Document Title: **Volvo standard tightening torques**	Function Group: **030**	Information Type: **Service Information**	Date: **4/27/2026**
Profile: **ABG3870 Volvo**			

Volvo standard tightening torques

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
ABG3870 Volvo			

Tightening torques in the following tables refer to bolted joints with tensile strength according to the below. The tables should be regarded as general guidelines for tightening bolted joints where nothing else is specified.

NOTE!
Increase the values by 10% for flange bolt type U6FS. Bolts and nuts should be clean and lubricated with oil.

Metric coarse and fine threads, tensile strength class 8.8	**Nm**	**kpm**	**lbf ft**
M6	10 ±2	1,0 ±0,2	7,4 ±1,5
M8	24 ±5	2,4 ±0,5	18 ±3,5
M10	48 ±10	4,8 ±1,0	35 ±7,4
M12	85 ±18	8,5 ±1,8	63 ±13
M14	140 ±25	14,0 ±2,5	103 ±18
M16	220 ±45	22,0 ±4,5	160 ±33
M20	430 ±85	43,0 ±8,5	320 ±63
M24	740 ±150	74,0 ±15,0	550 ±110

Metric coarse and fine threads, tensile strength class 10.9	**Nm**	**kpm**	**lbf ft**
M6	12 ±2	1,2 ±0,2	9 ±1,5
M8	30 ±5	3,0 ±0,5	22 ±3,5
M10	60 ±10	6,0 ±1,0	44 ±7,4
M12	105 ±20	10,5 ±2,0	78 ±14,5
M14	175 ±30	17,5 ±3,0	130 ±22
M16	275 ±45	27,5 ±4,5	204 ±33
M20	540 ±90	54,0 ±9,0	400 ±66
M24	805 ±160	80,5 ±16,0	594 ±118

UNC-threads, coarse pitch	**Nm**	**kpm**	**lbf ft**
1/4"	9 ±2	0,9 ±0,2	6,6 ±1,5
5/16"	18 ±4	1,8 ±0,4	13 ±3,0
3/8"	33 ±8	3,3 ±0,8	24 ±5,9
7/16"	54 ±14	5,4 ±1,4	40 ±10

1/2"	80 ±20	8,0 ±2,0	59 ±15
9/16"	120 ±30	12,0 ±3,0	89 ±22
5/8"	170 ±40	17,0 ±4,0	130 ±30
3/4"	300 ±70	30,0 ±7,0	220 ±52
7/8"	485 ±115	48,5 ±11,5	360 ±85
1"	725 ±175	72,5 ±17,5	530 ±130

Document Title: **Conversion tables**	Function Group: **030**	Information Type: **Service Information**	Date: **4/27/2026**
Profile: **ABG3870 Volvo**			

Conversion tables

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
ABG3870 Volvo			

Length

Unit	**cm**	**m**	**km**	**in**	**ft**	**yd**	**mile**
cm	1	0.01	0.00001	0.3937	0.03281	0.01094	0.000006
m	100	1	0.001	39.37	3.2808	1.0936	0.00062
km	100000	1000	1	39370.7	3280.8	1093.6	0.62137
in	2.54	0.0254	0.000025	1	0.08333	0.02777	0.000015
ft	30.48	0.3048	0.000304	12	1	0.3333	0.000189
yd	91.44	0.9144	0.000914	36	3	1	0.000568
mile	160930	1609.3	1.6093	63360	5280	1760	1
1 mm = 0.1 cm - 1 mm = 0.001 mm							

Area

Unit	**cm^2**	**m^2**	**km^2**	**a**	**ft^2**	**yd^2**	**in^2**
cm^2	1	0.0001	-	0.000001	0.001076	0.000012	0.155000
m^2	10000	1	0.000001	0.01	10.764	1.1958	1550.000
km^2	-	1000000	1	10000	1076400	1195800	-
a	0.01	100	0.0001	1	1076.4	119.58	-
ft^2	-	0.092903	-	0.000929	1	0.1111	144.000
yd^2	-	0.83613	-	0.008361	9	1	1296.00
in^2	6.4516	0.000645	-	-	0.006943	0.000771	1
1 ha = 100 a - 1 $mile^2$ = 259 ha = 2.59 km^2							

Volume

Unit	**cm^3 = cc**	**m^3**	**l**	**in^3**	**ft^3**	**yd^3**
cm^3 = ml	1	0.000001	0.001	0.061024	0.000035	0.000001
m^3	1000000	1	1000	61024	35.315	1.30796
dm^3(l)	1000	0.001	1	61.024	0.035315	0.001308
in^3	16.387	0.000016	0.01638	1	0.000578	0.000021
ft^3	28316.8	0.028317	28.317	1728	1	0.03704
yd^3	764529.8	0.76453	764.53	46656	27	1
1 gal (US) = 3785.41 cm^3 = 231 in^3 = 0.83267 gal (UK)						

Weight

Unit	g	kg	t	oz	lb
g	1	0.001	0.000001	0.03527	0.0022
kg	1000	1	0.001	35.273	2.20459
t	1000000	1000	1	35273	2204.59
oz	28.3495	0.02835	0.000028	1	0.0625
lb	453.592	0.45359	0.000454	16	1
1 ton (metric) = 1.1023 ton (US) = 0.9842 ton (UK)					

