

VOLVO CONSTRUCTION EQUIPMENT MATRIS REPORT

Machine model A45G	SerialNo 342056	Operating Hours 4798.5	Reading Date 01/08/2019
Company name volvo	Dealer arnold machinery	Report Issuer	
Contact name mike seifert	Technician CE Tech	Primary Application Sand, gravel and pebble	
Site	Workorder	Ground Condition	

MATRIS Reading, Summary / Recommendation

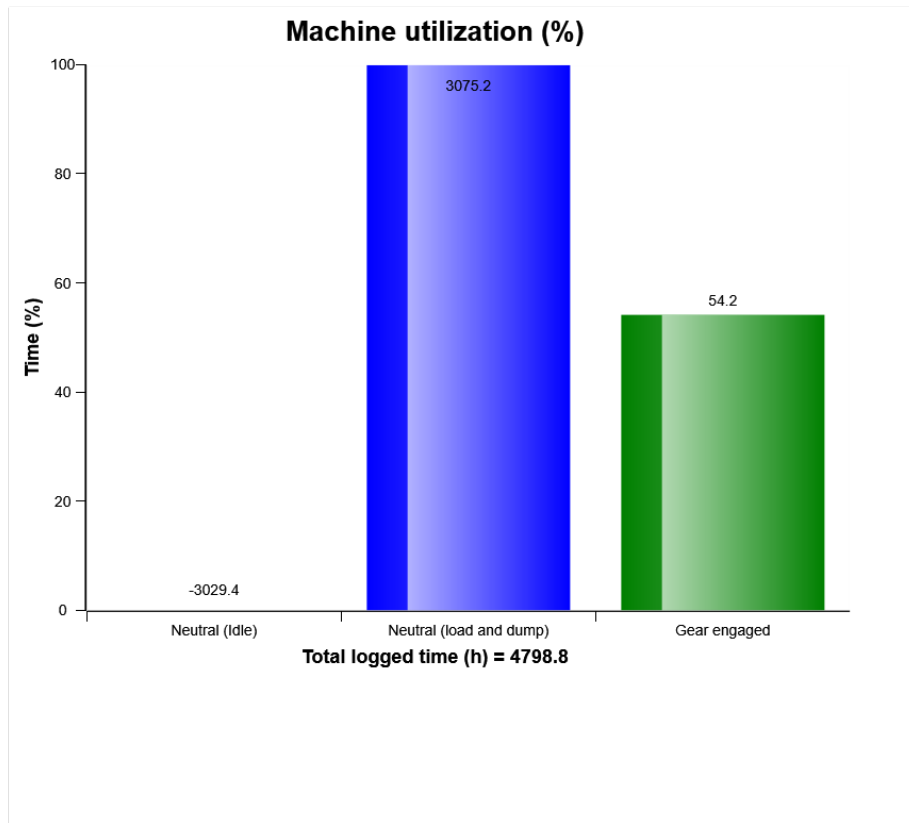


Machine model	SerialNo	Operating Hours	Reading Date
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Main equipment	Type	Equipment
	Tyre size/class	Sold without tyres
	Body extensions	Not mounted
	Tail-gate	Not mounted
	Extra spillguard	Not mounted
	Wear plates	Not mounted
	Pattern	None



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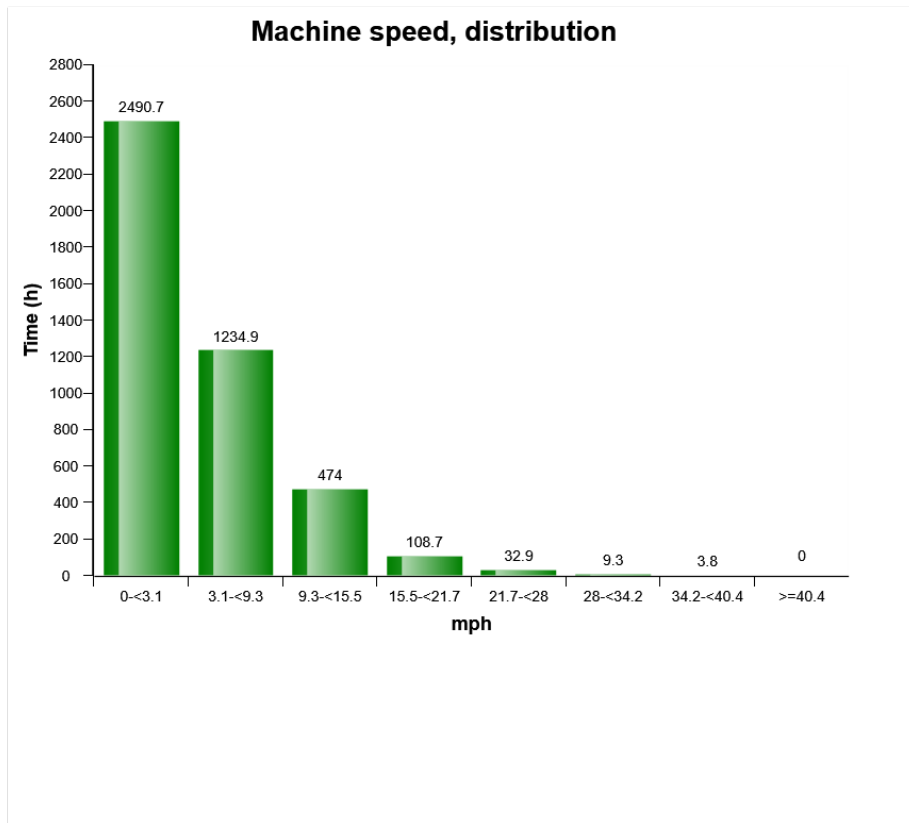
The diagram shows a simplified presentation of the machines utilization based on the relation between time in gear and time in neutral. The "Gear engaged " includes both forward and reverse gears.

This presentation of the machines utilization can only be seen as a guideline value since a full calculation of the machines utilization is more advanced. E.g. "Neutral" includes time for loading and dumping which should be seen as operating time.

High percentage of neutral time may indicate that the machine is underused due to e.g. under dimensioned loading tool or oversized hauler fleet



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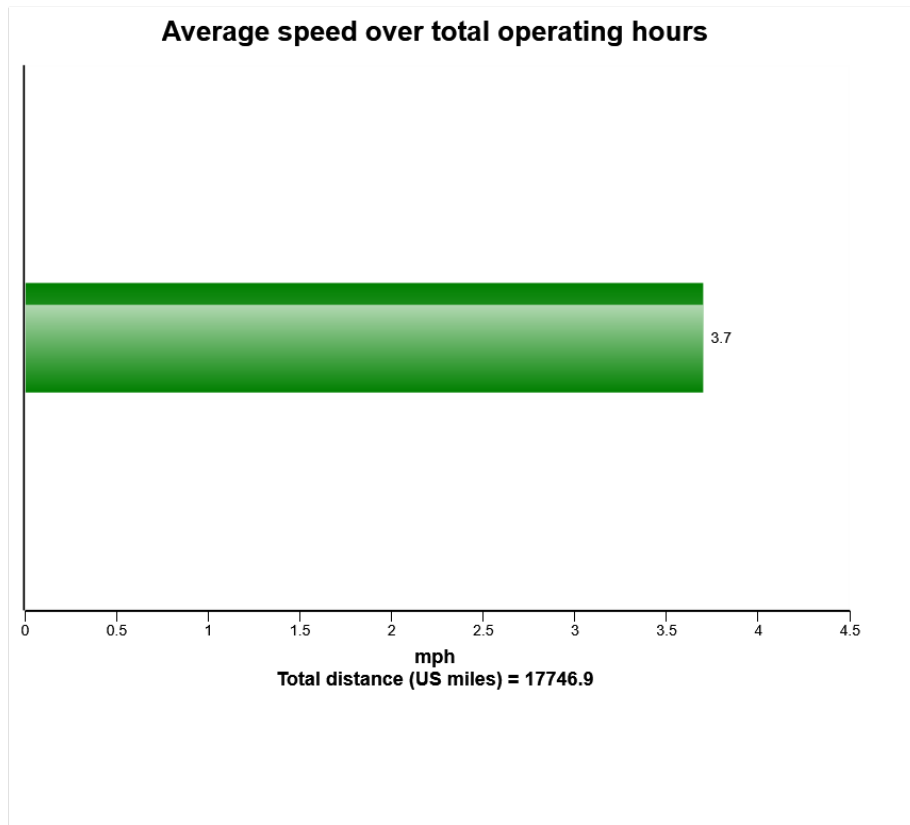


The presentation shows the time in hours in speed-intervals for the machine.

