# VOLVO CONSTRUCTION EQUIPMENT MATRIS REPORT

Machine model	SerialNo		Operating Hours		Reading Date
L90G	617610	)	4730.4		5/15/2018
Company name		Dealer	•	Report Issuer	
Arnold Machinery ARNOLD MACHINERY		CHINERY			
Contact name		Technician		Primary Application	
lvc		lvcetechn		Rehandling	
Site		Workorder		Ground Condition	

MATRIS Reading, Summary / Recommendation

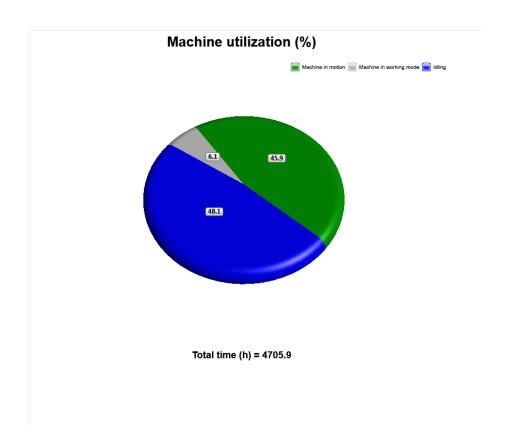


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L90G	617610	4730.4	5/15/2018

Main equipment	Туре	Equipment	
	Tyre size/class		
	Main Attachment		
	Extra Counterweight		
	Ballast		
	Chains		
	Boom Suspension System		
	Attachment Interface		
	Volume m3 (yd3) / Area m2 (ft2)		
	Attachment make		



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the distribution of the operating time for the machine. The operating time is defined as the time with engine on.

Blue sector = Engine speed less than idling or equal to idling and machine speed less than 0.5 km/h (0.3 mph)

Gear level position: Neutral, forward or reverse.

Green sector = Machine in motion.

Engine speed larger than idling and machine speed larger than 0.5 km/h (0.3 mph) .



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Gear level position: Forward or reverse.

One typical situation is material transportation, in bucket or long distance transportation.

Grey sector = Engine in working mode.

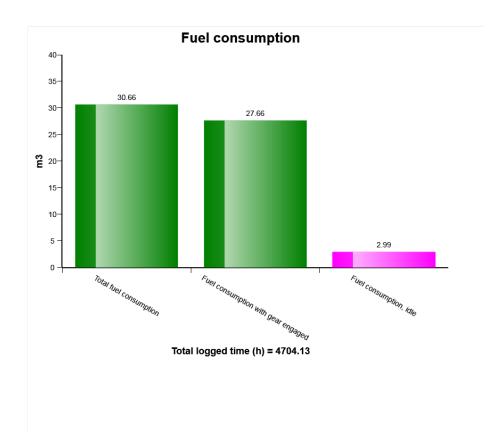
Engine speed larger than idling and machine speed less than 0.5 km/h (0.3 mph) .

Gear level position: Forward or reverse.

Typical application is loading and unloading of the bucket.



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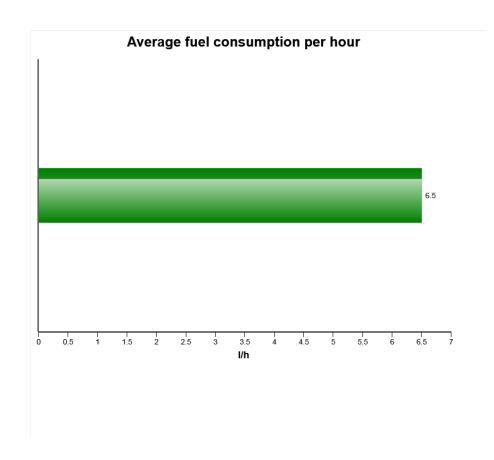


The diagram shows the total fuel consumption, fuel consumption with gear engaged and fuel consumption during idle.

High fuel consumption during idle can indicate that the machine is not fully utilized.



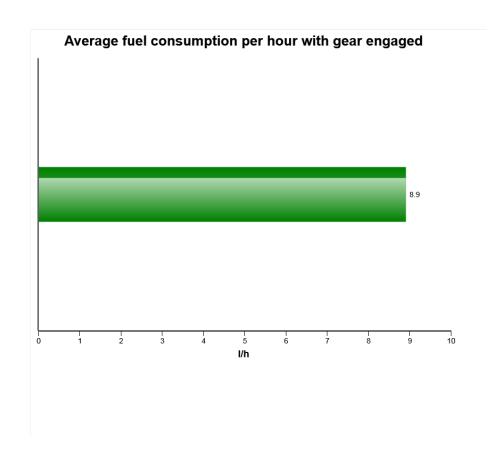
Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram shows the average fuel consumption based on total operating hours.



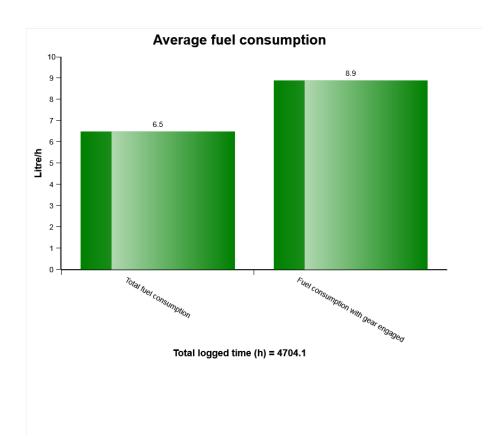
Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram shows the average fuel consumption based on the operating hours with gear engaged.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

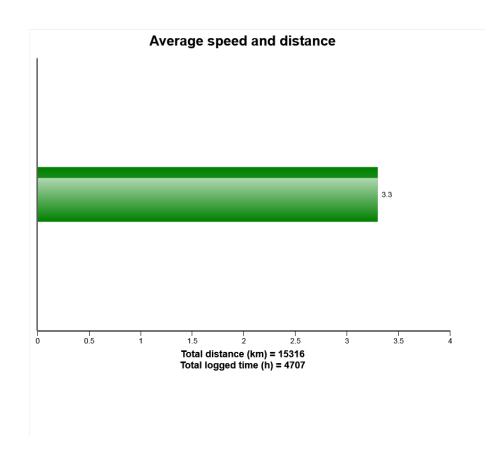


The diagram shows the total average fuel consumption versus average fuel consumption with gear engaged.

Big difference between the bars can indicate that the machine is not fully utilized, high idle lowers the total average fuel consumption.



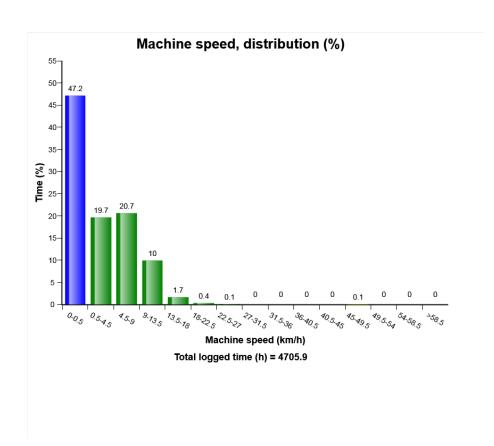
Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram shows the machines average speed based on the total operating hours.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



This graph describes the machine speed distribution.

The sum of all bars = 100% of machine speed time.

Under the graph total time with engine on, in hours, is displayed.