Pressure

Unit	kp/cm^2	bar	$Pa=N/m^2$	kPa	lbf/in^2	lbf/ft^2
kp/cm^2	1	0.98067	98066.5	98.0665	14.2233	2048.16
bar	1.01972	1	100000	100	14.5037	2088.6
$Pa=N/m^2$	0.00001	0.001	1	0.001	0.00015	0.02086
kPa	0.01020	0.01	1000	1	0.14504	20.886
lbf/in^2	0.07032	0.0689	6894.76	6.89476	1	144
lbf/ft^2	0.00047	0.00047	47.88028	0.04788	0.00694	1
kg/cm^2 = 735.56 Dry (mmHg) = 0.96784 atm						

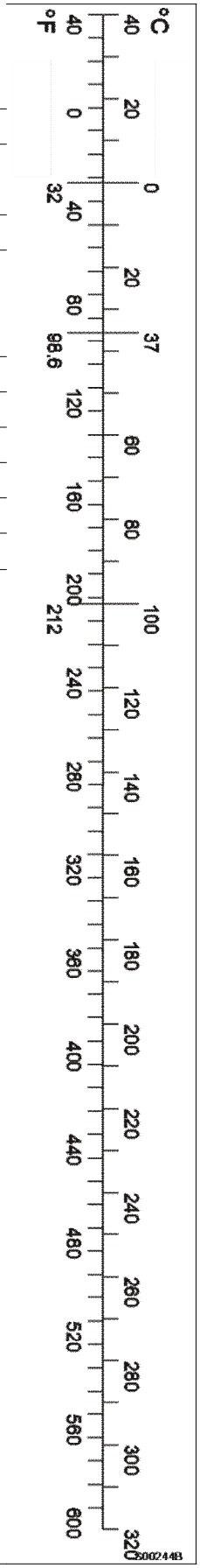
Unit explanations

Unit	abbreviation
Newton meter	Nm
Kilopoundmeter	kpm
Kilopascal	kPa
Megapascal	MPa
Kilowatt	kW
kilojoule	kJ
British thermal unit	Btu
Calorie	cal

Approx. conversion

SI unit	Conversion factor	Non SI	Conversion factor	SI
Torque				
Nm	x10.2	=kg/cm	x0.8664	=lb in
Nm	x0.74	=lbf·ft	x1.36	=Nm
Nm	x0.102	=kg/m	x7.22	=lbft
Pressure ($Pa = N/m^2$)				
kPa	x4.0	$=in.H_2O$	x0.249	=kPa
kPa	x0.30	=in.Hg	x3.38	=kPa
kPa	x0.145	=psi	x6.89	=kPa
bar	x14.5	=psi	x0.069	=bar
kp/cm^2	x14.22	=psi	x0.070	$=kp/cm^2$
N/mm^2	x145.04	=psi	x0.069	=bar
MPa	x145	=psi	x0.00689	=MPa
Power (W = J/s)				
kW	x1.36	=hp(cv)	x0.736	=kW

kW	x1.34	=bhp	x0.746	=kW
kW	x0.948	=Btu/s	x1.055	=kW
W	x0.74	=ft·lb/s	x1.36	=W
Energy (J = Nm)				
kJ	x0.948	=Btu	x1.055	=kJ
J	x0.239	=calorie	x4.19	=J
Speed and acceleration				
m/s^2	x3.28	$=ft/s^2$	x0.305	$=m/s^2$
m/s	x3.28	=ft/s	x0.305	=m/s
km/h	x0.62	=mph	x1.61	=km/h
Horsepower/torque				
Bhp x5252 rpm= TQ (lb·ft)			TQ x rpm 5252=bhp	
Temperature				
ºC =(ºF-32)/1.8			ºF =(ºC x1.8) +32	
Flow factor				
l/min (dm^3/min)	x0.264	= US gal/min x3.785		=liter/min



Document Title: **Operation numbers for additional work**	Function Group: **070**	Information Type: **Service Information**	Date: **4/27/2026**
Profile: **Wheeled Pavers (PAW)**			

Operation numbers for additional work

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These operations can be used to identify work that is not included in the time guide or described in the methods in the Service Manual. When these operations are used, a description of the work that has been performed must be provided.

Other work related to engine
Op. no. 070-210
This operation can be used when work has been done related to the engine and function group 2 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to electrical system
Op. no. 070-310
This operation can be used when work has been done related to the electrical system and function group 3 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to transmission, gearbox, travel motor, swing motor
Op. no. 070-410
This operation can be used when work has been done related to the transmission, gearbox, travel motor or swing motor and function group 4 when no applicable method description was available. Hhen this operation is used, additional information is required:

- Description of work that has been done

Other work related to drive axle
Op. no. 070-470
This operation can be used when work has been done related to the drive axle and function group 46 when no applicable method description was available. When this operation is used, additional information is required:

- Description of required work that have been done

Other work related to brake system
Op. no. 070-510
This operation can be used when work has been done related to the brake system and function group 5 when no applicable

method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to steering system
Op. no. 070-610
This operation can be used when work has been done related to the steering system and function group 6 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to frame link, axle suspension
Op. no. 070-710
This operation can be used when work has been done related to the frame link, axle suspension and other parts related to function group 7 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to cab, air conditioning
Op. no. 070-810
This operation can be used when work has been done related to the cab, air conditioning and other parts related to function group 8 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to hydraulic system
Op. no. 070-910
This operation can be used when work has been done related to the hydraulic system and other parts related to function group 9 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Document Title: **Alternative fuels**	Function Group: **160**	Information Type: **Service Information**	Date: **4/27/2026**
Profile: **Wheeled Pavers (PAW)**			

Alternative fuels

Showing Selected Profile

This statement is only valid for Volvo branded engines.