Note that the interval 0-3,1 mile/h includes machine not in motion. If the machine has been operated above 34,2 Mile/h there is a risk of engine over speed, check "Engine speed, over 2100 rpm"



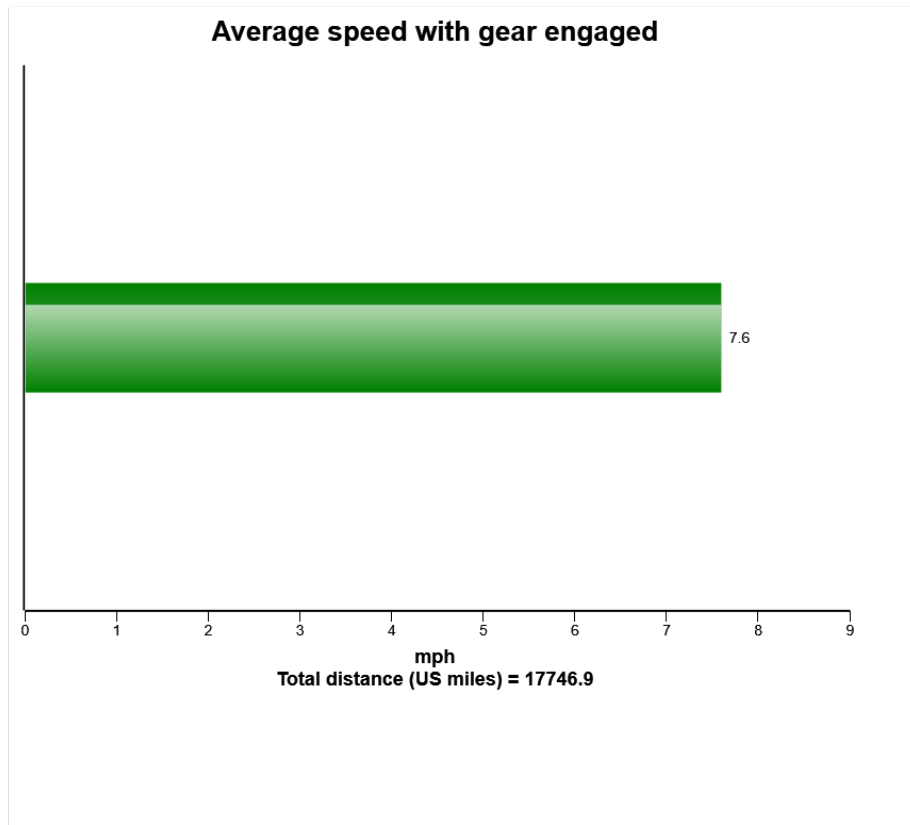
Machine model	SerialNo	Operating Hours	Reading Date
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The diagram shows the machines average speed based on the total operating hours



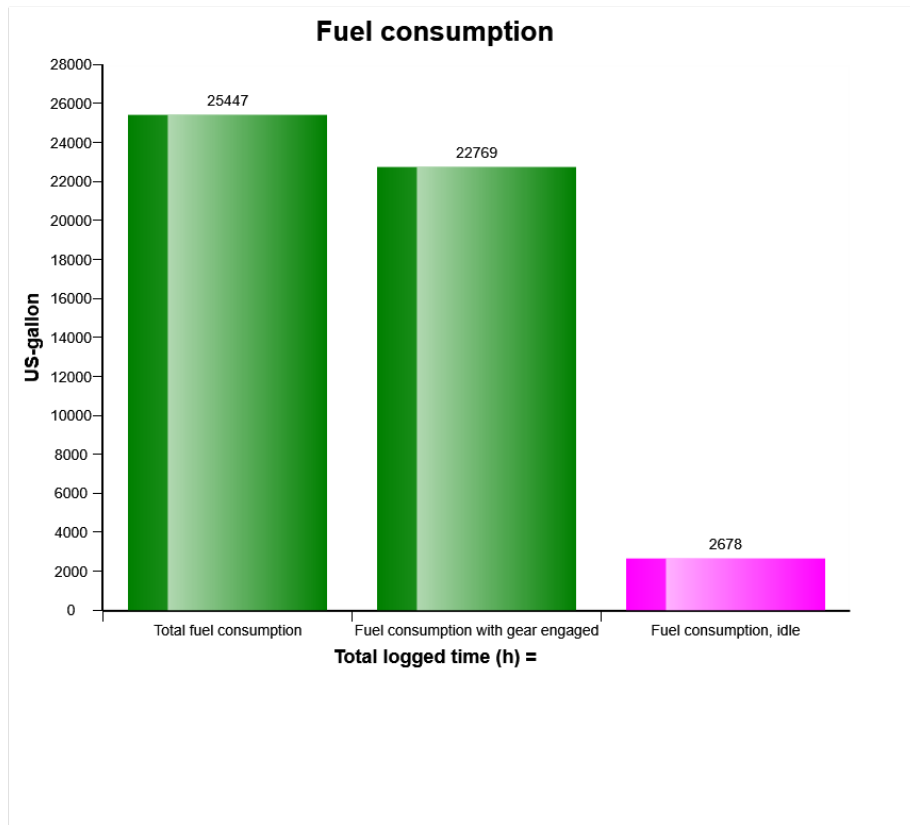
Machine model	SerialNo	Operating Hours	Reading Date
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The diagram shows the machines average speed based on the operating hours with gear engaged.



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

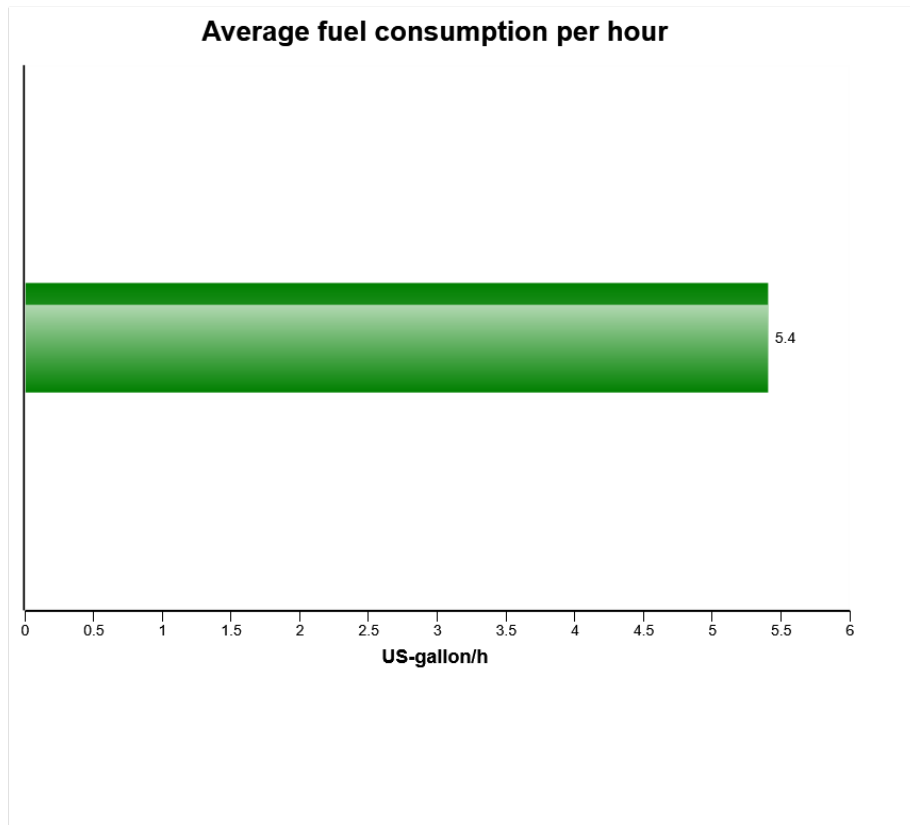


The diagram shows the total fuel consumption, fuel consumption with gear engaged and fuel consumption during idle.

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



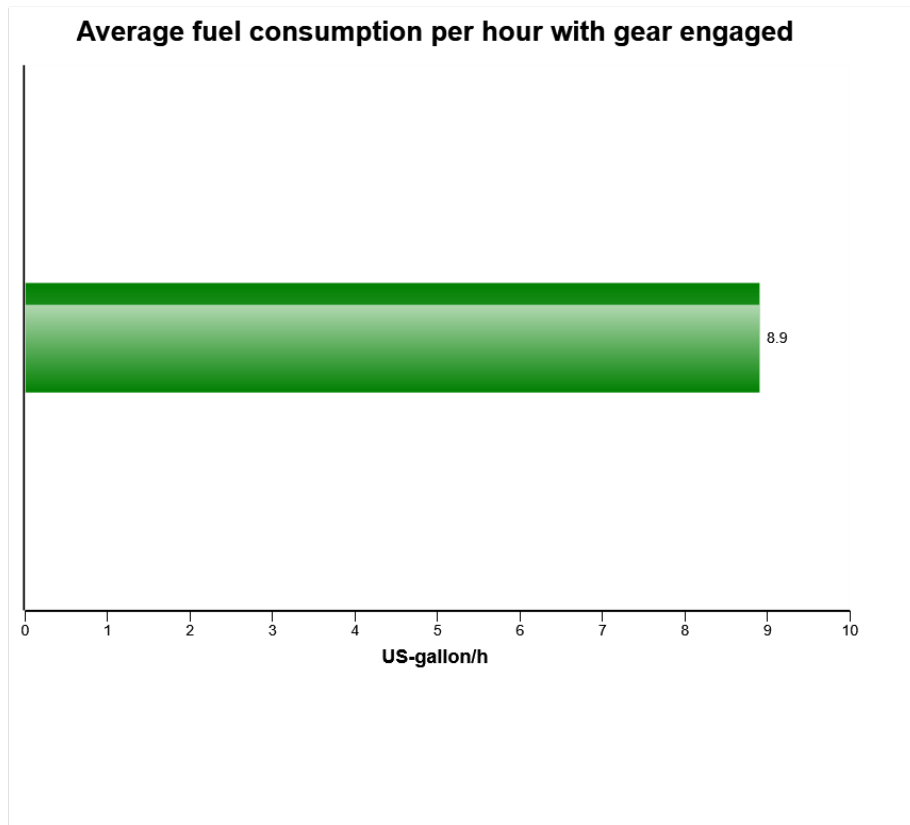
Machine model	SerialNo	Operating Hours	Reading Date
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The diagram shows the average fuel consumption based on total operating hours