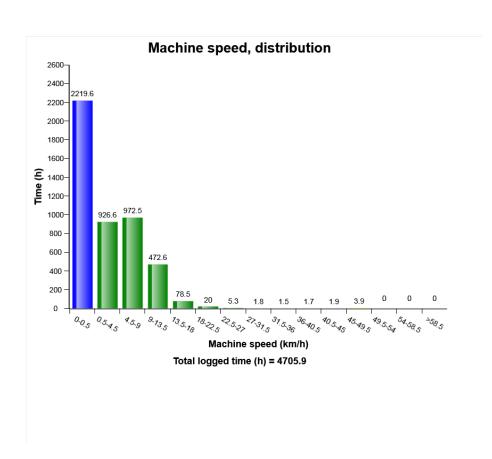
## Explanation:

Y-axis: Time, specified for each speed interval.

X-axis: Machine speed, divided into speed intervals.



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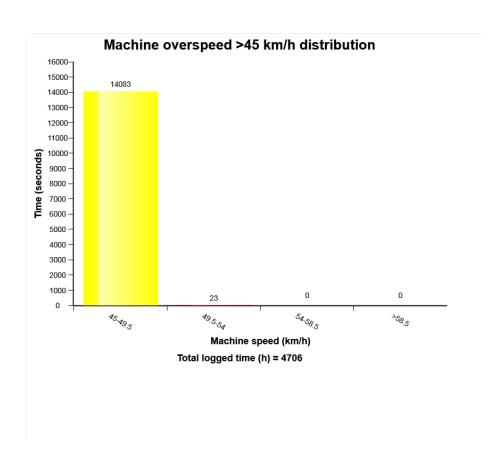
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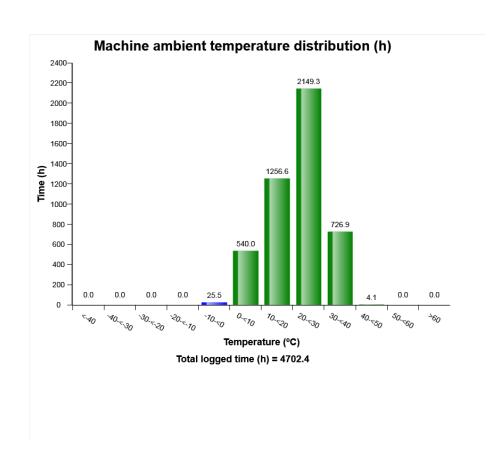
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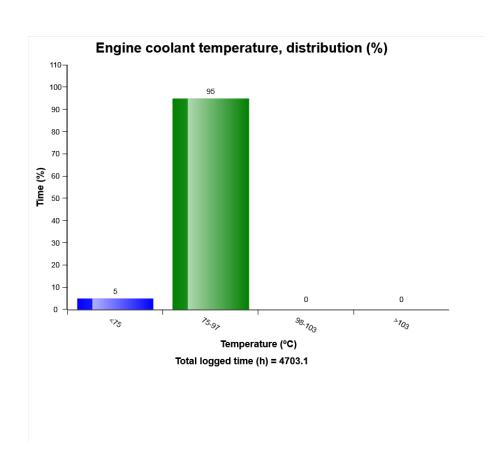
Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram describes ambient temperature distribution of the machine while machine operates.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the time distribution of the temperature, while engine running.

#### Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

During the engine warm-up phase, this temperature region is passed.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

It is normal to have registrations in this region.

Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

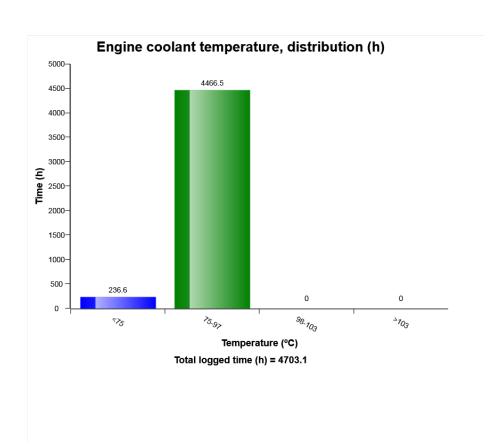
Yellow bar = High working temperature. It is normal to have some registrations in this region.

Red bar = Alarm.

Registrations in this region is not normal, running in this region may cause severe damage.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



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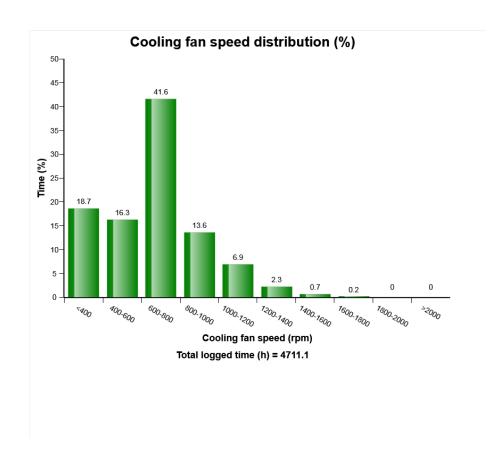
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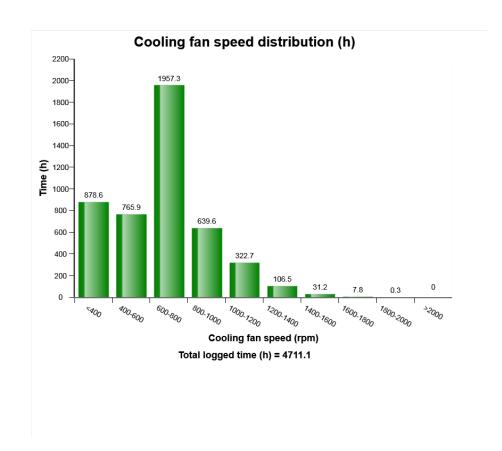
Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram shows the time distribution for the cooling fan in different rpm ranges.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

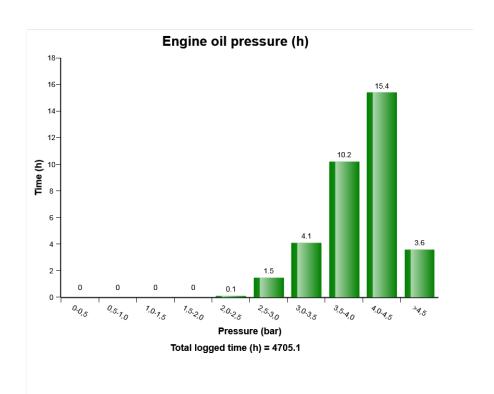


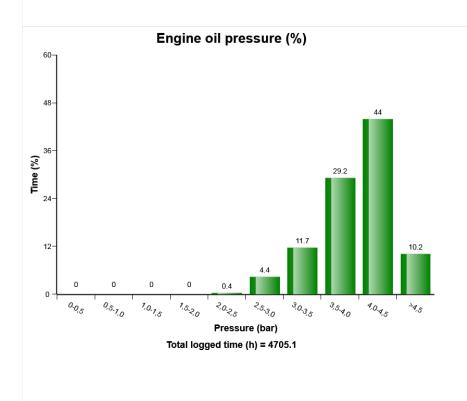
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 Machine model
 SerialNo
 Operating Hours
 Reading Date

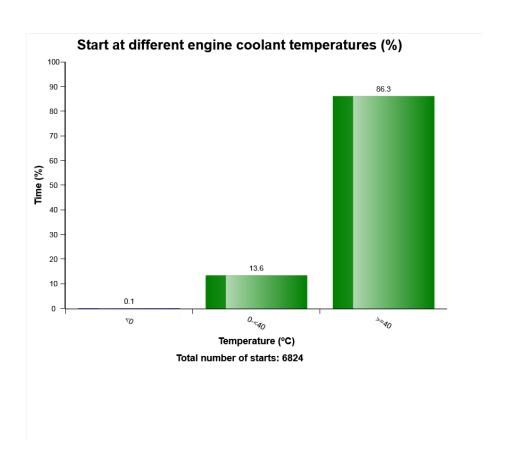
 L90G
 617610
 4730.4
 5/15/2018







Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the distribution of engine coolant temperature, at the starting moment.

