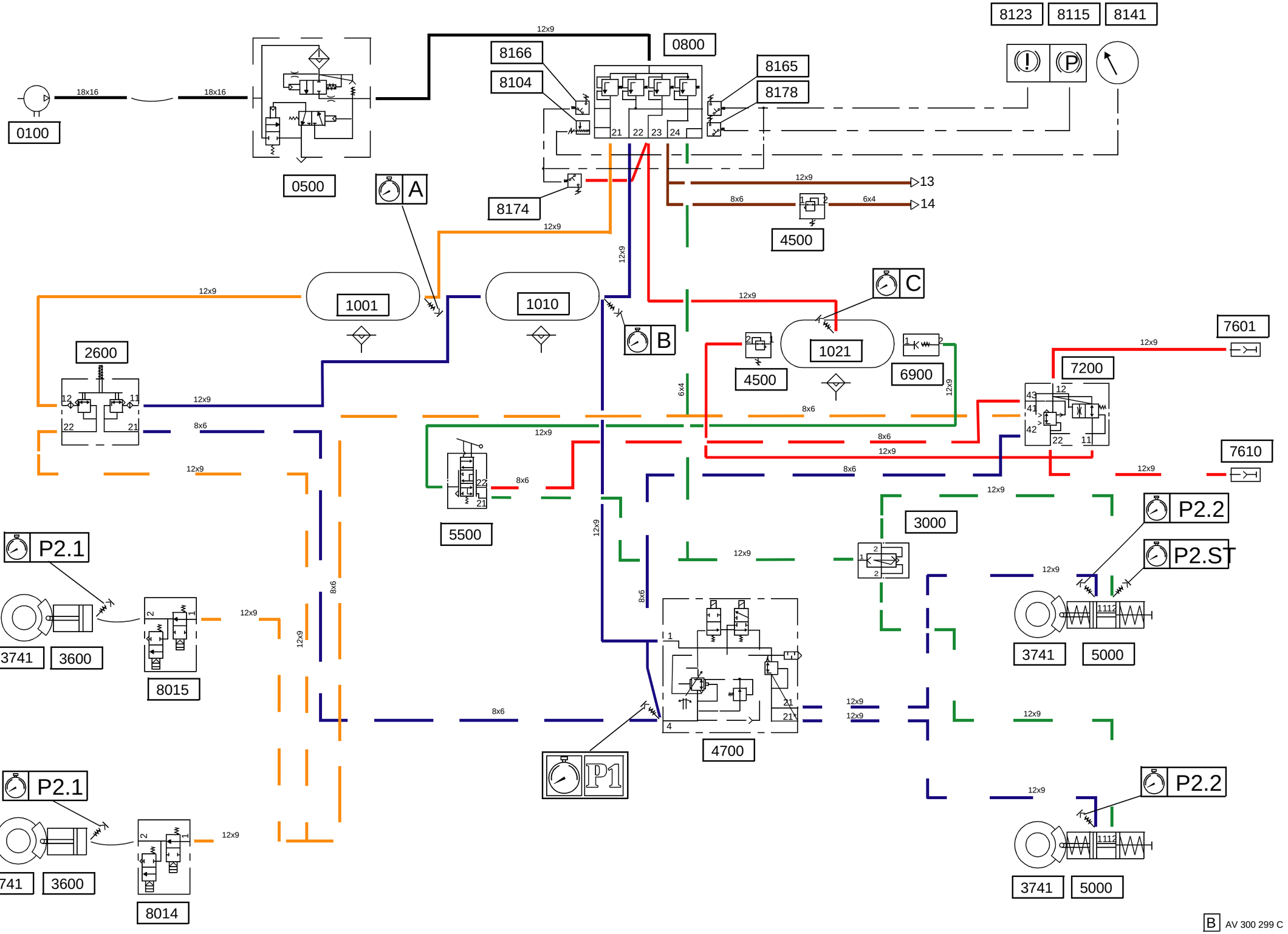


0100
18x16
18x16
0500
12x9
8166
8104
0800
21 22 23 24
8165
8178
8123
8115
8141
A
8174
12x9
13
8x6
6x4
14
4500
1001
1010
12x9
B
6900
2600
12
11
22
21
12x9
6x4
12x9
12x9
5500
12x9
P2.1
3741
3600
8015
12x9
12x9
8x6
P1
4700
3000
12x9
P2.2
P2.ST
3741
5000
12x9
12x9
12x9
P2.1
3741
3600
8014
4700
P2.2
3741
5000

A AV 300 297 C

Location of appliances

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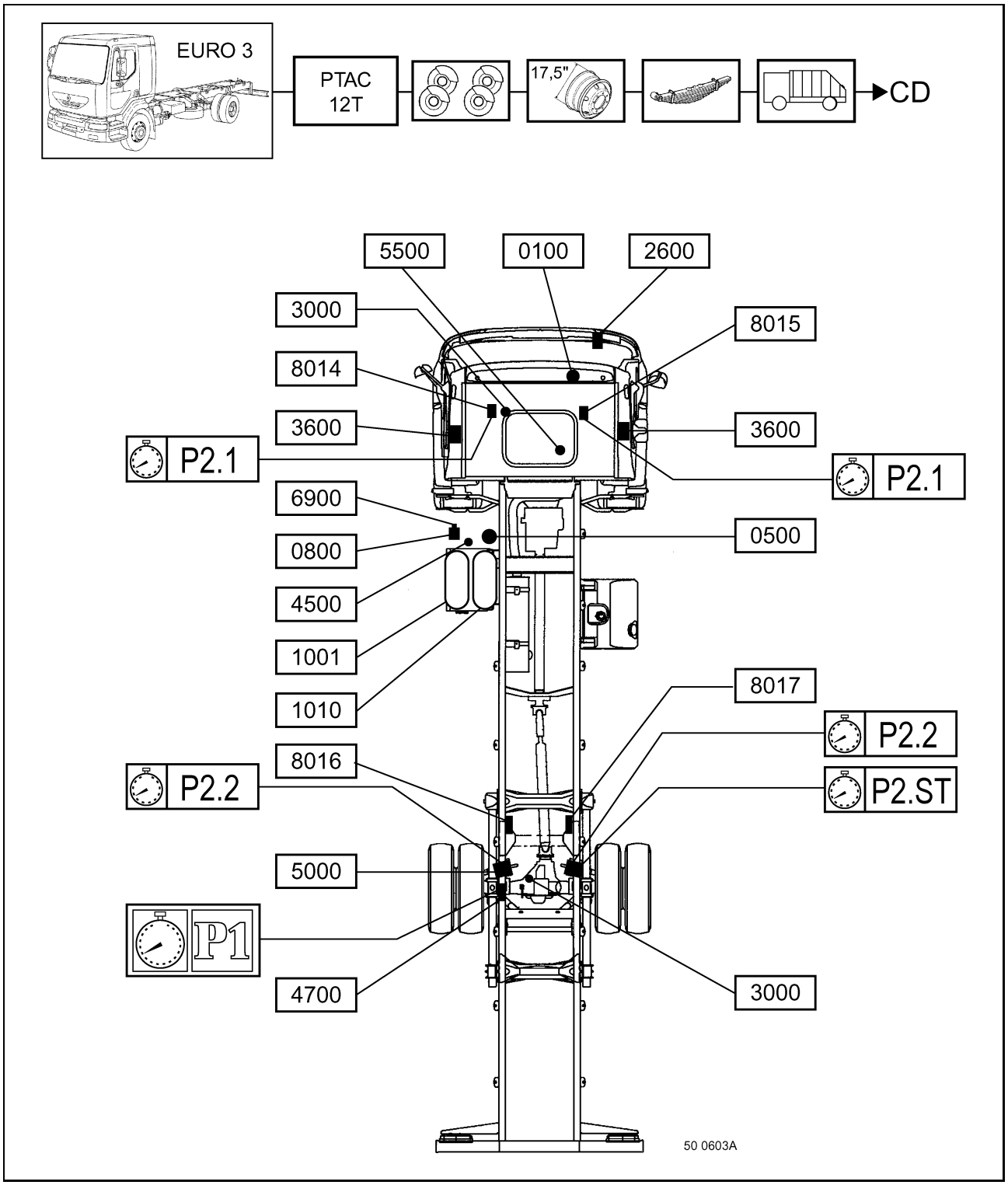
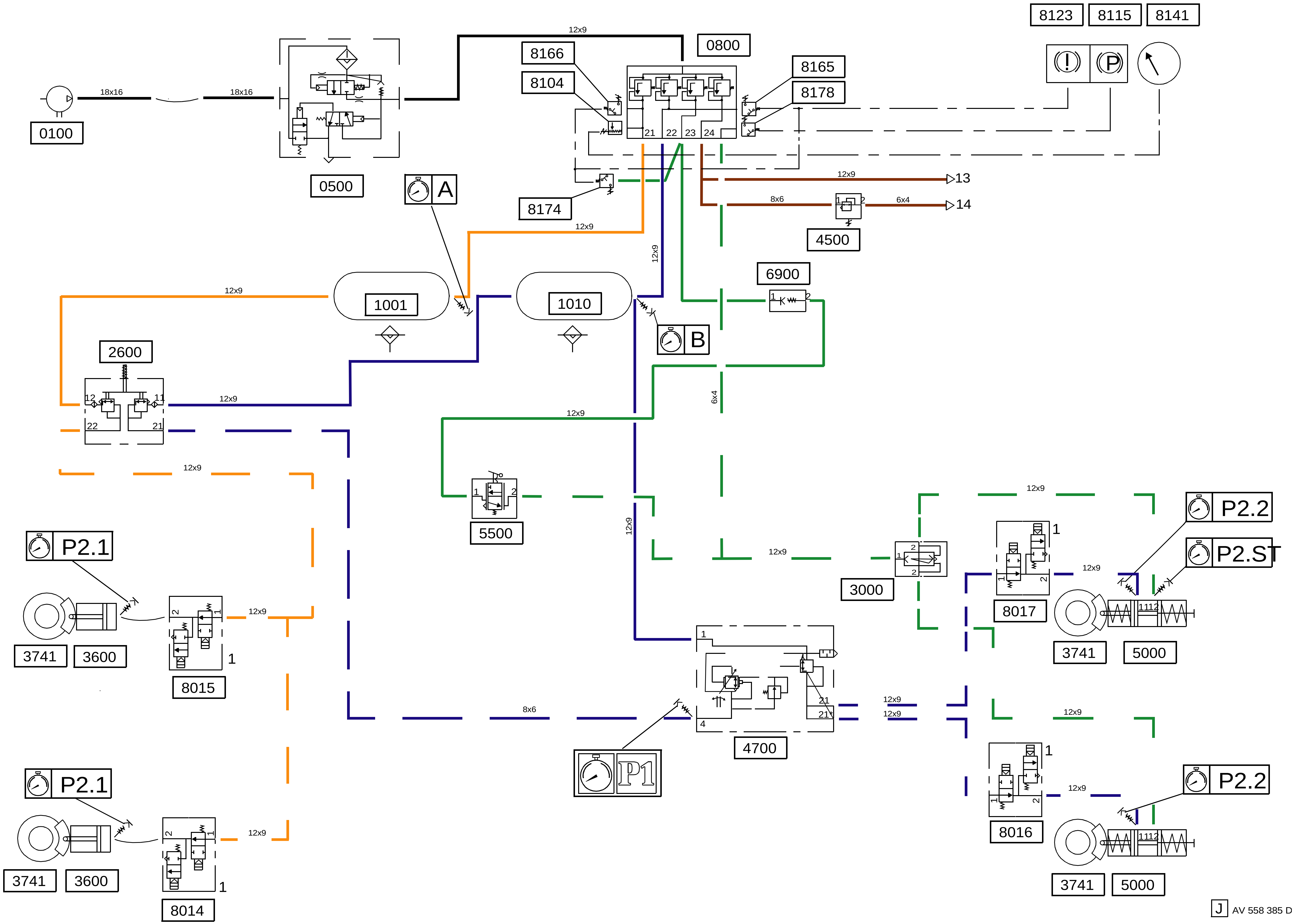
B AV 300 299 C

Location of appliances

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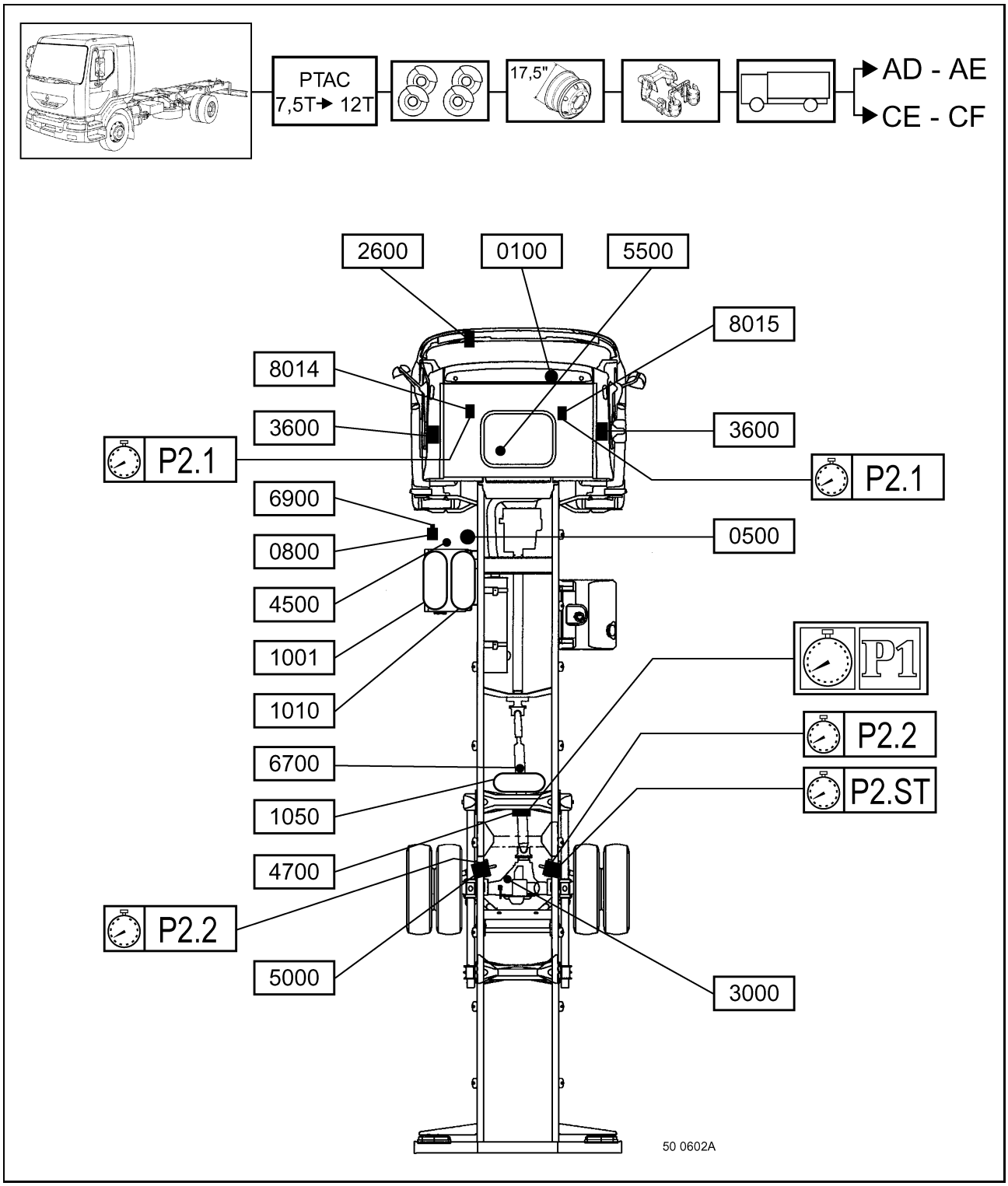
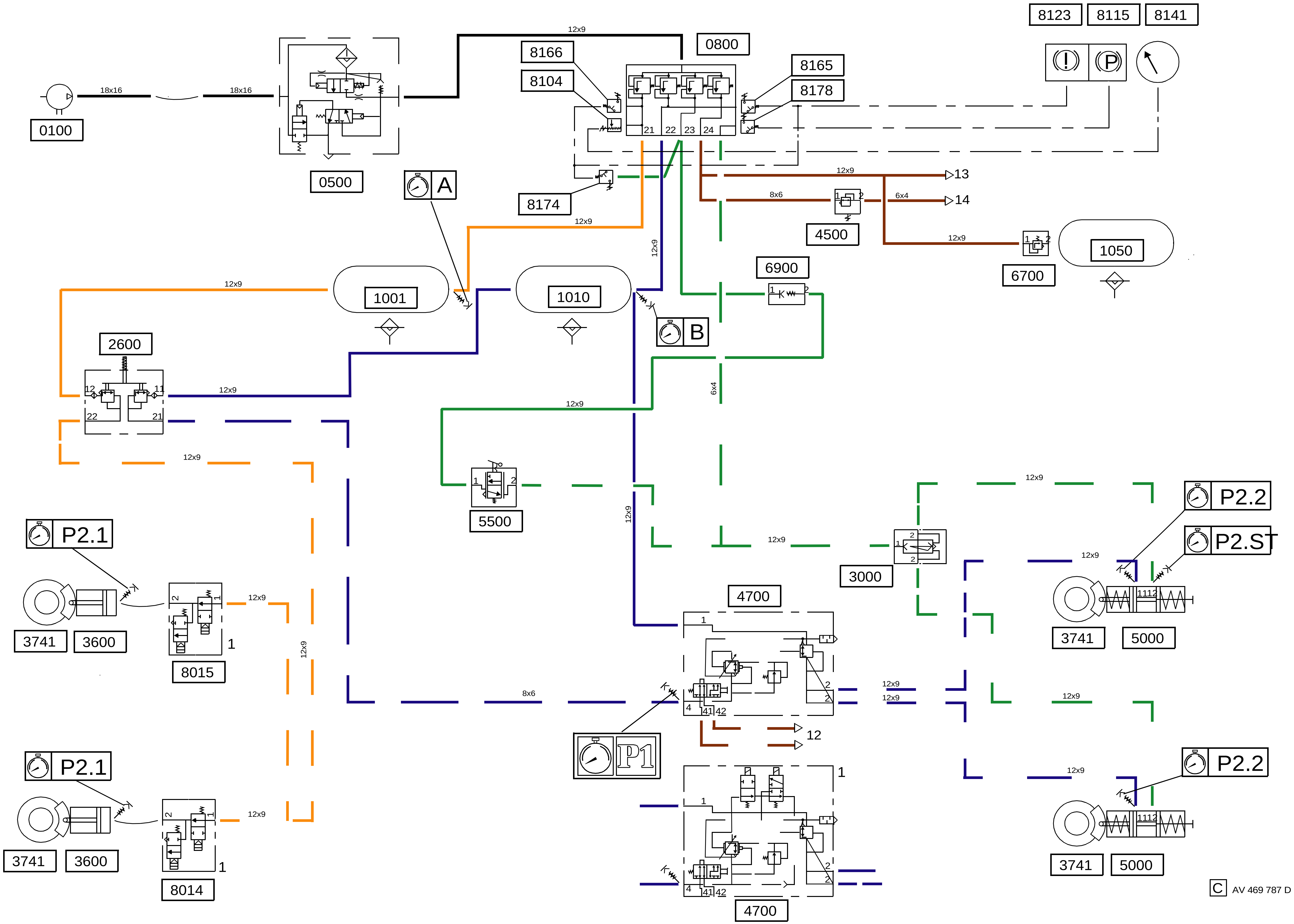
J AV 558 385 D

Location of appliances





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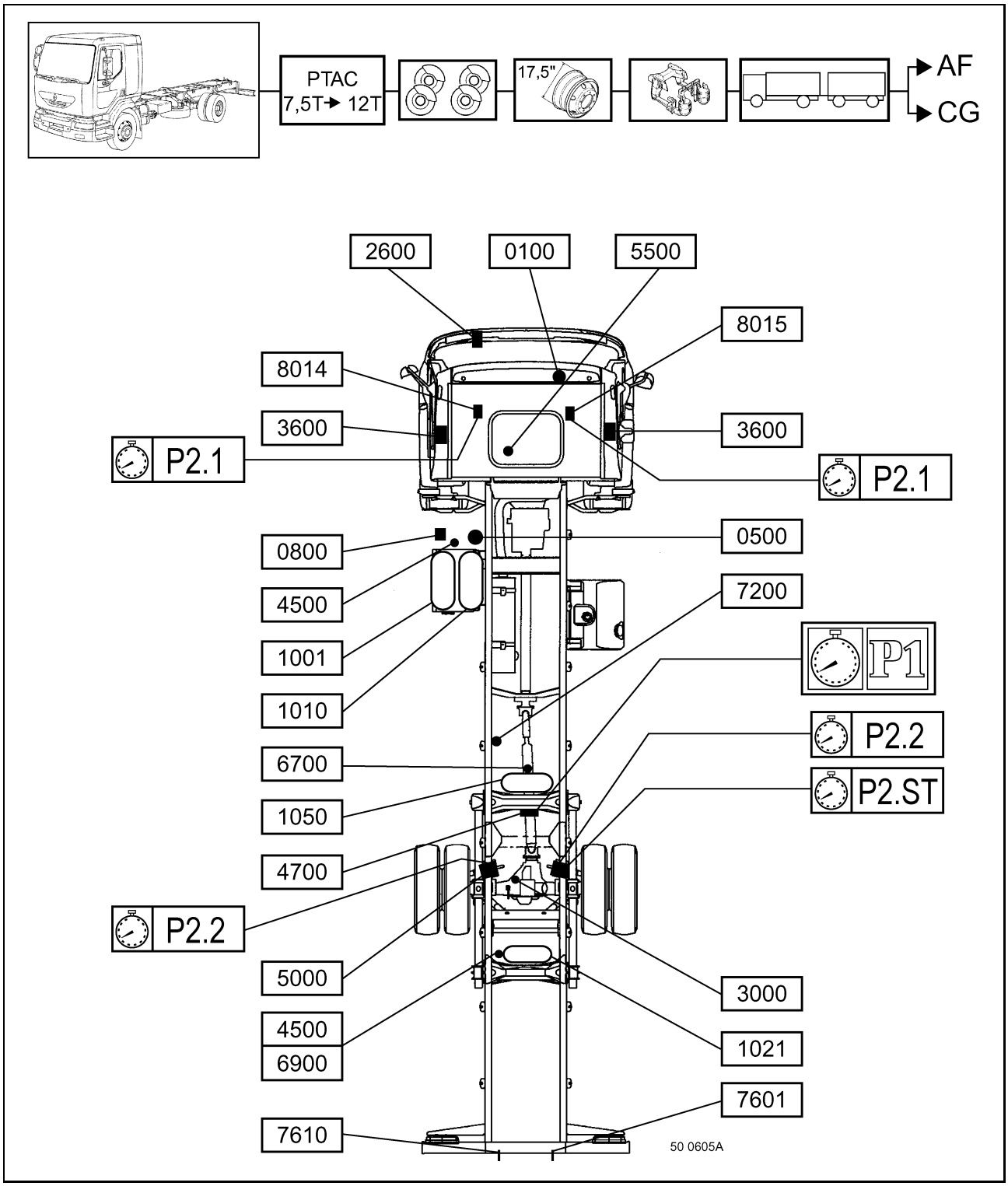
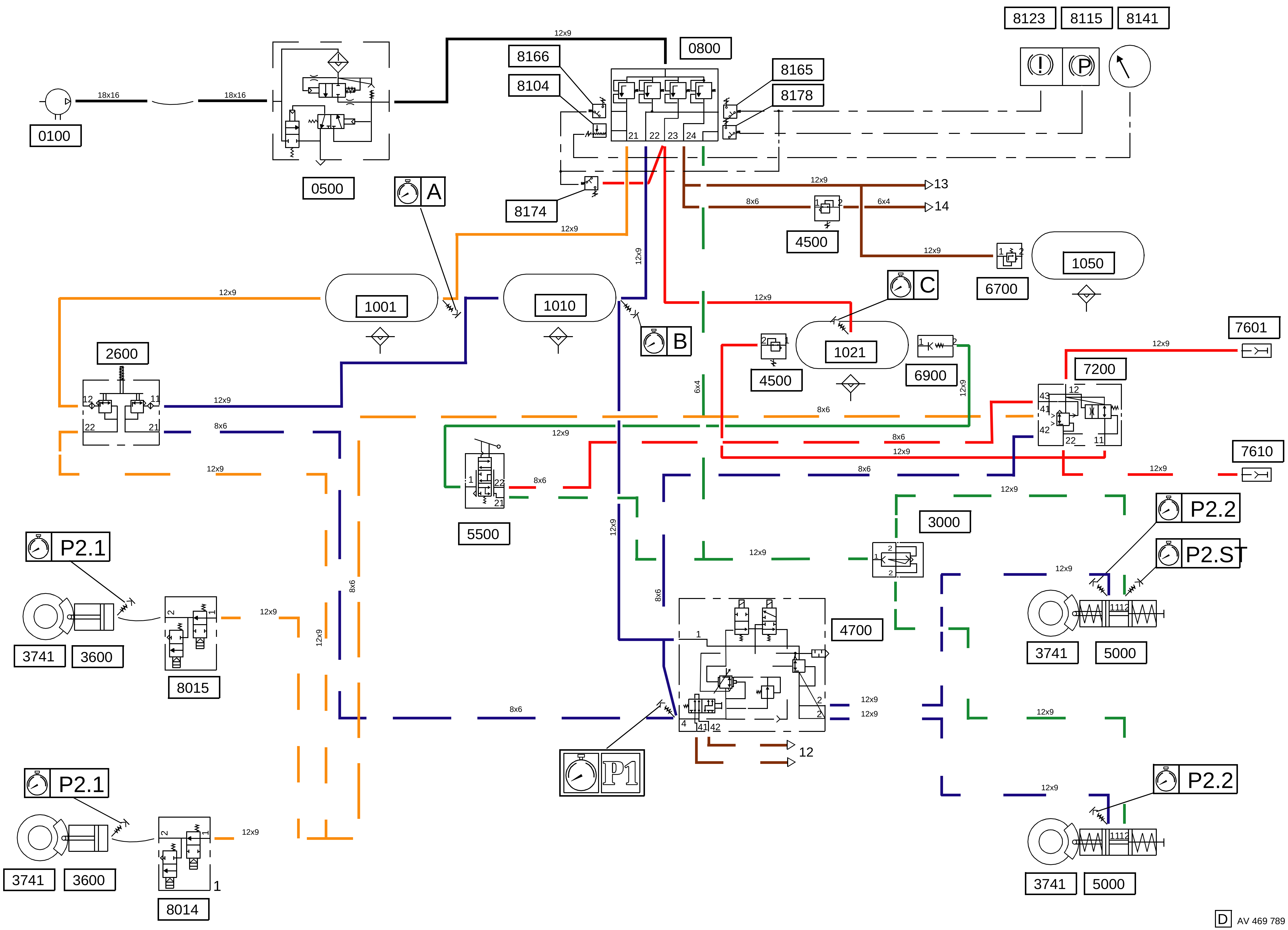
Location of appliances