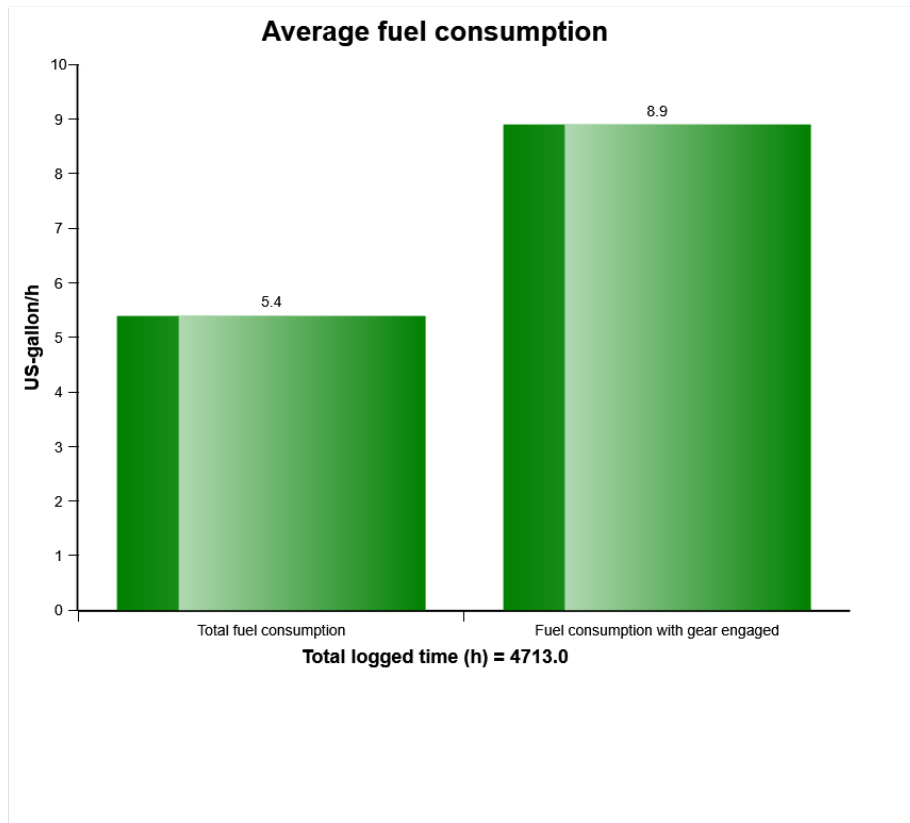
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The diagram shows the average fuel consumption based on operating hours with gear engaged



Machine model	SerialNo	Operating Hours	Reading Date
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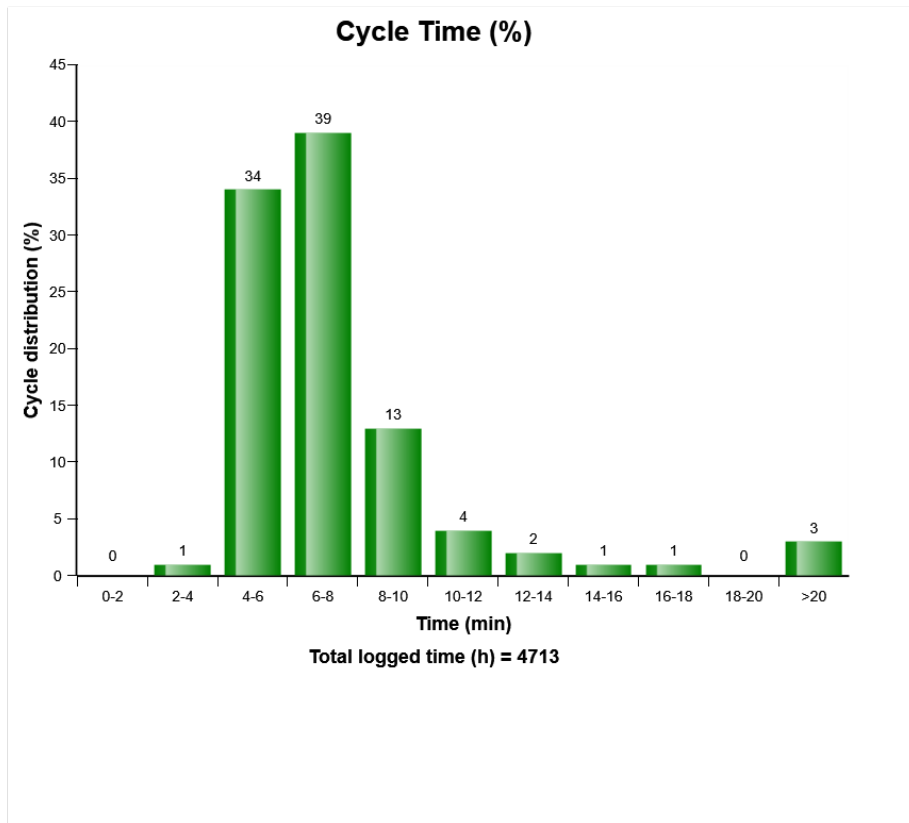


The diagram shows the total average fuel consumption versus average fuel consumption with gear engaged.

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



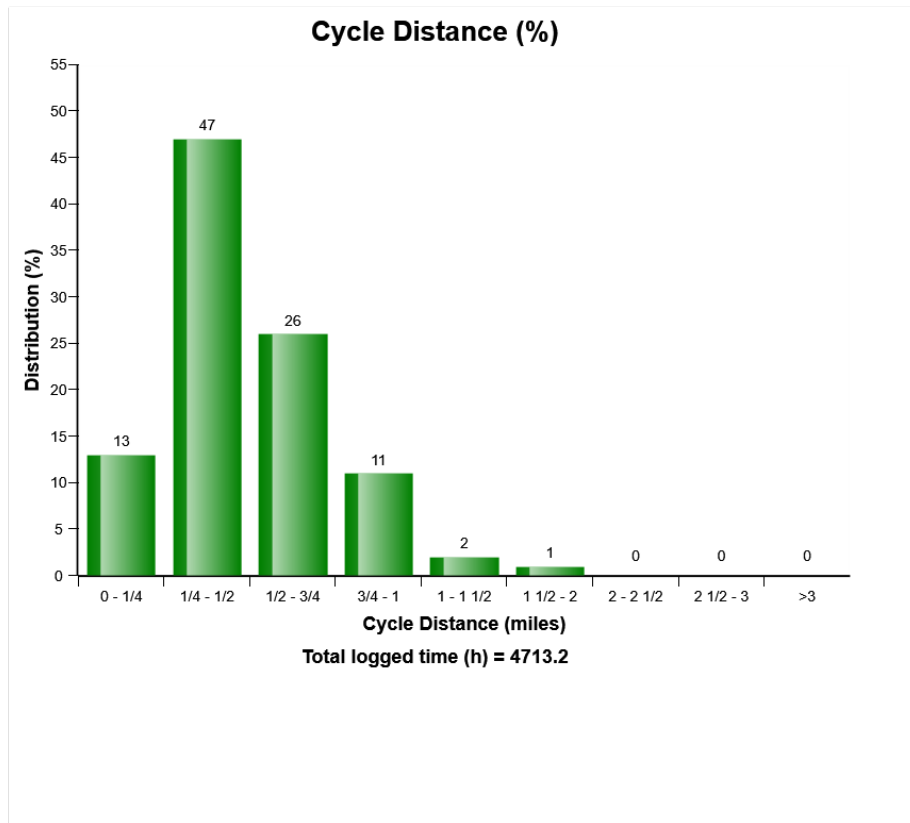
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The diagram shows the distribution of the working cycle time. The time between 2 valid cycle registrations is registered. Time starts from lifting the body.



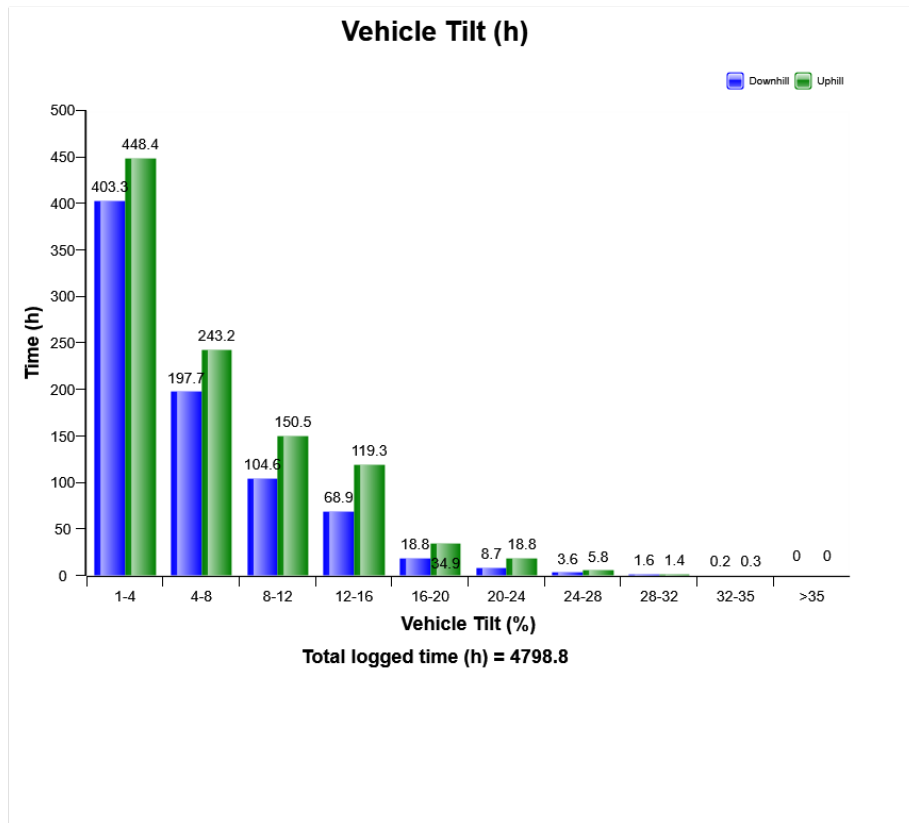
Machine model	SerialNo	Operating Hours	Reading Date
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The diagram shows the distribution of the working cycle distance. The distance driven between 2 valid cycle registrations.



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The diagram shows the distribution of the longitudinal tilt in percent (not degrees), the criteria to get registrations is that the vehicle speed exceeds 1km/h (0,62mph) and that the engine is on.



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Accumulated performance
Total logged time (h) =

Total logged time (h) =
Fuel consumption (US-gallons)
Production (ton,US)
Ton/h
Ton/gal
Fuel efficiency (US Gal/ton)
Number of cycles
Cycles overloaded (%)
Load utilisation / cycle (%)

The table shows the accumulated values for respectively area stated in the table.