#### **Explanation:**

Y-axis: Number of engine starts

X-axis: Engine coolant temperature.

A great proportion of engine wear is due to cold starts. Try to avoid extremely cold starts. Try using an electric coolant heater.



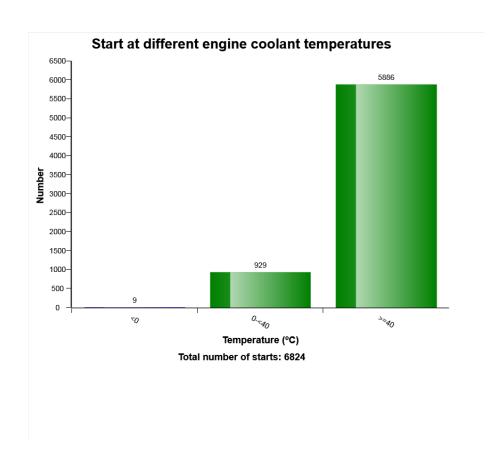
Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

Under the graph the total number of engine starts is displayed.

Also see " *Number of starts / hour*" to get a complete picture of engine starting.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



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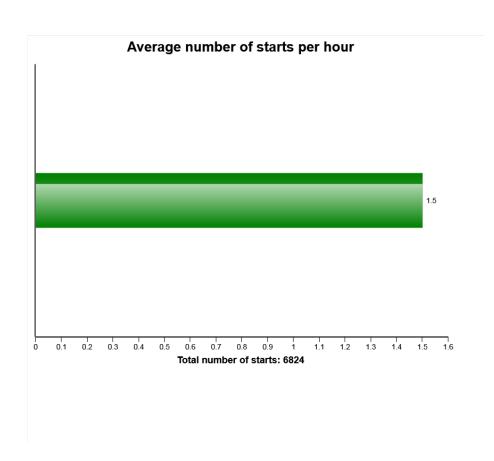
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Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph describes the average number of engine starts per engine running hour.

#### Explanation:

X-axis: Number of average starts per hour.

The actual time used for calculation, is time with engine on

If the fuel consumption is high one reason may be that the engine is not turned off often enough, perhaps machine is left idling for long periods. Check " Machine utilization".

The value can vary a lot depending on in which application the machine is used.



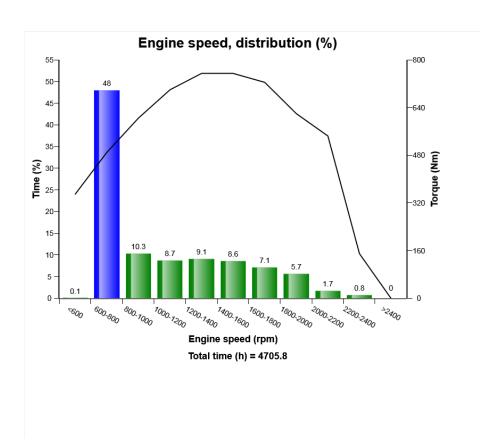
Machine model	SerialNo	Operating Hours	Reading Date
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To see at which different temperatures engine is started see" Start at different engine temperatures."

Green bar = Number of average starts per hour



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph describes the engine speed distribution, compared with the engine torque curve.

The sum of all bars = total time of engine running.

#### Explanation:

Y-axis\_1: Engine running time.

Y-axis\_2: Torque (Nm)

X-axis: Engine speed in rpm.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

П

Black curve = Engine torque curve. The highest part of the torque curve points out at which engine speed that the engine is strongest. To use the machine most efficient, keep the engine speed in the highest part of the torque curve. See below examples:

Blue bar = Idling interval.

Green bars = Normal engine speed range.

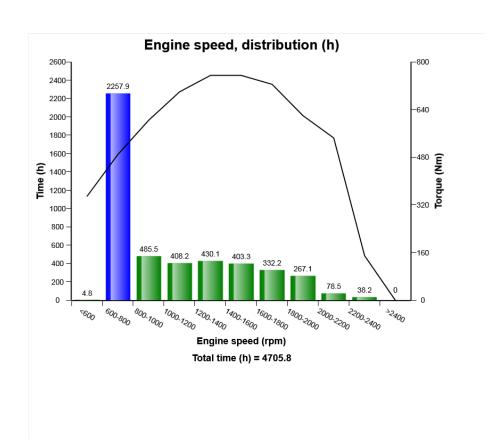
Red bar =The engine speed has exceeded the maximum design speed.

Never exceed the maximum engine design speed .

Exceeding the maximum design speed may cause severe damage to the engine.



Machine model	SerialNo	Operating Hours	Reading Date	
L90G	617610	4730.4	5/15/2018	



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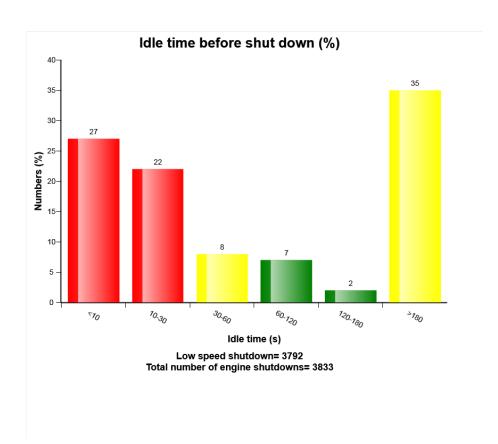
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This graph shows the distribution of delayed time at low idle speed until the engine is turned off.

The delayed time distribution for each bar is shown on top of its column in percentage.

The sum of bars is 100%.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

# Low Engine Oil Pressure Total number of occurences = 0

	Op hours	Year	Month	Day	Hour	Minute	Duration (sec)
A	0	2000	0	0	0	0	0
R	0	2000	0	0	0	0	0
Q	0	2000	0	0	0	0	0
Р	0	2000	0	0	0	0	0
0	0	2000	0	0	0	0	0
N	0	2000	0	0	0	0	0
M	0	2000	0	0	0	0	0
L	0	2000	0	0	0	0	0
K	0	2000	0	0	0	0	0
J	0	2000	0	0	0	0	0
I	0	2000	0	0	0	0	0
Н	0	2000	0	0	0	0	0
G	0	2000	0	0	0	0	0
F	0	2000	0	0	0	0	0
E	0	2000	0	0	0	0	0
D	0	2000	0	0	0	0	0
С	0	2000	0	0	0	0	0
В	0	2000	0	0	0	0	0
S	0	2000	0	0	0	0	0
Т	0	2000	0	0	0	0	0

#### Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating hours is displayed in the first column, followed by year, month, day, hour



# Extreme (bar)

Volvo Construction Equipment Customer Support



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

Duration:

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

Extreme value :

The extreme value column displays the most extreme value during the event.

#### Criteria:

In order for an occurrence of low engine oil pressure to be recorded in a data point and the count to increment by 1, the engine oil pressure state must change from "normal" or "error" to "low." The event of low transmission oil pressure will end when the status changes from "low" back to "normal" or "error."





Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

#### Low engine oil level at start Total number of occurences = 0

	Op hours	Year	Month	Day	Hour	Minute
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0

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This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

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Only one event per minute is registered.

Over the table the total number of events is displayed

#### Criteria:

In order for an occurrence of low engine oil level to be recorded in a data point and the count to increment by 1, an Alarm shall have been received at start up of machine



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

## High engine coolant temperature Total number of occurences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° C)
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0

## Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

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Only one event per minute is registered.