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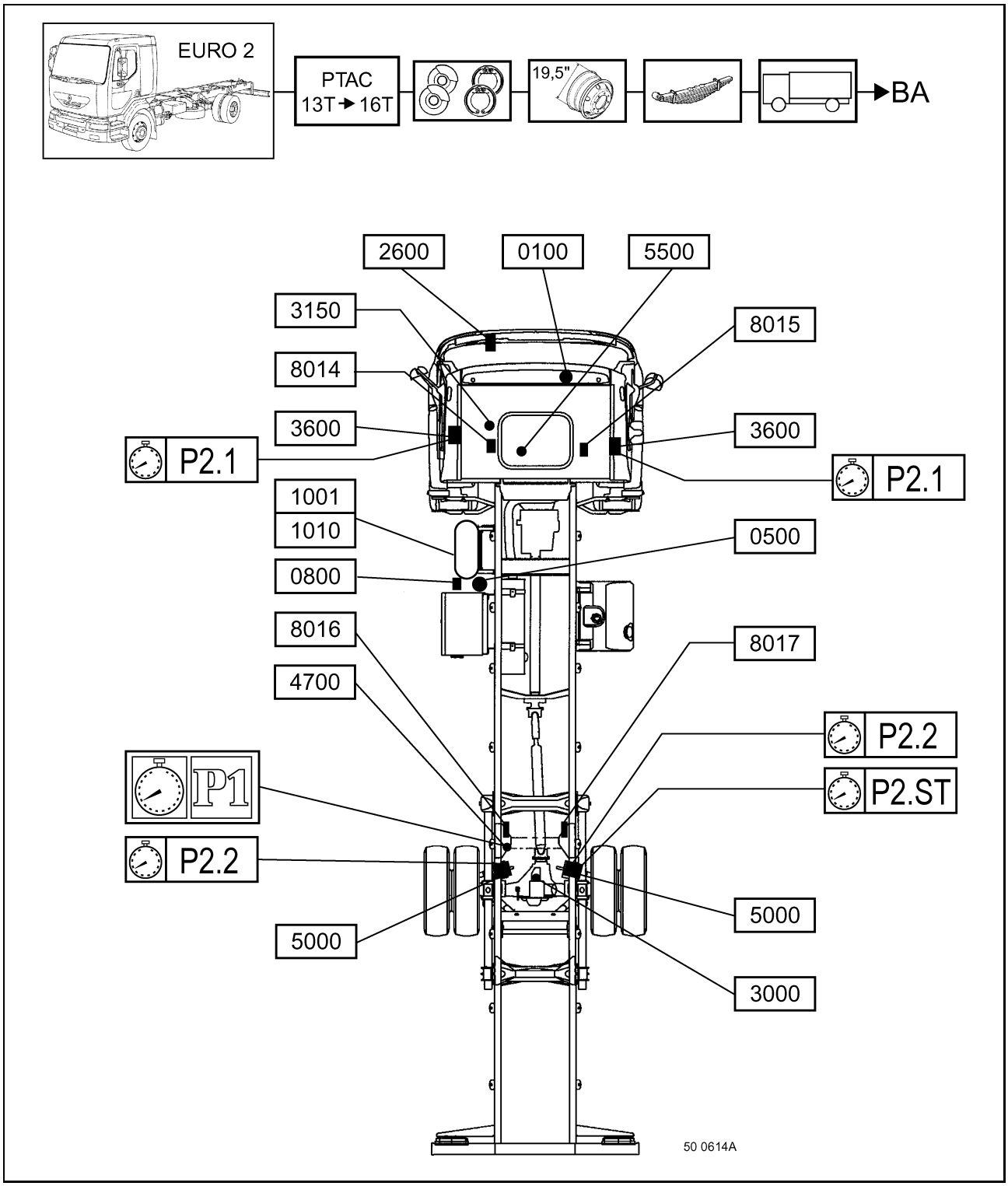
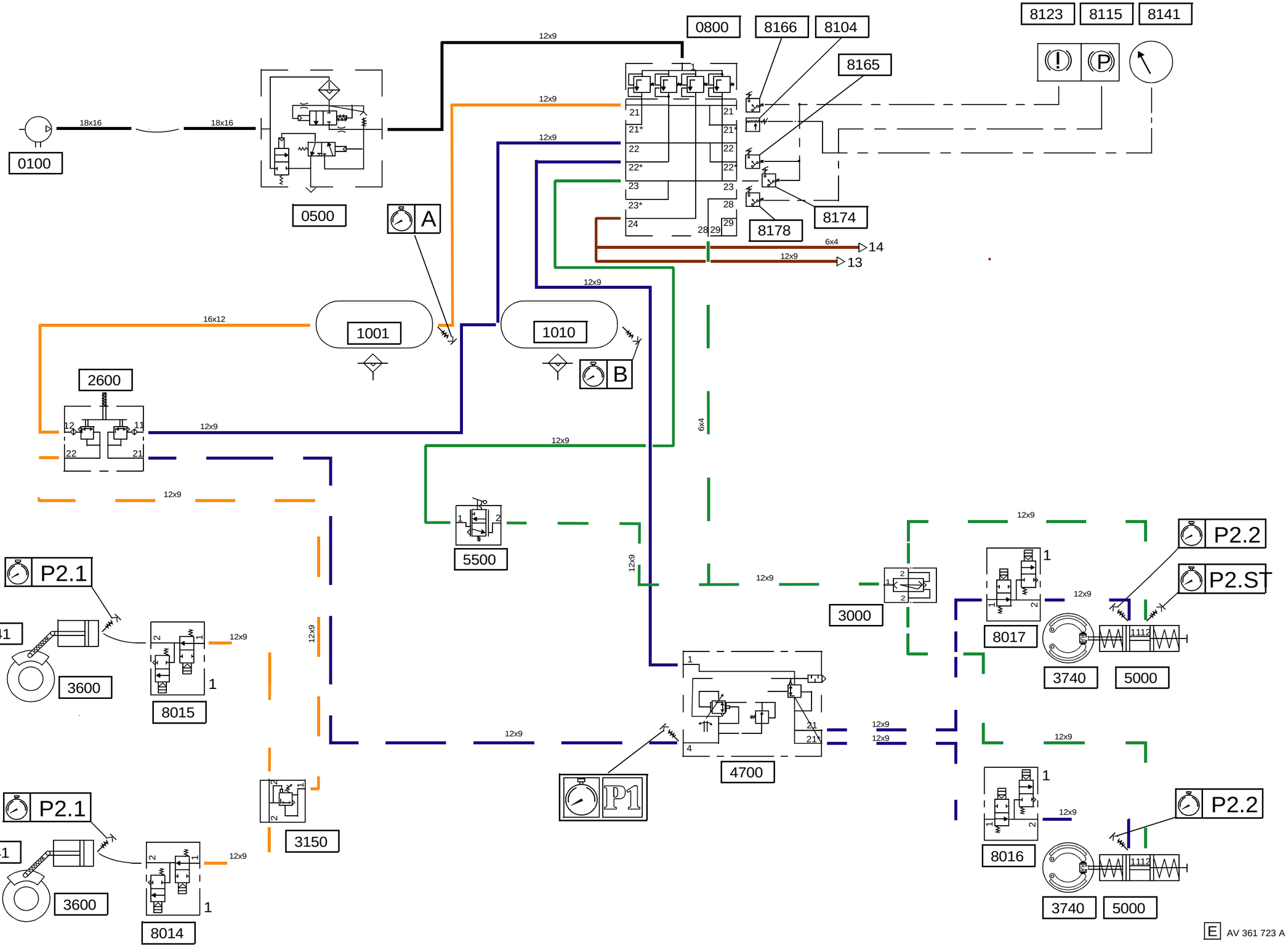
D AV 469 789 D

Location of appliances

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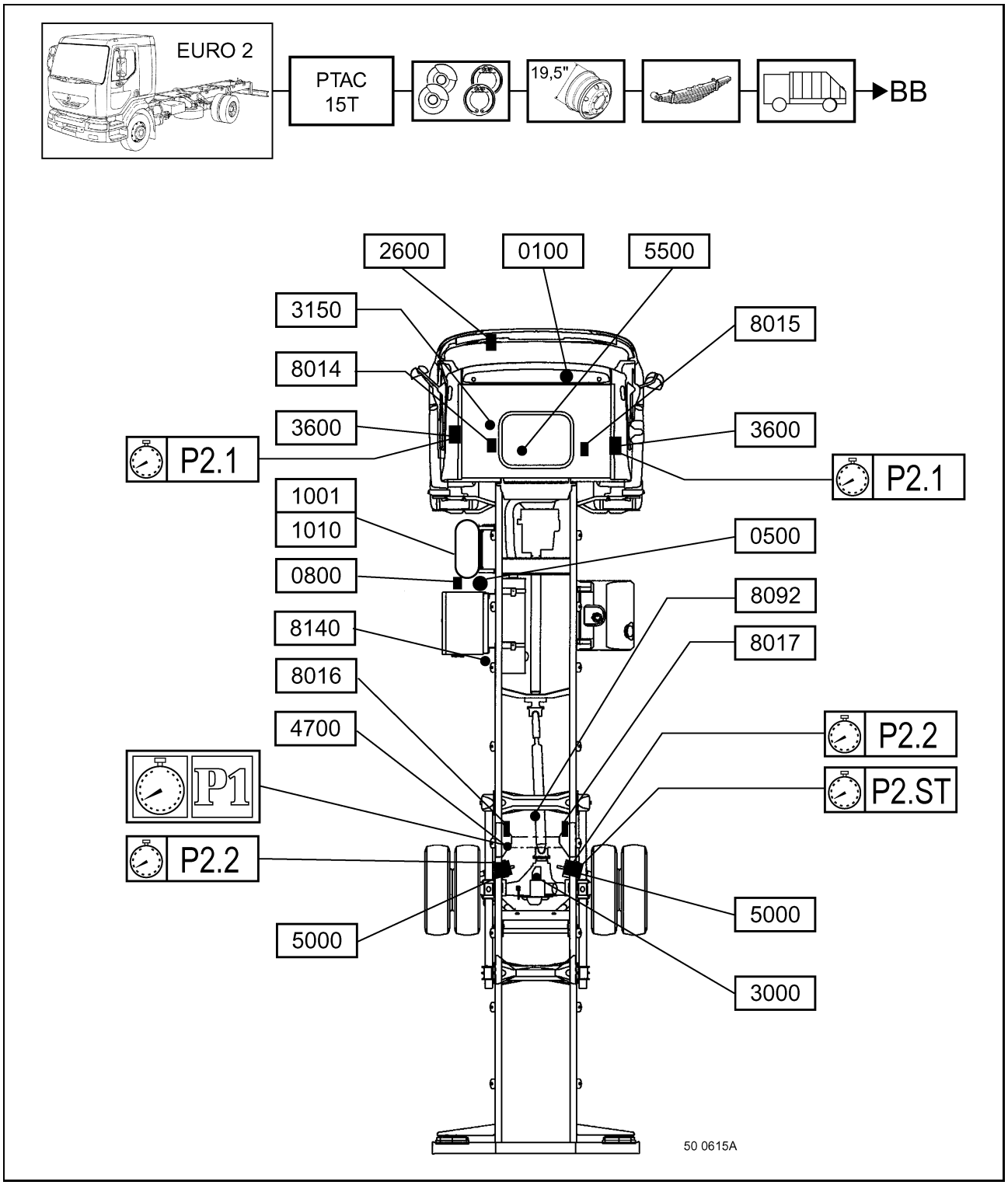
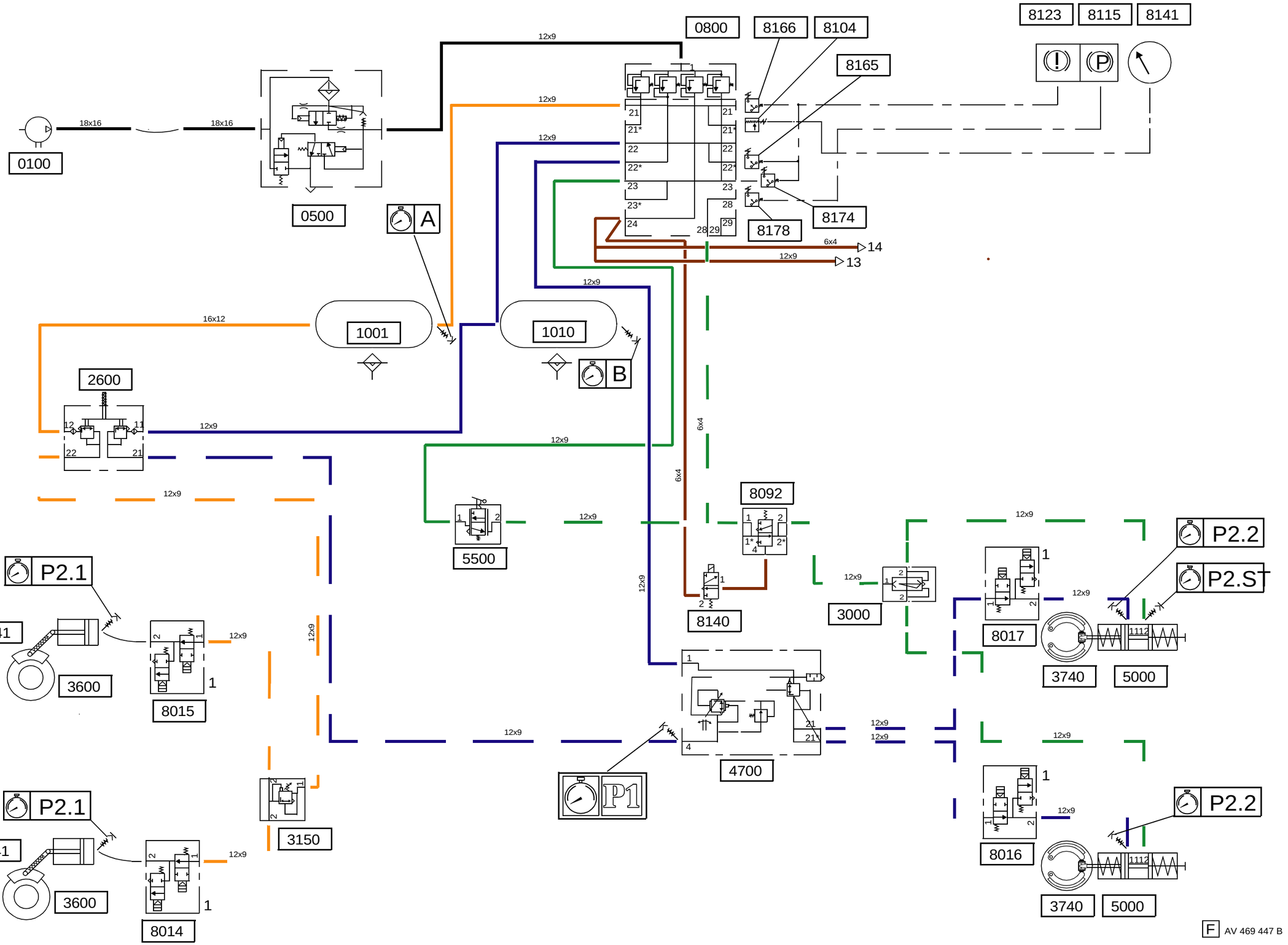
Location of appliances

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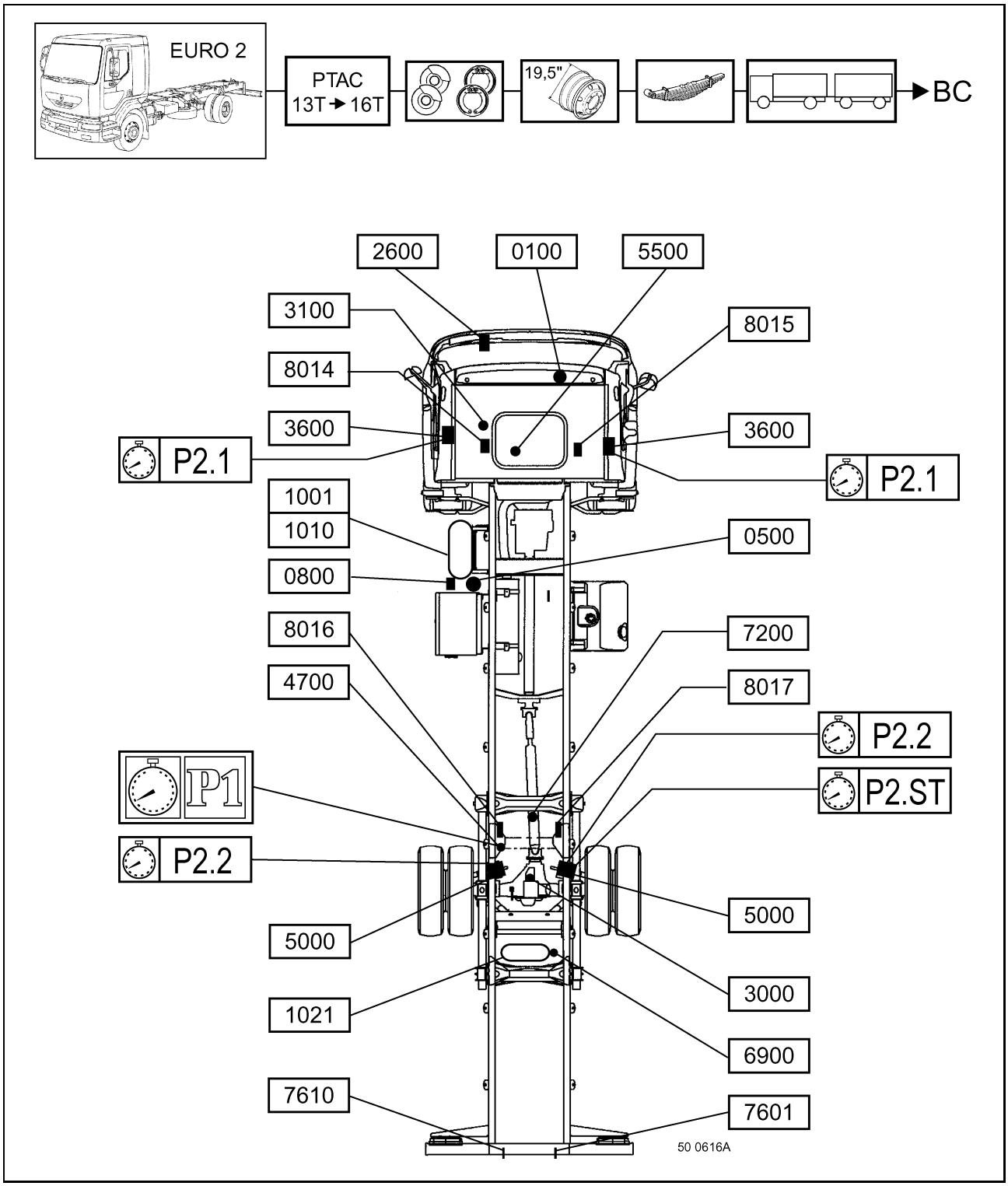
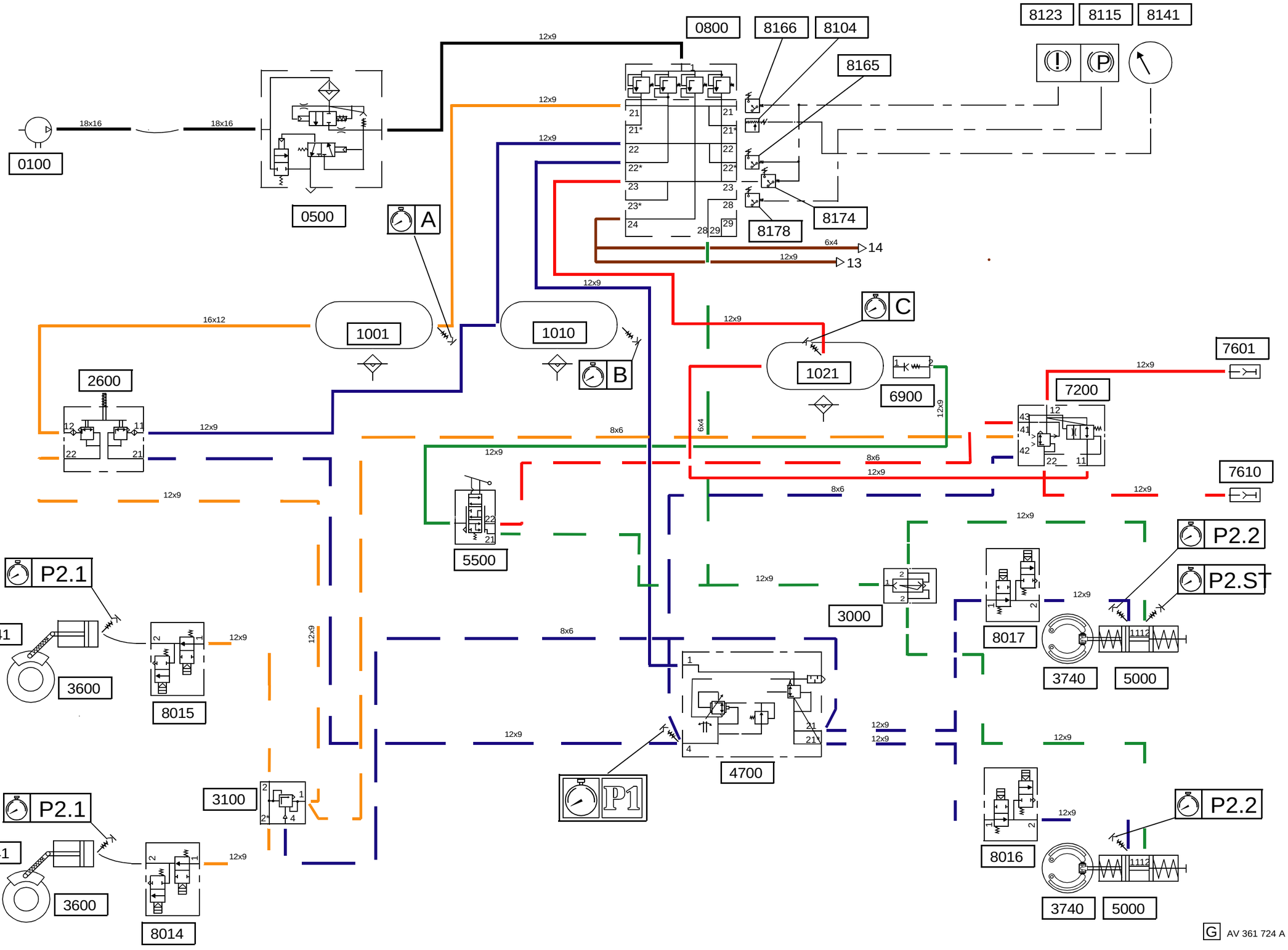
AV 469 447 B

Location of appliances

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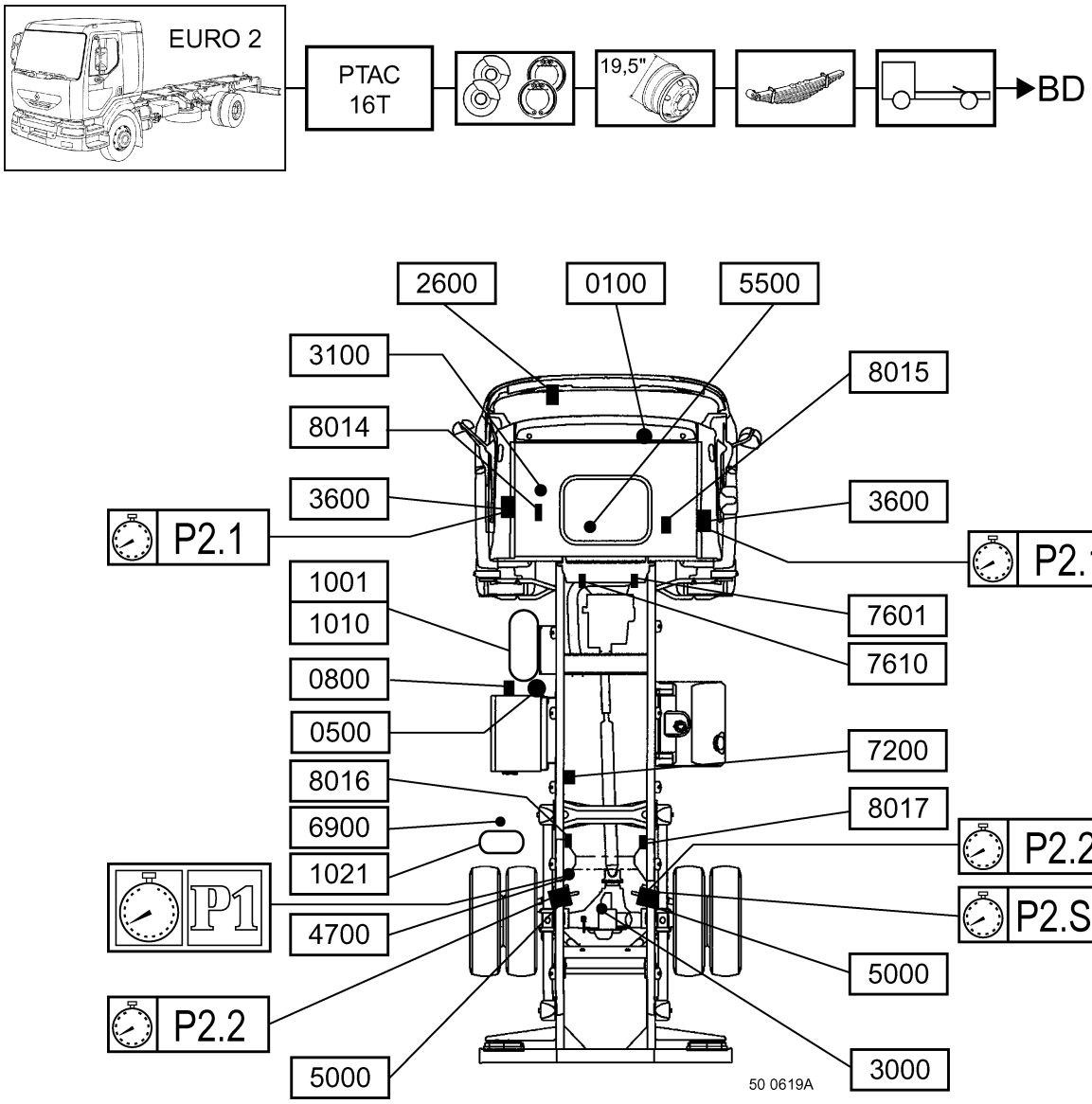
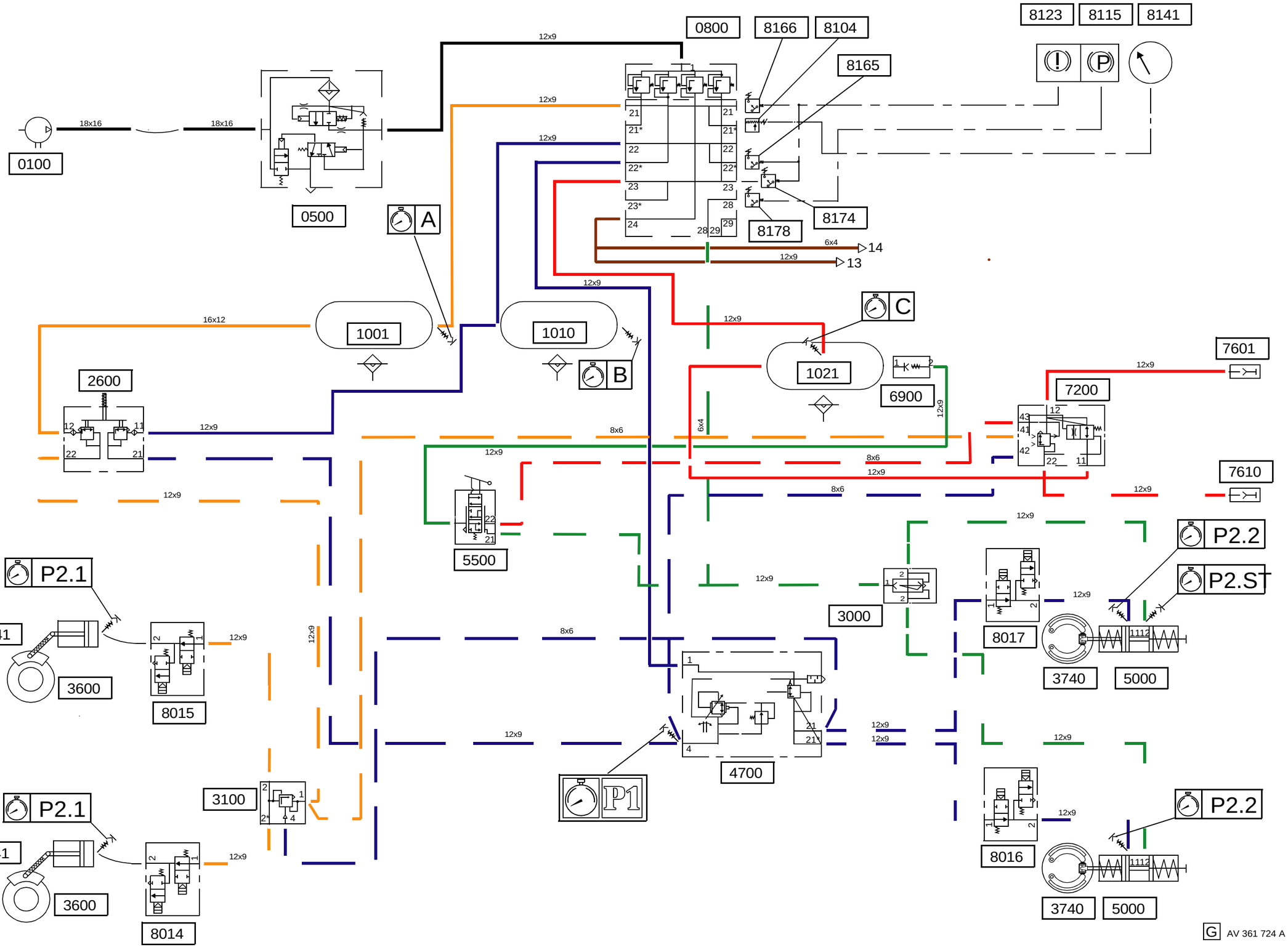
Location of appliances