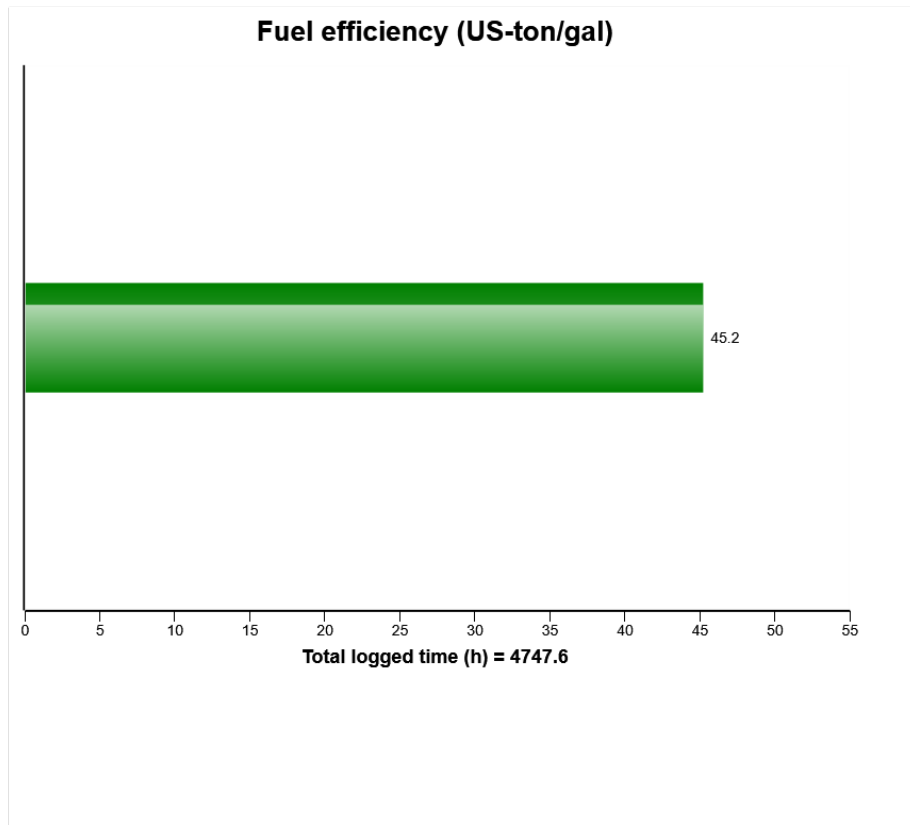
Values are saved over the life of the machine only when the engine is running.



4747.6
25455
1151034
242.4
45.2
0.02
32835
1
78



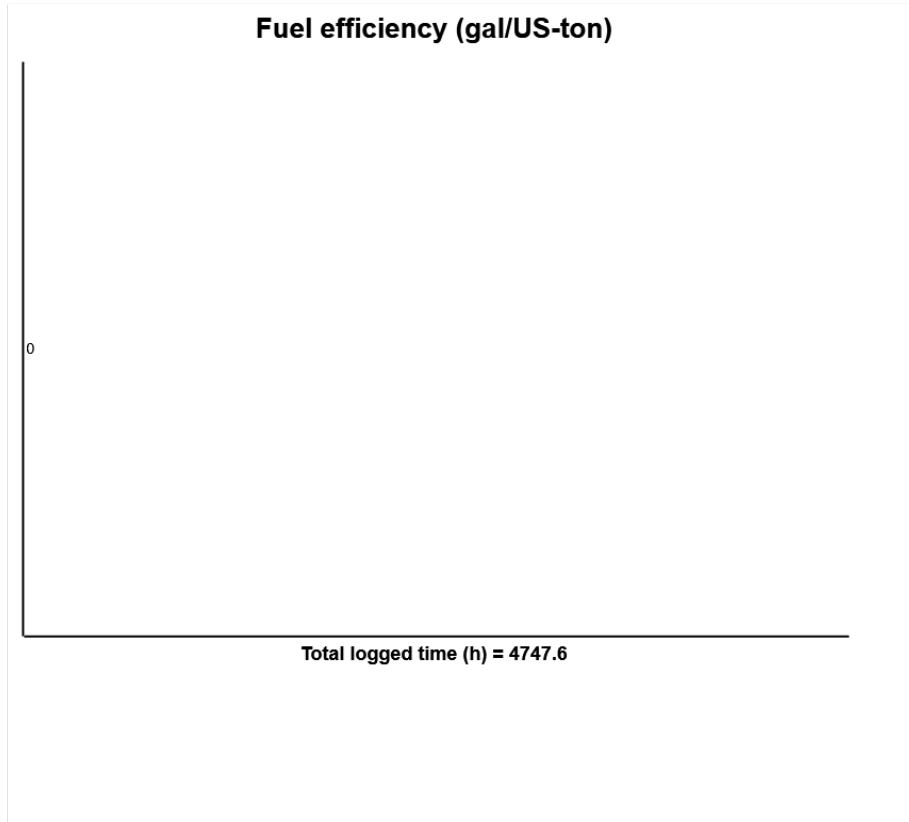
Machine model	SerialNo	Operating Hours	Reading Date
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The presentation display the average produced tonne per fuel unit over the machines lifetime



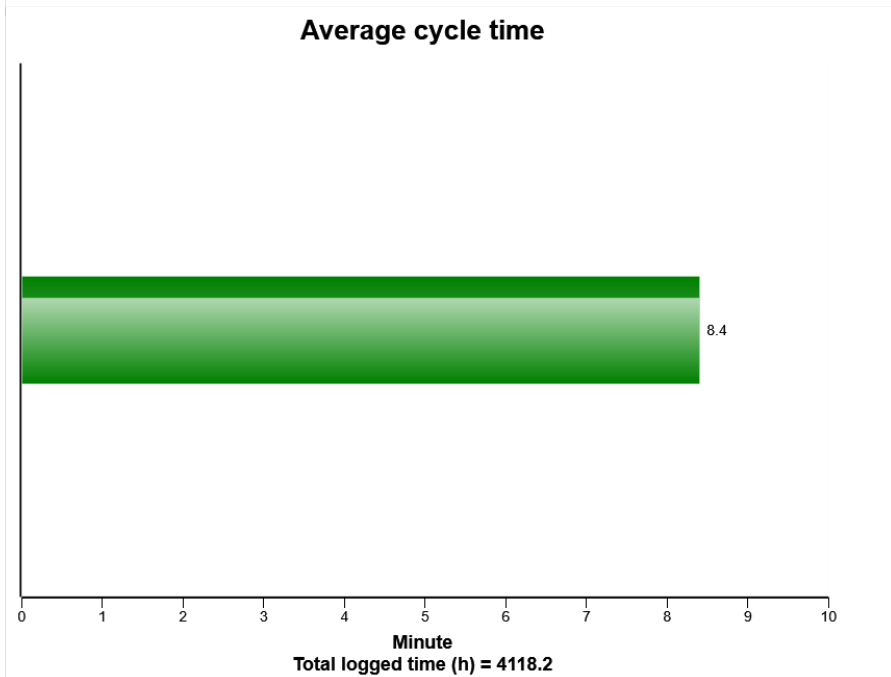
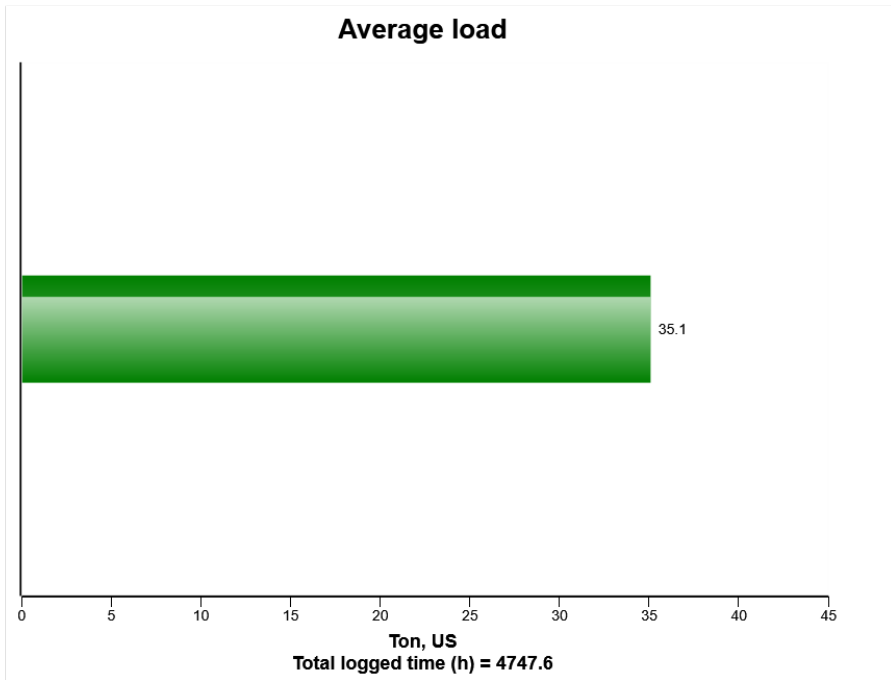
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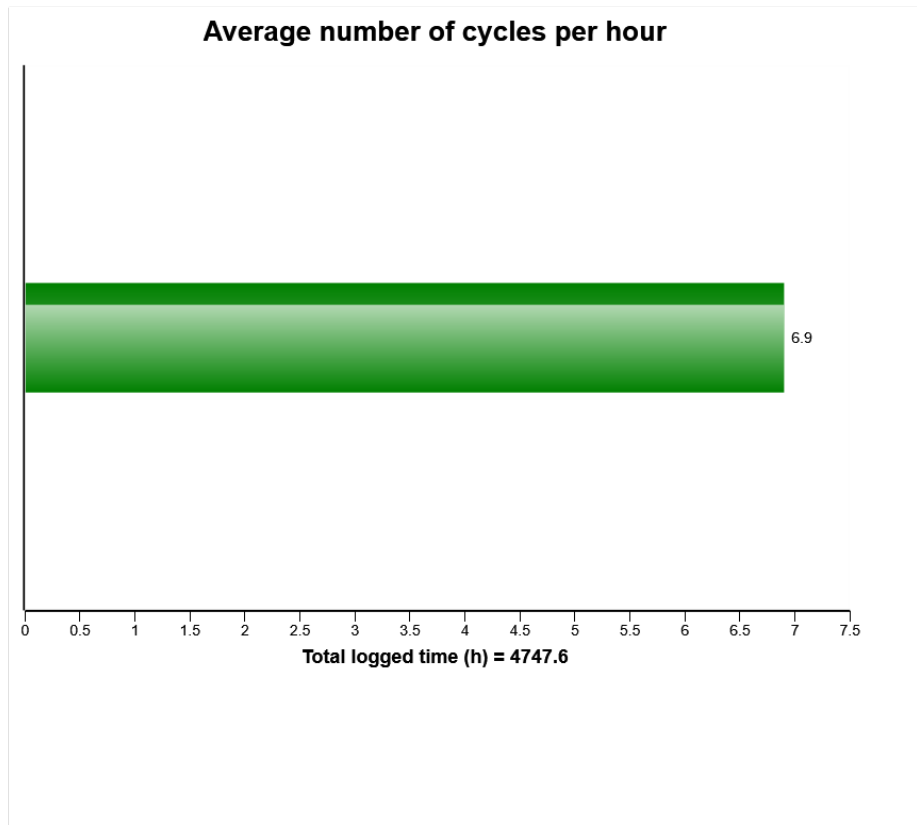
The presentation shows the average fuel consumption per tonne over the machines lifetime