Over the table the total number of events is displayed.

#### Duration:

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

#### Extreme value :

The extreme value column displays the most extreme value during the event.

#### Criteria:

The criteria to get an registration, is that the alarm signal for high engine coolant temperature is active and that the diesel engine is running.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

## Low Air filter pressure Total number of occurences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
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0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
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The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed.

#### Duration:

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

#### Criteria:

The criteria to get an registration, is that the alarm signal for air filter clogged is active, and that the diesel engine is running.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

## Starter overheating Total number of occurences = 0

Op hours	Year	Month	Day	Hour	Minute
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0
0	2000	0	0	0	0

## Definition:

The starter can be damaged if it is overheated.



Machine model	SerialNo	Operating Hours	Reading Date
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Alarm is registered if the starter is used continuously more than 40 seconds and if it is less than five minutes since the latest alarm.

## Explanation:

X-axis: Number of times that the starter alarm has been activated.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

# Regeneration ignored Total number of ignored regenerations 32

	Op hours	Year	Month	Day	Hour	Minute	Duration (min)
*	1988	2015	10	6	7	2	164
*	2135	2015	11	2	16	18	58
*	2135	2015	10	31	21	19	1
*	2626	2016	2	26	10	39	90
*	2628	2016	2	26	13	26	1
*	2628	2016	2	26	12	26	53
*	2628	2016	2	26	13	31	38
*	4140	2010	2	10	9	9	1
*	4140	2010	2	10	8	53	0
*	4140	2010	2	10	10	46	1
*	4140	2010	2	10	10	31	2
*	4140	2010	2	10	10	26	2
*	4140	2010	2	10	10	11	0
*	4140	2010	2	10	9	41	0
*	4140	2010	2	10	9	37	1
*	4140	2010	2	10	9	27	0
*	4140	2010	2	10	14	40	49
*	4159	2010	2	19	14	1	32
*	4159	2010	2	19	11	26	49
*	4535	2010	7	27	12	43	18



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

## Regeneration aborted Total number of occurences = 320

Op hours	Year	Month	Day	Hour	Minute
4405	2010	6	8	8	0
4405	2010	6	8	8	15
4414	2010	6	10	8	27
4414	2010	6	10	10	12
4415	2010	6	10	11	36
4415	2010	6	10	12	58
4423	2010	6	22	9	7
4431	2010	6	25	7	37
4439	2010	7	5	10	27
4439	2010	7	3	10	53
4440	2010	7	5	10	41
4451	2010	7	8	17	21
4452	2010	7	9	9	52
4569	2010	8	4	16	36
4604	2010	8	17	16	15
4654	2010	9	10	8	18
4655	2010	9	10	8	45
4666	2010	9	15	16	40
4692	2010	9	23	9	24
4693	2010	9	27	9	13



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

## Regeneration duration Total number of occurences = 1275

Op hours	Year	Month	Day	Hour	Minute	Duration (min)
4611	2010	8	20	4	19	28
4617	2010	8	23	10	6	31
4622	2010	8	27	3	15	30
4629	2010	9	6	13	36	31
4637	2010	9	7	14	6	29
4645	2010	9	8	15	22	33
4654	2010	9	10	8	3	15
4654	2010	9	10	8	26	20
4655	2010	9	10	8	55	31
4662	2010	9	14	12	56	30
4666	2010	9	16	7	43	30
4666	2010	9	15	16	35	5
4675	2010	9	17	9	10	29
4683	2010	9	20	14	31	29
4692	2010	9	23	8	59	25
4692	2010	9	27	8	44	29
4693	2010	9	27	9	24	28
4697	2011	2	14	15	35	36
4704	2011	5	10	11	26	1
4704	2011	5	10	11	28	11



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

## Water level warning in water separator Total number of occurences = 6

Op hours	Year	Month	Day	Hour	Minute	Duration (min)
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
2429	2016	1	19	14	54	52
2579	2016	2	17	12	5	26
3440	2009	8	17	1	41	23
3531	2009	9	4	7	49	96
4326	2010	5	5	13	5	0
4401	2010	6	7	10	33	89



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

## Low voltage Total number of occurences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme value
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0

## Definition:

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

#### Duration:

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

#### Extreme value :

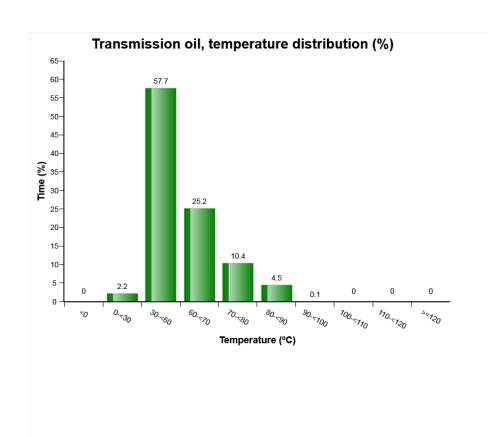
The extreme value column displays the most extreme value during the event.

#### Criteria:

Logging is performed when, Alarm low system voltage, is active.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram shows the transmission oil temperature in various temperature ranges. The time is displayed in the following ten temperature ranges:

<0°C Temperatures below 0°C

0 - <30°C Temperatures from 0°C until 30°C

30-<60°C Temperatures from 30°C until 60°C

60-<70°C Temperatures from 60°C until 70°C

70-<80°C Temperatures from 70°C until 80°C

80-<90°C Temperatures from 80°C until 90°C



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

90-<100°C Temperatures from 90°C until 100°C

100-<110°C Temperatures from 100°C until 110°C

110-<120°C Temperatures from 110°C until 120°C

≥120°C Temperatures over 120°C

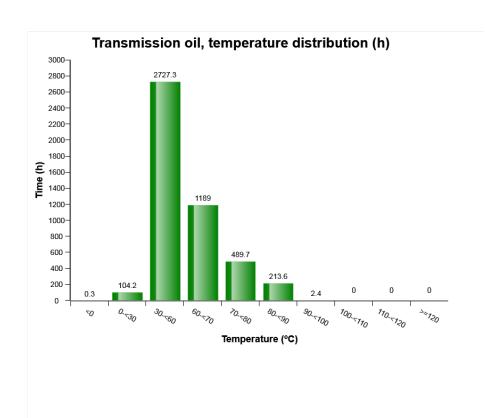
The bar that describes temperatures from 110°C until 120°C is yellow and means that the oil has began to be overheated. Driver has been given orange central warning

The bar that describes >120°C is red and means that the oil has been overheated. Driver has been given red central warning.

Oil temperatures exceeding 110°C must be avoided since the properties of the oil are degraded



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram shows the transmission oil temperature in various temperature ranges. The time is displayed in the following ten temperature ranges:

<0°C Temperatures below 0°C

0 - <30°C Temperatures from 0°C until 30°C

30-<60°C Temperatures from 30°C until 60°C

60-<70°C Temperatures from 60°C until 70°C

70-<80°C Temperatures from 70°C until 80°C

80-<90°C Temperatures from 80°C until 90°C



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

90-<100°C Temperatures from 90°C until 100°C

100-<110°C Temperatures from 100°C until 110°C

110-<120°C Temperatures from 110°C until 120°C

≥120°C Temperatures over 120°C

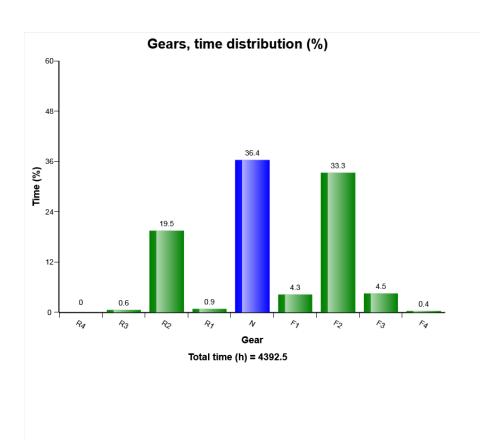
The bar that describes temperatures from 110° C until 120°C is yellow and means that the oil has began to be overheated. Driver has been given orange central warning

The bar that describes >120°C is red and means that the oil has been overheated. Driver has been given red central warning.