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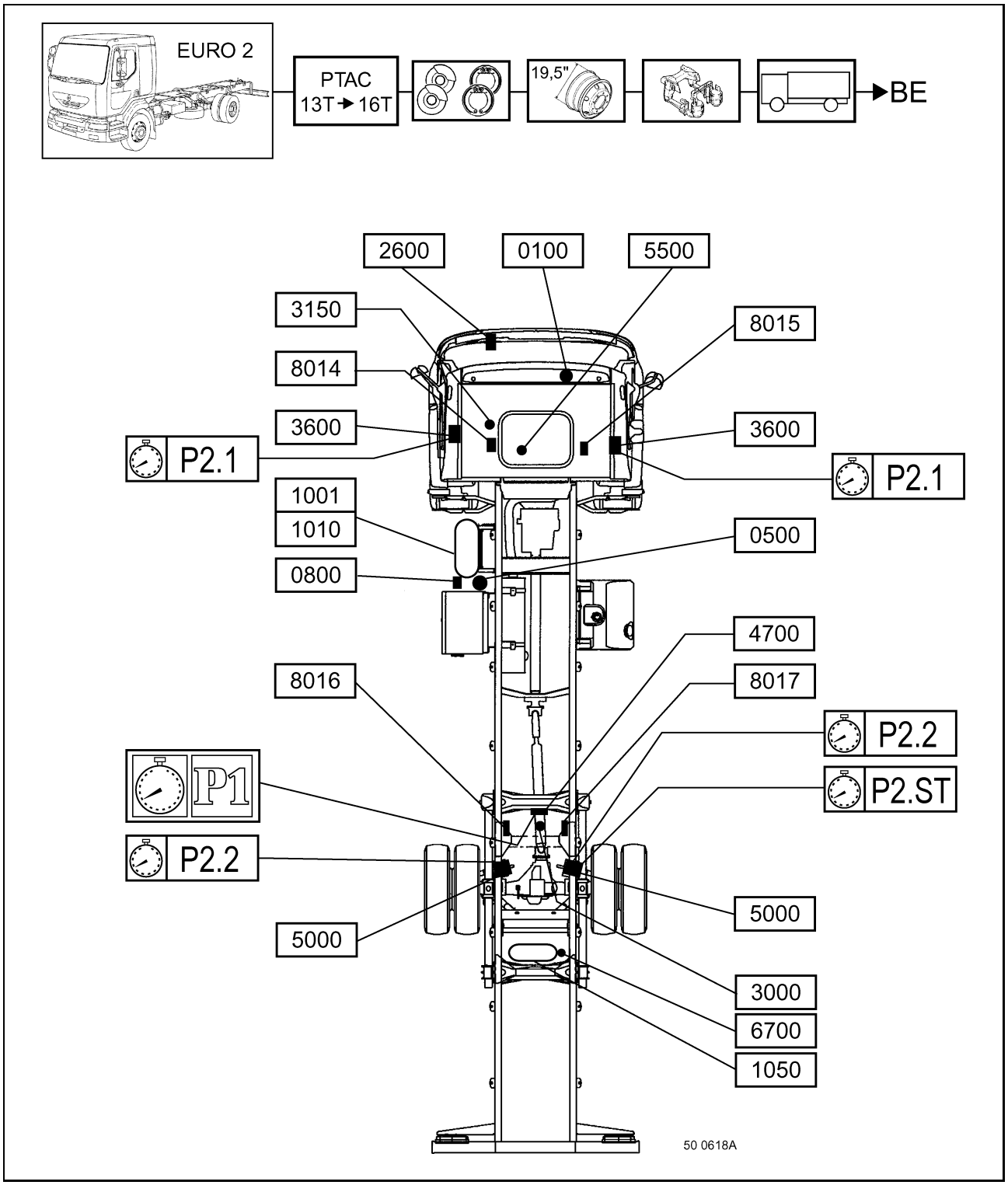
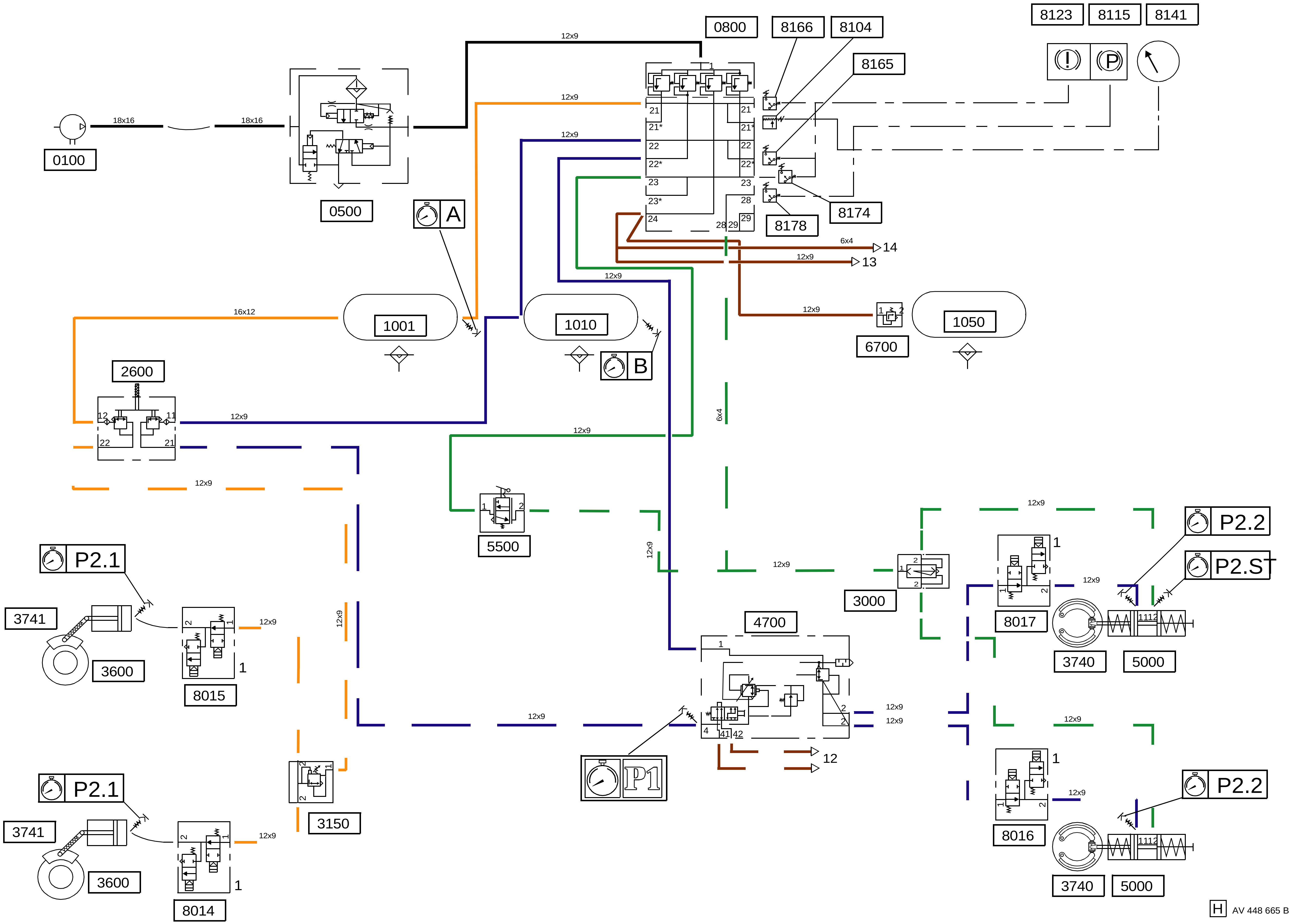
Location of appliances





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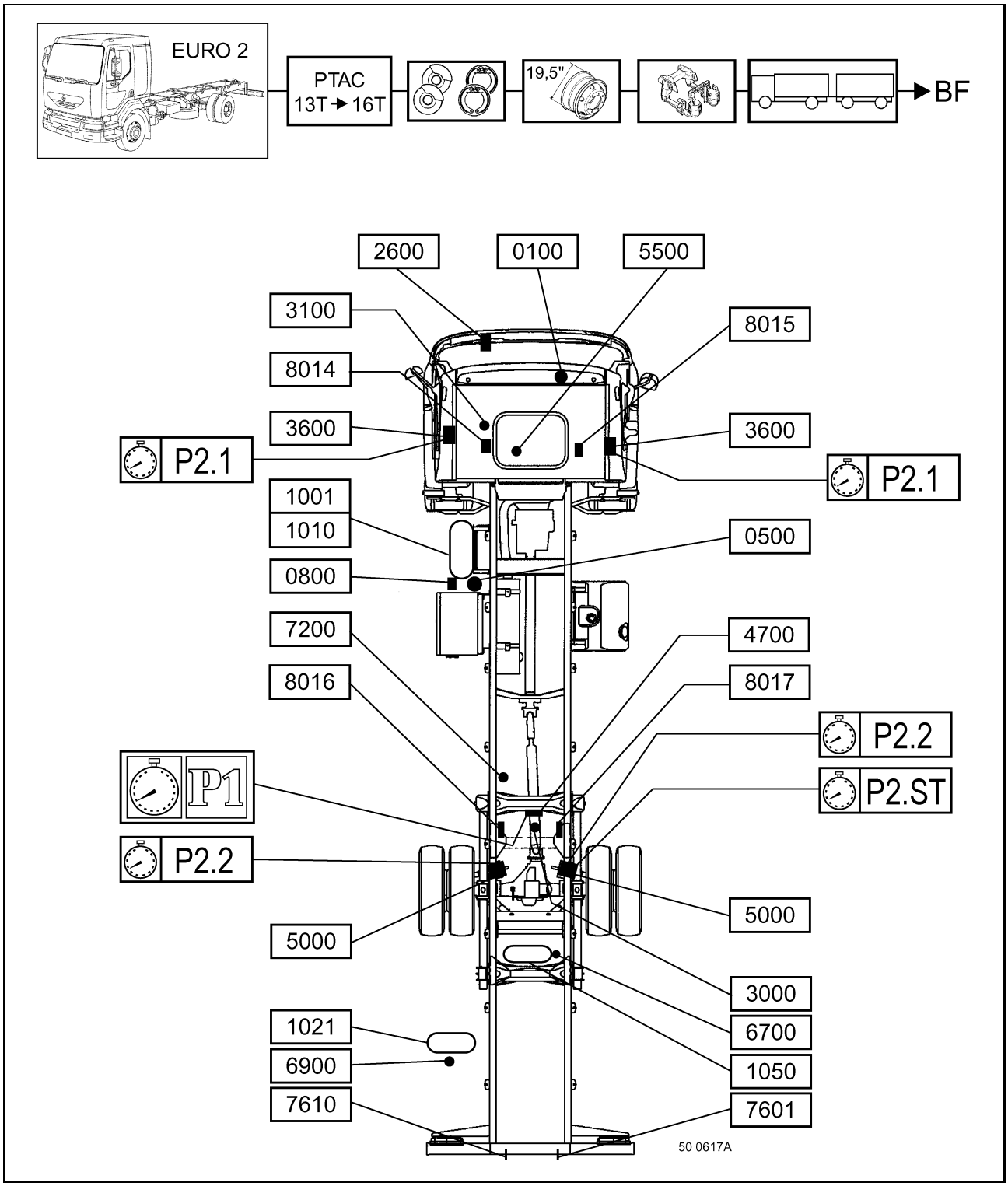
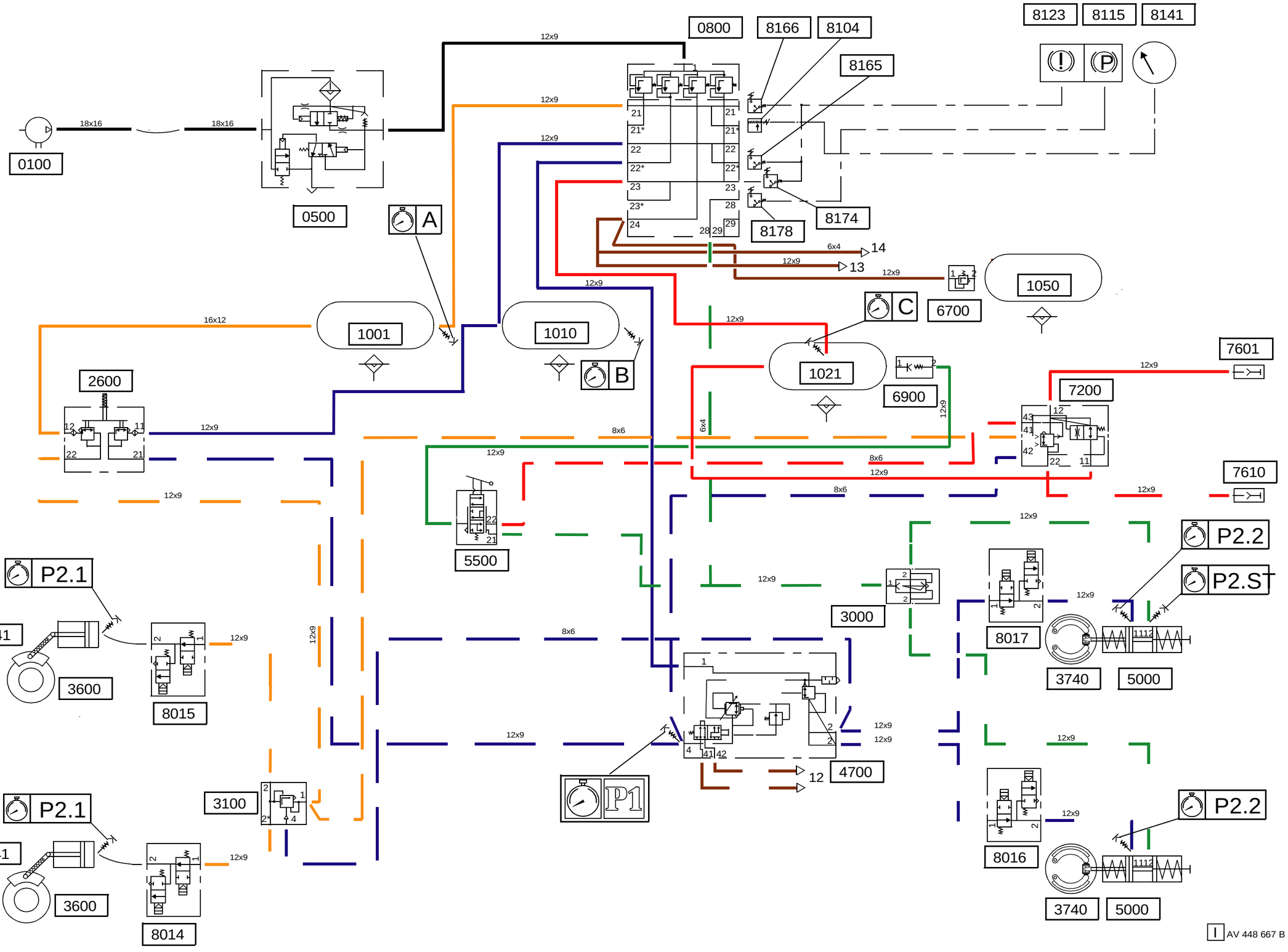
AV 448 665 B

Location of appliances

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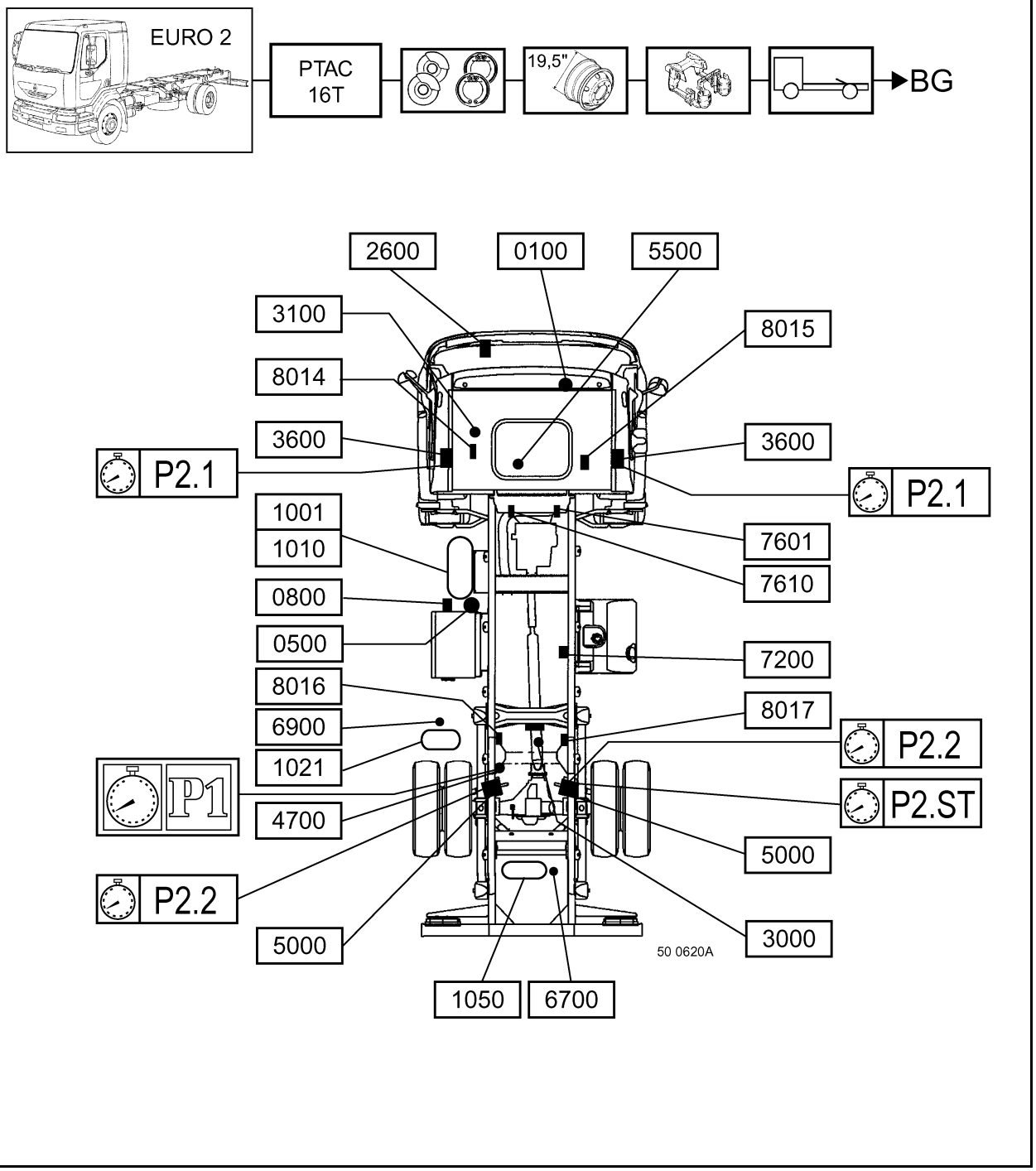
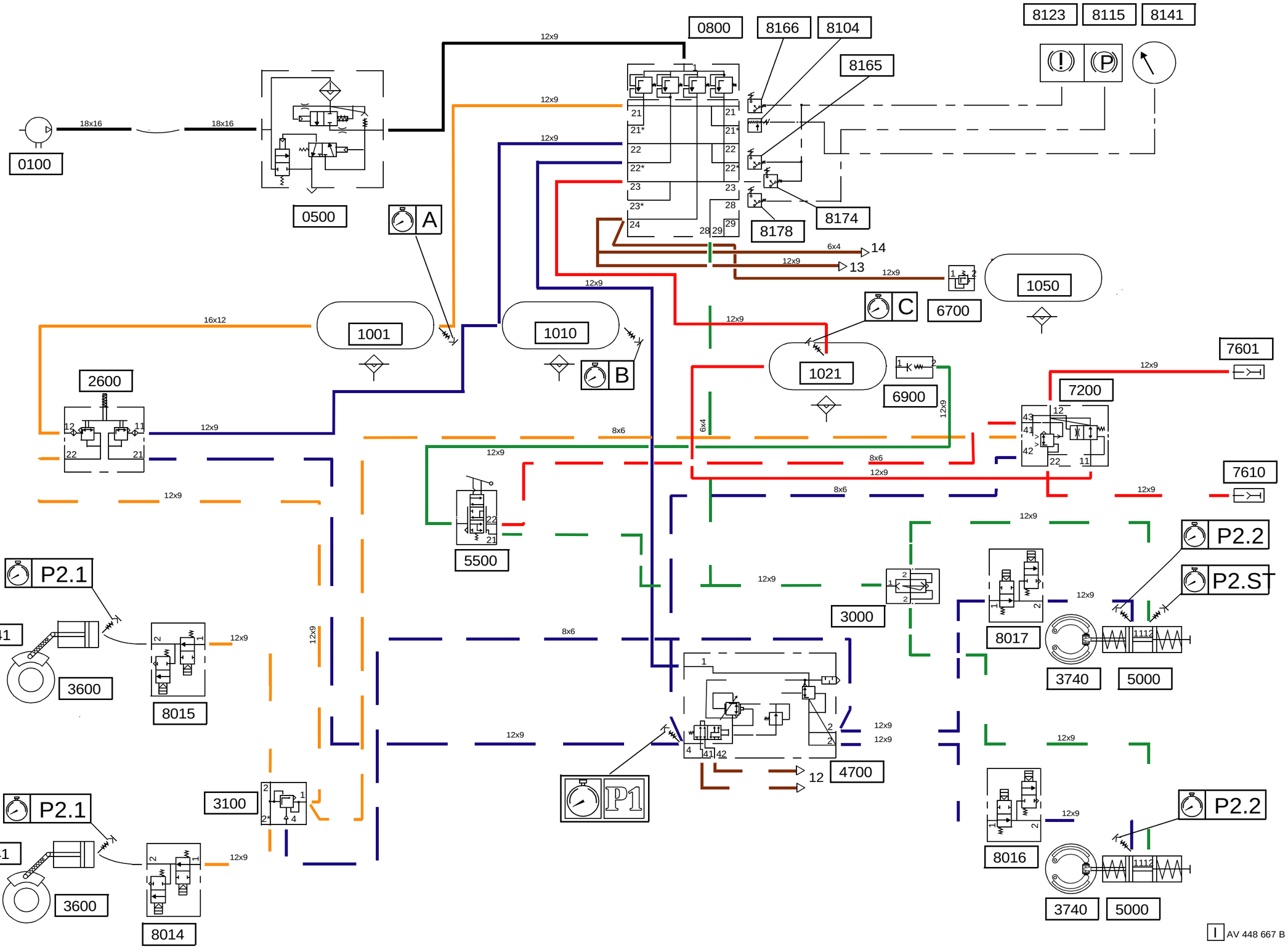
Location of appliances

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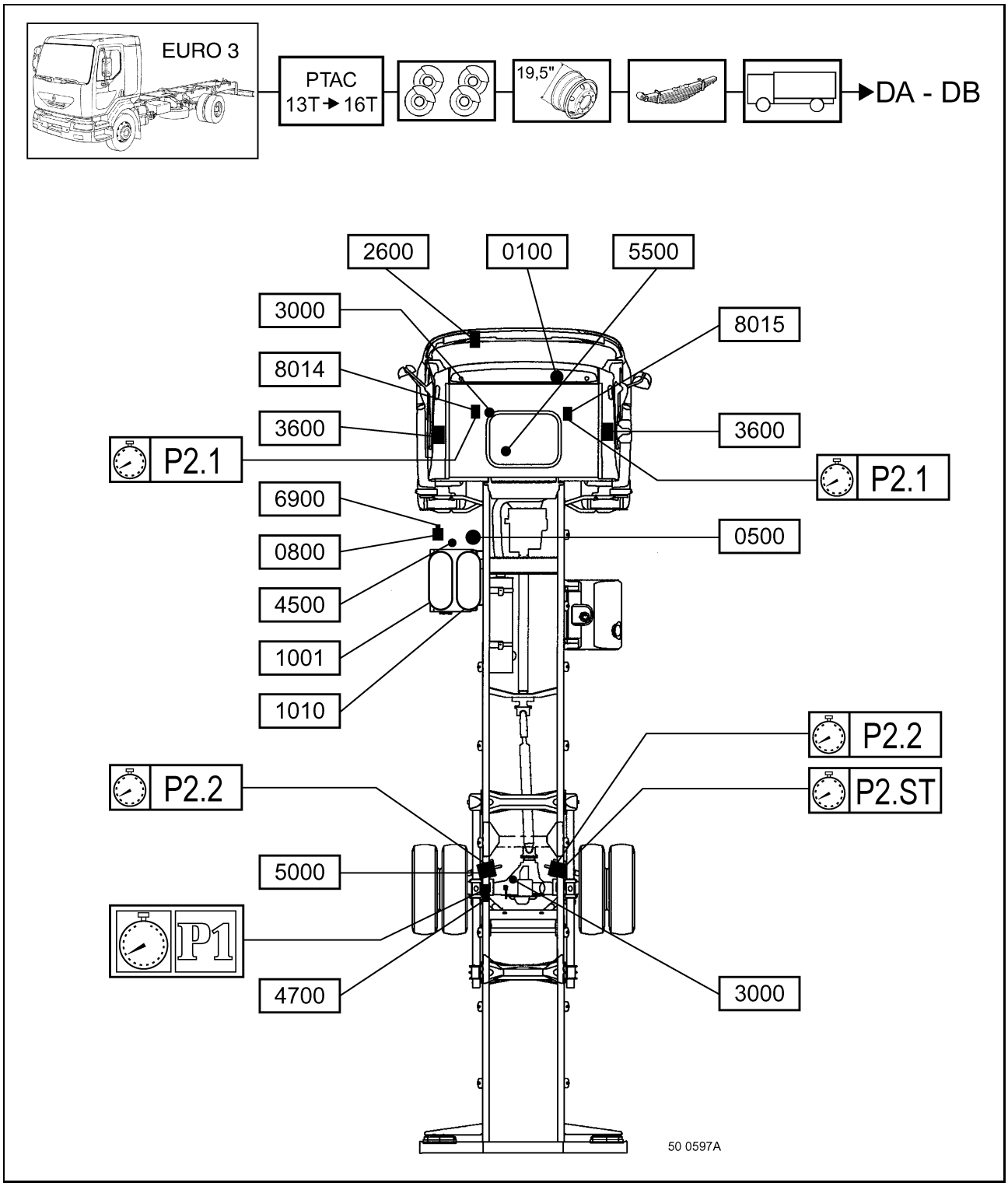
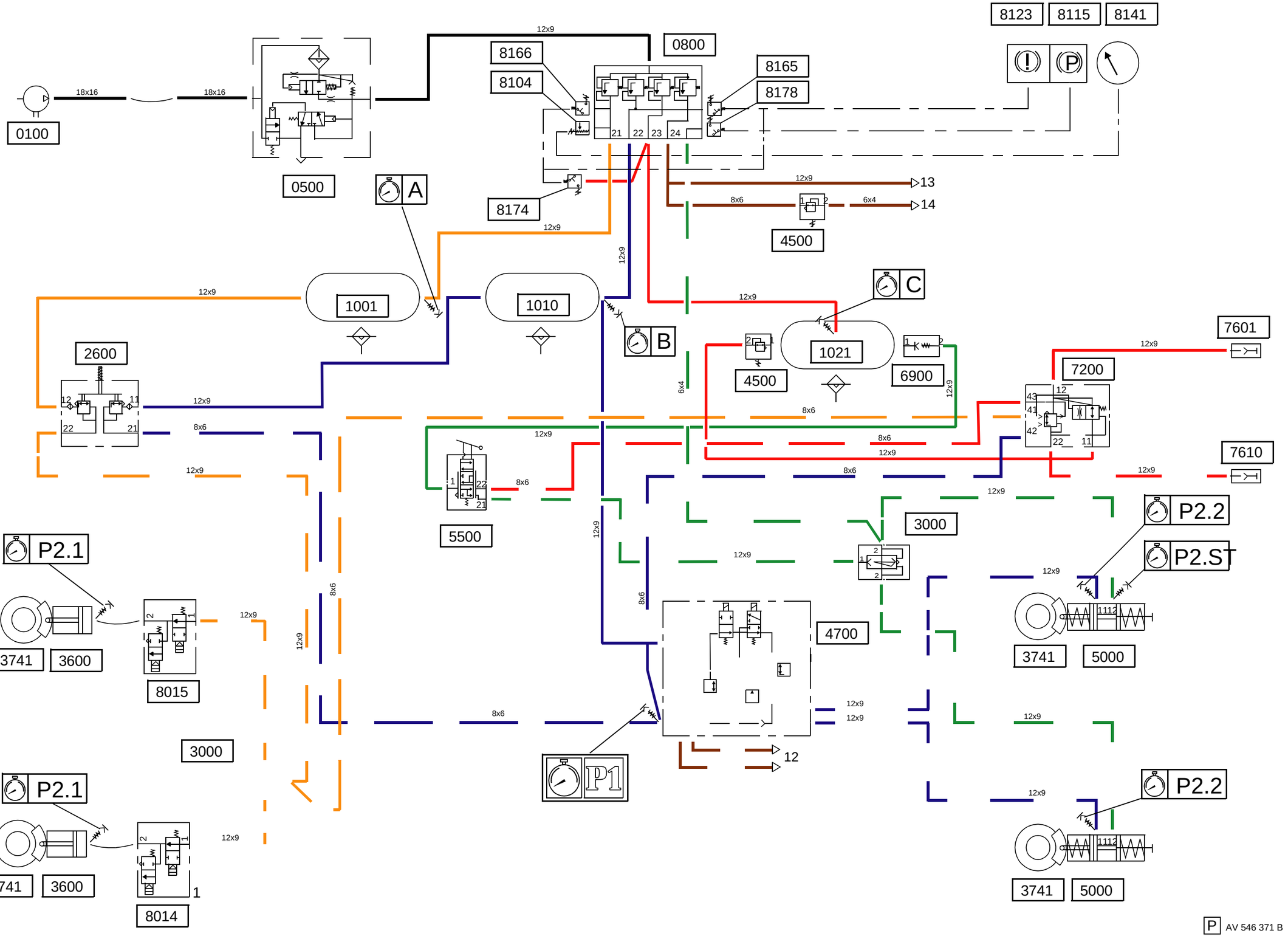
Location of appliances