Machine model	SerialNo	Operating Hours	Reading Date
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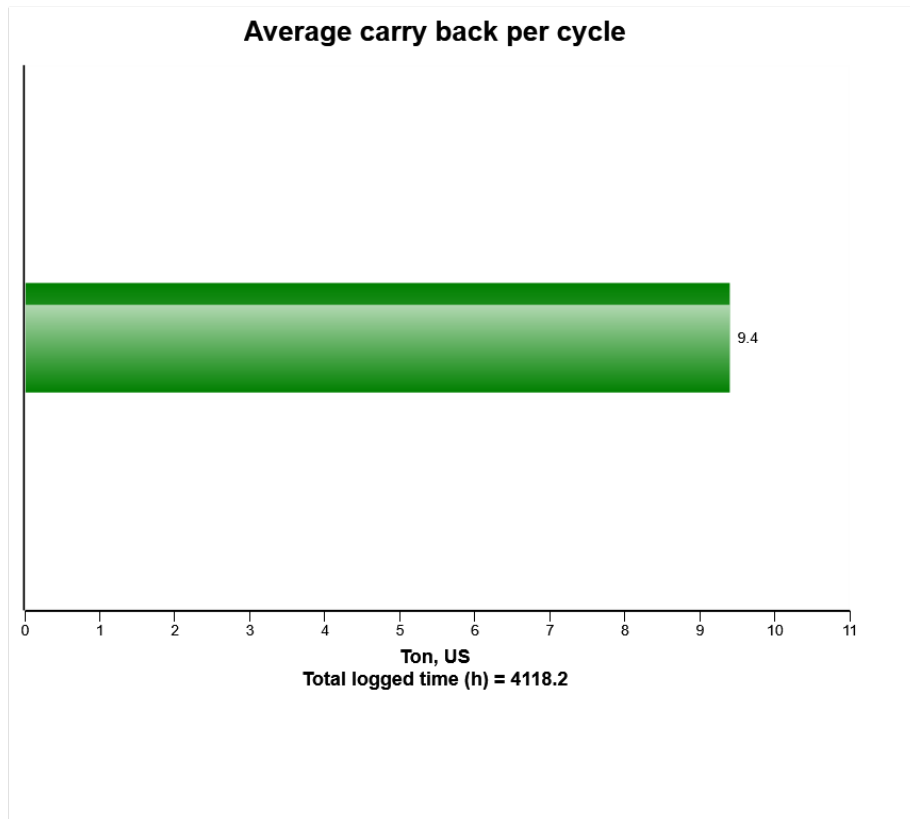
Machine model	SerialNo	Operating Hours	Reading Date
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The presentation shows the average number of cycles per hour over the machines lifetime.



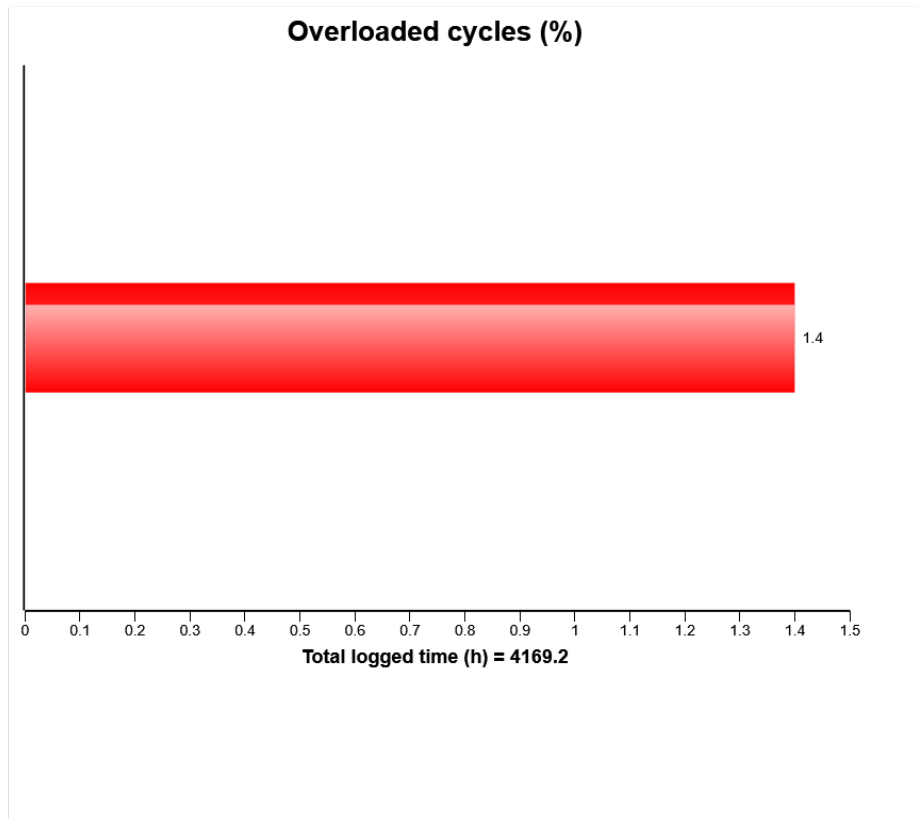
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An error has occurred while processing HtmlTextBox 'htmlTextBox1':
'WordSection1' is an unexpected token. The expected token is "" or "". Line 1, position 18.



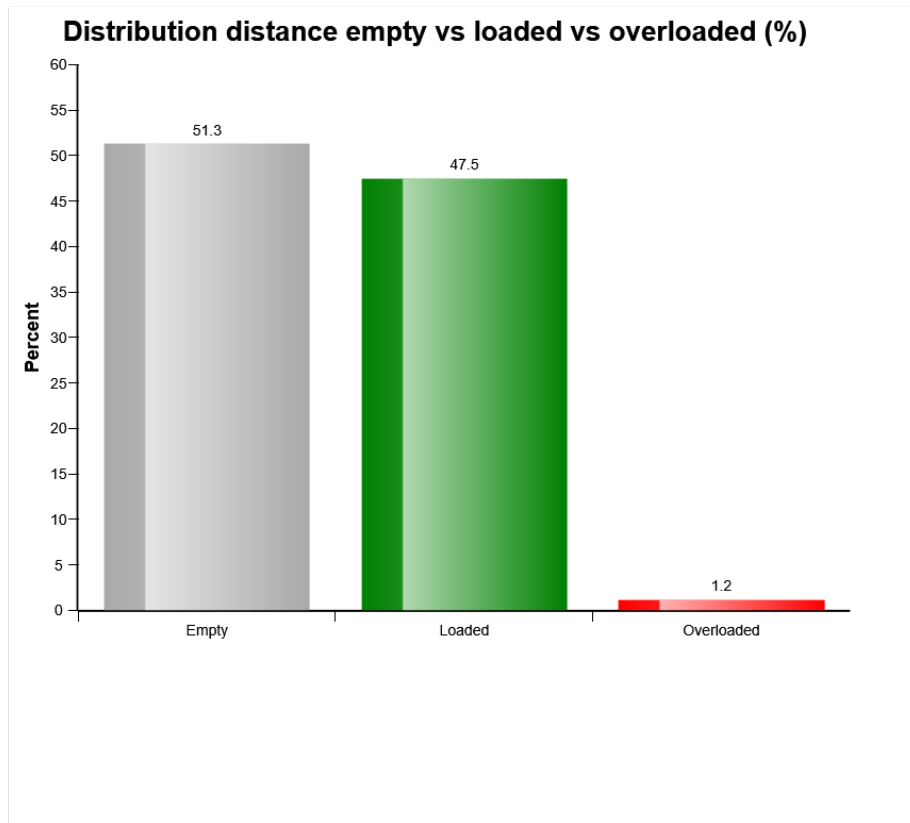
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An error has occurred while processing HtmlTextBox 'htmlTextBox1':
The ':' character, hexadecimal value 0x3A, cannot be included in a name. Line 1, position 656.