Oil temperatures exceeding 110°C must be avoided since the properties of the oil are degraded



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph describes the distribution of the usage of the different gears, expressed as percentage of total engine running time.

The sum of all bars = 100% = total engine running time.

Under the graph the total engine running time (in hours) is displayed.

### Explanation:

Y-axis: Engine running time, in percent.

X-axis: Active gear.

Volvo Construction Equipment Customer Support





Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

### Green bars:

R1 = First reverse gear

R2 = Second reverse gear

R3 = Third reverse gear

R4 =Fourth reverse gear

N = Neutral position

F1=First forward gear

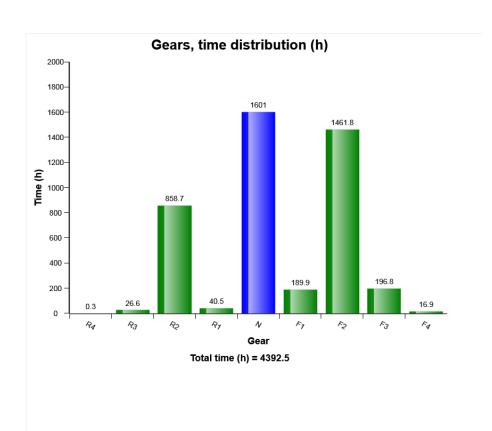
F2=Second forward gear

F3=Third forward gear

F4=Fourth forward gear



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph describes the distribution of the usage of the different gears, expressed as total running time for each gear..

The sum of all bars = Total engine running time.

Under the graph the total engine running time (in hours) is displayed.

### Explanation:

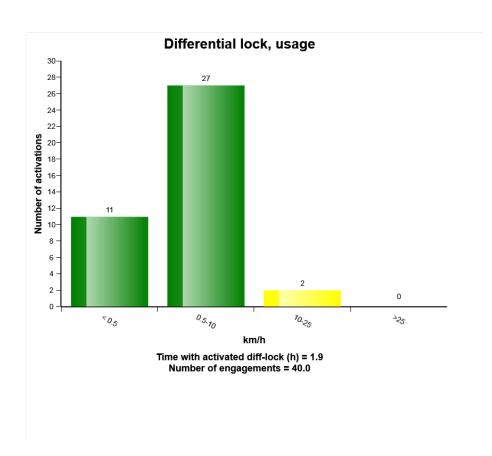
Y-axis: Engine running time, in hours.

X-axis: Active gear.

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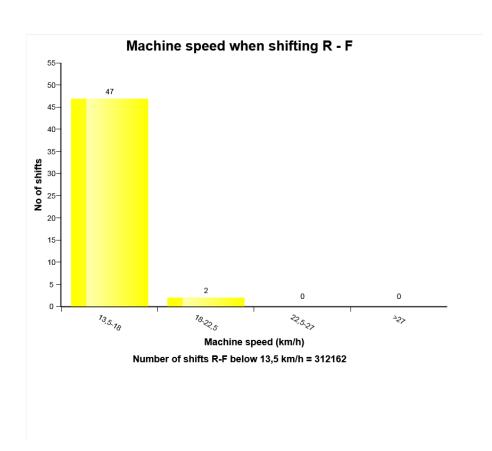
Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram show, number of times the differential lock has been engaged at each speed interval



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the machine speed at direction shift, reverse to forward (R-F)

### Explanation:

Y-axis: Number of shifts (reverse-forward)

X-axis: Machine speed in km/h.

Under the graph the total number of directional gear shifts R-F below 13,5 km/h is displayed.

Transmission wear depends on current speed when shifting direction. Less machine speed when shifting direction generally cause less wear on the transmission.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

Yellow bar = From 13,5km/h to18 km/h

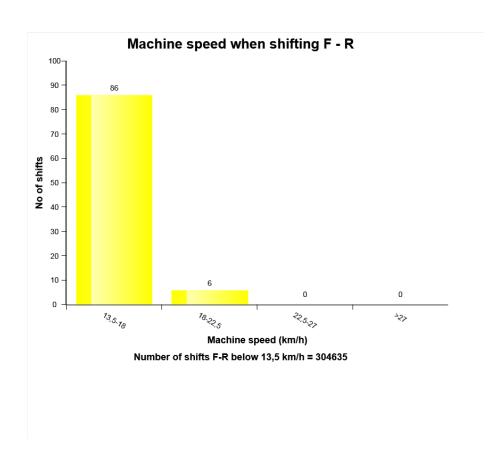
Red bar = From 18km/h to 22,5 km/h

Red bar = From 22,5km/h to 27 km/h

Red bar = Over 27 km/h



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the machine speed at direction shift, forward to reverse (F-R).

### Explanation:

Y-axis: Number of shifts (forward to reverse)

X-axis: Machine speed in km/h.

Under the graph the total number of directional gear shifts F-R below 13,5 km/h is displayed.

Transmission wear depends on current speed when shifting direction. Less machine speed when shifting direction generally cause less wear on the transmission.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

Yellow bar = From 13,5km/h to 18 km/h

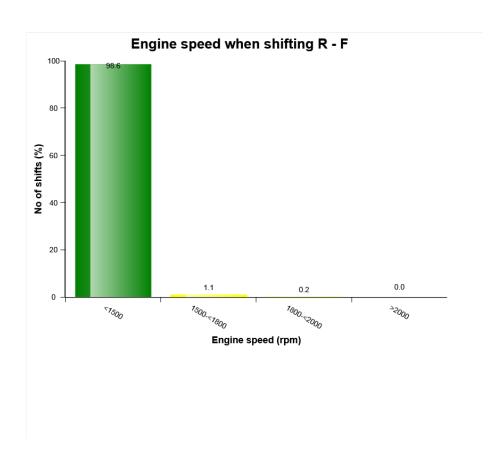
Red bar = From 18km/h to 22,5 km/h

Red bar = From 22,5km/h to 27 km/h

Red bar = Over 27 km/h



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the machine speed at direction shift, reverse to forward (R-F)

### Explanation:

Y-axis: Number of shifts (reverse-forward)

X-axis: Machine speed in km/h.

Under the graph the total number of directional gear shifts R-F below 13,5 km/h is displayed.

Transmission wear depends on current speed when shifting direction. Less machine speed when shifting direction generally cause less wear on the transmission.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

Yellow bar = From 13,5km/h to18 km/h

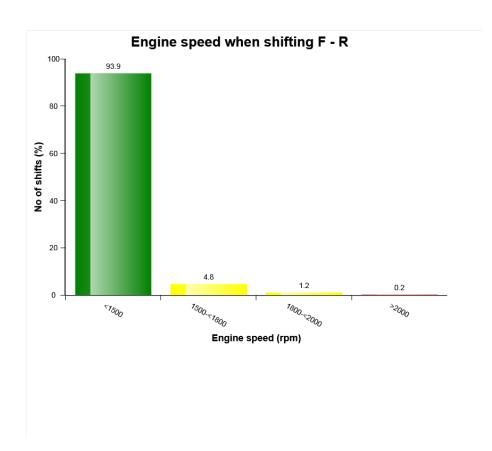
Red bar = From 18km/h to 22,5 km/h

Red bar = From 22,5km/h to 27 km/h

Red bar = Over 27 km/h



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the machine speed at direction shift, forward to reverse (F-R).