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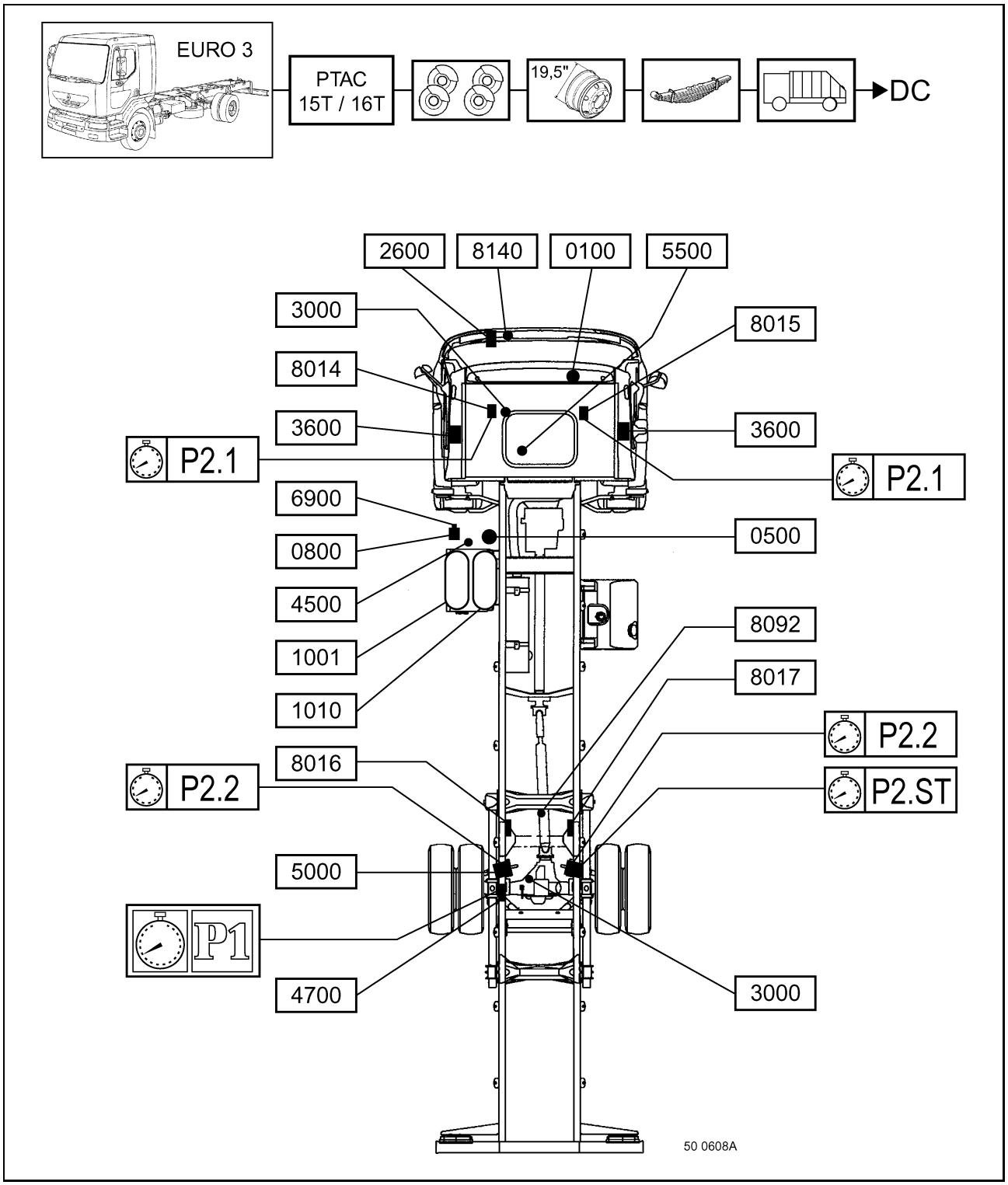
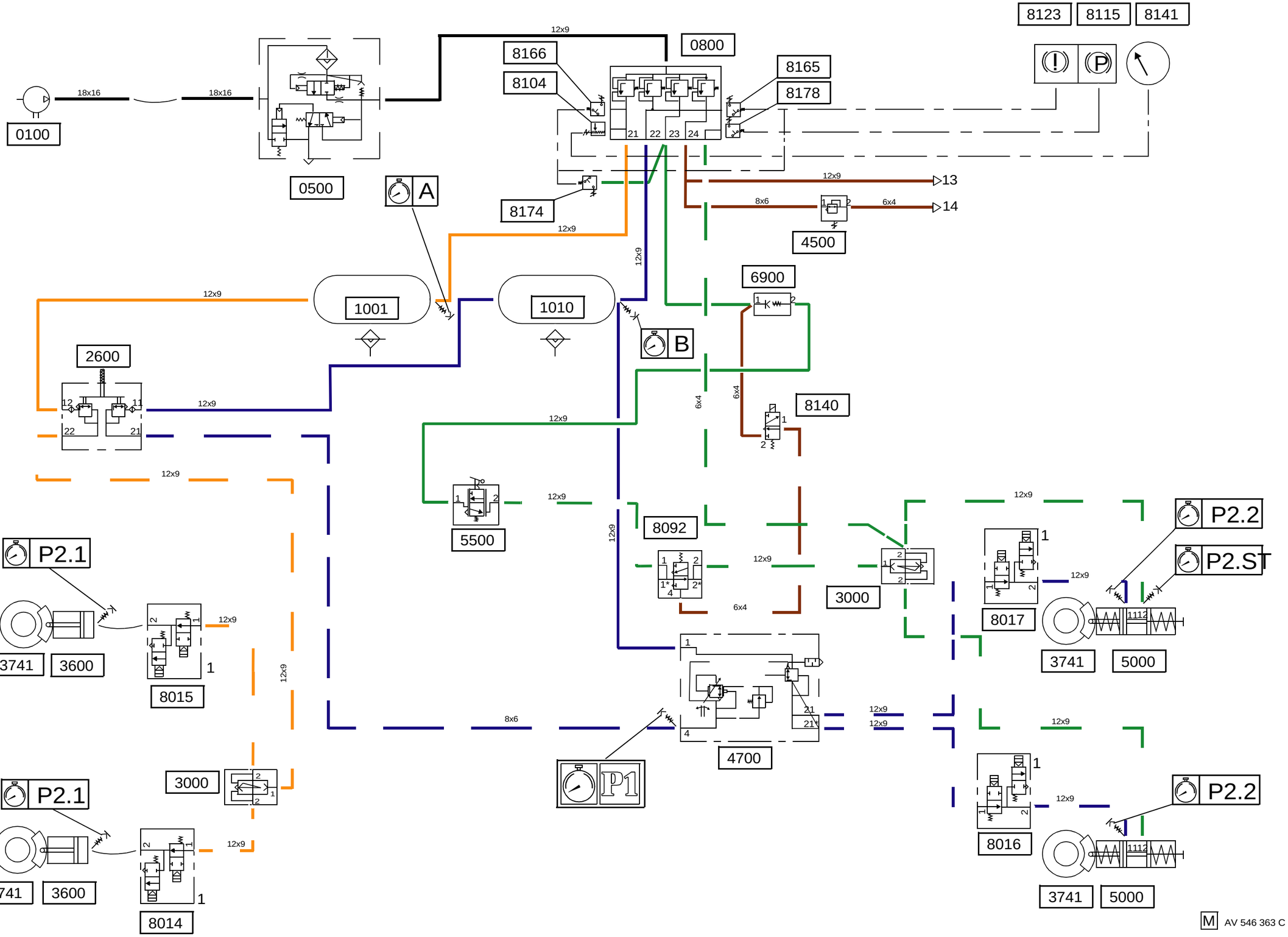
Location of appliances

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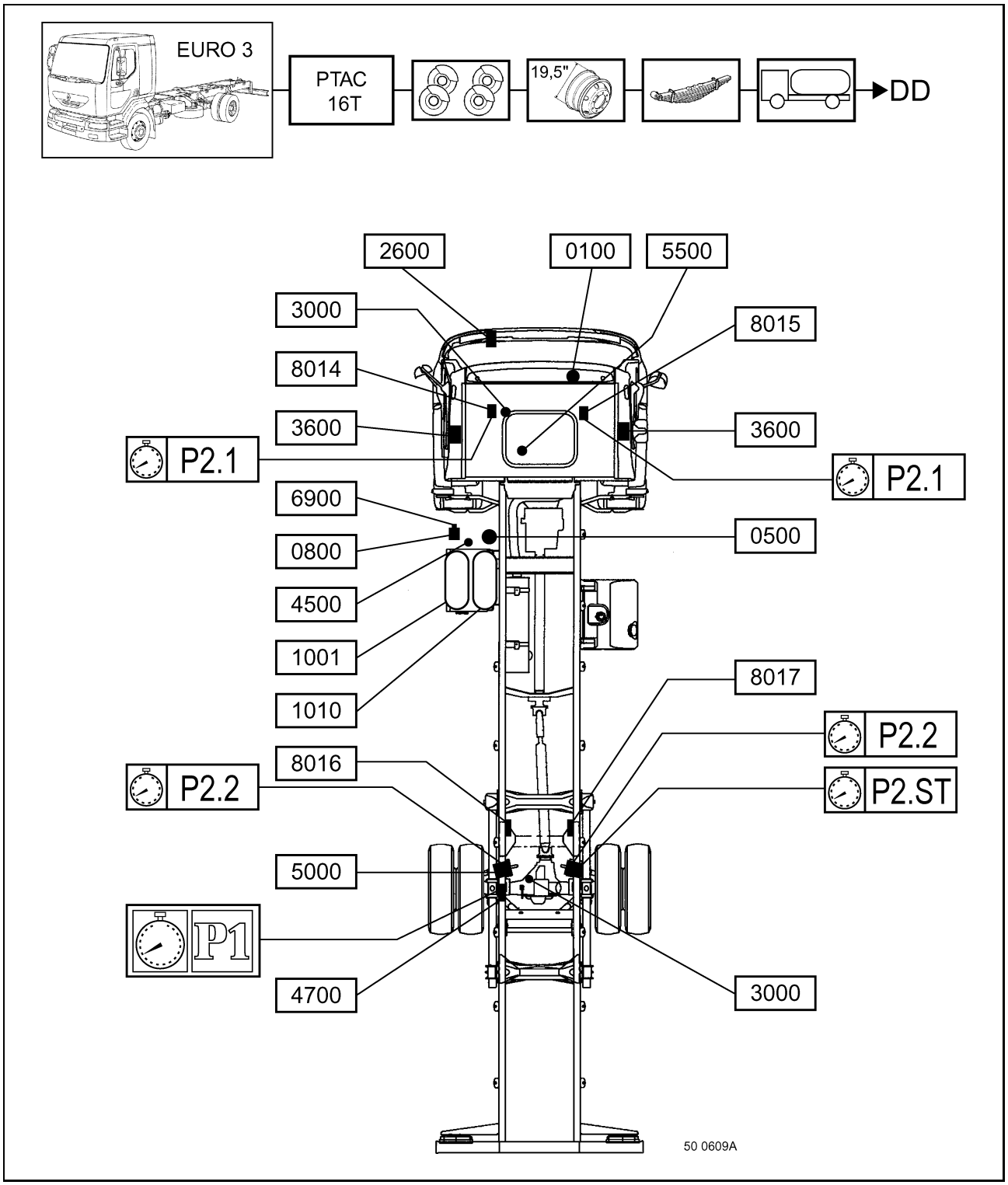
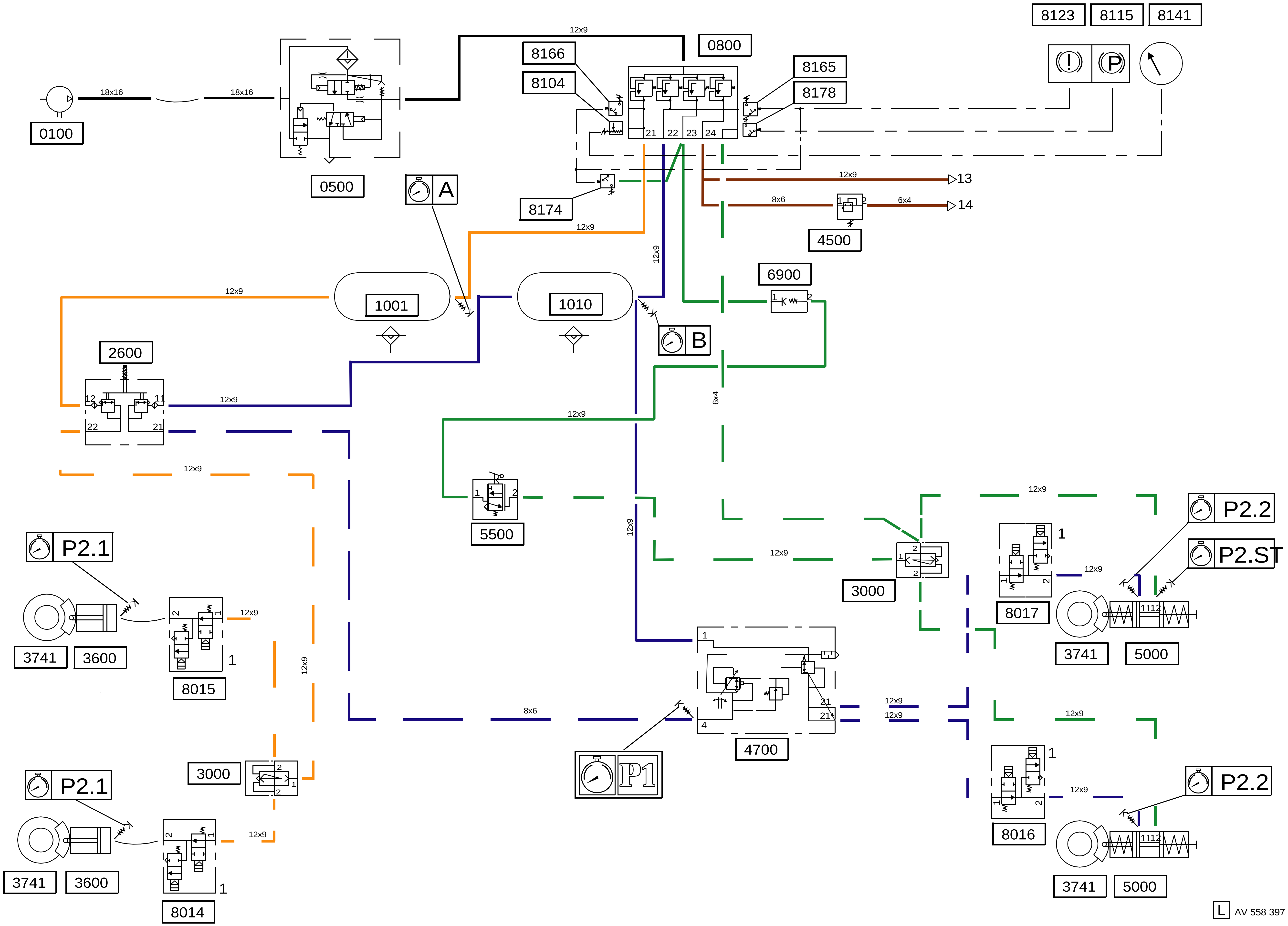
Location of appliances

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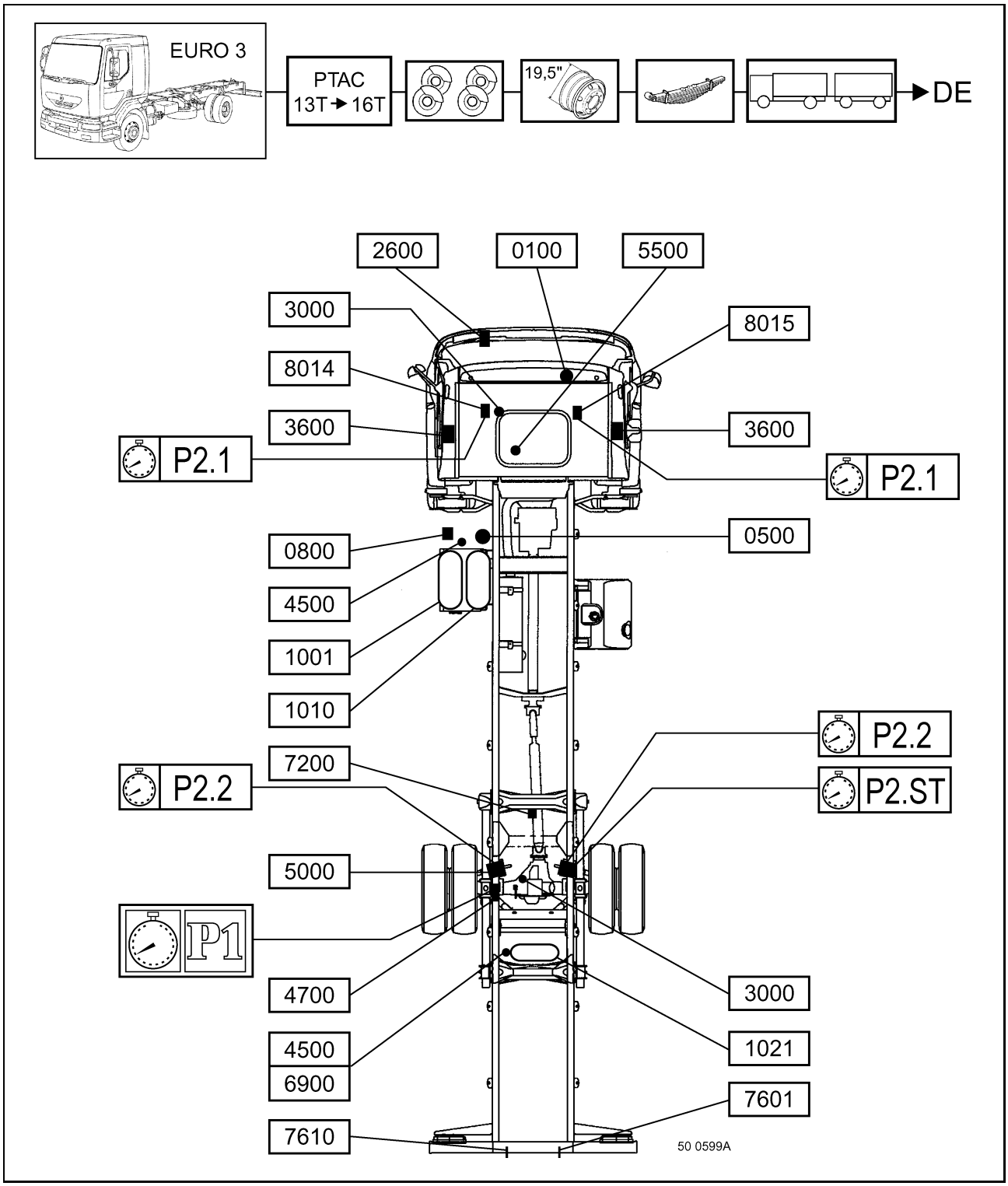
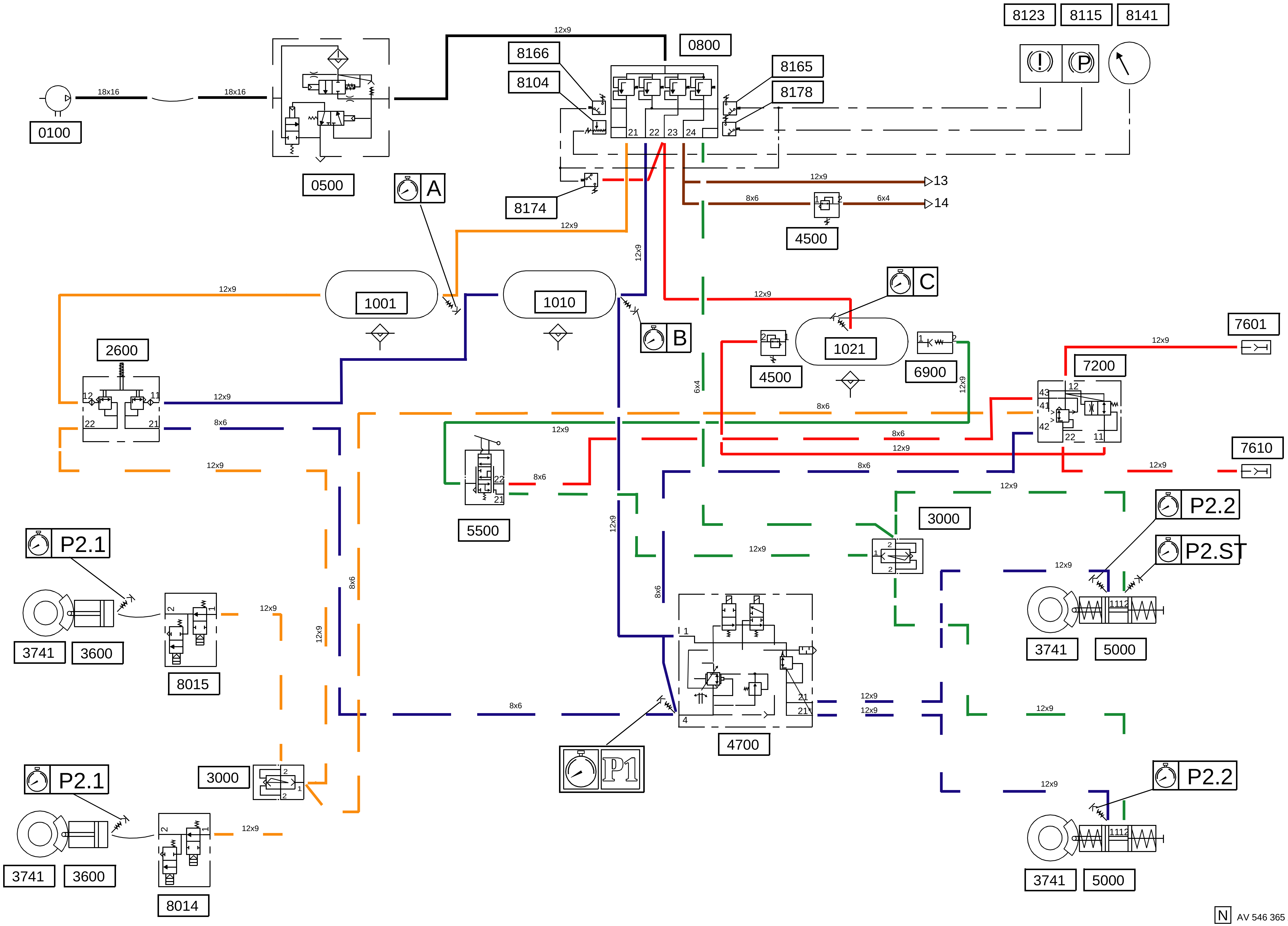
Location of appliances

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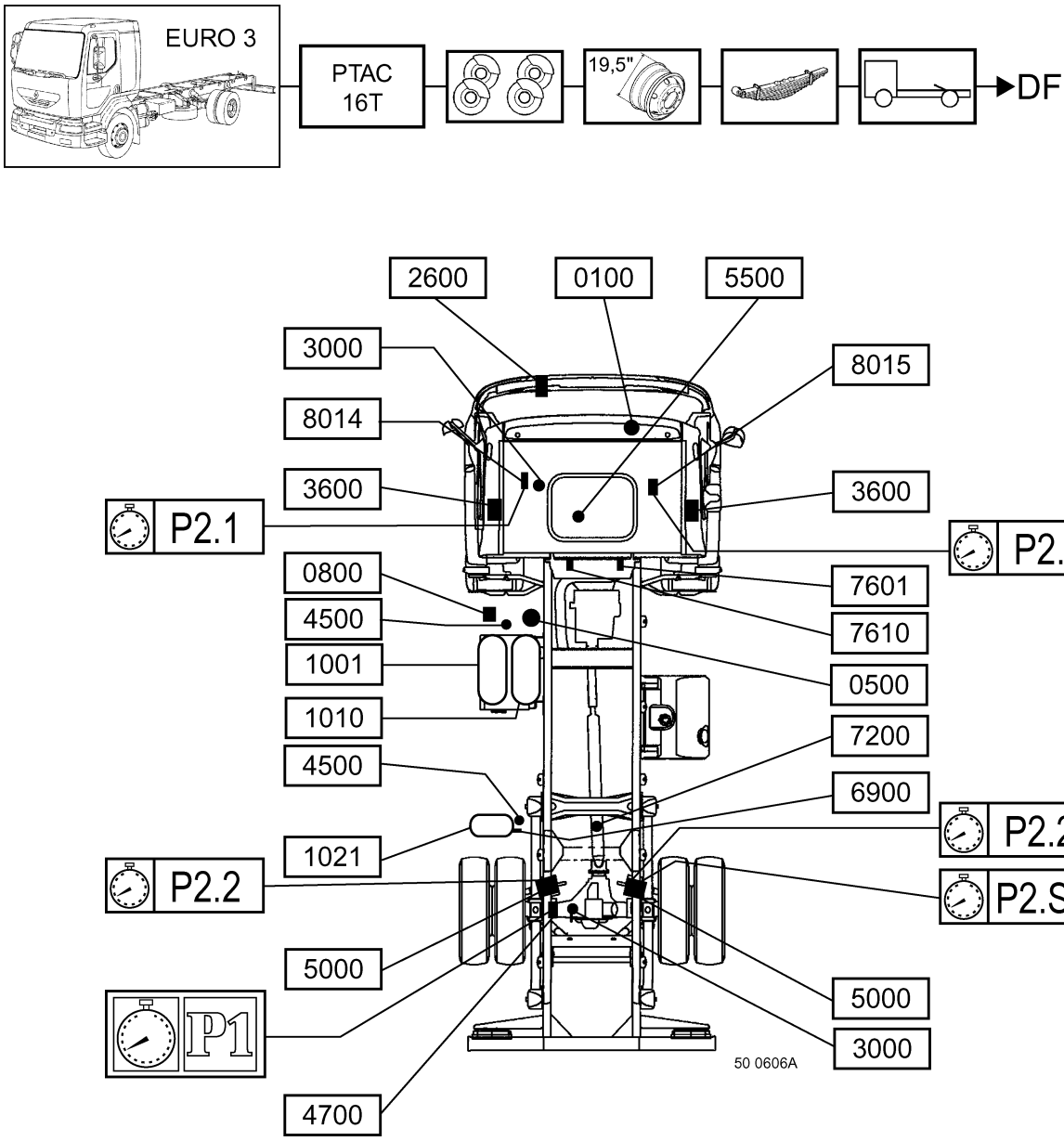
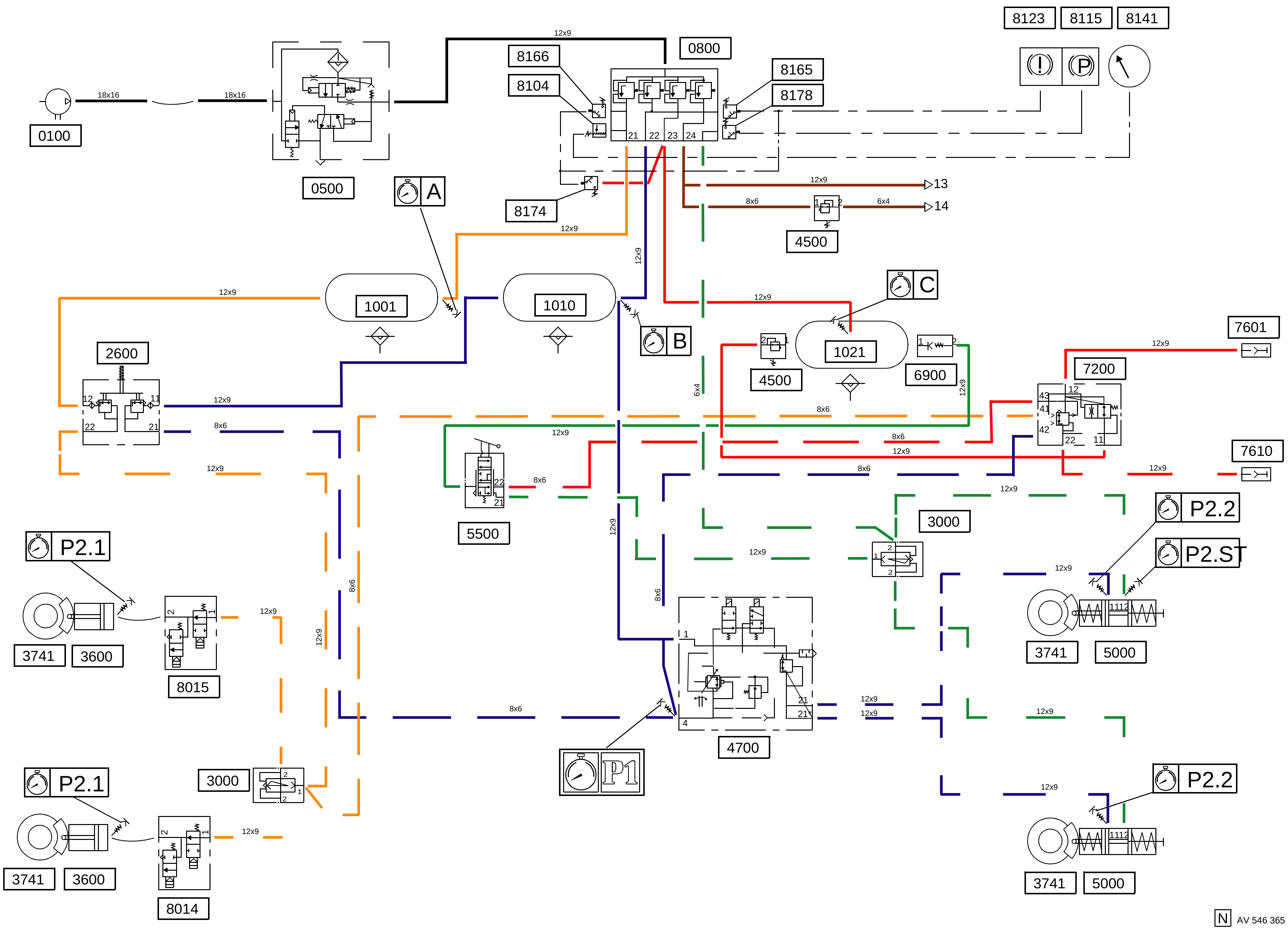
Location of appliances