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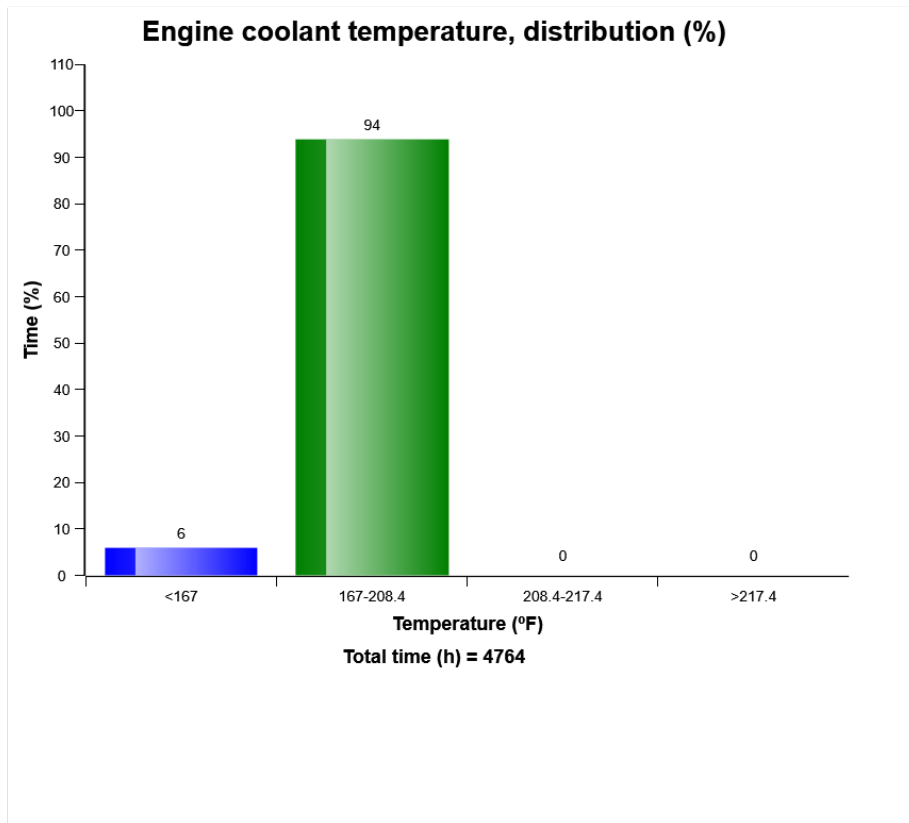


Much time operated with overload puts unnecessary stress to the machine which could lead to shorter machine life and higher repair and maintenance cost.

Much time operated empty could indicate that the machine has been operated a lot when not in production.



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



Definition:

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.

It is normal to have registrations in this region.



Machine model	SerialNo	Operating Hours	Reading Date
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Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

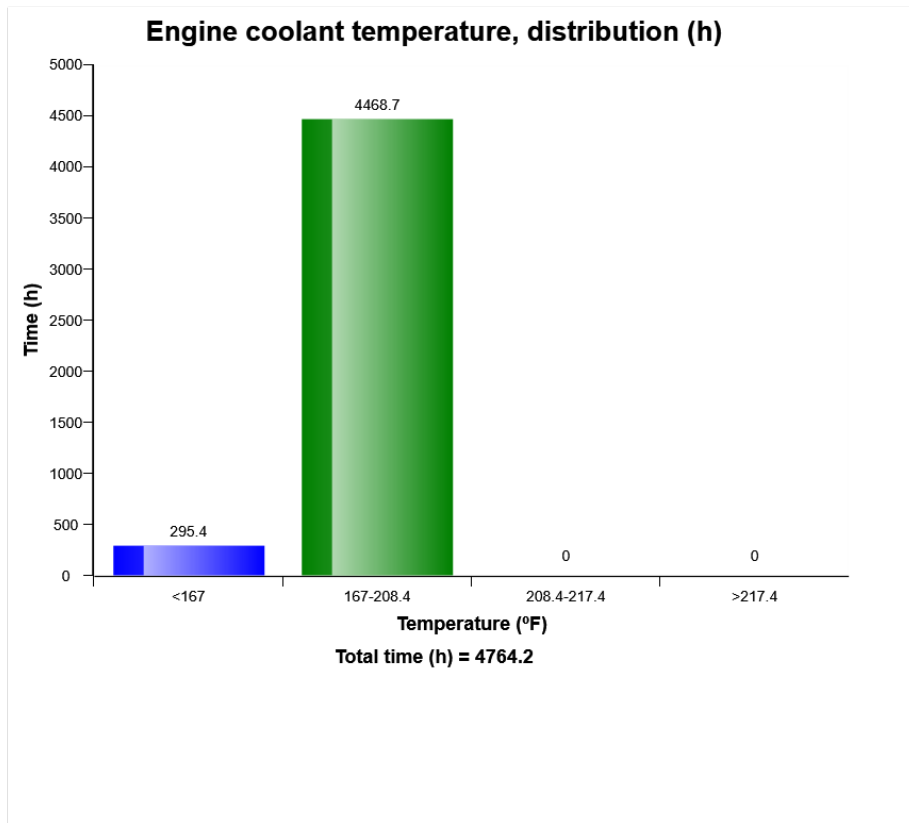
Yellow bar = High working temperature. It is normal to have some registrations in this region.

Red bar = Alarm.

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



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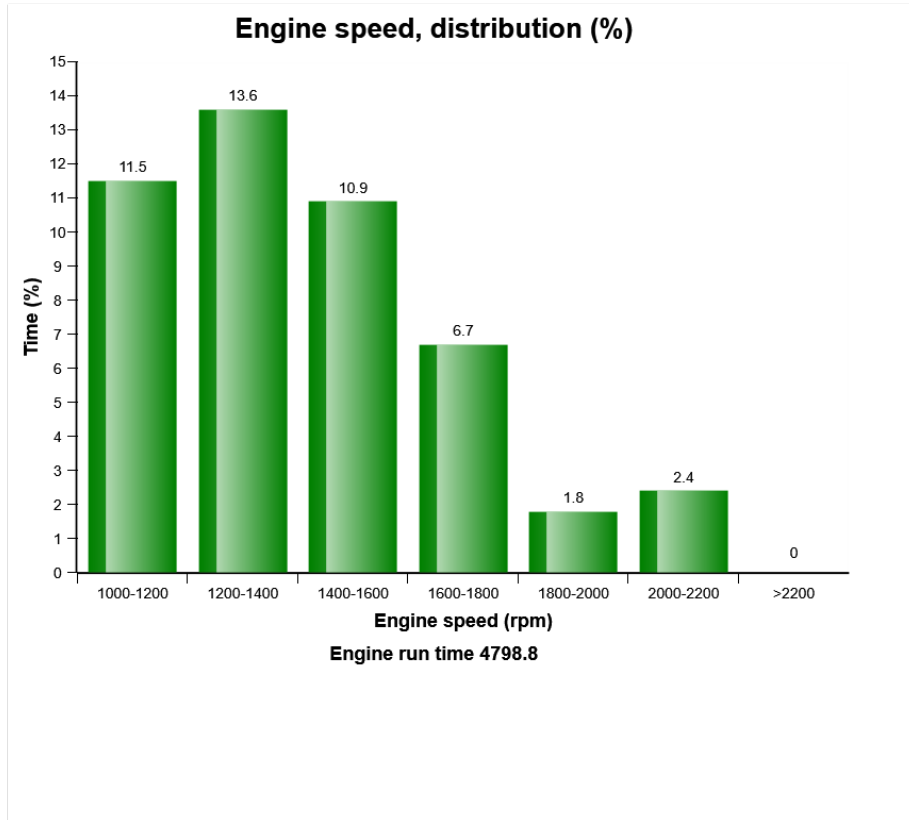
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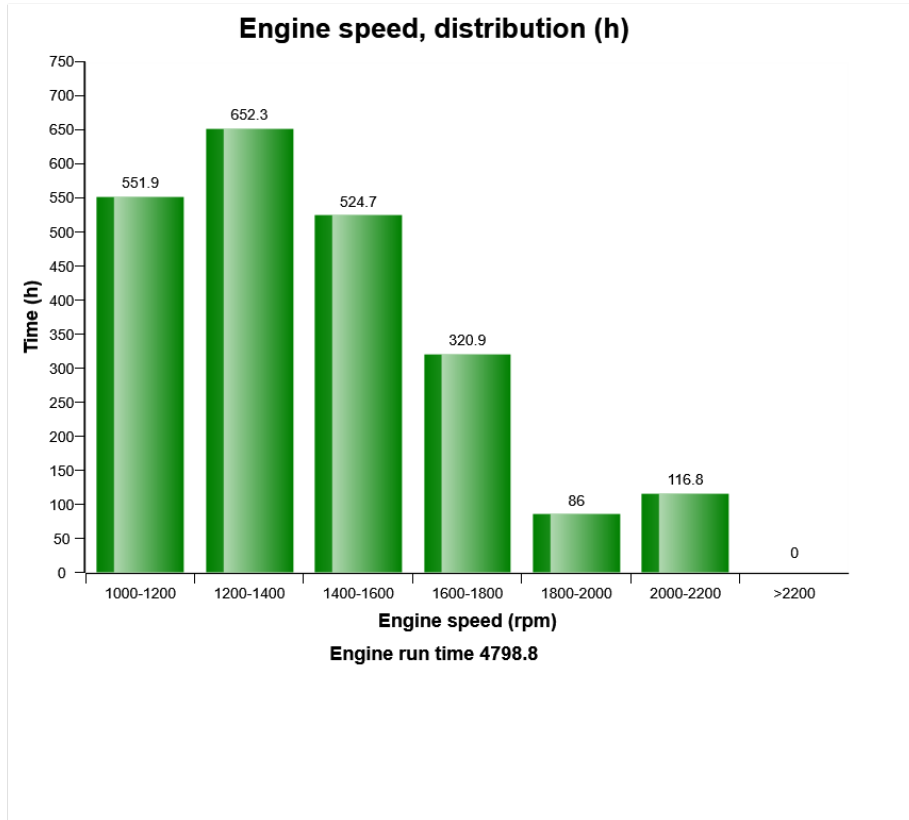
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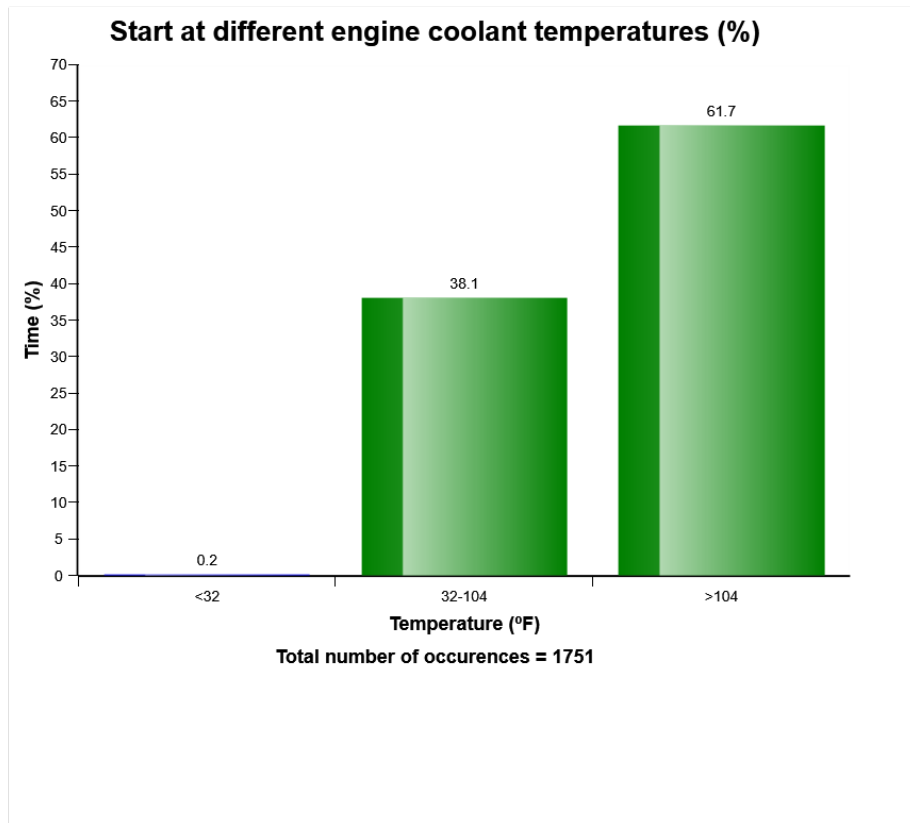
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Definition:

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.



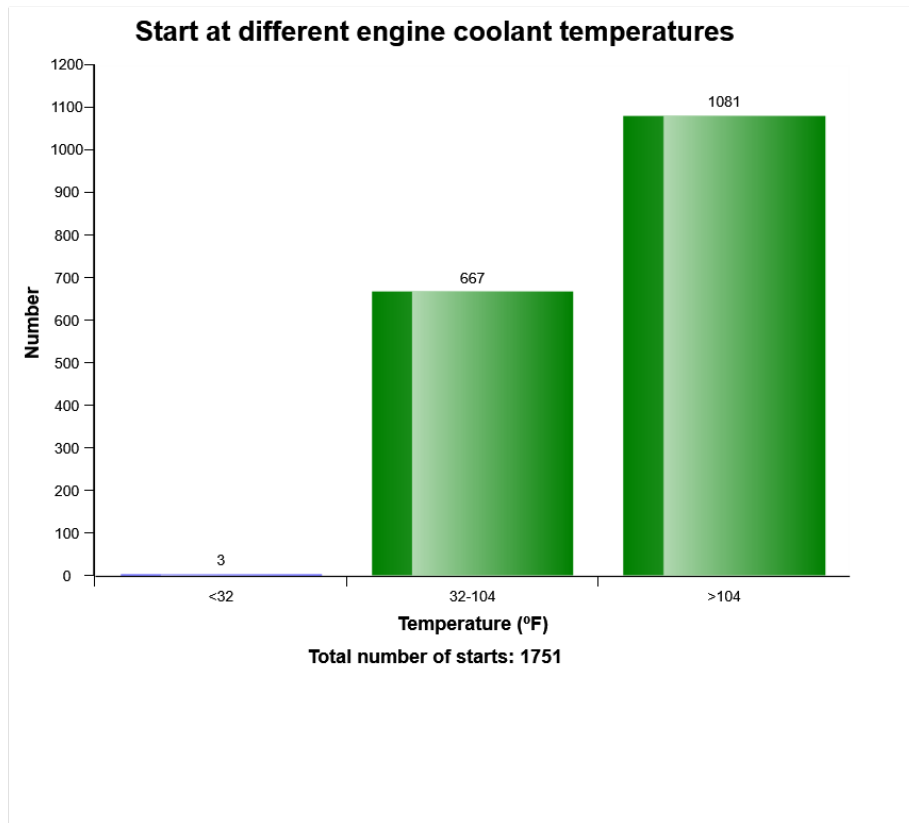
Machine model	SerialNo	Operating Hours	Reading Date
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Under the graph the total number of engine starts is displayed.

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



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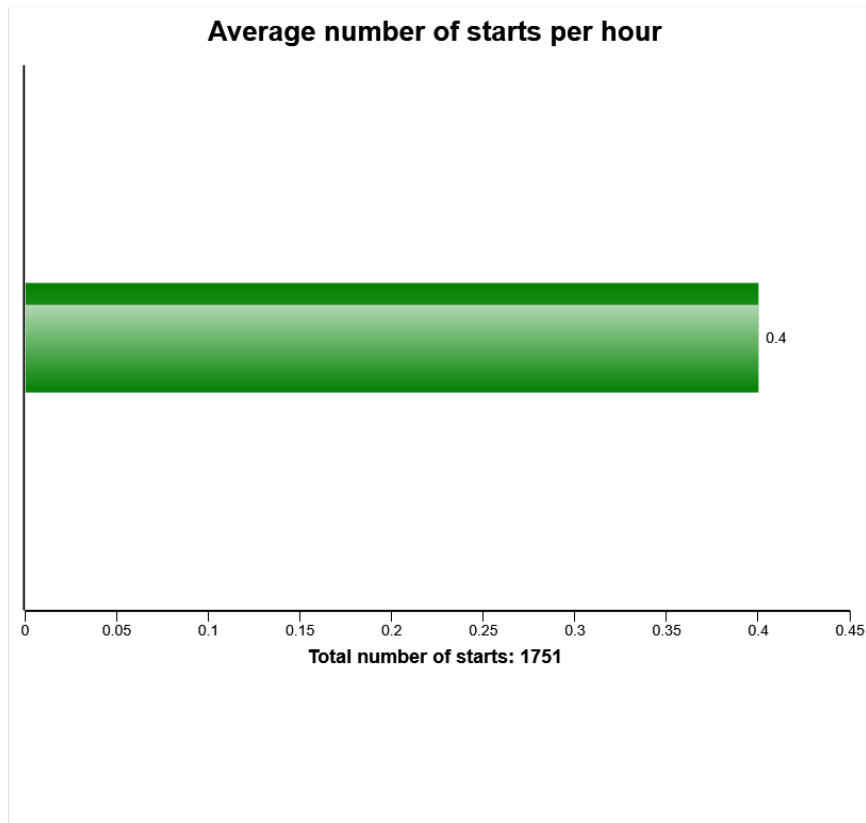
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Definition:

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.

To see at which different temperatures engine is started see" Start at different engine temperatures."



Machine model	SerialNo	Operating Hours	Reading Date
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Green bar = Number of average starts per hour



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

**High engine coolant temperature
Total number of occurrences = 0**

	Op hours	Year	Month	Day	Hour	Minute	Duration (sec)
A	0	2000	0	0	0	0	0
B	0	2000	0	0	0	0	0
C	0	2000	0	0	0	0	0
D	0	2000	0	0	0	0	0
E	0	2000	0	0	0	0	0
F	0	2000	0	0	0	0	0
G	0	2000	0	0	0	0	0
H	0	2000	0	0	0	0	0
I	0	2000	0	0	0	0	0
J	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 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.



**Extreme (°
F)**

32

32

32

32

32

32

32

32

32

32



Machine model	SerialNo	Operating Hours	Reading Date
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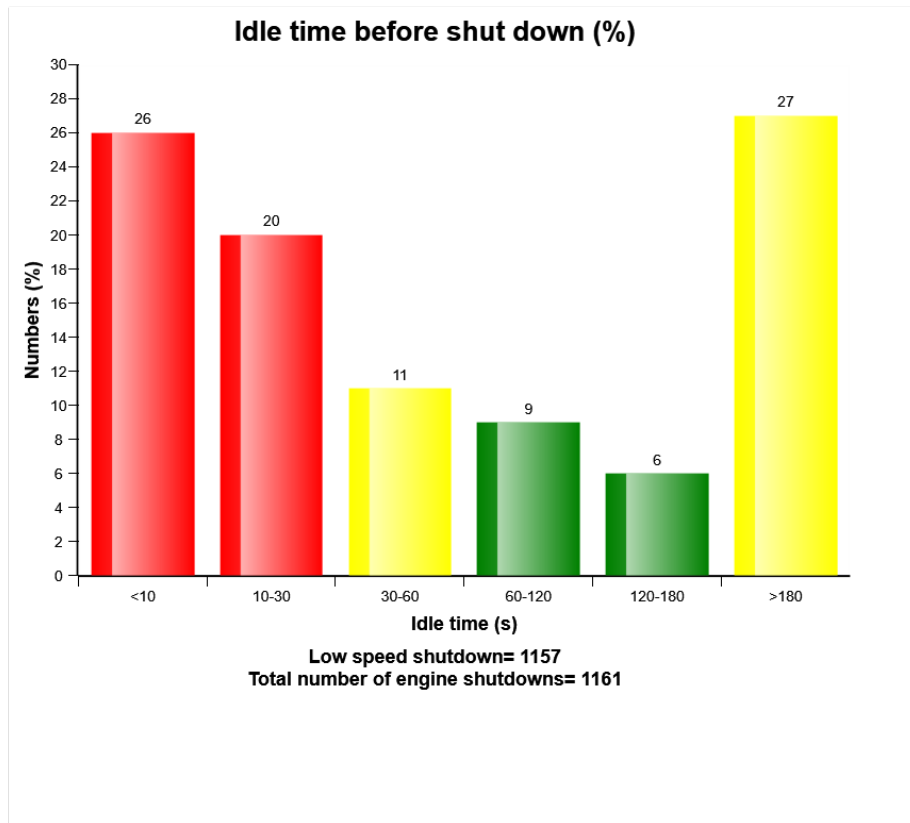
Criteria :

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.