Hydro-treated vegetable oil (HVO) and fatty acid methyl ester (FAME) biodiesel are both made from renewable raw materials such as vegetable oils and animal fats, but they are chemically processed in different ways.

Hydro-treated vegetable oil (HVO)
HVO is created using a chemical process called hydro-treating. Hydro-treating creates an oxygen-free hydrocarbon product that is very similar to distillate diesel fuel and is well suited for use in diesel engines. HVO fuels complying with the CEN diesel fuel standard EN 590:2013 or with the European Fuel Quality Directive 98/70/EC are approved for use in all Volvo Construction Equipment diesel engines with no changes to maintenance intervals. Paraffinic diesel fuels complying with the CEN standard EN 15940 may be used in all machines operating outside the European Union and for EU-certified engines up to the emission level Stage IV. These fuels may also be used for the EU-certified D11, D13 and D16 engines meeting the emission level Stage V.

Biodiesel
Biodiesel is a product made from renewable resources such as vegetable oils or animal fat. Biodiesel that has been chemically processed into fatty acid methyl ester (FAME) can be blended with distillate diesel fuel and used in some diesel engines. Unblended biodiesel is referred to as B100 because it is 100% biodiesel.
Rapeseed methyl ester (RME) is the most common type of FAME used in Europe. Soy methyl ester (SME) and sunflower oil methyl ester (SOME) are the most common types of FAME used in the US.
Although use of FAME biodiesel is now a legal requirement in some markets, it is not as suitable for use in diesel engines as conventional diesel fuel or HVO (hydro-treated vegetable oil).

Biodiesel fuel requirements
The FAME biodiesel blends specified in the table below are approved for use if:

- The biodiesel is pre-blended by the fuel supplier
- The biodiesel used in the blend conforms to EN14214 or ASTM D6751
- The distillate fuel used in the blend meets fuel sulphur requirements
- The distillate fuel used in the blend conforms to EN590 or ASTM D975
- B1-B5 biodiesel blends conform to EN590 or ASTM D975
- B6-B7 biodiesel blends conform to EN590 or ASTM D7467
- B8-B20 biodiesel blends conform to EN16709(B20) or ASTM D7467

Engine emission designation	Engine size	Acceptable blend
EU Stage II / US Tier 2 * EU Stage IIIA / US Tier 3 * EU Stage IIIB / US Tier 4 interim EU Stage IV / US Tier 4 final EU Stage V	Below D4 / 4 litres	Up to B7
EU Stage II / US Tier 2 * EU Stage IIIA / US Tier 3 * EU Stage IIIB / US Tier 4 interim EU Stage IV / US Tier 4 final	D4–D8	Up to B7
EU Stage II / US Tier 2 * EU Stage IIIA / US Tier 3 * US Tier 4 final, special North America arrangement **	D9–D16	Up to B20
EU Stage IIIB / US Tier 4 interim EU Stage IV / US Tier 4 final	D11–D16	Up to B10

EU Stage IIIB / US Tier 4 interim, equipped with High Sulphur Fuel Conversion Kit (only available in unregulated markets) EU Stage IV / US Tier 4 final, equipped with High Sulphur Fuel Conversion Kit (only available in unregulated markets)	D4–D16	Up to B20
EU Stage V	D4–D16	Up to B7
* As Tier 2 and Tier 3 emissions regulations ended in 2005 and 2010 respectively, engines produced since then typically **meet Stage II / Stage IIIA regulations**, allowing their sale in less regulated markets. ** With additional restrictions and special operating conditions, equipment used in North America may operate on B20 diesel.		

NOTE!
Failures directly caused by the use of poor quality biofuel, or any other fuel not conforming to standards, are not factory defects and the manufacturer's warranty does not apply.

Maintenance interval requirements
Additional service actions and shorter maintenance intervals are mandatory when using biodiesel blends above B10.

Every 10 hours
○ Check the engine oil and change if it rises above the maximum fill level ○ Inspect the fuel system components and replace as necessary
Half of original interval
○ Change the engine oil and filter ○ Replace the fuel filter(s)
Every year, regardless of operating hours
○ Change the engine oil and filter ○ Clean the fuel tank

Effects of biodiesel on engine oil
Using biodiesel can lead to increased oil dilution. Use engine oil analysis tools frequently to check for fuel dilution and monitor engine oil condition. Check the engine oil level daily. Always change the engine oil if the oil level rises above the maximum fill level.

Effects of biodiesel on fuel systems
Biodiesel dissolves and loosens some fuel system deposits. During the initial conversion to biodiesel, loosened deposits will travel to the fuel filters and require more frequent fuel filter replacements. Start with new fuel filters when using biodiesel for the first time.

Biodiesel is aggressive to some materials used in fuel system components. Inspect seals, hoses, rubber and plastic components every 10 hours. Repair or replace any components that are damaged, softened or leaking. Clean biodiesel from painted surfaces immediately to prevent paint damage.

Biodiesel is more sensitive to bacteria and water contamination than distillate diesel fuel.