### Explanation:

Y-axis: Number of shifts (forward to reverse)

X-axis: Machine speed in km/h.

Under the graph the total number of directional gear shifts F-R below 13,5 km/h is displayed.

Transmission wear depends on current speed when shifting direction. Less machine speed when shifting direction generally cause less wear on the transmission.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

Yellow bar = From 13,5km/h to 18 km/h

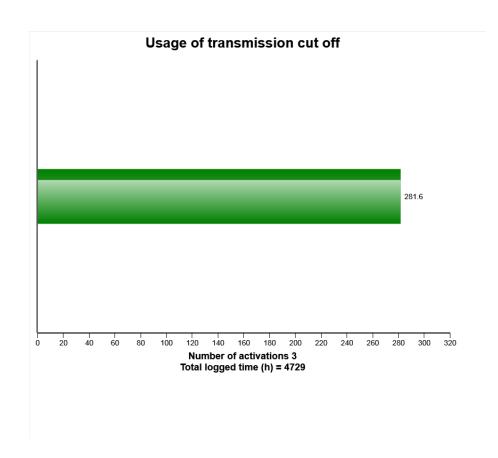
Red bar = From 18km/h to 22,5 km/h

Red bar = From 22,5km/h to 27 km/h

Red bar = Over 27 km/h



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

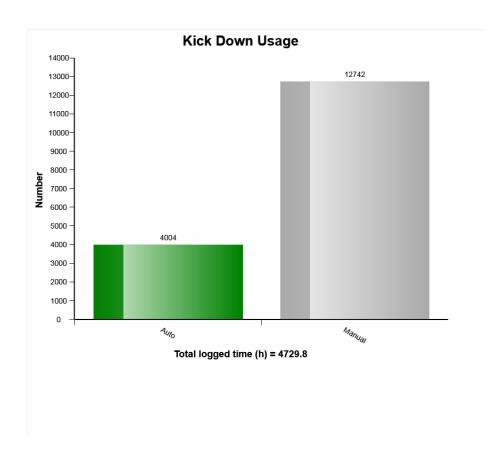


The diagram shows the time that the transmission cut off has been ON.

Below the diagram total number of activations is presented.



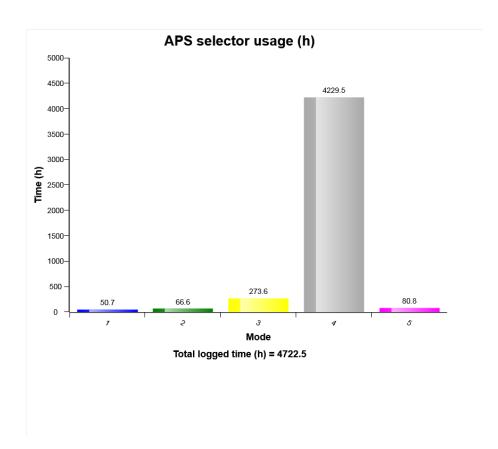
Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram shows the distribution between Auto and Manual activations of the Kick down function.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram shows the time distribution for the different APS modes.

For WLO:

Mode1 = Light

Mode2 = Normal

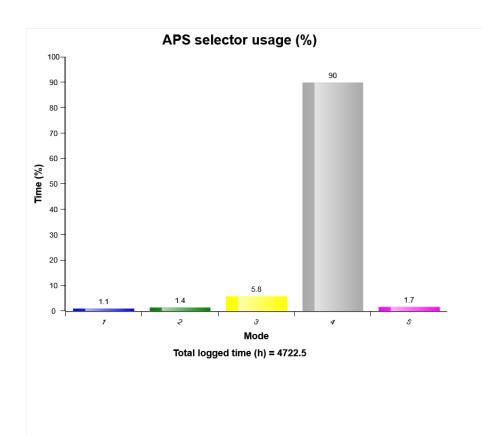
Mode3 = Heavy

Mode4 = Auto

Mode5 = Service.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram shows the time distribution for the different APS modes.

For WLO:

Mode1 = Light

Mode2 = Normal

Mode3 = Heavy

Mode4 = Auto

Mode5 = Service.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

## Transmission oil temperature high Total number of occurences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (°C)
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0

## Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

hours is displayed in the first column, followed by year, month, day, hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed.

#### Duration:

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

#### Extreme value :

The extreme value column displays the most extreme value during the event.

#### Criteria:

In order for an occurrence of high transmission oil temperature to be recorded in a data point and the count to increment by 1, the high transmission oil temperature state must change from "normal" or "error" to "high." The event of high transmission oil temperature will end when the status changes from "high" back to "normal" or "error."



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

## Transmission oil pressure low Total number of occurences = 9

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (bar)
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
4712	2010	9	21	15	23	0	11.4
4715	2010	9	22	11	0	0	11.0
4715	2010	9	22	10	58	0	11.0
4715	2010	9	22	10	55	0	9.8
4715	2010	9	22	10	51	46	5.9
4715	2010	9	22	10	49	47	6.2
4715	2010	9	22	10	44	0	2.9
4715	2010	9	22	10	42	0	11.5
4716	2010	9	22	11	29	2	7.0

## Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

hours is displayed in the first column, followed by year, month, day, hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed.

#### Duration:

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

#### Extreme value :

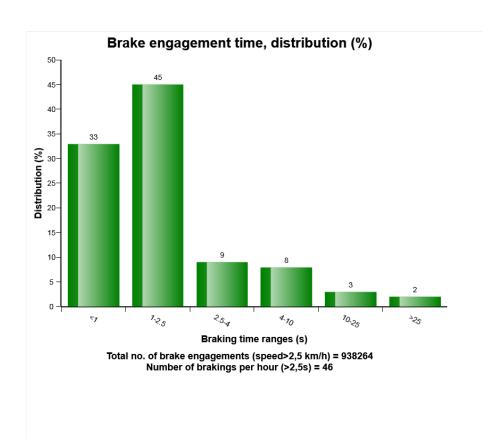
The extreme value column displays the most extreme value during the event.

#### Criteria:

In order for an occurrence of low transmission oil pressure to be recorded in a data point and the count to increment by 1, the transmission oil pressure state must change from "normal" or "error" to "low." The event of low transmission oil pressure will end when the status changes from "low" back to "normal" or "error."



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph describes the duration of brake engagements: Distribution in percent.

This chart illustrates time with higher brake pressure than 5.0 bar (72.5 psi) and machine speed exceeding 2.5 km/h (1.55 mph).

The sum of bars=100% of brake engagements.

## **Explanation:**

Y-axis: Percentage of times that the brake has been engaged in each class.

X-axis: Brake engagement time range in seconds.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

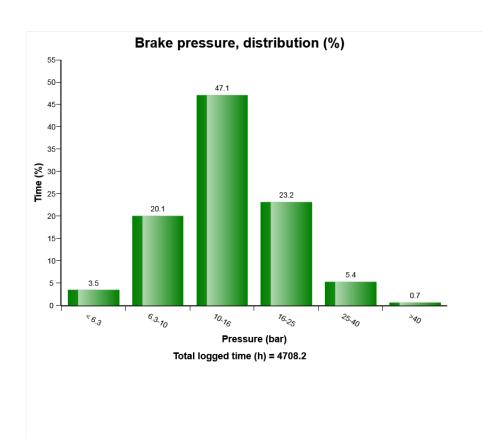
The distribution of the bars throughout the ranges reflects the operator's way of handling the machine.