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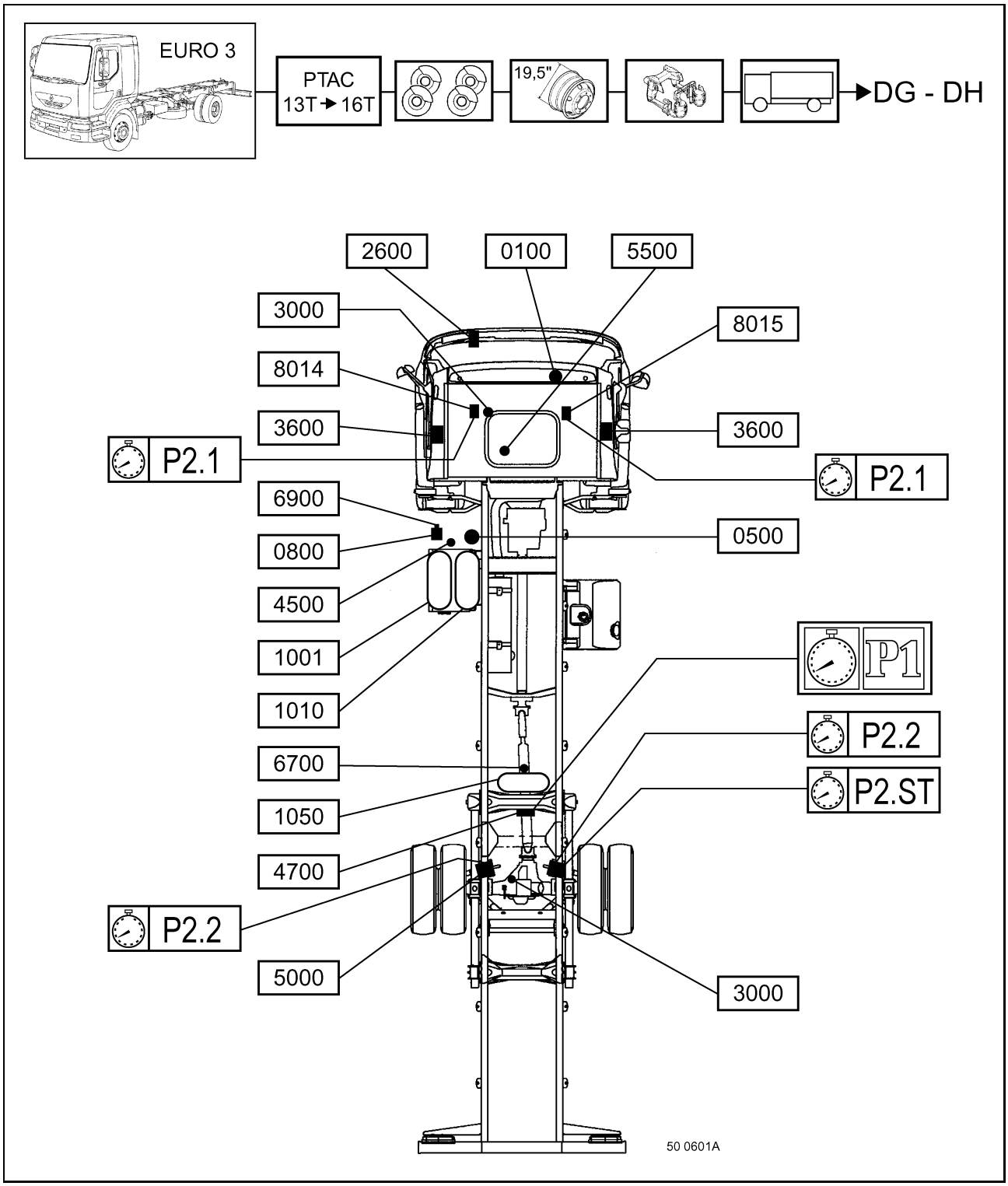
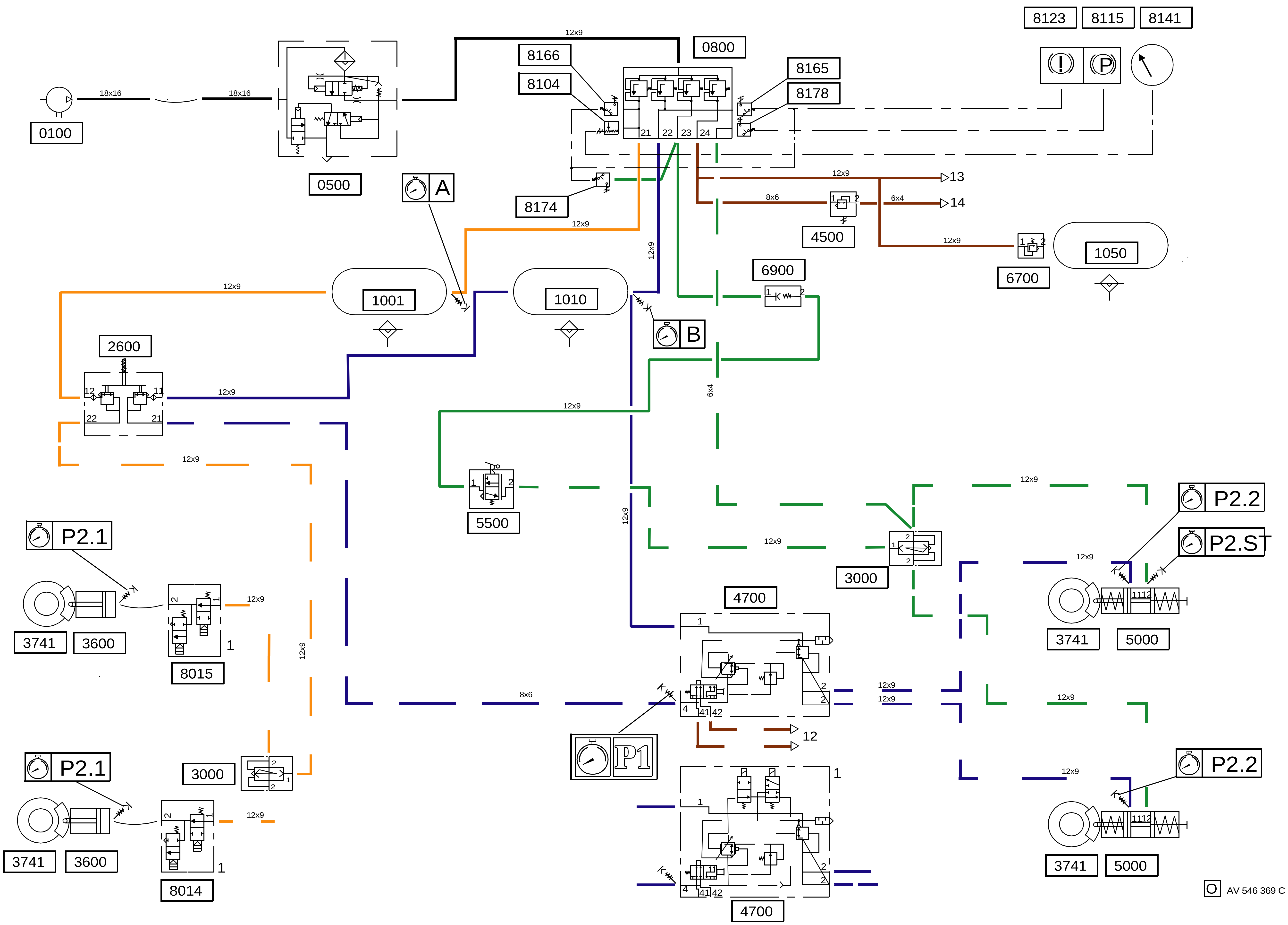
N AV 546 365 A

Location of appliances

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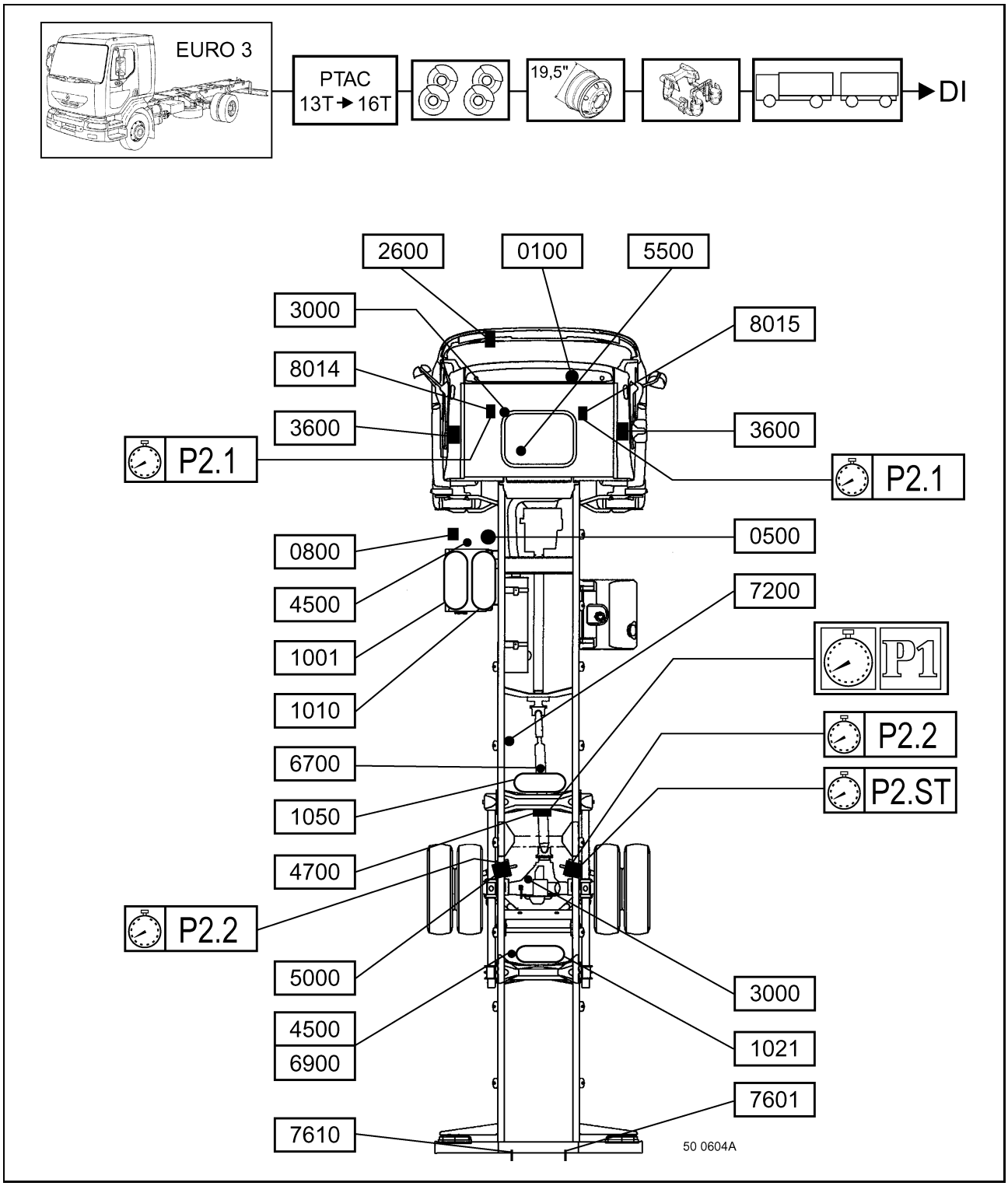
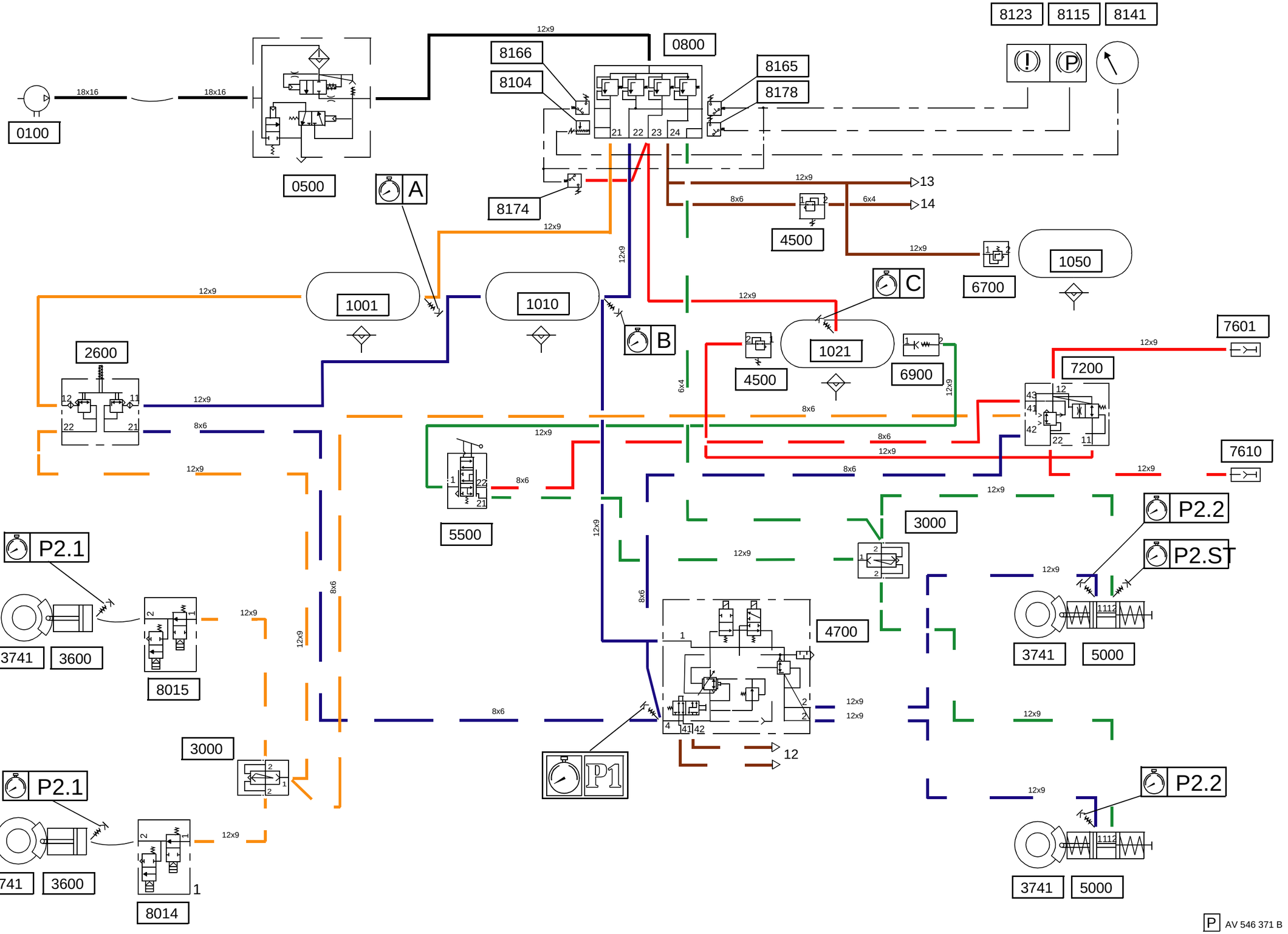
Location of appliances

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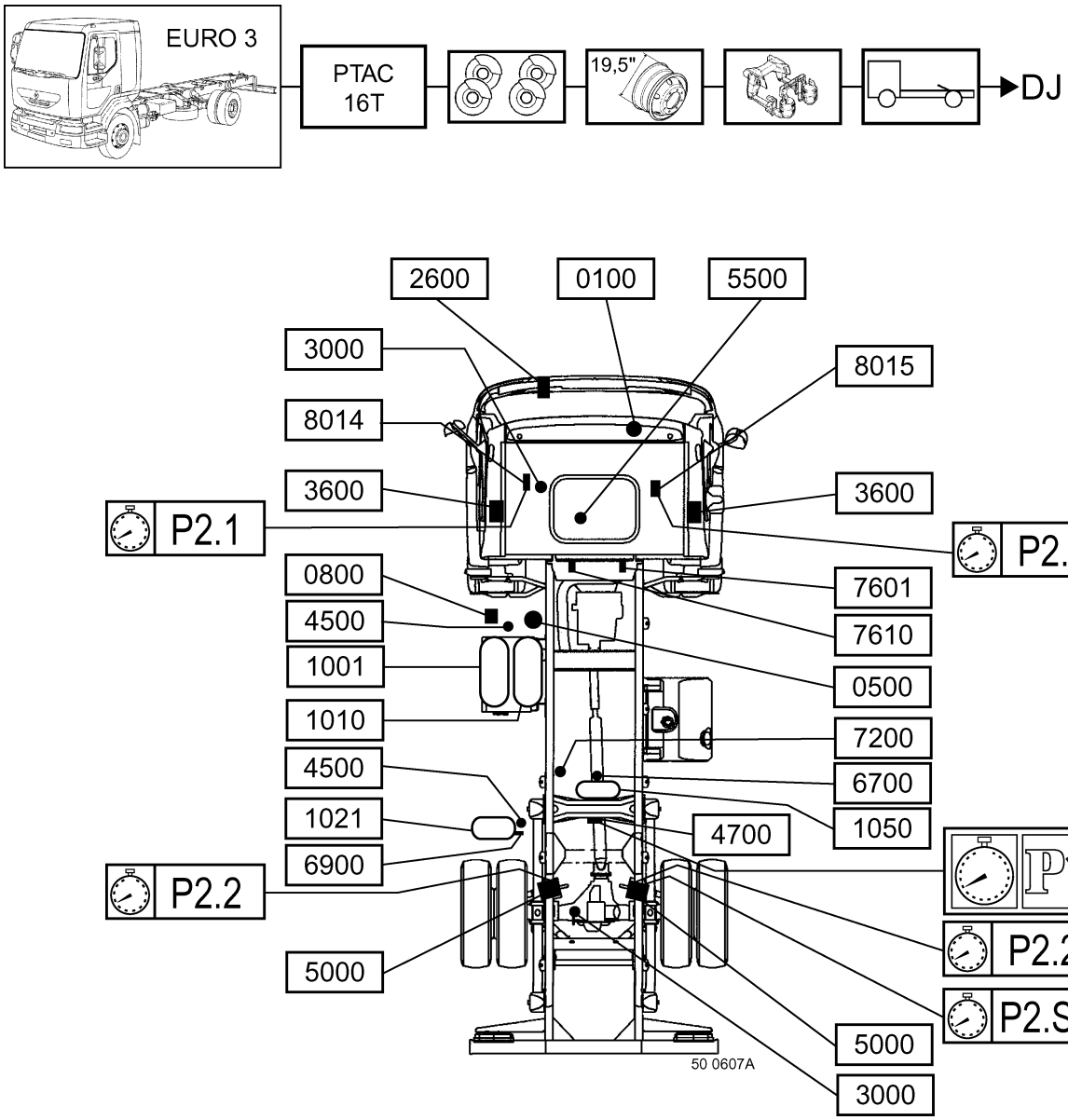
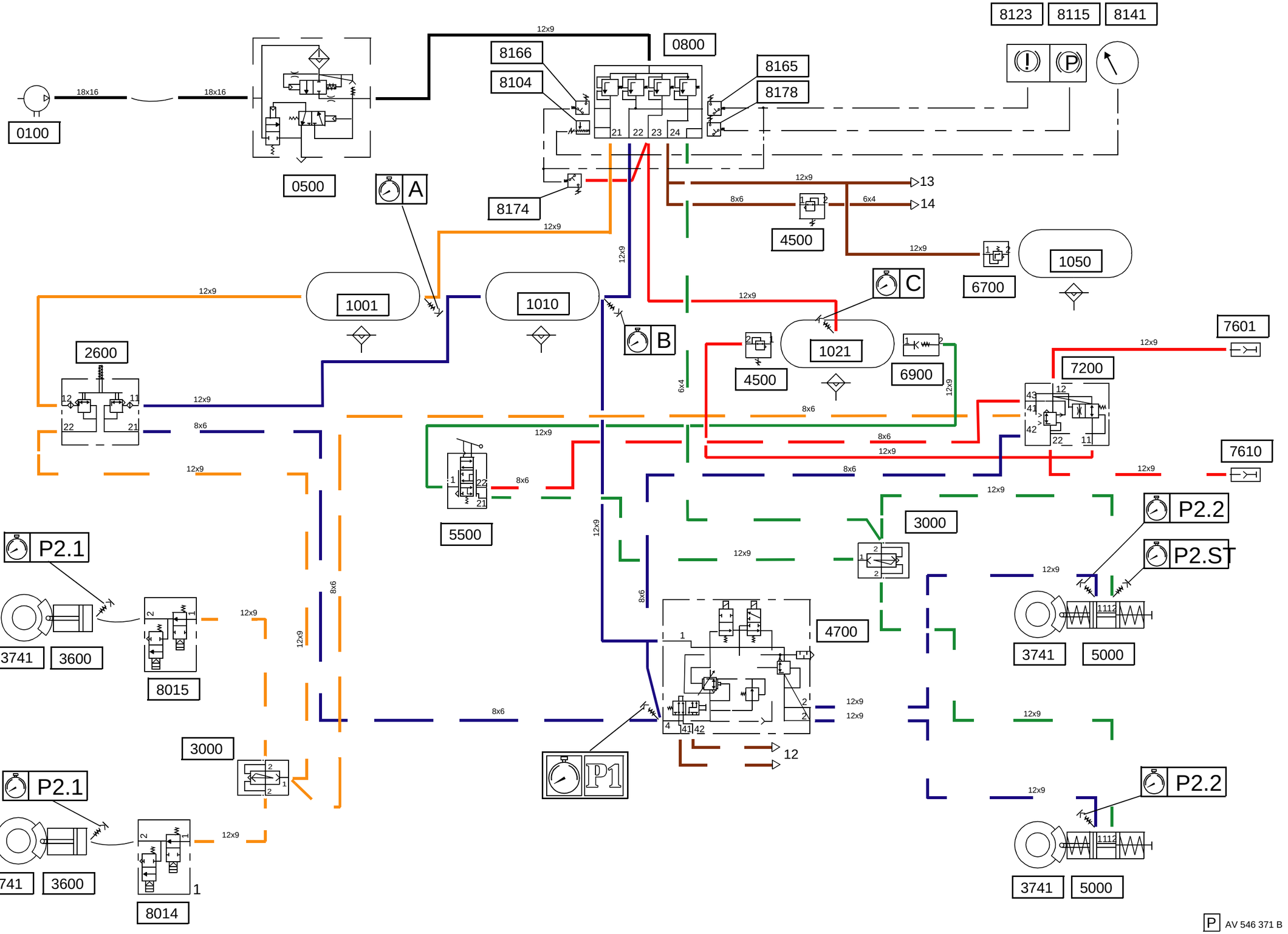
Location of appliances

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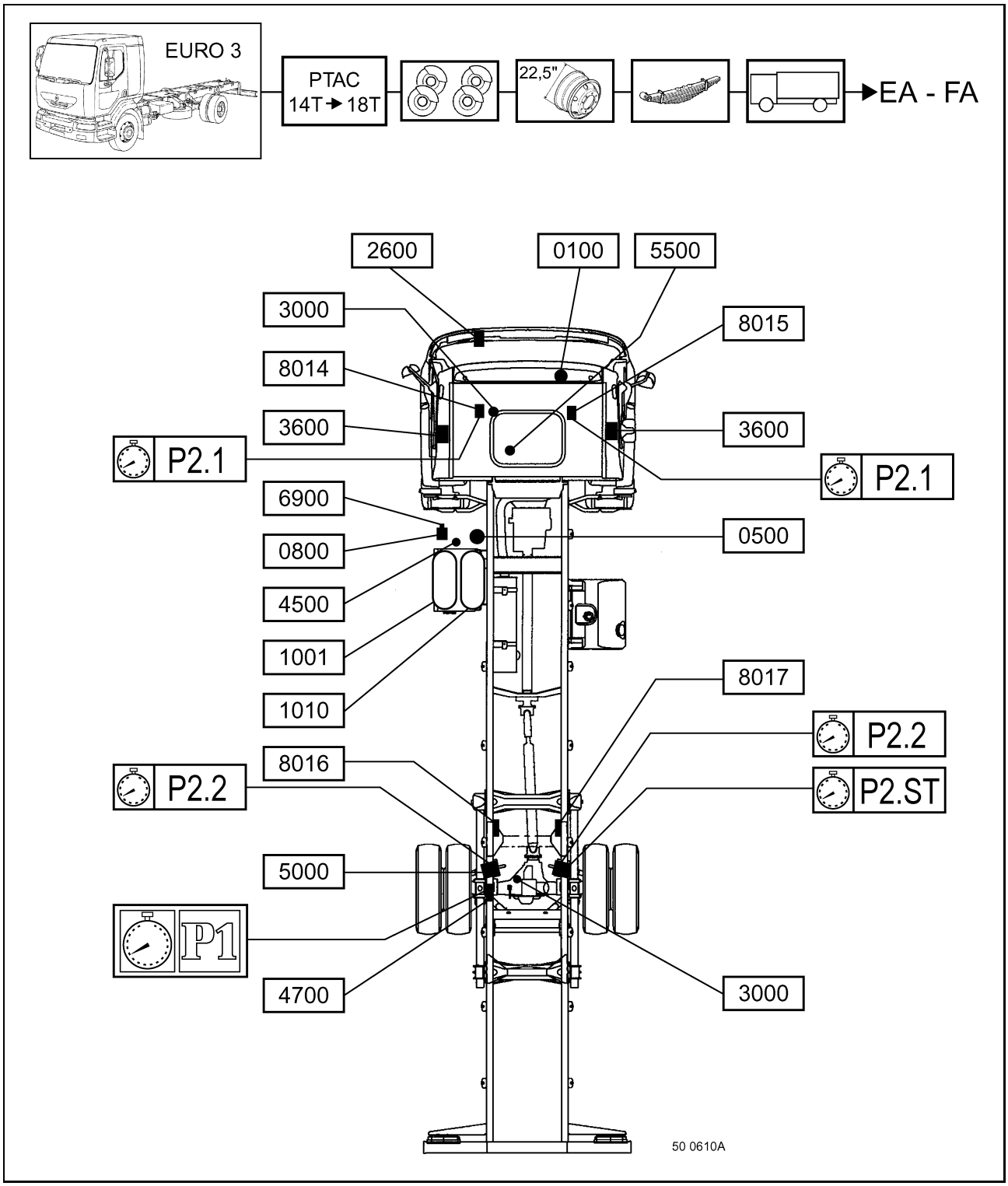
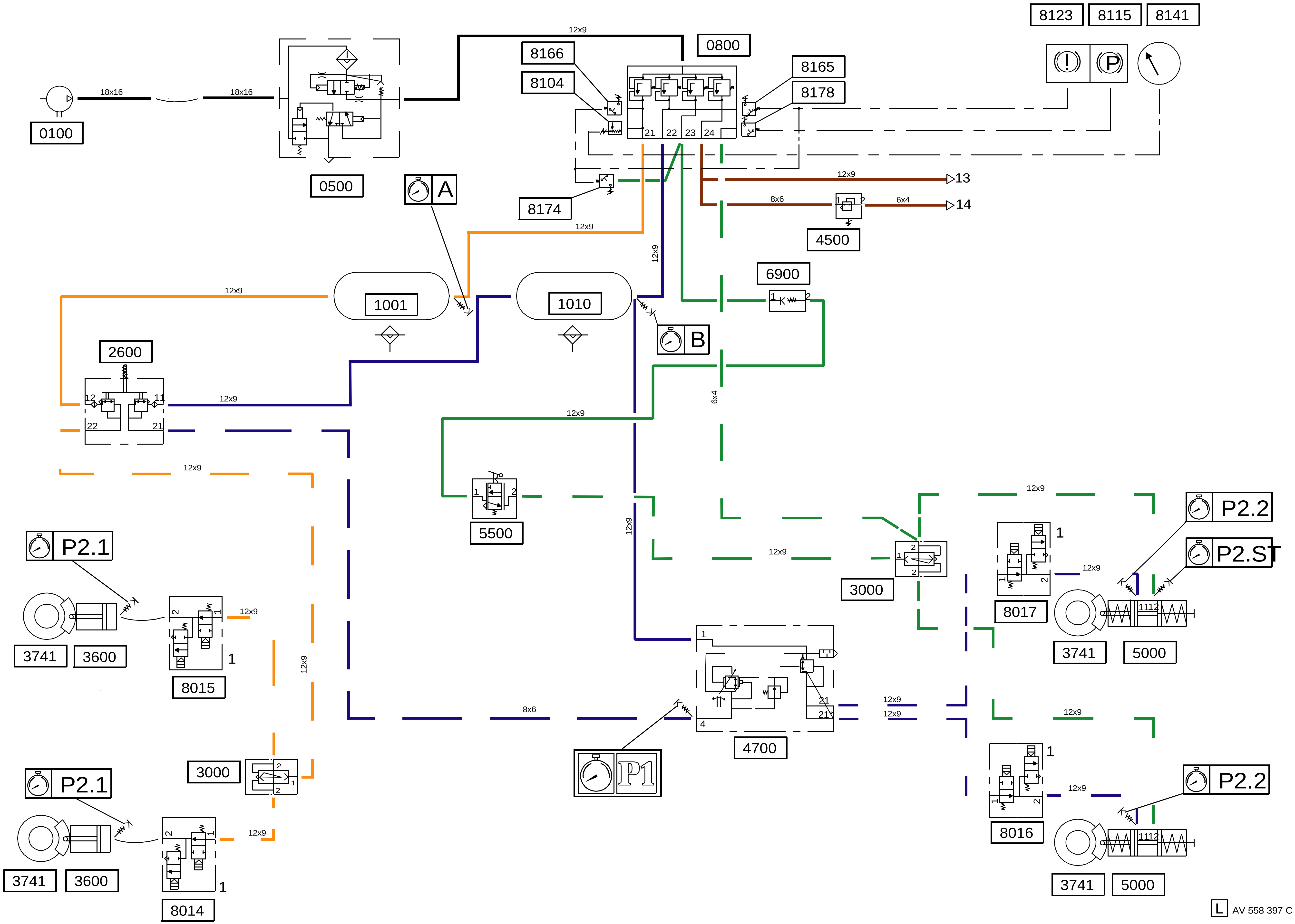
AV 546 371 B