- Use as much fuel as possible before refilling the fuel tank in order to prevent bacteria growth if a machine is in regular use, e.g. regularly uses up a tank of fuel within a week. In climates where condensation is a risk, or when the machine is working for short durations, keep the fuel tank full.
- Do not use biodiesel in machines with low utilization or operating time.
- Do not store machines for more than 4 weeks without flushing biodiesel out of the fuel system by operating the machine through at least one full tank of distillate diesel fuel.
- Always follow the manufacturer's storage recommendations and "best-before" dates for each delivery of biodiesel.

Effects of biodiesel on exhaust aftertreatment systems
Biodiesel leaves higher levels of ash in diesel particulate filters and may require more frequent diesel particulate filter (DPF) regeneration and cleaning. Biodiesel can cause deviations in temperatures and functionality of the DPF burner and may cause fault codes or errors.

Biodiesel exhaust gas is aggressive to some materials used in selective catalytic reduction systems (SCR) and may require more frequent cleaning, repairing or replacing of SCR parts.

Effects of biodiesel on cold weather operation

Biodiesel has a high viscosity at temperatures below 0 ˚C (32 ˚F) and may cause problems starting the engine. Use a fuel heater or park machines in a heated building if possible.

Effects of biodiesel on engine performance

Biodiesel B100 has about 8% lower energy density compared to regular diesel fuel. Blends equal or lower than B20 have a small impact on engine performance.

Effects of biodiesel on emissions compliance

Engines are certified to comply with U.S. EPA, California and EU emissions standards based upon the use of test fuels with specifications established by these regulatory agencies. Alternative fuels, including biodiesel, that are not substantially similar to the required test fuels may adversely affect engine emissions compliance. As a result, Volvo does not warrant that the engine will conform to applicable Federal or California and EU emissions limits when operated on, or having previously being operated on, biodiesel or other alternative fuels that are not substantially similar to specified test fuels used for certification, nor if biodiesel / regular diesel is used in blends that exceed the recommendations.

However, the use of biodiesel up to a maximum of 20% (B20) in and of itself, will not affect the manufacturer's mechanical warranty as to engine or emissions system, provided the bio fuel used in the blend conforms to the applicable standards and the additional steps outlined herein are followed.

Document Title:	Function Group:	Information Type:	Date:
Arrival Inspection, according to Inspection Programme	**171**	**Service Information**	**4/27/2026**
Profile: **Wheeled Pavers (PAW)**			

Arrival Inspection, according to Inspection Programme

Op nbr 171-001

Total procedure time (hr): 0.80

1. This Inspection Programme can be found as a PDF file in the document library in PROSIS.

Document Title:	Function Group:	Information Type:	Date:
Delivery Inspection, according to Inspection Programme	**171**	**Service Information**	**4/27/2026**
Profile: **Wheeled Pavers (PAW)**			

Delivery Inspection, according to Inspection Programme

Op nbr 171-002

Total procedure time (hr): 2.00

1. This Inspection Programme can be found as a PDF file in the document library in PROSIS.

Document Title: **Maintenance of Stored Machines, according to Inspection Programme**	Function Group: **171**	Information Type: **Service Information**	Date: **4/27/2026**
Profile: **Wheeled Pavers (PAW)**			

Maintenance of Stored Machines, according to Inspection Programme

Op nbr 171-003

Total procedure time (hr): 2.50

1. This Inspection Programme can be found as a PDF file in the document library in PROSIS.

VOLVO

Service Information

Document Title: **Wiring diagram 1**	Function Group: **370**	Information Type: **Service Information**	Date: **4/27/2026**
Profile: **ABG3870 Volvo**			