To get a greater understanding of how the brake is used also study the presentation " *Brake pressure distribution*".

**Green bars** = Brake engagement duration in separate ranges



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph describes the brake pressure distribution.

The sum of bars=100% of brake engagements.

## Explanation:

Y-axis: Percentage of times that the brake has been engaged.

X-axis: Brake pressure distribution in bar.

The distribution of the bars throughout the ranges reflects the operator's way of handling the machine. A concentration in the lower ranges indicates that the machine is being operated correctly.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

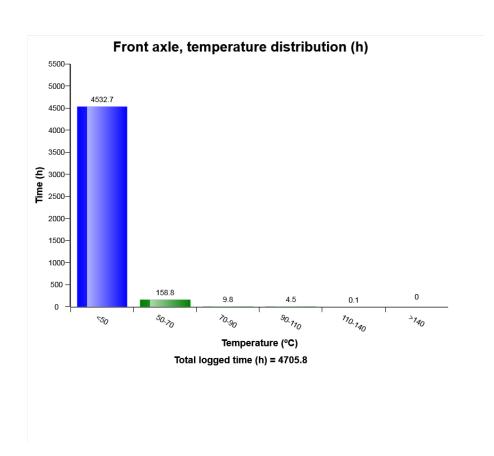
A concentration in the highest range indicates that the machine is operated hard and in an inefficient manner.

To get a greater understanding of how the brake is used also study the presentation "Brake engagement time".

Green bars = Brake pressure ranges



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the time distribution of the temperature, while engine running.

## Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

During the engine warm-up phase, this temperature region is passed.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

It is normal to have registrations in this region.

Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

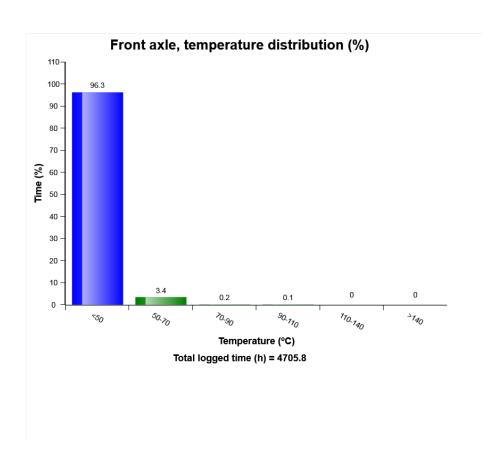
Yellow bar = High working temperature. It is normal to have some registrations in this region.

Red bar = Alarm.

Registrations in this region is not normal, running in this region may cause severe damage.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the time distribution of the temperature, while engine running.

## Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

During the engine warm-up phase, this temperature region is passed.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

It is normal to have registrations in this region.

Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

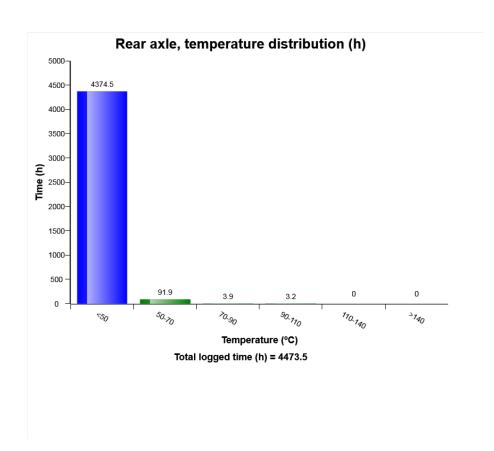
Yellow bar = High working temperature. It is normal to have some registrations in this region.

Red bar = Alarm.

Registrations in this region is not normal, running in this region may cause severe damage.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the time distribution of the temperature, while engine running.

## Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

During the engine warm-up phase, this temperature region is passed.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

It is normal to have registrations in this region.

Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

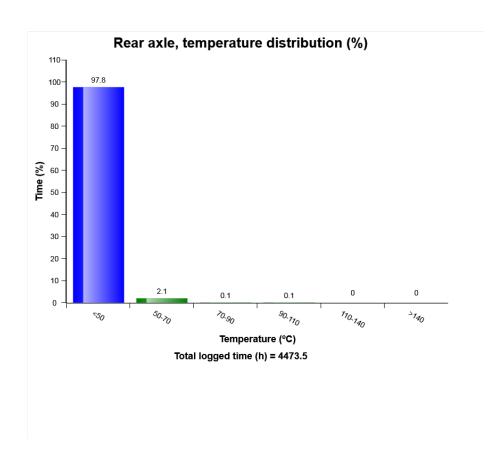
Yellow bar = High working temperature. It is normal to have some registrations in this region.

Red bar = Alarm.

Registrations in this region is not normal, running in this region may cause severe damage.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the time distribution of the temperature, while engine running.

## Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

During the engine warm-up phase, this temperature region is passed.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

It is normal to have registrations in this region.

Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

Yellow bar = High working temperature. It is normal to have some registrations in this region.

Red bar = Alarm.

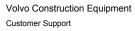
Registrations in this region is not normal, running in this region may cause severe damage.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

# Parking brake usage Total number of occurences = 2713

Op hours	Year	Month	Day	Hour	Minute	Duration (minutes)
4728	2011	5	4	8	33	10
4728	2011	5	4	8	31	0
4729	2011	5	6	9	9	1
4729	2011	5	4	9	4	11
4729	2011	5	4	9	1	1
4729	2011	5	4	8	55	4
4729	2011	5	4	8	50	0
4729	2011	5	6	9	0	2
4729	2011	5	10	11	13	1
4729	2011	5	7	11	45	0
4729	2011	5	7	11	22	1
4729	2011	5	6	18	44	1
4729	2011	5	6	16	17	0
4729	2011	5	6	16	14	1
4729	2011	5	6	16	11	1
4729	2011	5	6	15	54	10
4729	2011	5	7	11	47	0
4729	2011	5	6	9	6	1
4730	2011	5	10	11	17	0
4730	2011	5	10	11	18	20







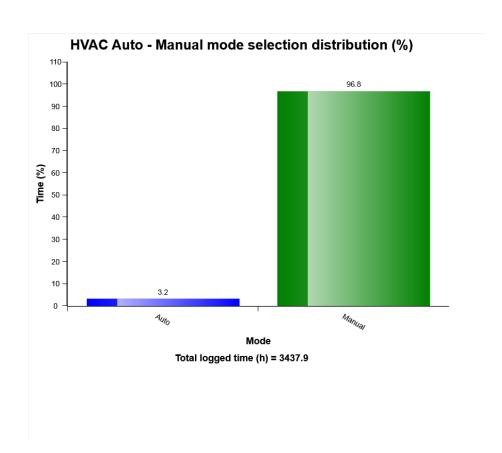
Machine model	SerialNo	Operating Hours	Reading Date	
L90G	617610	4730.4	5/15/2018	

# Parking brake abuse Total number of occurences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (seconds)	Extreme (km/h)
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0



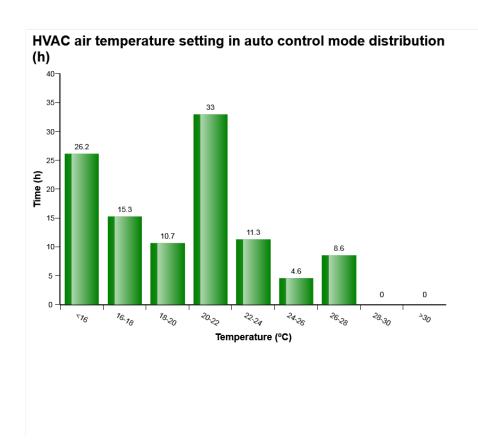
Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram describes auto-manual mode sele ction distribution of HVAC system in machine while it Works. The share of each mode compared to Total time of HVAC operation is displayed.