Location of appliances





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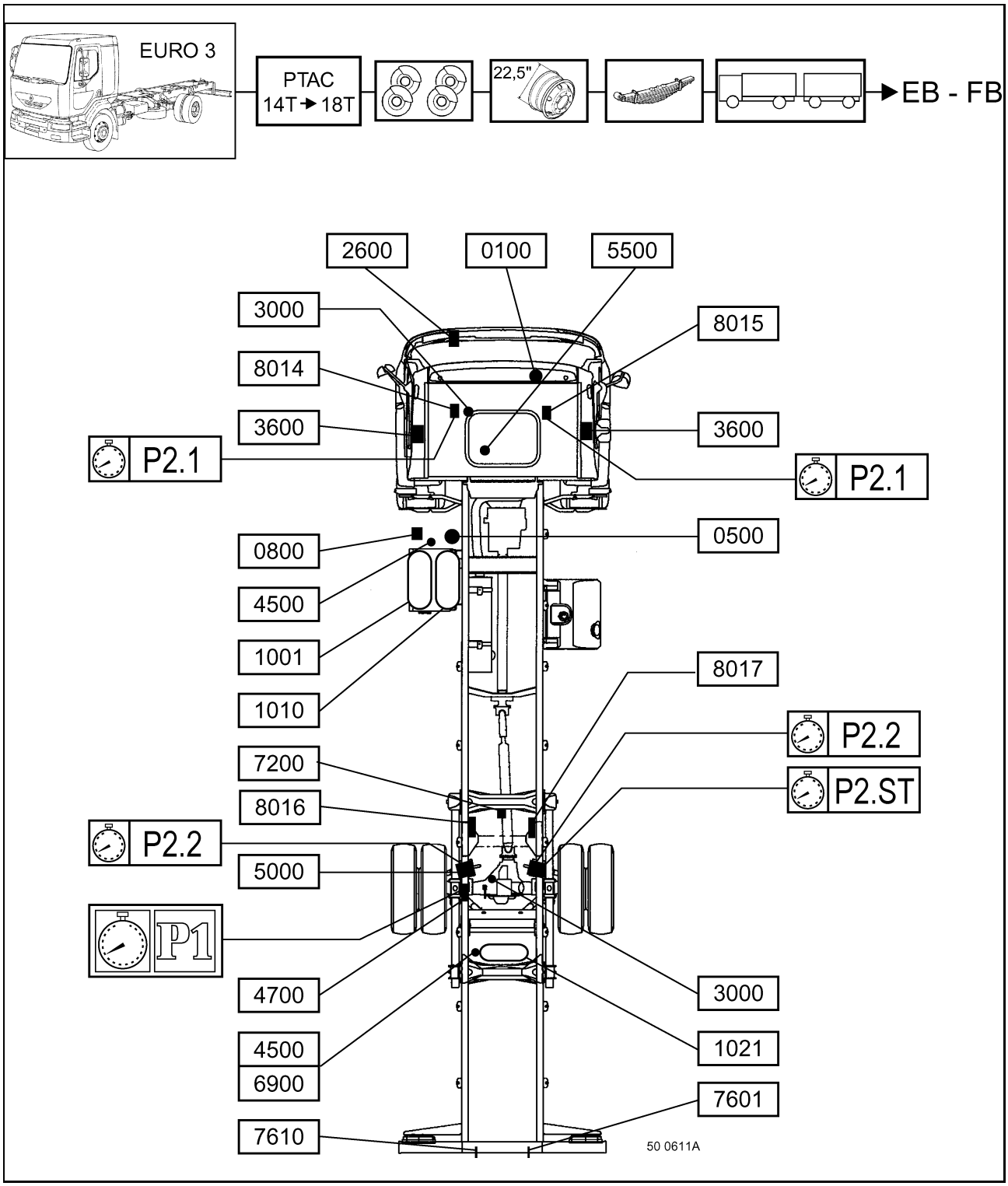
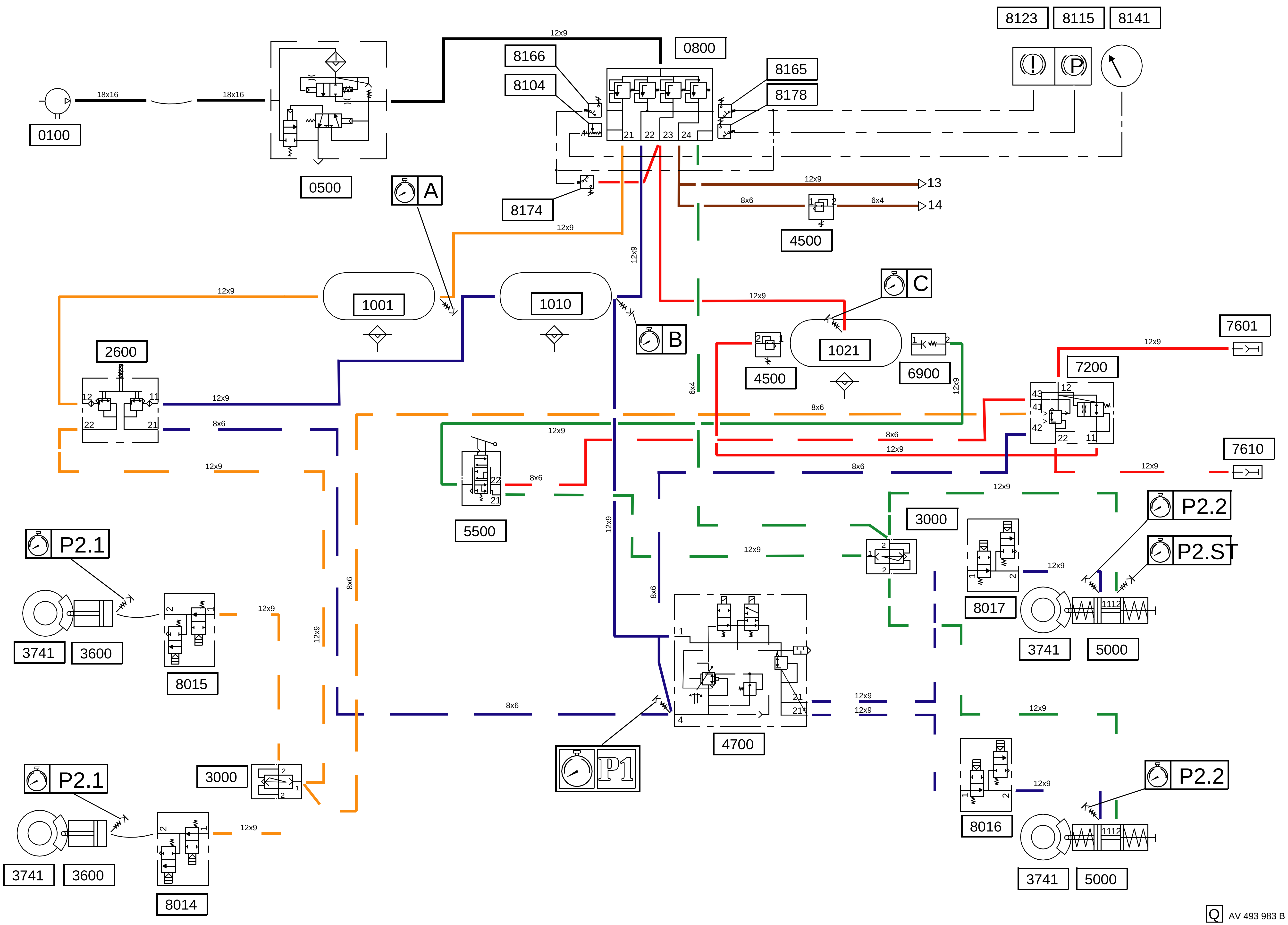
Location of appliances





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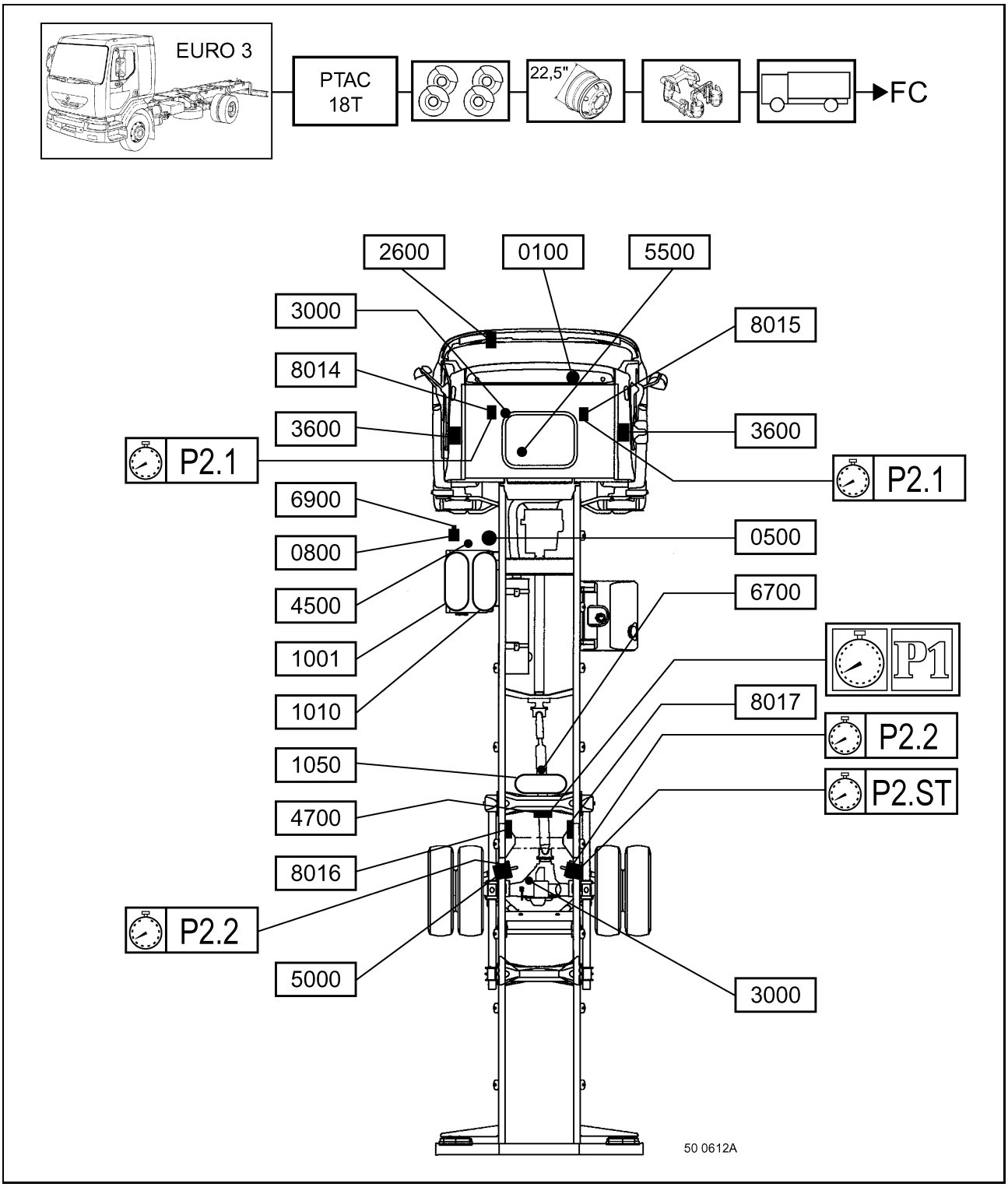
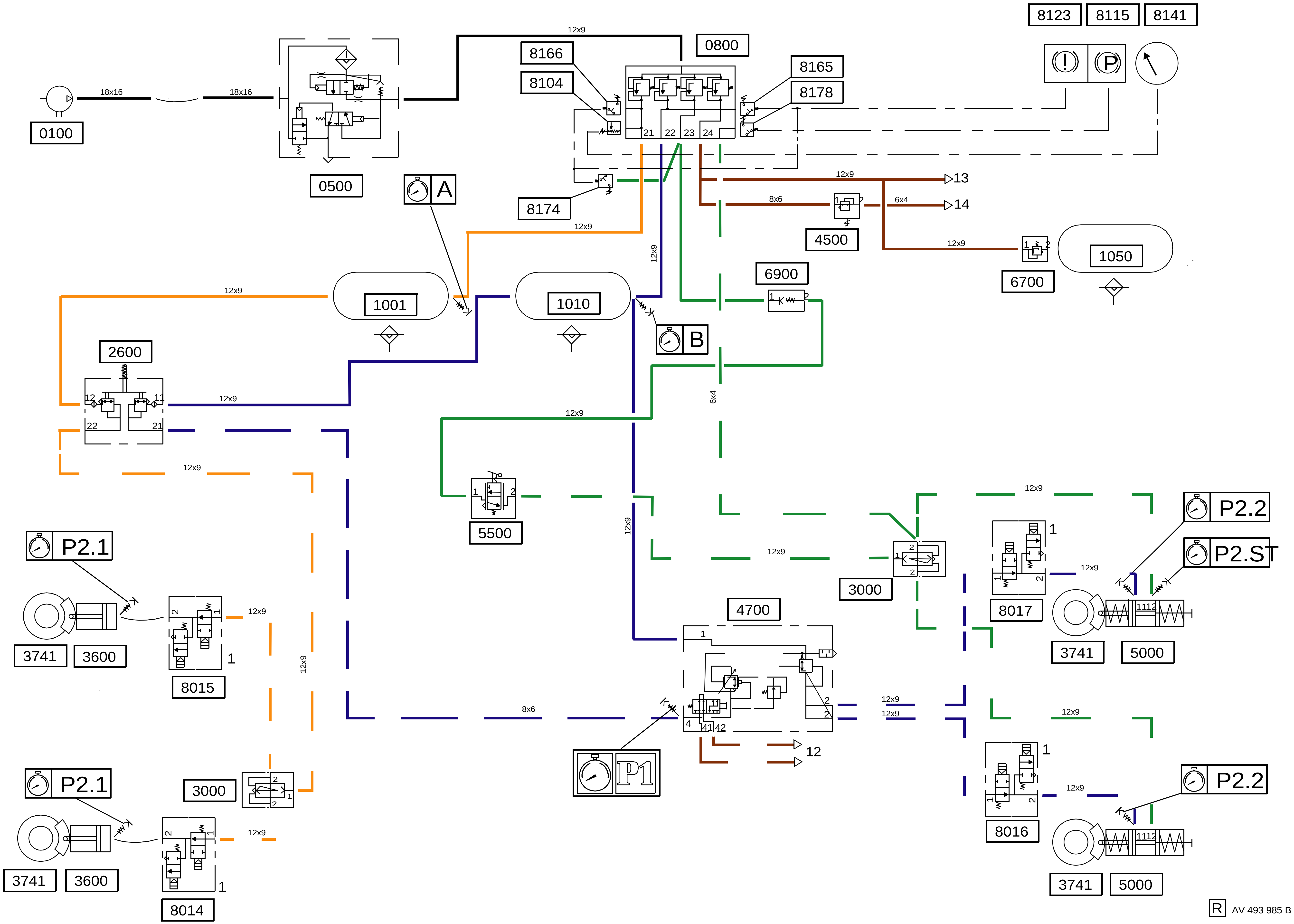
AV 493 983 B

Location of appliances





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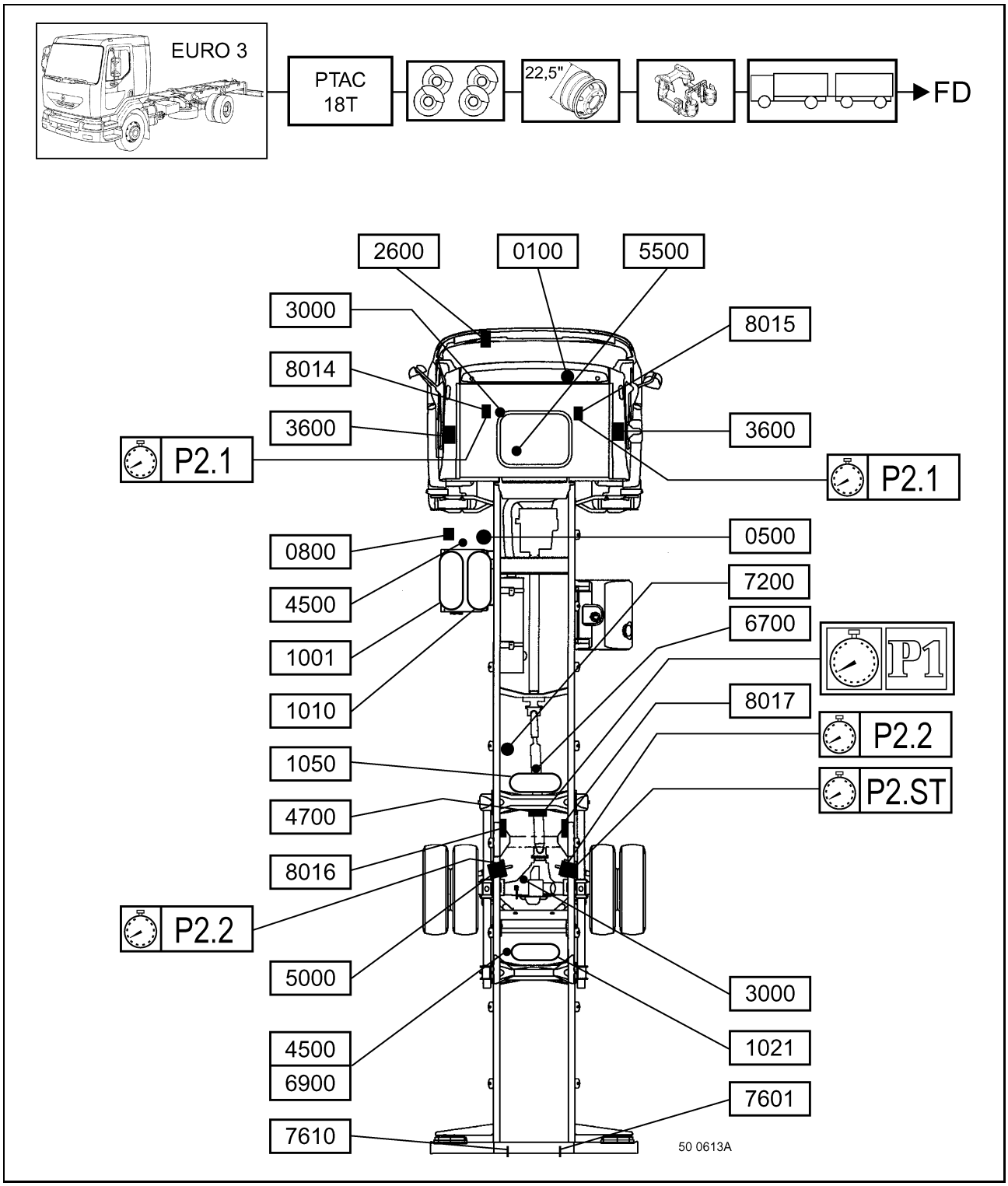
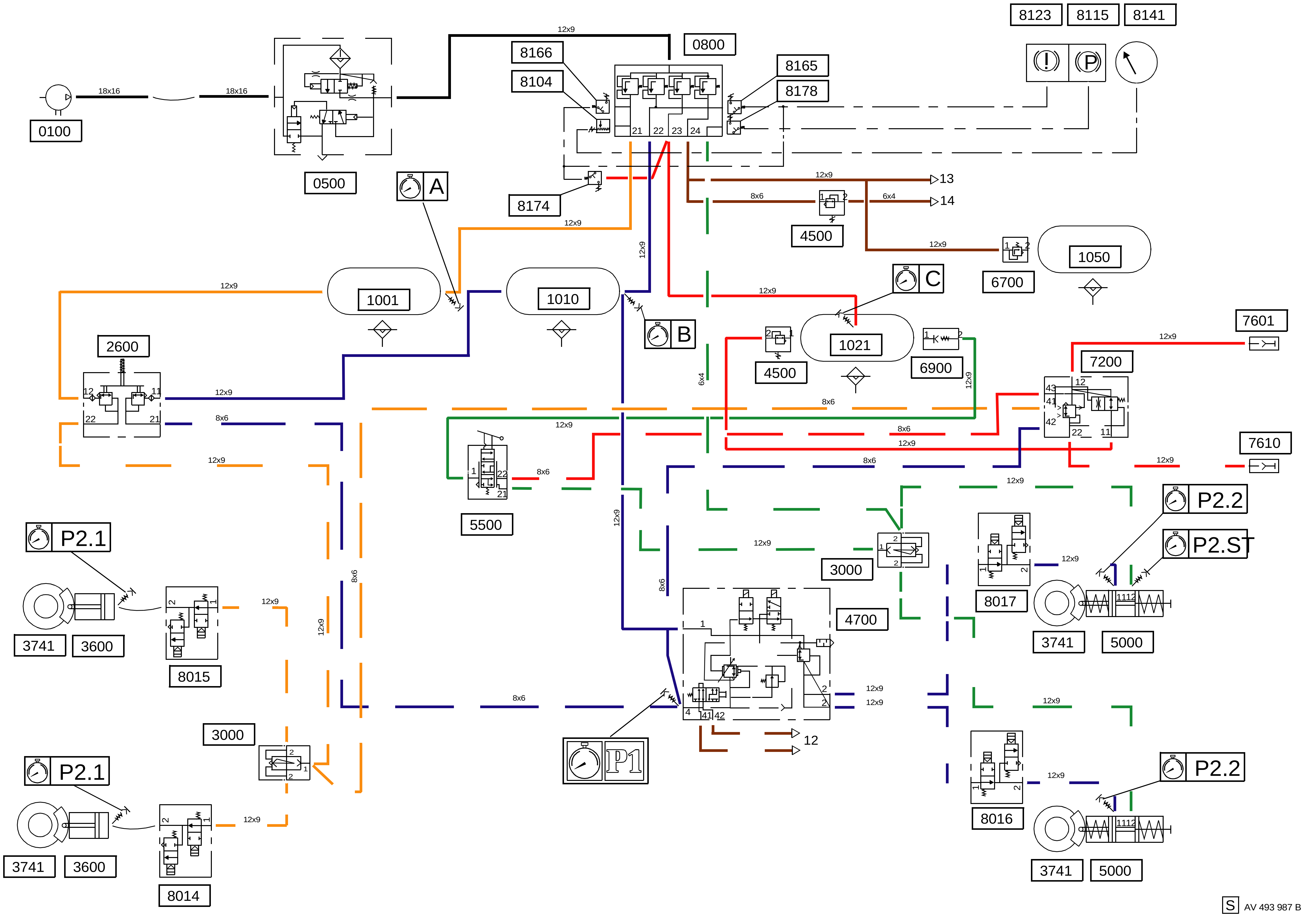
Location of appliances

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TESTING/ADJUSTMENT

TESTING THE BRAKES

Generalities

Braking circuits must be tested not only systematically when there is trouble with the braking system but also periodically to make sure that the safety functions of each circuit are in order.
Recommendation: test whenever replacing brake linings.

Preliminary checks :
Before testing a compressed air circuit, proceed as follows:

- Make a quick mechanical check of the following :
- Brake pedal clearance,
- Adjustment and operation of brake levers,
- Brakes operating clearance,
- Absence of seizure,
- Conformity to original assembly.

- Test circuits for leaks :
- This can be done with soapy water, foam sprayed from an aerosol canister, or using an ultrasonic detector.

The vehicle compressed air system must be held at governing pressure for the whole duration of testing.

Since July 1992 (NF standard "EN286-2"), compressed air tanks have a validity period of **15 years** and are not to be re-used. After that period, **they must be replaced.**

VEHICLE IN "ROAD" POSITION

Use test case n° **2423**.

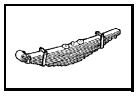
Testing the air supply and the governing pressure

Drain the air from the tanks and check for absence of water in tanks (the presence of water is indicative of air dryer malfunction).
Using a flexible pipe n° **7096**, connect a pressure gauge to point(s) **A, B, C**.
Re-pressurize the air circuit and, during this operation, check the pressure at which the instrument panel air pressure warning lights go out (see value in "Technical Data" chapter).
Check the cut-out pressure: at point(s) **A, B** (see value in "Technical Data" chapter according to vehicle type).
Actuate the brake pedal several times until the air dryer cuts in again. Check the cut-in pressure (see value in "Technical Data" chapter).
Using a flexible pipe n° **7096**, connect a pressure gauge to point(s) **P2.ST**.
Create a steady leak at the protection valve inlet (Caution: pressurized circuit). The minimum guaranteed pressure should be at **4.5** $^{0/+0.5}$ **bar** at point(s) **A, B, C**.
The pressure at point(s) **P2.ST** should not drop below **4.5 bar**.

Testing the service brake circuit

Using a flexible pipe n° **7096**, connect a pressure gauge to point(s) **P1, P2.1, P2.2**.
Progressively depress the brake pedal as far as maximum braking.
Check the progressiveness and simultaneousness of change in pressure and their values at point(s) **P1, P2.1, P2.2**.

Testing the load sensing valve



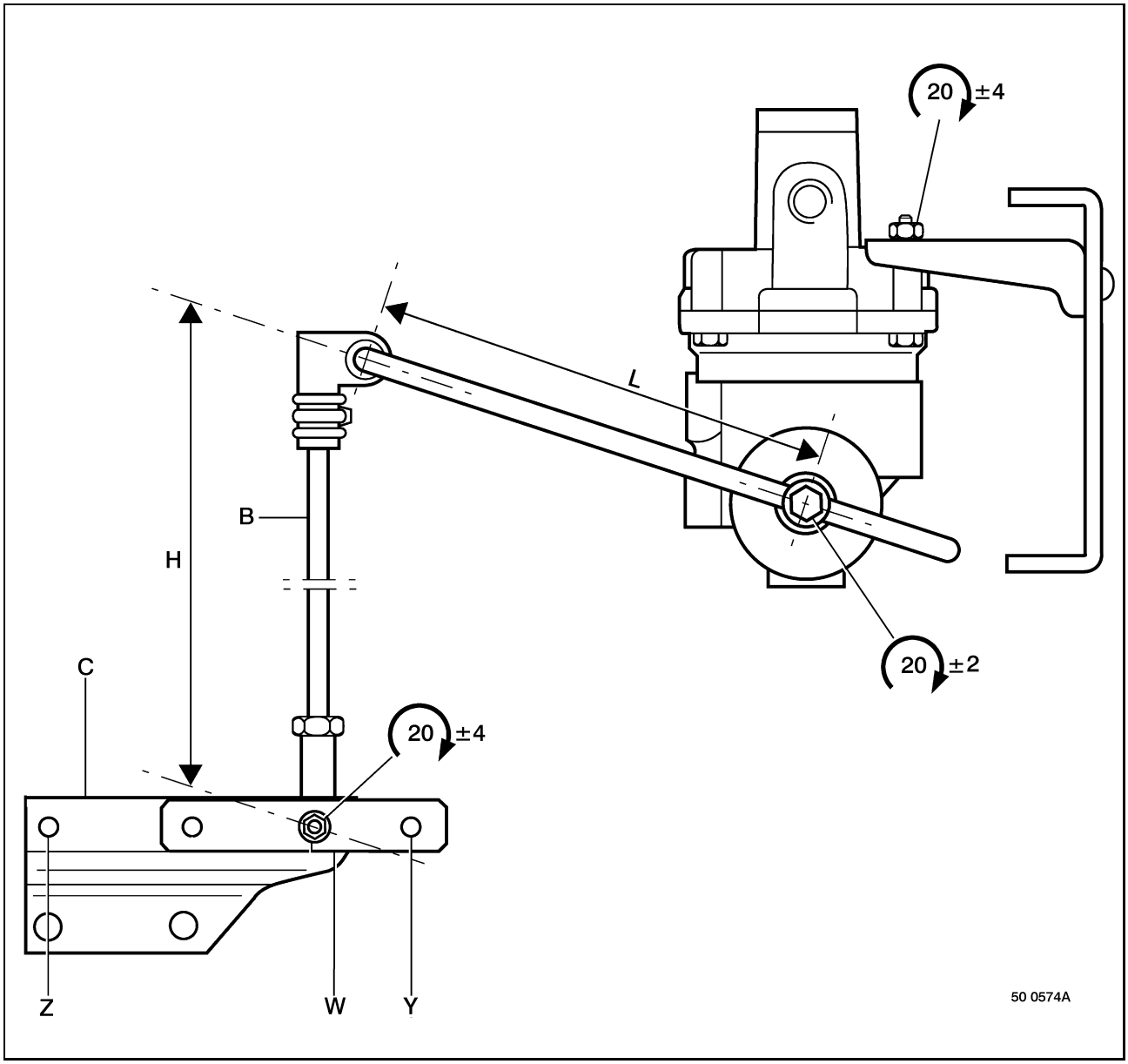
Vehicle equipped with rear mechanical suspension

Testing can be carried out :
- either according to the vehicle load, using the rating plate glued to the inside of the RH door of the cab (Check that the vehicle type agrees with the reference number on the rating plate - see table page E-17) ;
- or according to the angle of the control arm **(A)**, using the diagram in the workshop manual according to the load sensing valve type.

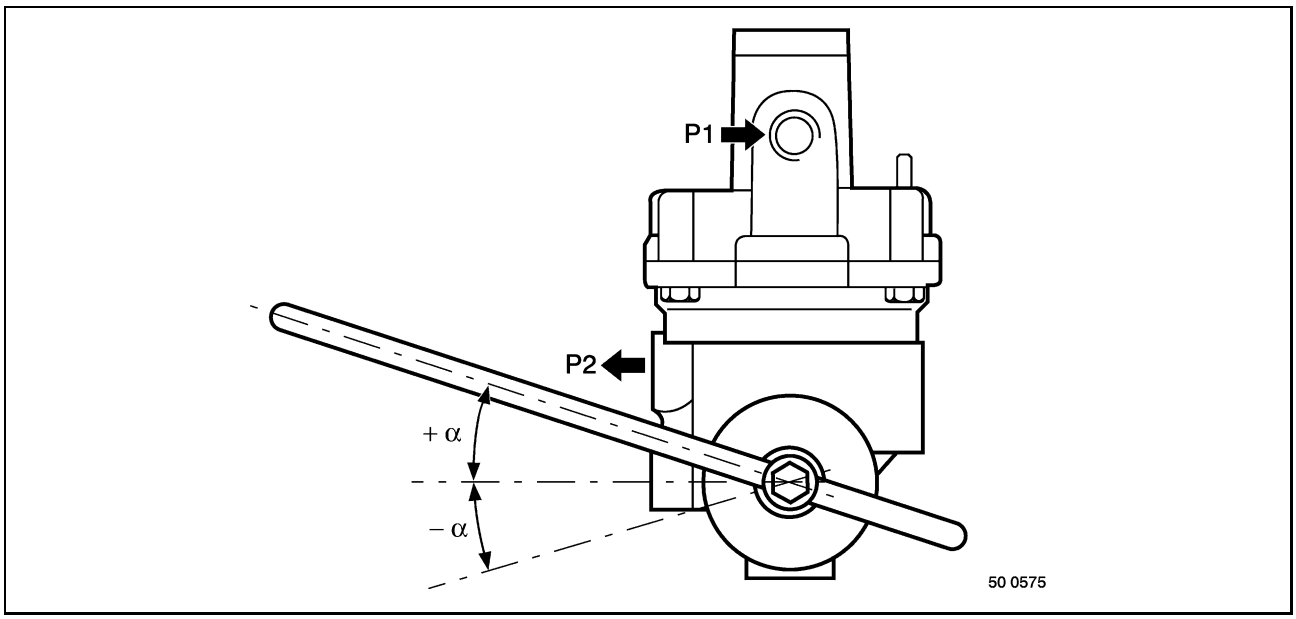
Testing using the control arm.