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Wiring diagram 1

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
ABG3870 Volvo			

Sheet 1

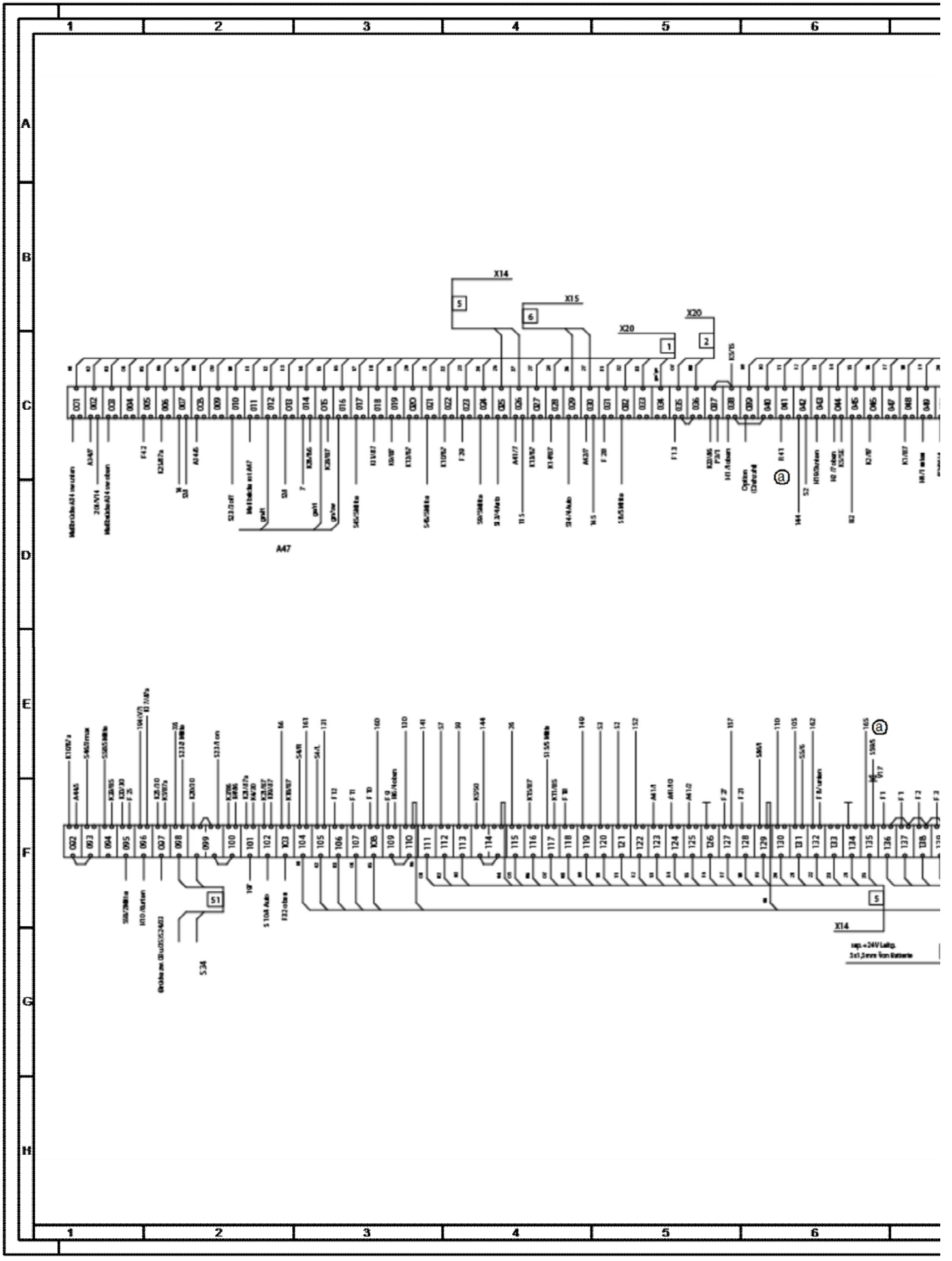
X14
X15
X20
X20
A47
S34
S1
X14

Figure 1
V1081488

Document Title: **Wiring diagram 1**	Function Group: **370**	Information Type: **Service Information**	Date: **4/27/2026**
Profile: **ABG3870 Volvo**			

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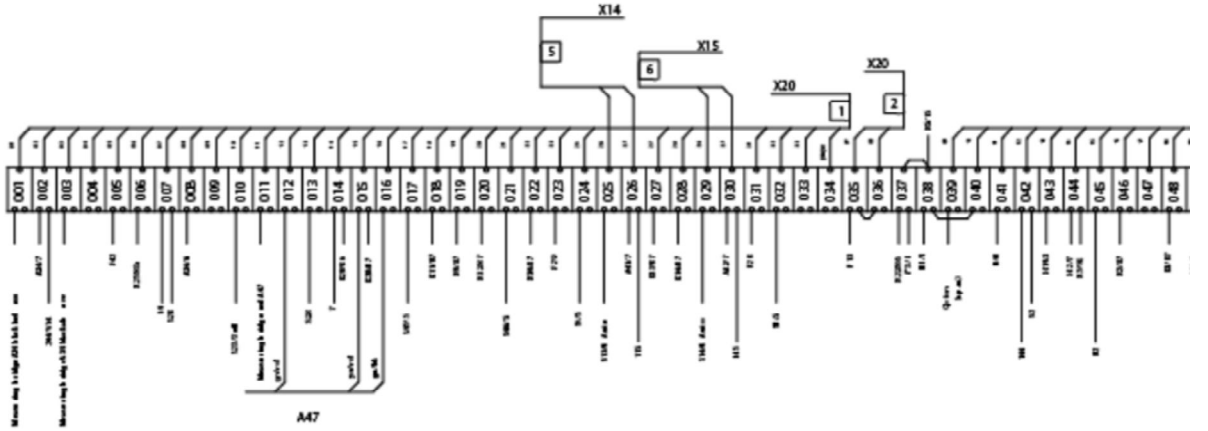
Wiring diagram 1