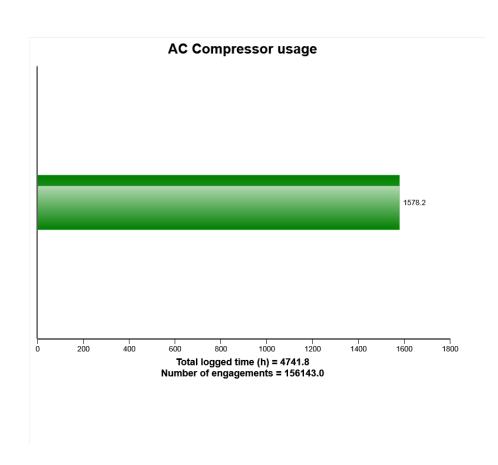
Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram describes air temperature setting distribution for HVAC auto control mode established by operator in Cabin



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the total time of AC compressor engagement.

## Explanation:

Green bar: Total time in hours, AC compressor has been engaged.

Under the graph the total engine running time (in hours) is displayed.

Total number of AC compressor activations is also displayed.

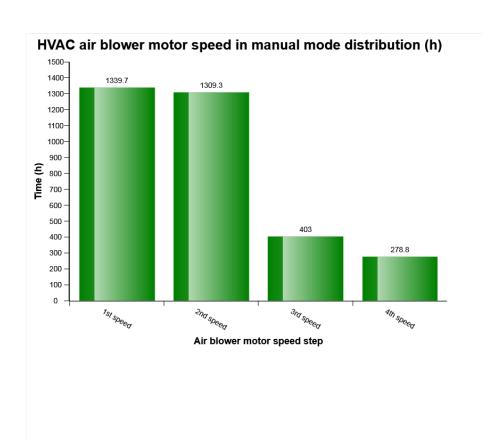


Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

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Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The diagram describes air blower motor speed distribution for HVAC manual control mode established by operator in Cabin.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

# AC High Pressure Total number of occurences = 1024

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (°C)
4696	2010	9	16	14	9	29	35
4696	2010	9	16	14	16	391	35
4696	2010	9	16	14	24	45	34
4697	2010	9	16	15	3	520	35
4697	2010	9	16	14	45	93	34
4697	2010	9	16	14	48	174	35
4697	2010	9	16	14	57	63	35
4697	2010	9	16	15	21	2222	36
4698	2010	9	16	16	2	974	35
4698	2010	9	16	16	32	66	36
4702	2010	9	17	14	0	55	33
4708	2010	9	20	15	7	11	32
4708	2010	9	20	15	1	286	32
4708	2010	9	20	14	53	201	33
4708	2010	9	20	14	27	144	31
4709	2010	9	20	16	2	66	33
4709	2010	9	20	15	15	27	32
4715	2010	9	22	10	58	31	27
4716	2010	9	22	11	56	59	31
4716	2010	9	22	11	49	43	30

## Definition:

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

#### Duration:

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

#### Extreme value :

The extreme value column displays the most extreme value during the event.

#### Criteria:

Logging is performed when, High AC Pressure signal is active. Ambient temp is viewed.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

## AC Boiling Protection Number of engagements = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (°C)
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0

## Definition:

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

#### Duration:

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

#### Extreme value :

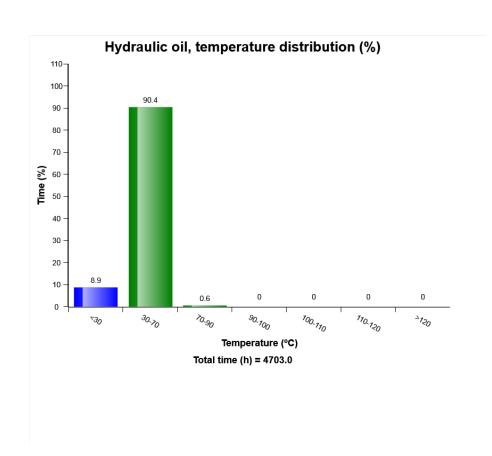
The extreme value column displays the most extreme value during the event.

#### Criteria:

Logging is performed when, Boiling protection signal is active. Ambient temp is viewed.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph describes hydraulic oil temperature distribution.

The sum of bars = Engine total running time.

Under the graph the total engine running time is displayed.

The value of each bar presented above the bars with one decimal.

## Explanation:

Y-axis: Engine running time in percent of time.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

X-axis: Oil temperature distribution in °C.

Blue bar = Below 30°C, warming-up phase.

Green bar = From 30 ° C to 70 °C, normal working temperature

Green bar = From 70 ° C to 90 °C, normal working temperature

Green bar = From 90 ° C to 100 °C, normal working temperature

Yellow bar = From 100 ° C to 110 °C, high working temperature

Red bar = From 110°C to 120°, To high temperature

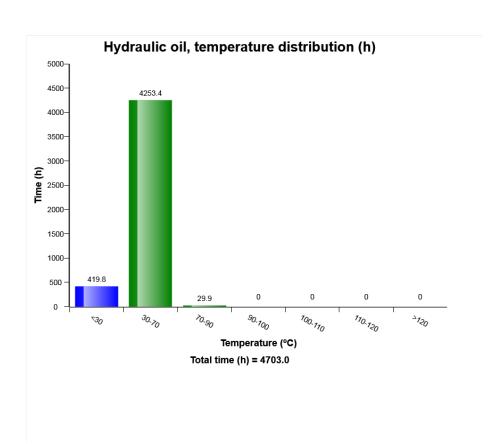
Red bar = Over 120°, Alarm

Temperature in this area is <u>not normal</u>.

Temperature over 120°C may cause severe damages on the hydraulic system.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



The graph shows the time distribution of the temperature, while engine running.

## Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

During the engine warm-up phase, this temperature region is passed.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

It is normal to have registrations in this region.

Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

Yellow bar = High working temperature. It is normal to have some registrations in this region.

Red bar = Alarm.

Registrations in this region is not normal, running in this region may cause severe damage.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

# High hydraulic oil temperature Total number of occurences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (°C)
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0

## Definition:

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

#### Duration:

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

#### Extreme value :

The extreme value column displays the most extreme value during the event.

#### Criteria:

Logging is performed when, Alarm high hydraulic oil temperature, is active.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

# Low Hydraulic Oil Level Total number of occurences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (seconds)
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0

## Definition:

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

#### Duration:

The duration of each event is shown after the timestamp of the event.

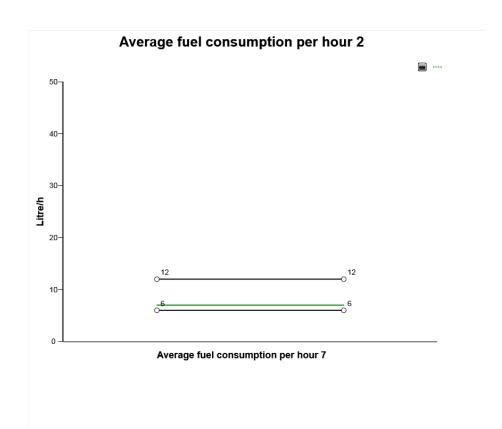
The duration is counted as long as the criteria is fulfilled.

#### Criteria:

The criteria to get a registration, is that the Alarm signal for low hydraulic oil level is active and that the diesel engine is running.



Machine model	SerialNo	Operating Hours	Reading Date
L90G	617610	4730.4	5/15/2018



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