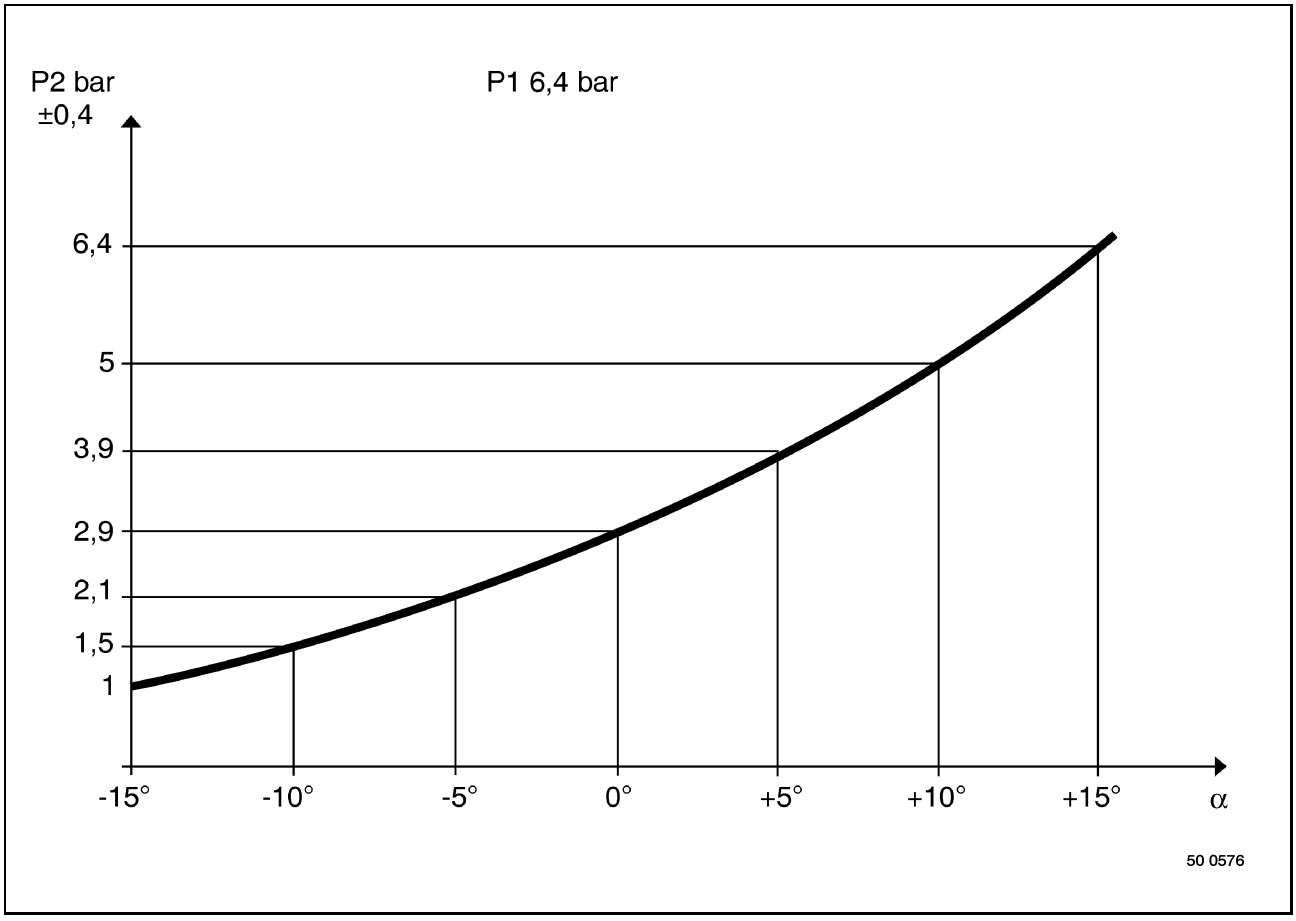
KNORR lever type load sensing valve

Axle spread(s)	**BA → BD**



With the vehicle's compressed air system at governing pressure.
Disconnect link rod **(B)**.
Install test template n° **2587**, (see page C-3).
Using a flexible pipe n° **7096**, connect a pressure gauge to point(s) **P1 – P2.2**.
Actuate the brake pedal until a pressure at **P1** of **6.4 bars** is obtained.
Position control arm **(A)** at different angles in succession and note down the pressures **P2** obtained.
Compare the pressures **P2** obtained with those shown in the diagrams hereafter.
If these values are not within the tolerances, the yellow coupling head must be replaced or adjusted on a test bench.





Withdraw the test template.
If necessary, adjust the length **L** of the control arm **(A)** according to the vehicle type (see table hereafter) to change the angular position of the control arm.
Check the length **H** of link rod **(B)**, then reconnect the rod to bracket **(C)** fastened to the rear drive axle taking its position according to the vehicle type into account (see table hereafter).

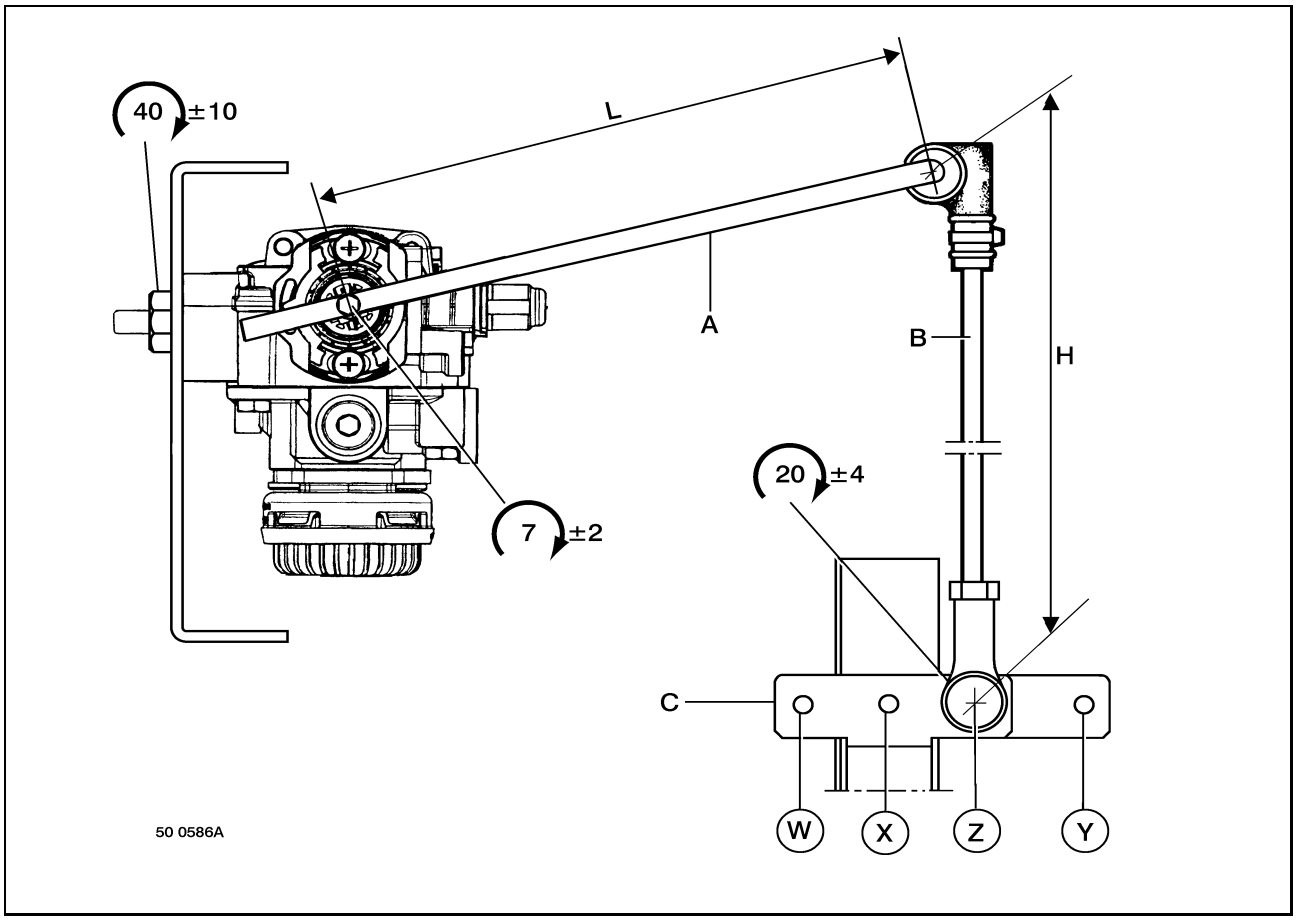
Vehicle(s)	Variant(s)	L (mm)	H (mm)	Ball-joint position
43C2	20802	295	190	Z
43C2	20809	160	160	W
43T		295	190	Z
43V (15T)	10009+20126	130	175	Y
43V (15T)	10009+20135	130	230	W

Testing using the control arm.

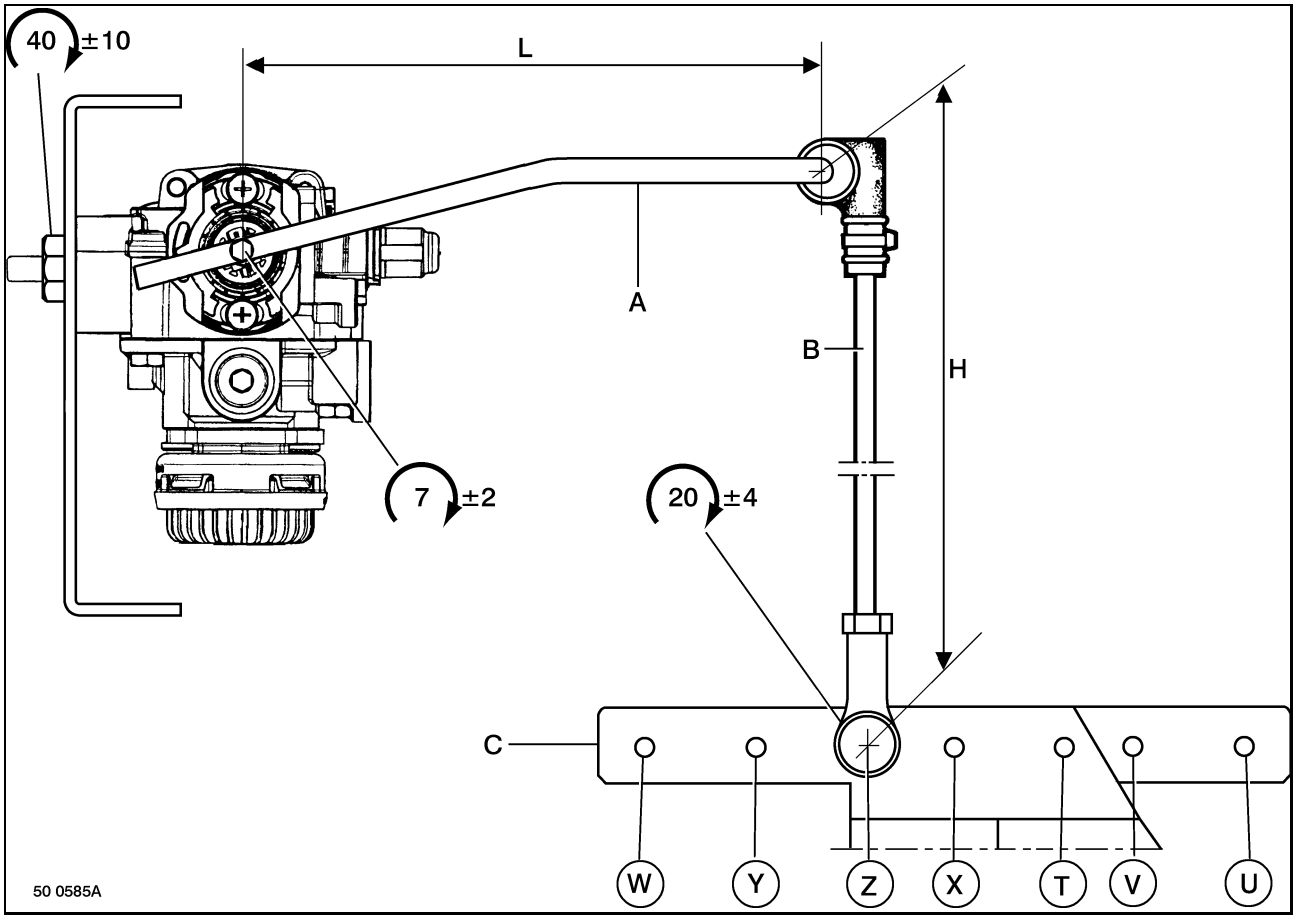
WABCO lever type load sensing valve

Axle spread(s) **AA → AC / CA → CD / DA → DF / EA, EB, FA, FB**

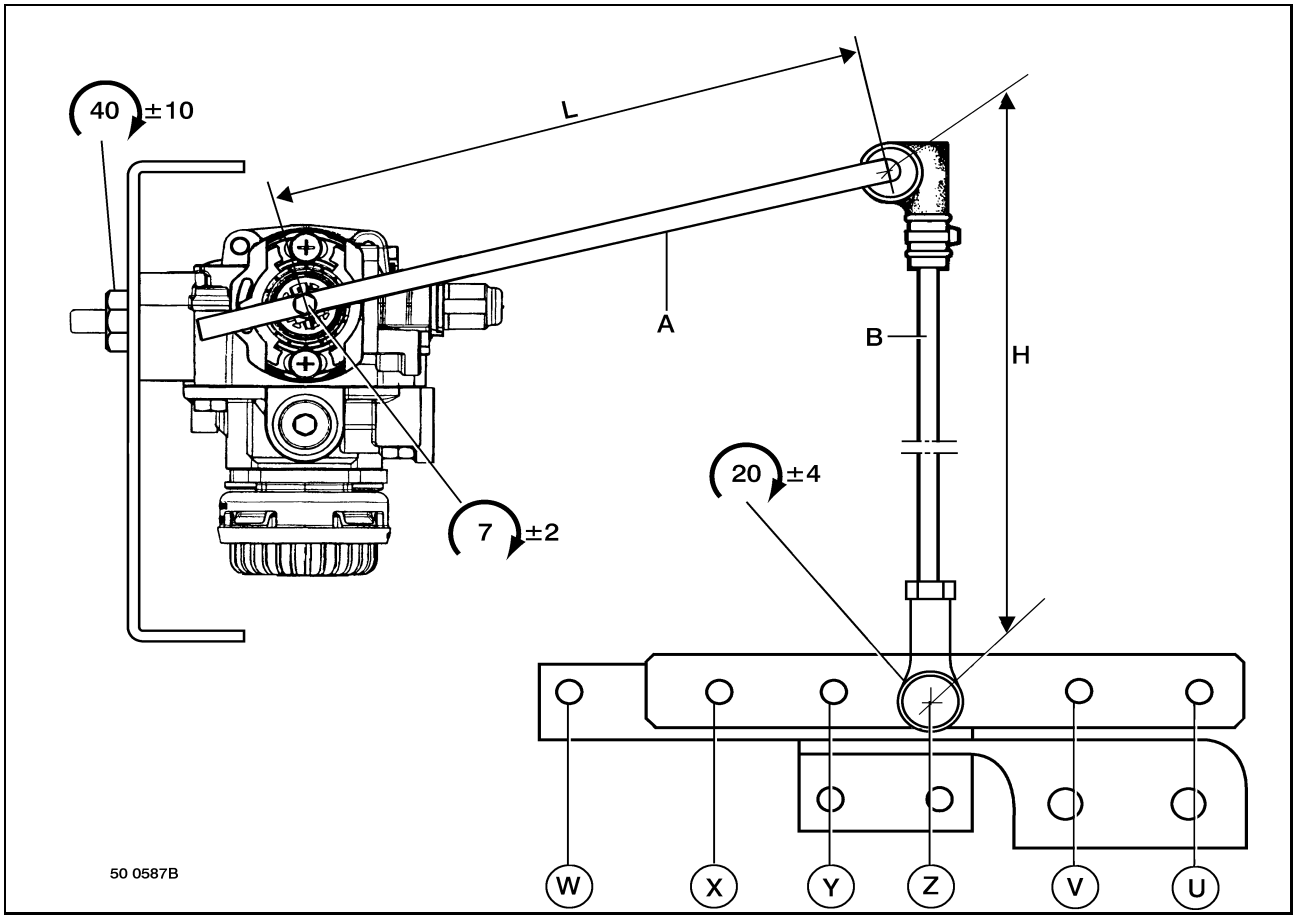
Assembly with rear drive axle **P669** (variant **15223**).



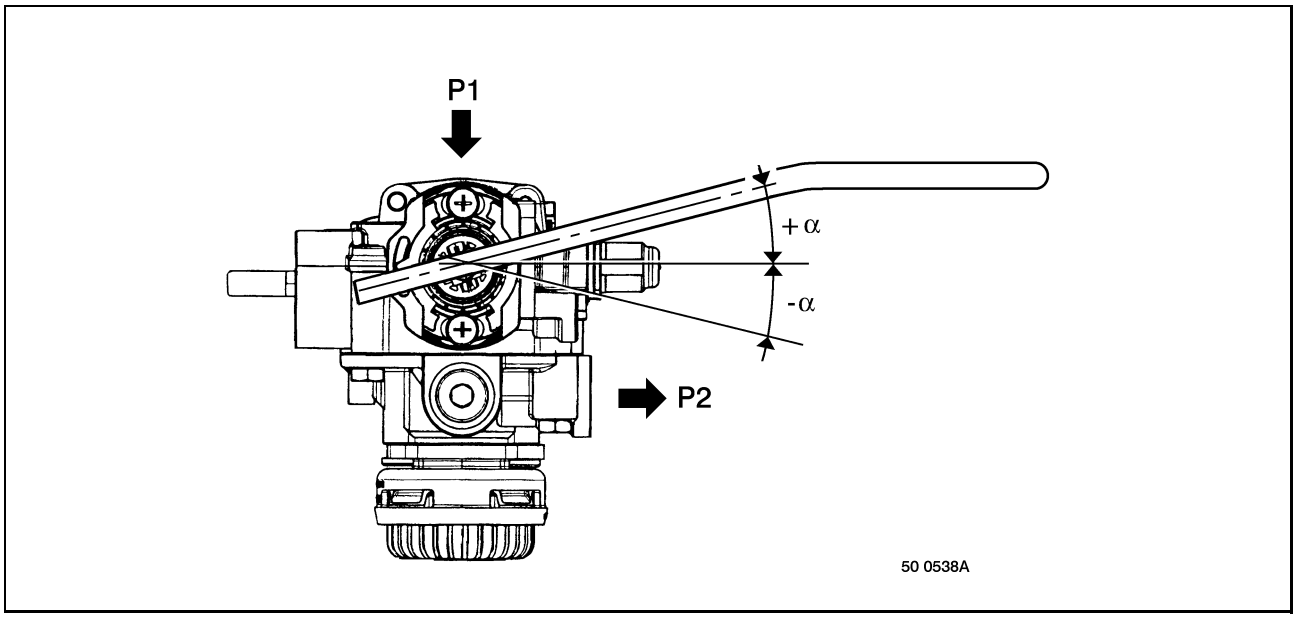
Assembly with rear drive axle **P920/P1120/P1121** (variant **152AB/AH/AI/BG**).

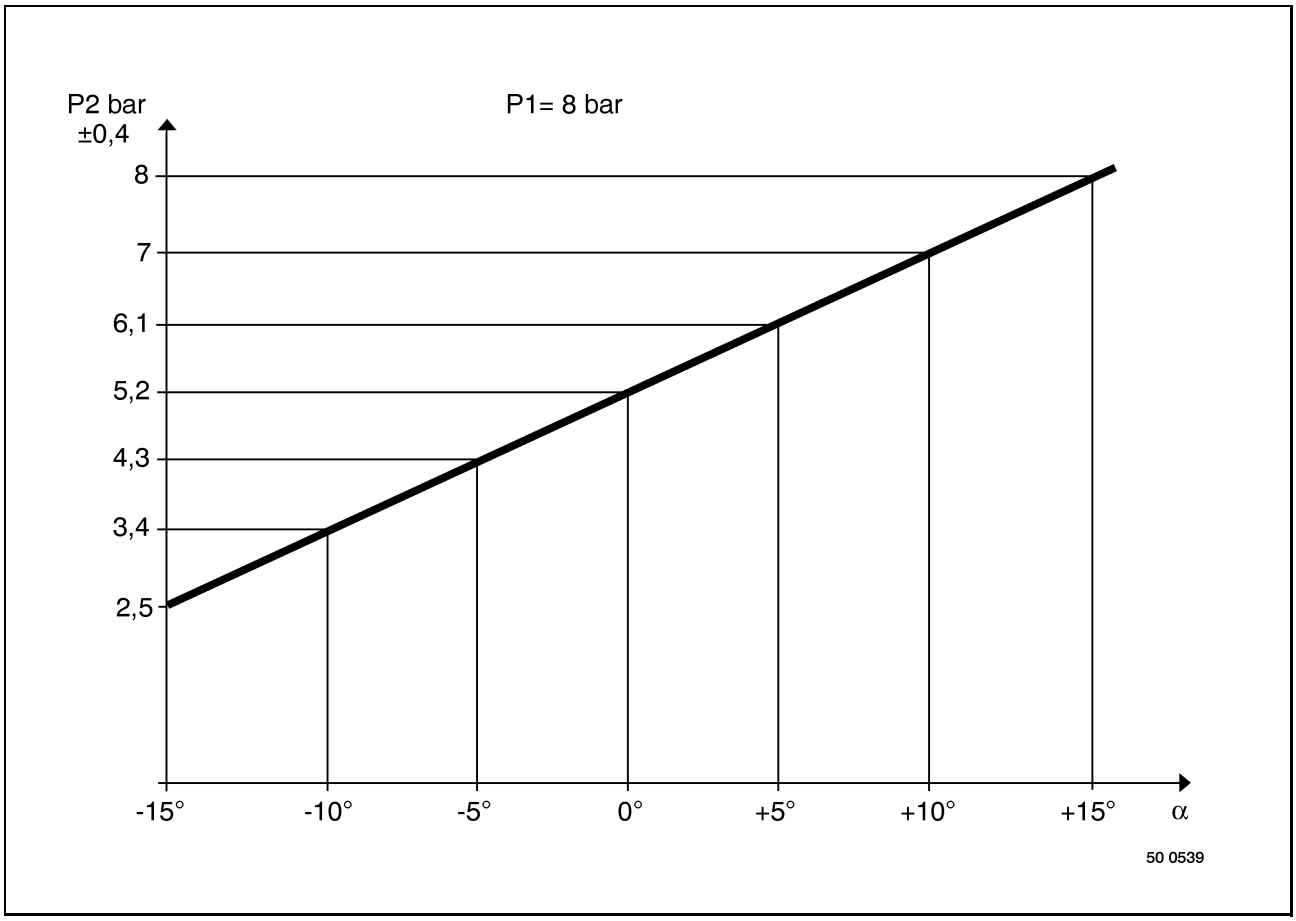


Assembly with rear drive axle **P1170** (variant **152AJ**).



With the vehicle's compressed air system at governing pressure.
Disconnect link rod **(B)**.
Install test template n° **2588**, (see page C-3).
If necessary, take off control arm **(A)** then put it back.
Using a flexible pipe n° **7096**, connect a pressure gauge to point(s) **P1 – P2.2**.
Actuate the brake pedal until a pressure at **P1** of **8 bars** is obtained.
Position control arm **(A)** at different angles in succession and note down the pressures **P2** obtained.
Compare the pressures **P2** obtained with those shown in the diagrams hereafter.
If these values are not within the tolerances, the yellow coupling head must be replaced or adjusted on a test bench.





Withdraw the test template.
If necessary, adjust the length **L** of the control arm **(A)** according to the vehicle type (see table hereafter) to change the angular position of the control arm.
Check the length **H** of link rod **(B)**, then reconnect the rod to bracket **(C)** fastened to the rear drive axle taking its position according to the vehicle type into account (see table hereafter).

42B1 - 42B3 with rear drive axle P669 (variant 15223)				
Vehicle(s)	**Variant(s)**	**L (mm)**	**H (mm)**	**Ball-joint position**
42B1	10101+20802	300	190	Z
42B1	10101+20809	170	240	W
42B1	10103+20802	400	240	Y
42B1	10103+20809	230	220	W
42B3	08802+10101+20802	300	190	Z
42B3	08802+10101+20809	170	240	W
42B3	08802+10103+20802	400	165	Y
42B3	08802+10103+20809	230	220	W
42B3	08803+10101+20802+11219	210	210	W
42B3	08803+10101+20802+11230/39/58	225	205	W
42B3	08803+10101+20809+11219	190	225	W
42B3	08803+10101+20809+11230/39/58	210	210	W
42B3	08803+10103+20802+11026/27/58+11219	210	210	W
42B3	08803+10103+20802+11026/27/58+11230/39/58	225	205	W
42B3	08803+10103+20802+11033+11030/39/58	300	200	Z
42B3	08803+10103+20809+11026/27/58+11219	190	225	W
42B3	08803+10103+20809+11026/27/58+11230/39/58	210	210	W
42B3	08803+10103+20809+11033+11230/39/58	280	185	X

42 B1/B2/B3/B4 - 43C1 - 43V - 44C1 - 44V with rear drive axle P920 (variants 152AB/BG)				
Vehicle(s)	**Variant(s)**	**L (mm)**	**H (mm)**	**Ball-joint position**
42B1/B2	10006+10101+20802	300	125	V
42B1/B2	10006+10101+20809	170	170	Y
42B1/B2	10006+10103+20802	400	95	U
42B1/B2	10006+10103+20809	230	160	W
42B1/B2	10011+10101/03+20802	220	155	W
42B1/B2	10011+10101/03+20809	190	140	Y
42B1/B2	10013+20292/93/94	190	140	Y
42B1/B2	10013+20295	190	165	Y
42B3/B4	08802+10006+10101+20802	300	125	V
42B3/B4	08802+10006+10101+20809	170	170	Y
42B3/B4	08802+10006+10103+20802	400	95	U

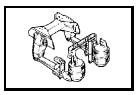
42 B1/B2/B3/B4 - 43C1 - 43V - 44C1 - 44V with rear drive axle P920 (variants 152AB/BG)				
Vehicle(s)	**Variant(s)**	**L (mm)**	**H (mm)**	**Ball-joint position**
42B3/B4	08802+10006+10103+20809	230	160	Z
42B3/B4	08802+10011+10101/03+20101+20802	220	155	Z
42B3/B4	08802+10011+10101/03+20101+20809	190	140	Y
42B3/B4	08802+10011+10101+20132+20809	110	180	W
42B3/B4	08802+10013+20288/89/92/96/97	190	140	Y
42B3/B4	08802+10013+20295	190	165	Y
42B3/B4	08803+10006+10101+20802+11219	210	170	Z
42B3/B4	08803+10006+10101+20802+11230/39/58	225	155	Z
42B3/B4	08803+10006+10101+20809+11219	190	165	Y
42B3/B4	08803+10006+10101+20809+11230/39/58	210	170	Z
42B3/B4	08803+10006+10103+20802+11026/27/58+11219	210	170	Z
42B3/B4	08803+10006+10103+20802+11026/27/58+11230/39/58	225	155	Z
42B3/B4	08803+10006+10103+20802+11033+11230/39/58	300	130	T
42B3/B4	08803+10006+10103+20809+11026/27/58+11219	190	165	Y
42B3/B4	08803+10006+10103+20809+11026/27/58+11230/39/58	210	170	Z
42B3/B4	08803+10006+10103+20802+11033+11230/39/58	280	165	X
42B3/B4	08803+10011+10101/03+20802	210	170	Z
42B3/B4	08803+10011+10101/03+20809	190	165	Y
42B3/B4	08803+10013+20288/89/92/96/97	190	165	Y
42B3/B4	08803+10013+20295	190	185	Y
43C1	20802	280	140	Z
43C1	20809	280	185	Z
43V	10013	90	295	W
44C1	20802	280	175	X
44C1	20809	280	190	X
44V	10013	90	295	W

44C2 - 44T - 44V - 45D2 with rear drive axle P1120/1121 (variants 152AH/AI)				
Vehicle(s)	**Variant(s)**	**L (mm)**	**H (mm)**	**Ball-joint position**
44C2	10031+10101+20802	265	175	Z
44C2	10031+10101+20809	140	220	W
44C2	10031+10103+20802+11012/37	265	175	Z

44C2 - 44T - 44V - 45D2 with rear drive axle P1120/1121 (variants 152AH/AI)				
Vehicle(s)	**Variant(s)**	**L (mm)**	**H (mm)**	**Ball-joint position**
44C2	10031+10103+20809+11012/37	140	220	W
44C2	10031+10103+20802+11035	350	160	T
44C2	10031+10103+20809+11035	185	205	Y
44C2	10032+20802	225	200	Z
44C2	10032+20809	125	210	W
44T		225	200	Z
44V	10009+20135	95	285	W
44V	10032+20126	95	235	W
45D2	10031+11221/24	140	235	W
45D2	10031+11233	140	215	W
45D2	10032+20101	125	270	W
45D2	10032+20132	125	290	W

44C2 - 44T - 45D2 - 45D3 with rear drive axle P1170 (variant 152AJ)				
Vehicle(s)	**Variant(s)**	**L (mm)**	**H (mm)**	**Ball-joint position**
44C2	10031+10101+20802	265	135	Z
44C2	10031+10101+20809	140	120	W
44C2	10031+10103+20802+11012/37	265	135	Z
44C2	10031+10103+20809+11012/37	140	120	W
44C2	10031+10103+20802+11035	350	115	V
44C2	10031+10103+20809+11035	185	130	X
44C2	10032+20802	225	120	X
44C2	10032+20809	125	125	W
44T		225	120	X
45D2	10031+11221/24	140	175	W
45D2	10031+11233	140	155	W
45D2	10032	125	180	W
45D3	20802	235	155	Y
45D3	20809	145	140	W

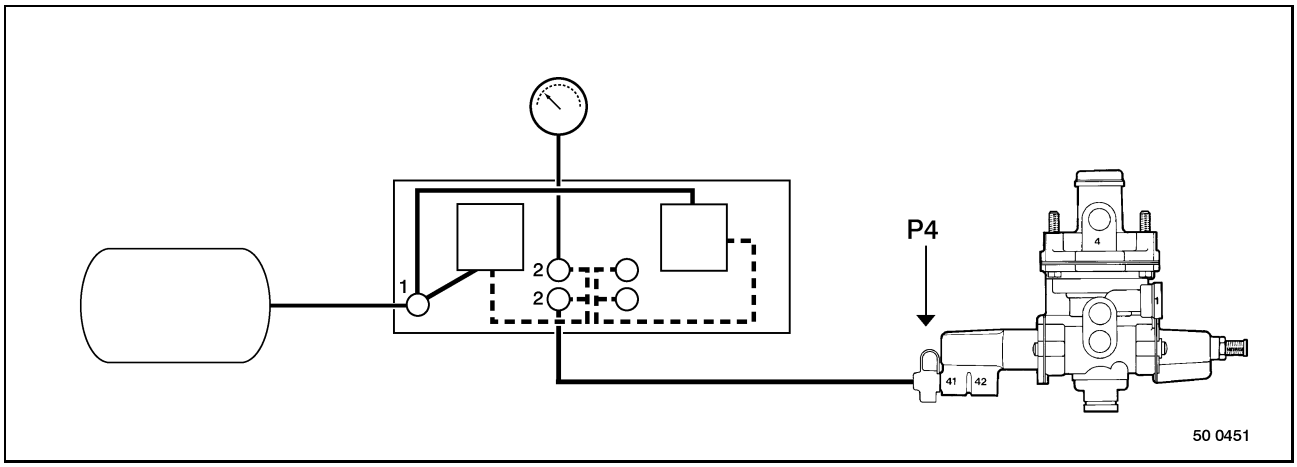
Testing the load sensing valve



Vehicle equipped with rear air suspension

Testing can be carried out :
- either according to the vehicle load, using the rating plate glued to the inside of the RH door of the cab (Check that the vehicle type agrees with the reference number on the rating plate - see table page E-17) ;
- or according to the angle of the control arm A, using the diagram in the workshop manual according to the load sensing valve type.