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
ABG3870 Volvo			

Sheet 2


X14
X15
X20
X20
A47

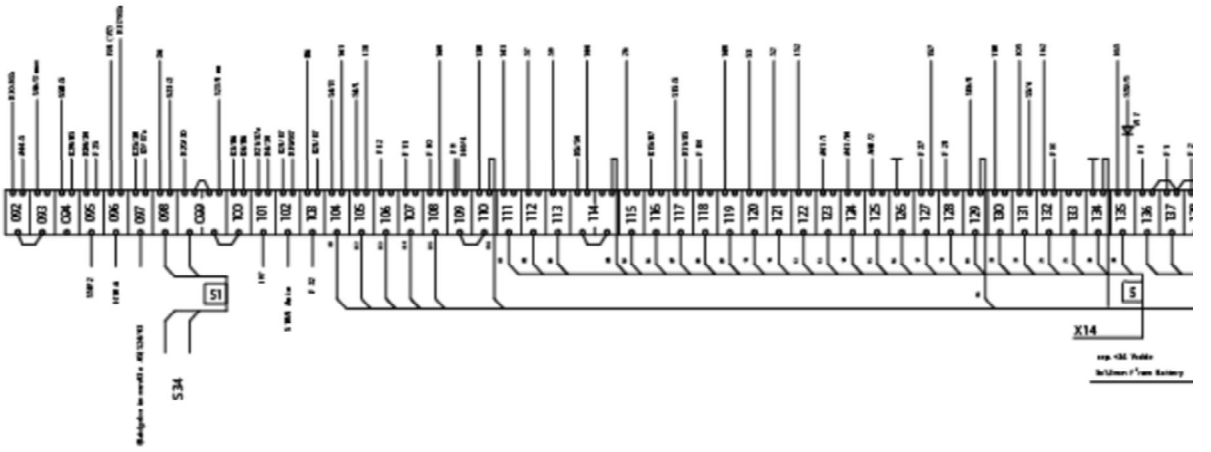

S1
S34
X14

Figure 1
V1081489

VOLVO

Service Information

Document Title: **Wiring diagram 2**	Function Group: **370**	Information Type: **Service Information**	Date: **4/27/2026**
Profile: **ABG3870 Volvo**			

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Wiring diagram 2

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
ABG3870 Volvo			

Sheet 1

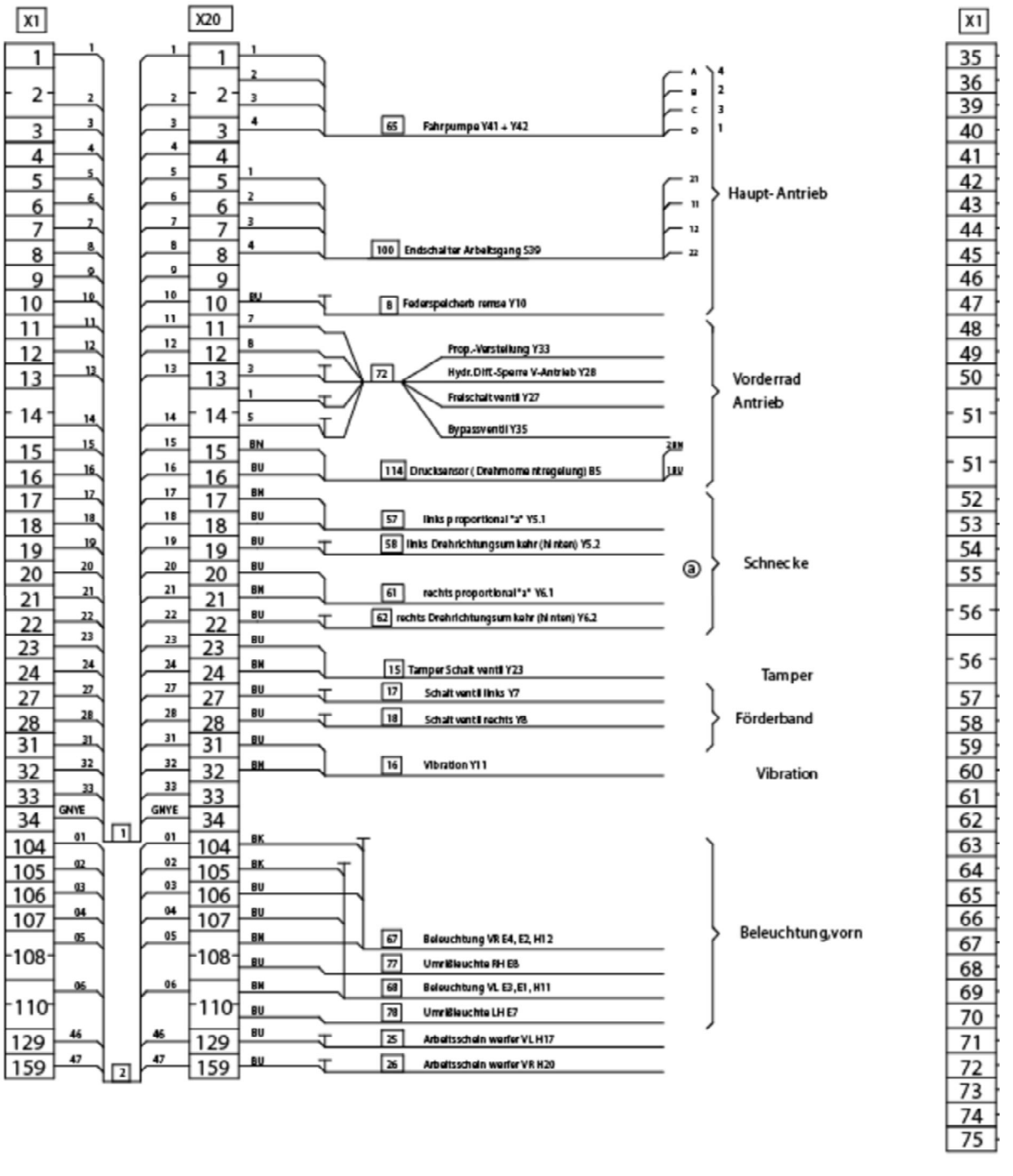
X1
X20
X1
65 Fahrpumpe Y41 + Y42
100 Endschalter Arbeitsgang S39
8 Federspeicherb remse Y10
72
Prop.-Verstellung Y33
Hydr.Diff.-Sperre V-Antrieb Y28
Freischaltventil Y27
Bypassventil Y35
114 Drucksensor (Drehmomentregelung) B5
57 links proportional "a" Y5.1
58 links Drehrichtungsumkehr (hinten) Y5.2
61 rechts proportional "a" Y6.1
62 rechts Drehrichtungsumkehr (hinten) Y6.2
15 Tamper Schaltventil Y23
17 Schaltventil links Y7
18 Schaltventil rechts Y8
16 Vibration Y11
67 Beleuchtung VR E4, E2, H12
77 Umrißleuchte RH E8
68 Beleuchtung VL E3, E1, H11
78 Umrißleuchte LH E7
25 Arbeitsscheinwerfer VL H17
26 Arbeitsscheinwerfer VR H20
Haupt- Antrieb
Vorderrad Antrieb
Schnecke
Tamper
Förderband
Vibration
Beleuchtung,vorn

Figure 1
V1081490

Document Title: **Wiring diagram 2**	Function Group: **370**	Information Type: **Service Information**	Date: **4/27/2026**
Profile: **ABG3870 Volvo**			

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Wiring diagram 2

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
ABG3870 Volvo			

Sheet 2

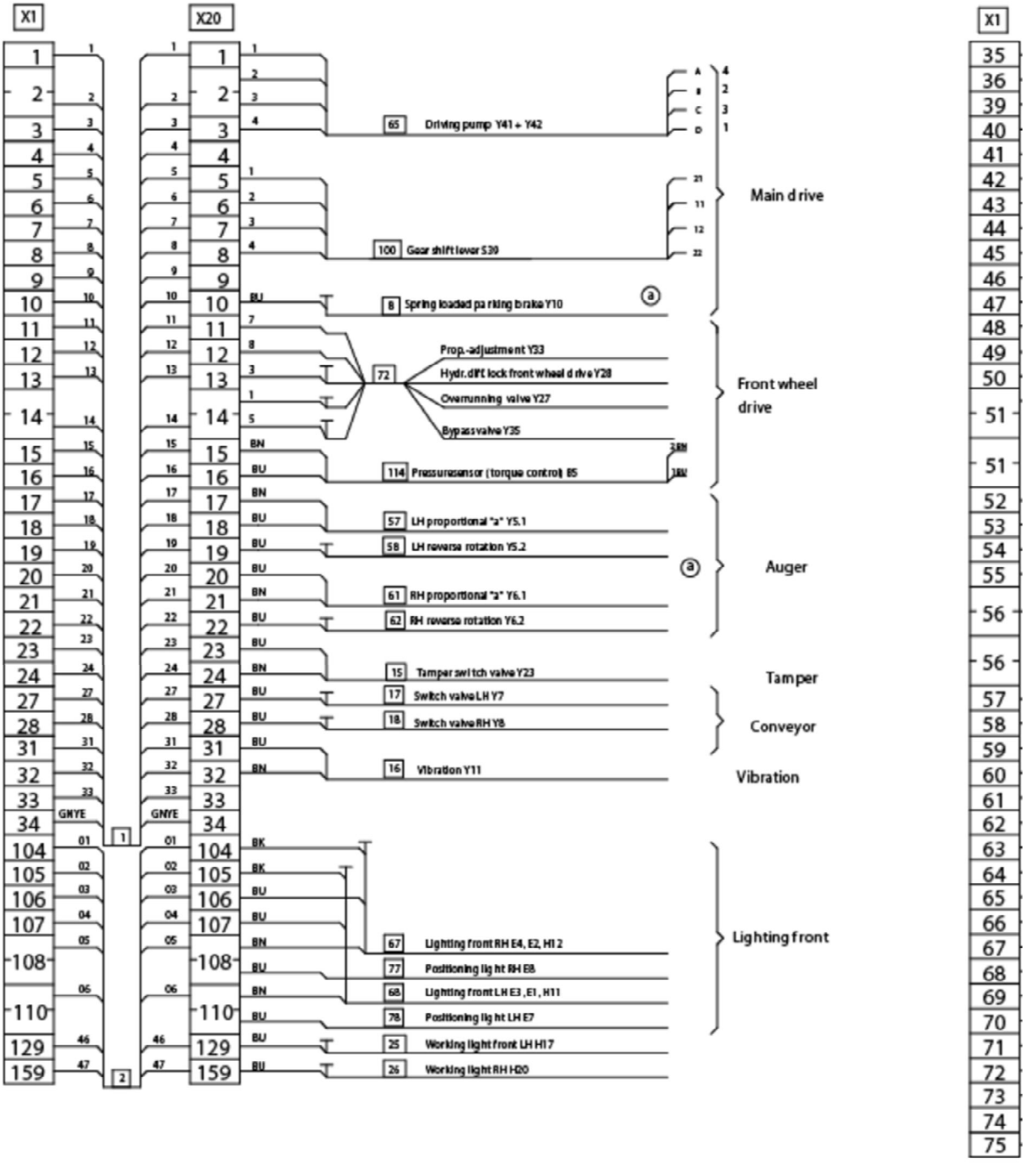
X1
X20
X1
65 Driving pump Y41 + Y42
100 Gear shift lever S39
8 Spring loaded parking brake Y10
72
Prop.-adjustment Y33
Hydr.diff.lock front wheel drive Y28
Overrunning valve Y27
Bypass valve Y35
114 Pressuresensor (torque control) B5
57 LH proportional "a" Y5.1
58 LH reverse rotation Y5.2
61 RH proportional "a" Y6.1
62 RH reverse rotation Y6.2
15 Tamper switch valve Y23
17 Switch valve LH Y7
18 Switch valve RH Y8
16 Vibration Y11
67 Lighting front RH E4, E2, H12
77 Positioning light RH E8
68 Lighting front LH E3 , E1 , H11
78 Positioning light LH E7
25 Working light front LH H17
26 Working light RH H20
Main drive
Front wheel drive
Auger
Tamper
Conveyor
Vibration
Lighting front