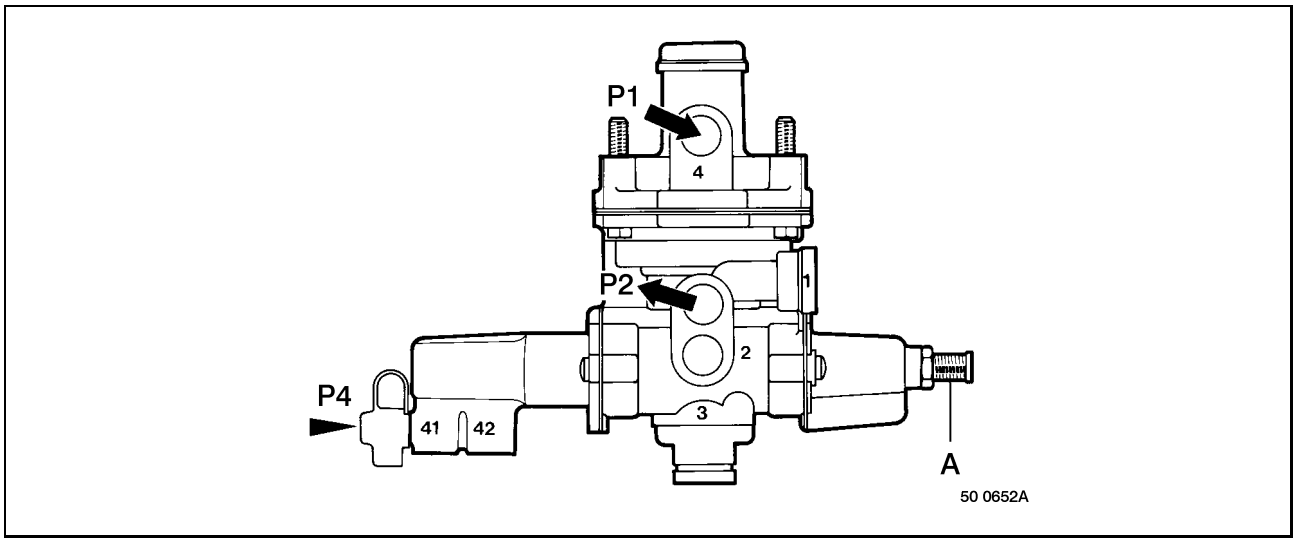
Testing using the suspension air springs pressure.
With the vehicle's compressed air system at governing pressure.
Using a flexible pipe n° **7096**, connect a pressure gauge to point(s) **P1 – P2.2**.
Using the suspension control box, move the suspension to the "down" position (safety level), then switch off the master switch.
Plug in test case n° **7093** as shown below.

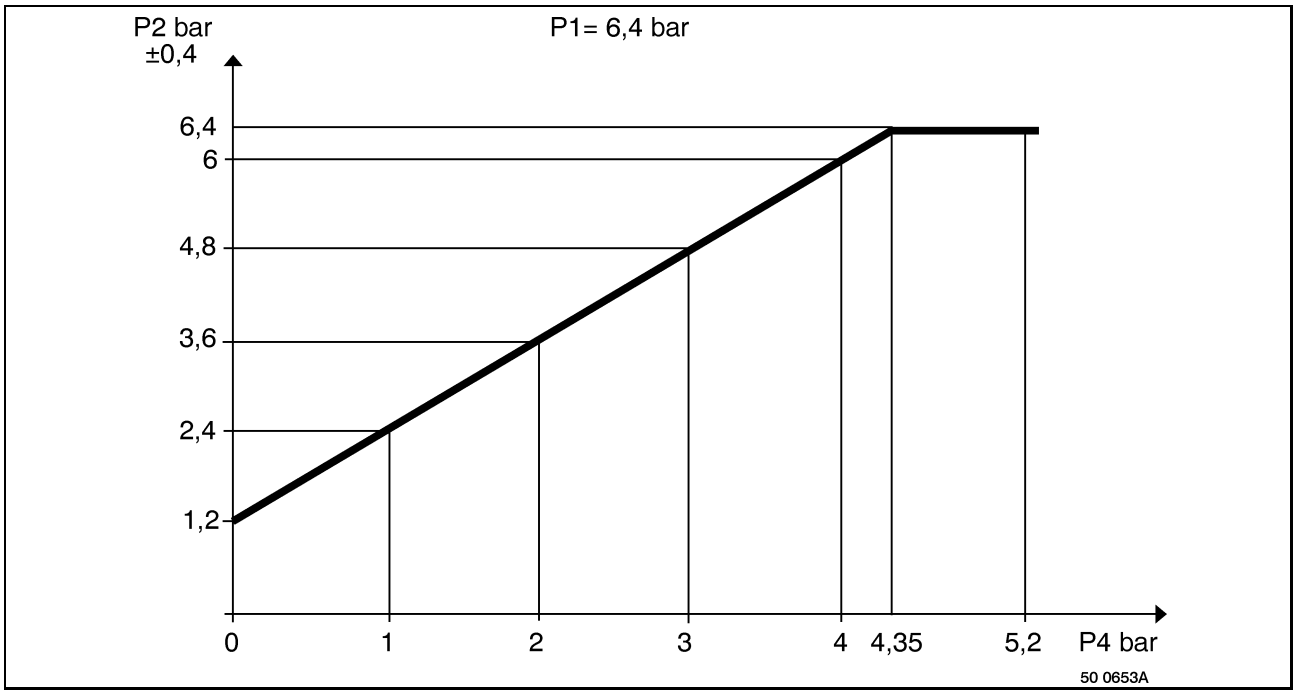


WABCO 475711.... Air-controlled load sensing valve

Axle spread(s)	**BE, BF, BG**

Actuate the brake pedal until a pressure at **P1** of **6.4 bars** is obtained.
Using the test case pressure reducer, vary the pressure **P4** and note down the pressures **P2** obtained.
Compare the pressures **P2** obtained with those shown in the diagrams hereafter.
If these values are within the tolerances, the load sensing valve is in order. If not, slight adjustment can be made by turning screw **(A)**.
If the correction is > **0.5 bar**, the load sensing valve must be replaced or adjusted on a test bench.

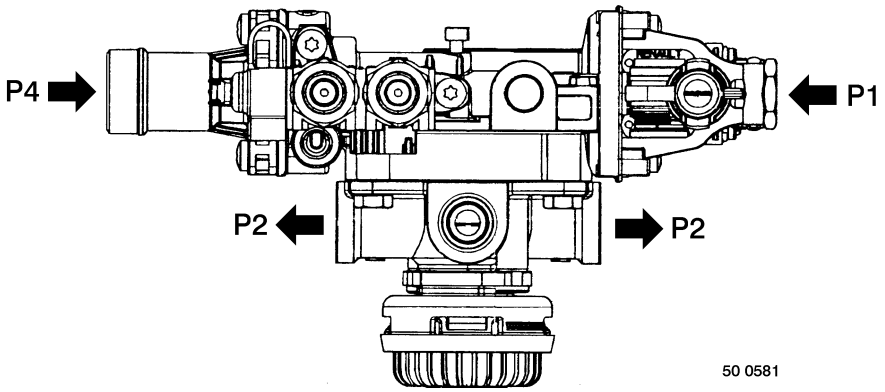




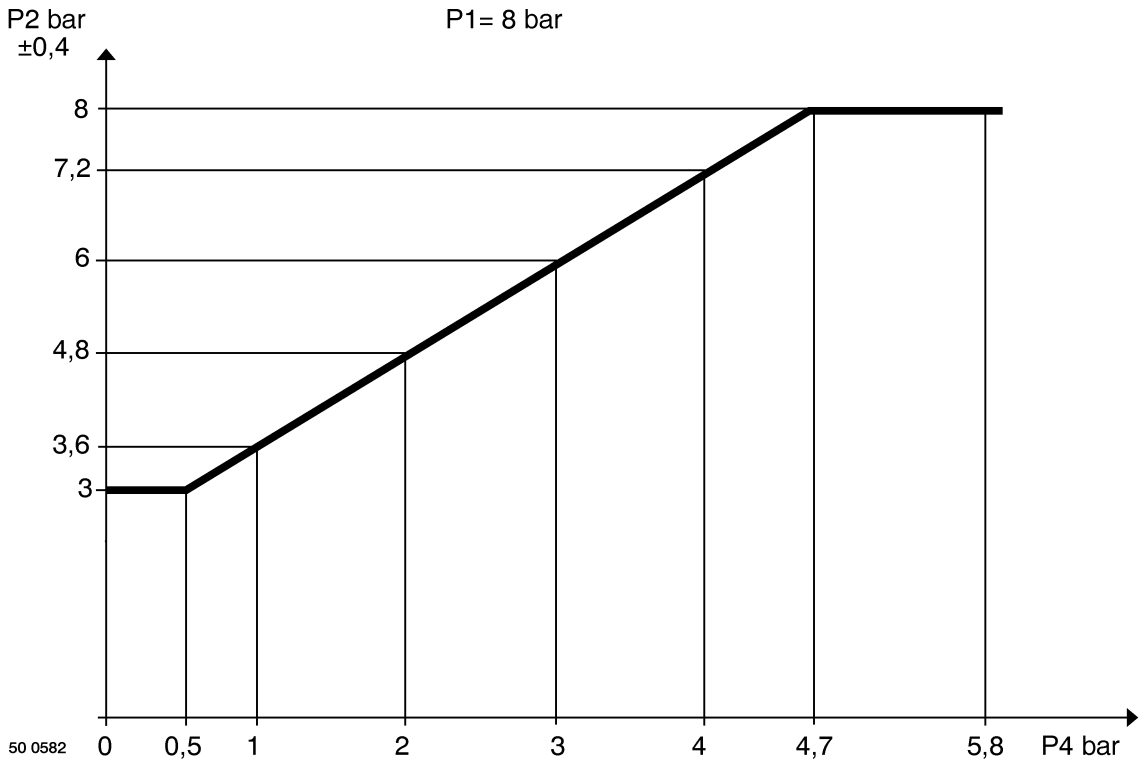
WABCO 475721.... Air-controlled load sensing valve

Axle spread(s)	**AD, AE, AF, CE, CF, CG, DG → DJ, FC, FD**

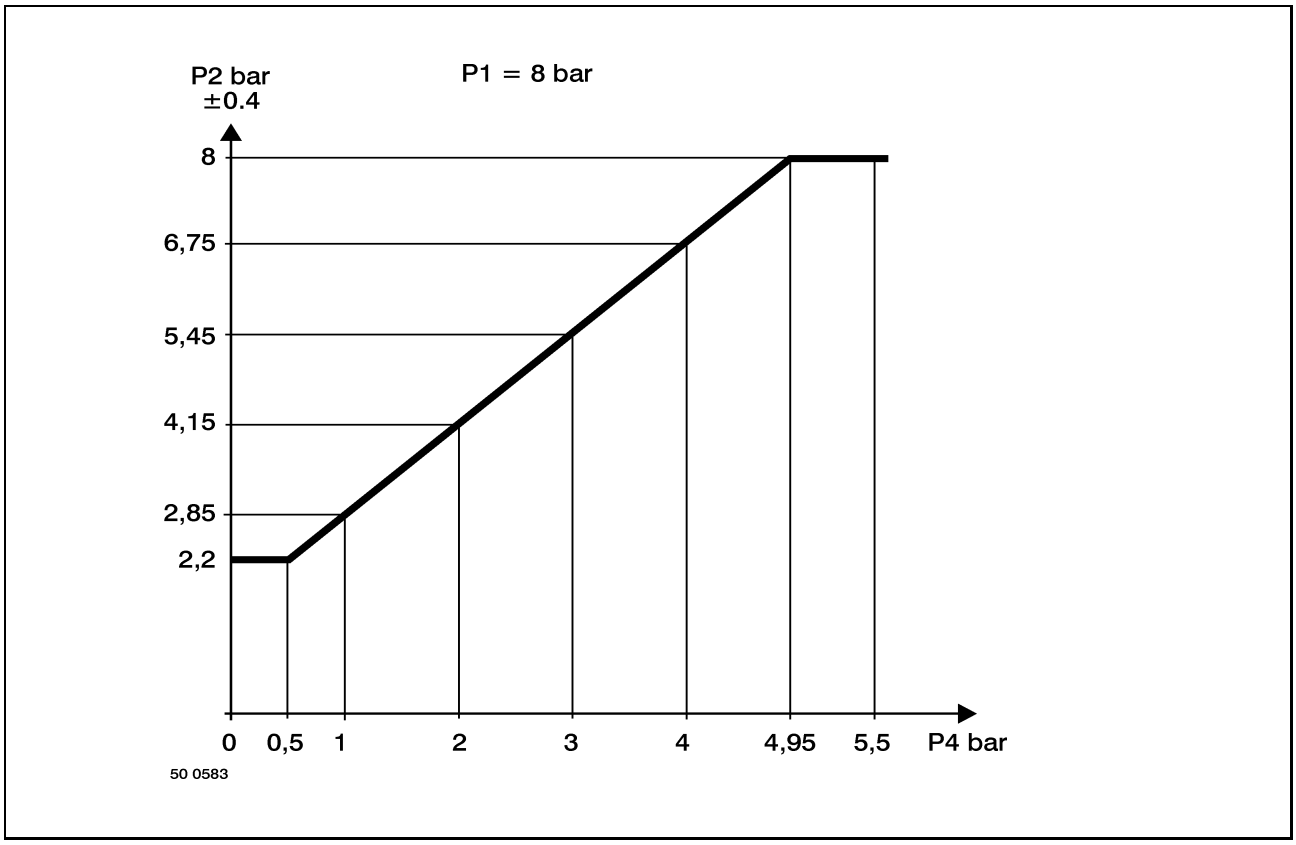
Actuate the brake pedal until a pressure at **P1** of **8 bars** is obtained.
Using the test case pressure reducer, vary the pressure **P4** and note down the pressures **P2** obtained.
Compare the pressures **P2** obtained with those shown in the diagrams hereafter.
If these values are not within the tolerances, the yellow coupling head must be replaced or adjusted on a test bench.



Vehicle(s) : **42B1/B2/B3/B4 / 44C1**



Vehicle(s) : **44C2** variant(s) **10101**.
Vehicle(s) : **44C2** variant(s) **10103+11012/37**.
Vehicle(s) : **44T**



Vehicle(s) : **44C2** variant(s) **10103+11035**.
Vehicle(s) : **45D3**

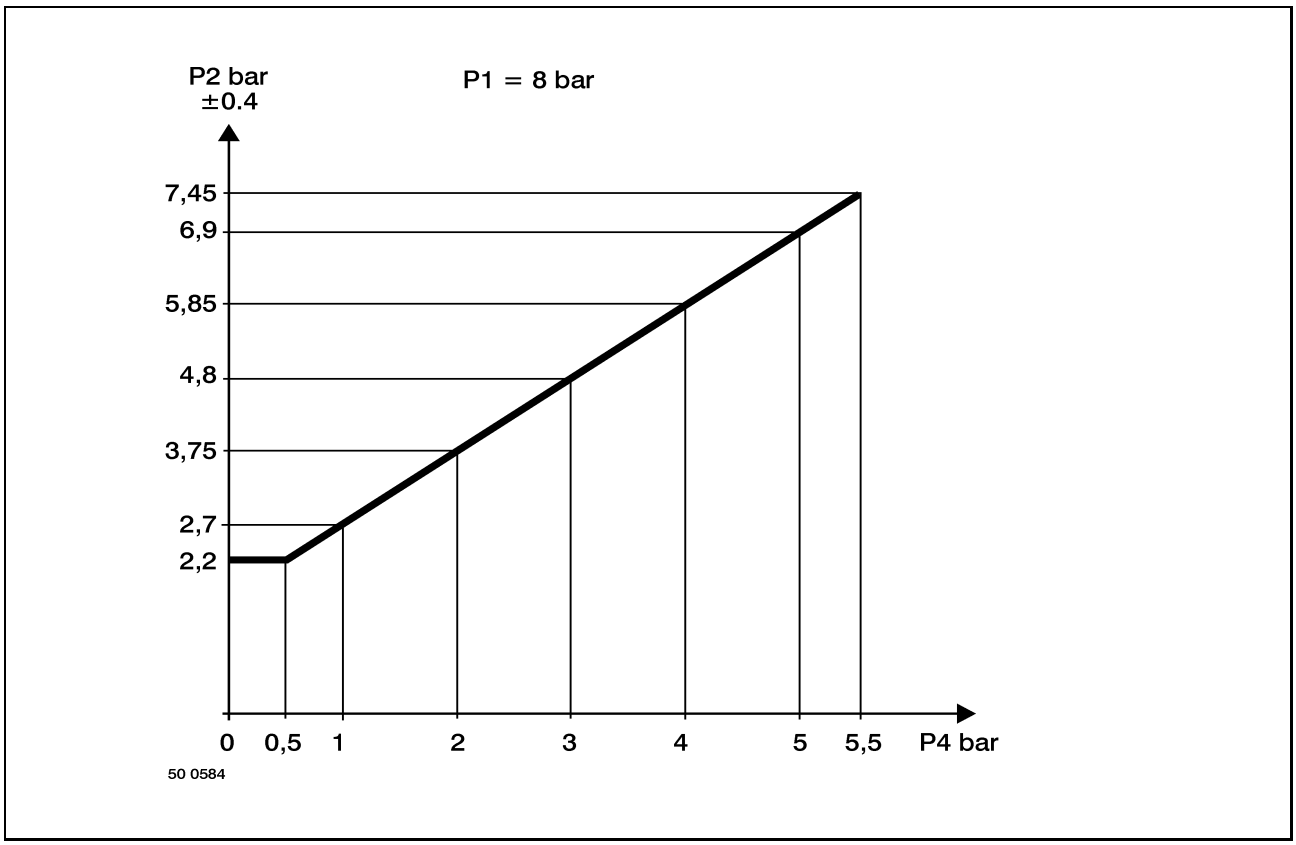


Table of load sensing valve plates

Vehicle(s)	Variant(s)	Plate reference N°
42B1/B2	10006+10101+20802	5010469829
42B1/B2	10006+10101+20809	5010493465
42B1/B2	10006+10103+20802	5010493571
42B1/B2	10006+10103+20809	5010493570
42B1/B2	10011+20802	5010469846
42B1/B2	10011+20809	5010469851
42B1/B2	10013+20802	5010469851
42B1/B2	20804	5010493464
42B3/B4	08802+10006+10101+20802	5010469829
42B3/B4	08802+10006+10101+20809	5010493465
42B3/B4	08802+10006+10103+20802	5010493571
42B3/B4	08802+10006+10103+20809	5010493570
42B3/B4	08802+10011+20101+20802	5010469846
42B3/B4	08802+10011++20101+20809	5010469851
42B3/B4	08802+10011++20132+20809	5010543814
42B3/B4	08802+10013	5010469851
42B3/B4	08803+10006+10101+20802+11219	5010558810
42B3/B4	08803+10006+10101+20802+11230/39/58	5010558808
42B3/B4	08803+10006+10101+20809+11219	5010469851
42B3/B4	08803+10006+10101+20809+11230/39/58	5010558810
42B3/B4	08803+10006+10103+20802+11026/27/58+11219	5010558810
42B3/B4	08803+10006+10103+20802+11026/27/58+11230/39/58	5010558808
42B3/B4	08803+10006+10103+20802+11033+11230/39/58	5010558809
42B3/B4	08803+10006+10103+20809+11026/27/58+11219	5010469851
42B3/B4	08803+10006+10103+20809+11026/27/58+11230/39/58	5010558810
42B3/B4	08803+10006+10103+20809+11033+11230/39/58	5010569758
42B3/B4	08803+10011+20802	5010558810
42B3/B4	08803+10011+20809	5010469851
42B3/B4	08803+10013+20802	5010469851
42B3/B4	08804+20804	5010493464
43C1	20802/09	5010469853
43C1	20804	5010493464
43C2	10101+20802	5010361692
43C2	10101+20804	5010361694

Vehicle(s)	Variant(s)	Plate reference N°
43C2	10101+20809	5010361693
43C2	10103+20802	5010361695
43C2	10103+20804	5010361697
43C2	10103+20809	5010361696
43T	20802	5010361695
43T	20809	5010361697
43V	10009	5010493026
43V	10013	5010469854
44C1	20802/09	5010469853
44C1	20804	5010493464
44C2	10031+10101+20802	5010546007
44C2	10031+10101+20804	5010546708
44C2	10031+10101+20809	5010546008
44C2	10031+10103+20802+11012/37	5010546007
44C2	10031+10103+20802+11035	5010546005
44C2	10031+10103+20804+11012/37	5010546708
44C2	10031+10103+20804+11035	5010546709
44C2	10031+10103+20809+11012/37	5010546008
44C2	10031+10103+20809+11035	5010546006
44C2	10032+20802	5010546009
44C2	10032+20804	5010546708
44C2	10032+20809	5010546010
44T	20802	5010546009
44T	20804	5010546708
44V	10009/32	5010549798
44V	10013	5010469854
45D2	10031	5010546008
45D2	10032	5010546010
45D3	20802	5010569469
45D3	20804	5010569468
45D3	20809	5010569470

Testing the adaptation valve

Axle spread(s)	**BA, BB, BE**

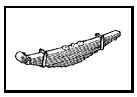
With the vehicle's compressed air system at governing pressure.
Using a flexible pipe n° **7096**, connect a pressure gauge to point(s) **P1 – P2.1**.
Actuate the brake pedal.
For **P1 = 0.45 bar** ..... **P2.1 = 0.10 $\pm$ 0.02 bar**
For **P1 = 5.10 bar** ..... **P2.1 = 3.65 $\pm$ 0.2 bar**
For **P1 = 6.00 bar** ..... **P2.1 = 6.00 $\pm$ 0.3 bar**

If these values are not within the tolerances, the yellow coupling head must be replaced or adjusted on a test bench.

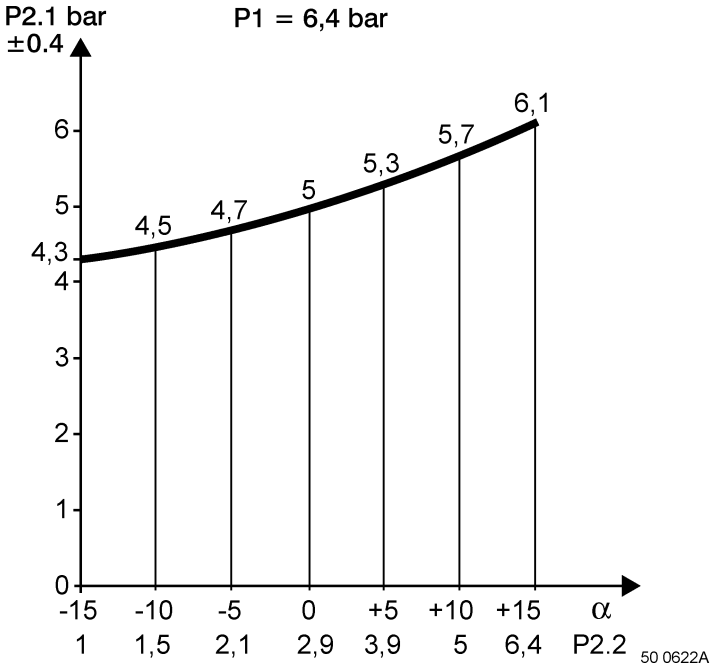
Testing the pressure reduction valve

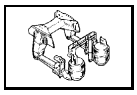
Axle spread(s)	**BC, BD, BF, BG**

After testing the load sensing valve, if it is correct, test the piloted front brakes pressure reduction valve.
With the vehicle's compressed air system at governing pressure.
Using a flexible pipe n° **7096**, connect a pressure gauge to point(s) **P2.1**.
Repeat the same operations as for testing the load sensing valve according to the suspension type.
Note down the pressures obtained at point(s) **P2.1**.
Compare the pressures **P2.1** obtained with those shown in the diagrams hereafter.
If these values are not within the tolerances, the yellow coupling head must be replaced or adjusted on a test bench.

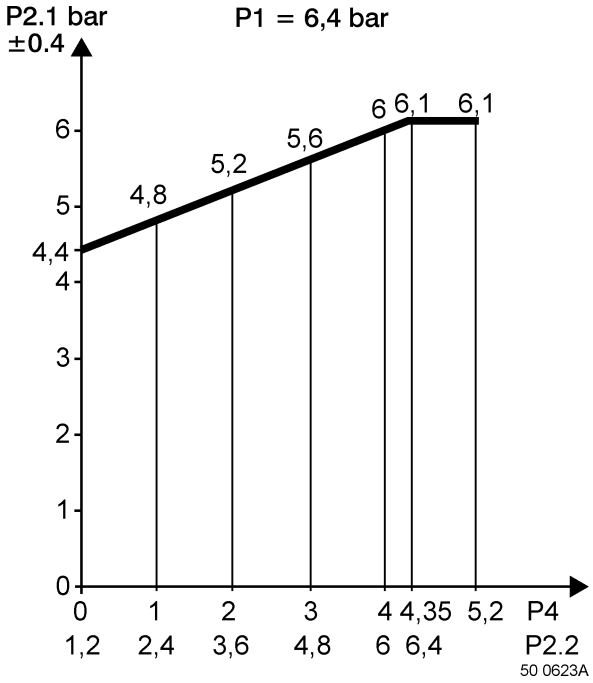


Vehicle equipped with rear mechanical suspension





Vehicle equipped with rear air suspension



Testing the ABS

See workshop manual section MR **50 099**.

Testing the trailer control valve

Remove the yellow coupling head.
In its place, fit a coupling and a pressure take-off (spare parts N° **5005430260 / 5005430259**) and, using a flexible pipe n° **7096**, connect a pressure gauge to the yellow coupling head point.
With the vehicle's compressed air system at governing pressure.
Using a flexible pipe n° **7096**, connect a pressure gauge to point(s) **P1**.
Actuate the brake pedal until a pressure at **P1** of **2 bars** is obtained.

Trailer control valve KNORR AB2838
Pressure at yellow coupling head : **2.4** $^{\pm 0.1}$ **bar**.

Trailer control valve KNORR AB2860
Pressure at yellow coupling head : **2** $^{\pm 0.1}$ **bar**.

Trailer control valve WABCO 973009007
Pressure at yellow coupling head : **2** $^{+ 0.2}$ **bar**.

Trailer control valve WABCO 973009008
Pressure at yellow coupling head : **2.4** $^{\pm 0.1}$ **bar**.

Trailer control valve WABCO 973009009
Pressure at yellow coupling head : **2.6** $^{\pm 0.1}$ **bar**.

See "Technical data" chapter to determine the trailer control valve according to the vehicle.
If these values are not within the tolerances, the yellow coupling head must be replaced or adjusted on a test bench.
If the values are correct, refit the yellow coupling head.

VEHICLE IN THE "PARKING" POSITION

Testing the parking brake circuit

Using a flexible pipe n° **7096**, connect a pressure gauge to point(s) **P2.ST**.
Progressively actuate the parking brake valve until the lever locks.
Check mechanical locking of the lever.
The pressure at point(s) **P2.ST** should drop to **0 bar**.
The instrument panel warning light should come on.