Figure 1
V1081491

VOLVO

Service Information

Document Title: **Wiring diagram 3**	Function Group: **370**	Information Type: **Service Information**	Date: **4/27/2026**
Profile: **ABG3870 Volvo**			

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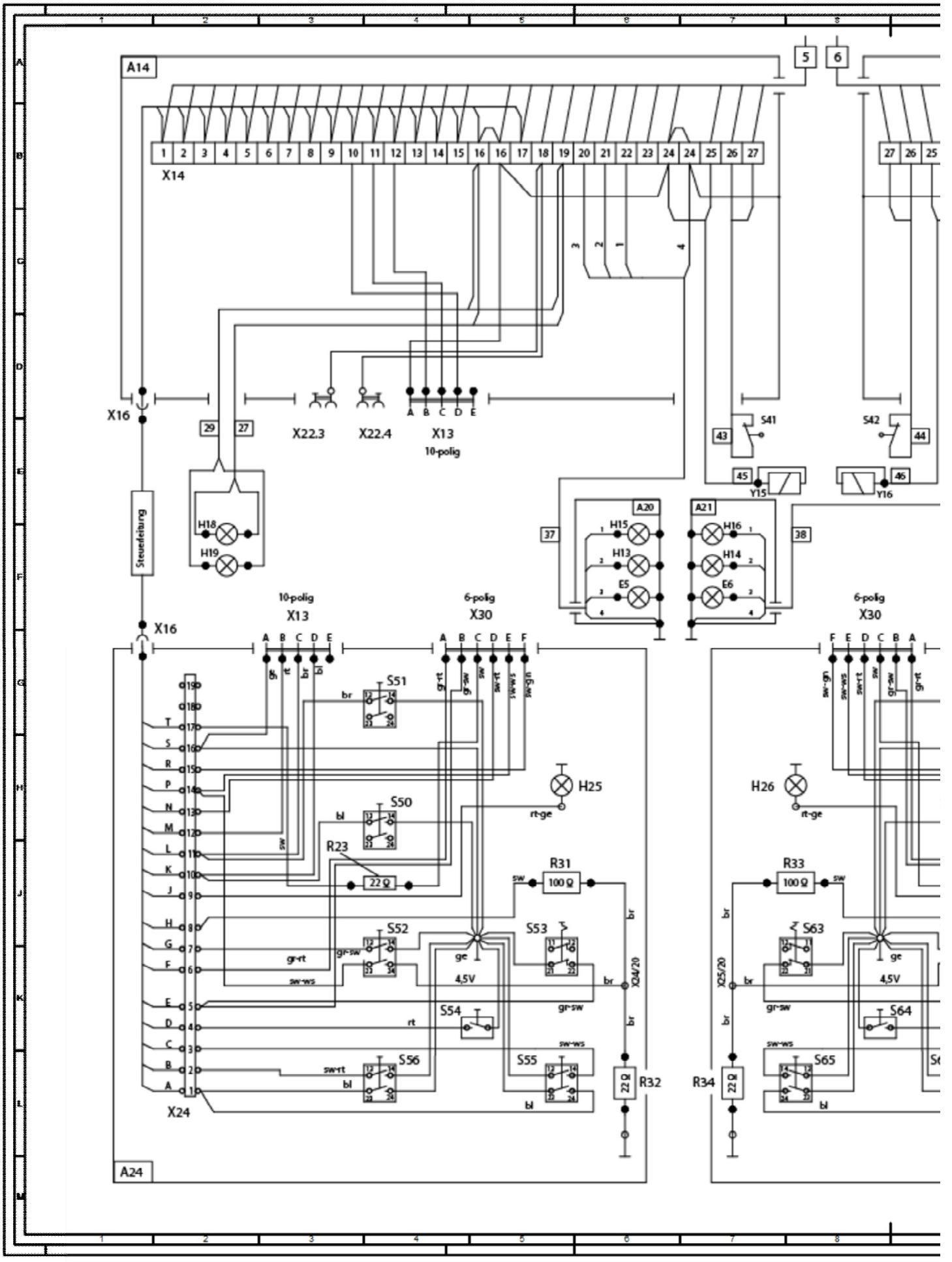
Wiring diagram 3

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
ABG3870 Volvo			

Sheet 1


A14
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X16
X22.3
X22.4
X13
10-polig
A B C D E
S41
S42
Y15
Y16
A20
A21
H15
H13
E5
H16
H14
E6
Steuerleitung
H18
H19
X16
10-polig
X13
6-polig
X30
S51
S50
S52
S53
S54
S55
S56
R23
22 Ω
R31
100 Ω
H25
rt-ge
4,5V
X24/20
R32
X24
A24
H26
R33
S63
S64
S65
R34
X25/20

Figure 1
V1081492

Document Title: **Wiring diagram 3**	Function Group: **370**	Information Type: **Service Information**	Date: **4/27/2026**
Profile: **ABG3870 Volvo**			

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Wiring diagram 3

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
ABG3870 Volvo			

Sheet 2