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Definition:

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%.



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**High engine oil temperature
Total number of occurrences = 0**

	Op hours	Year	Month	Day	Hour	Minute	Duration (sec)
A	0	2000	0	0	0	0	0
B	0	2000	0	0	0	0	0
C	0	2000	0	0	0	0	0
D	0	2000	0	0	0	0	0
E	0	2000	0	0	0	0	0
F	0	2000	0	0	0	0	0
G	0	2000	0	0	0	0	0
H	0	2000	0	0	0	0	0
I	0	2000	0	0	0	0	0
J	0	2000	0	0	0	0	0

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Only one event per minute is registered.

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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.



**Extreme (°
F)**

32

32

32

32

32

32

32

32

32

32



Machine model	SerialNo	Operating Hours	Reading Date
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Criteria :

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





Machine model	SerialNo	Operating Hours	Reading Date
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Starter overheating
Total number of occurrences = 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
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.

Alarm is registered if the starter is used continuously more than 40 seconds and if it is less than five



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minutes since the latest alarm .

Explanation:

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



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Low Air filter pressure
Total number of occurrences = 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
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 hours is displayed in the first column, followed by year, month, day, hour and minute to show when an



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



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Regeneration ignored
Total number of ignored regenerations 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
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0



**Duration
(min)**

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0



Machine model	SerialNo	Operating Hours	Reading Date
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Regeneration aborted
Total number of occurrences = 18

Op hours	Year	Month	Day	Hour	Minute	Reason
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
3853	2017	10	29	11	53	1
4032	2017	11	29	9	13	2
4131	2017	12	16	14	52	1
4187	2017	12	31	9	15	1
4187	2017	12	31	9	46	1
4188	2017	12	31	10	33	1
4188	2017	12	31	10	39	1
4189	2017	12	31	11	12	1
4190	2017	12	31	15	50	1
4191	2018	1	5	13	35	1
4192	2018	1	6	8	20	1
4192	2018	1	5	14	8	1
4192	2018	1	6	8	3	1
4193	2018	1	6	8	30	1
4194	2018	1	6	11	5	1
4195	2018	1	9	6	59	1
4444	2018	2	14	15	22	1
4543	2018	3	5	11	49	2



Machine model	SerialNo	Operating Hours	Reading Date
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Regeneration duration
Total number of occurrences = 55

Op hours	Year	Month	Day	Hour	Minute	Duration (min)
4132	2017	12	18	6	42	45
4187	2017	12	31	9	19	27
4187	2017	12	31	8	55	20
4187	2017	12	31	9	48	29
4188	2017	12	31	10	37	2
4188	2017	12	31	10	19	14
4188	2017	12	31	10	40	31
4189	2017	12	31	14	47	31
4190	2017	12	31	15	20	31
4191	2018	1	5	13	34	2
4191	2018	1	5	13	37	32
4192	2018	1	6	7	59	4
4192	2018	1	6	8	8	12
4192	2018	1	6	8	24	6
4193	2018	1	6	10	35	31
4195	2018	1	9	6	42	17
4444	2018	2	14	15	14	8
4444	2018	2	14	15	43	46
4543	2018	3	5	11	5	44
4643	2018	3	20	13	6	46



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

Water level warning in water separator
Total number of occurrences = 0

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
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



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

High voltage
Total number of occurrences = 1

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme value
33	2017	3	30	14	17	1	31.7
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
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 hours is displayed in the first column, followed by year, month, day, hour and minute to show when



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

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 system voltage , is active.



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

Low voltage
Total number of occurrences = 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
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 hours is displayed in the first column, followed by year, month, day, hour and minute to show when



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

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 :

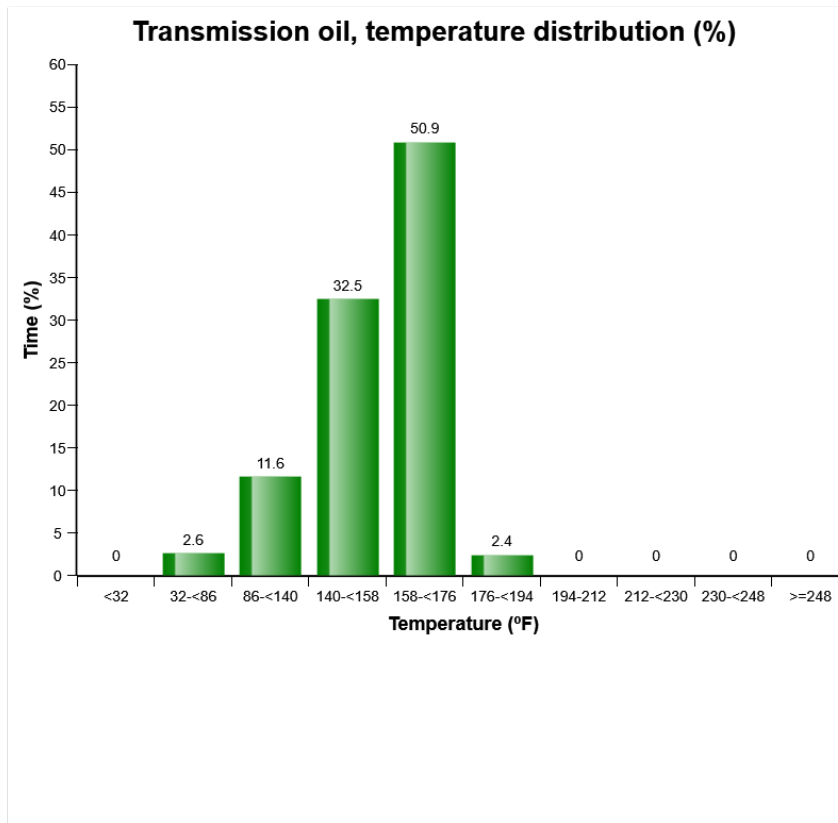
The extreme value column displays the most extreme value during the event.

Criteria :

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



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



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

<32°F Temperatures below 32°F

32-<86°F Temperatures from 32°F until 86°F

86-<140°F Temperatures from 86°F until 140°F

140-<158°F Temperatures from 140°F until 158°F

158-<176°F Temperatures from 158°F until 176°F

176-<194°F Temperatures from 176°F until 194°F

194-<212°F Temperatures from 194°F until 212°F



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

212-<230°F Temperatures from 212°F until 230°F

230-<248°F Temperatures from 230°F until 248°F

>248°F Temperatures over 248°F

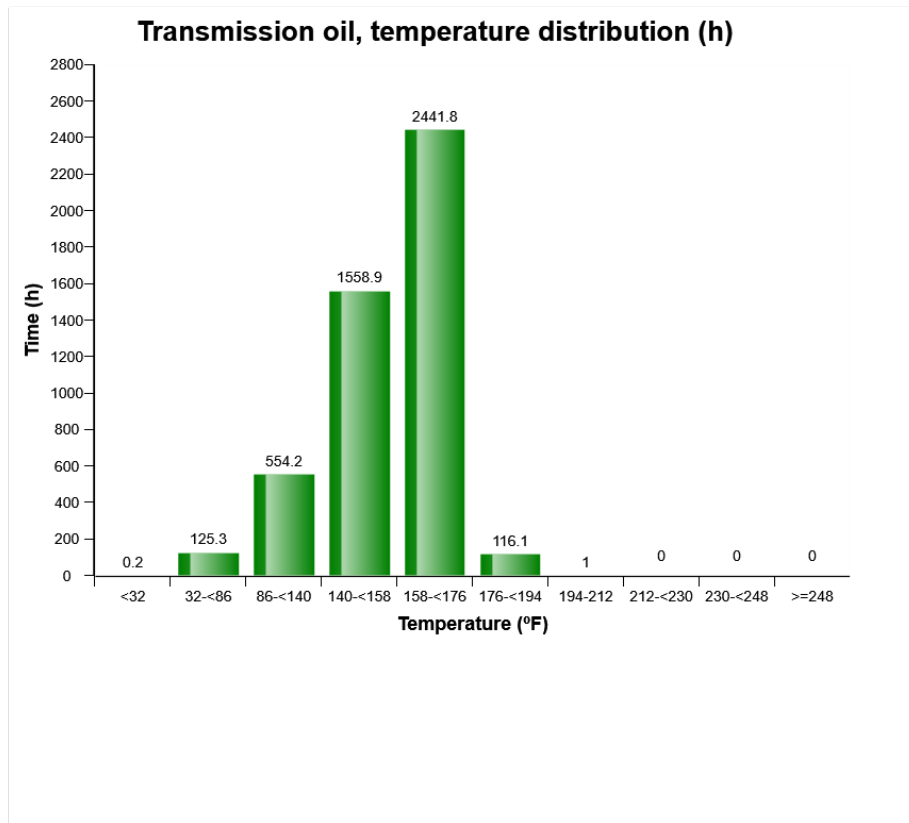
The bar that describes temperatures from 230°F until 248°F is yellow and means that the oil has begun to be overheated. Driver has been given orange central warning

The bar that describes >248°F is red and means that the oil has been overheated. Driver has been given red central warning.

Oil temperatures exceeding 230°F must be avoided since the properties of the oil are degraded



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



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

<32°F Temperatures below 32°F

32-<86°F Temperatures from 32°F until 86°F

86-<140°F Temperatures from 86°F until 140°F

140-<158°F Temperatures from 140°F until 158°F

158-<176°F Temperatures from 158°F until 176°F

176-<194°F Temperatures from 176°F until 194°F

194-<212°F Temperatures from 194°F until 212°F



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

212-<230°F Temperatures from 212°F until 230°F

230-<248°F Temperatures from 230°F until 248°F

>248°F Temperatures over 248°F

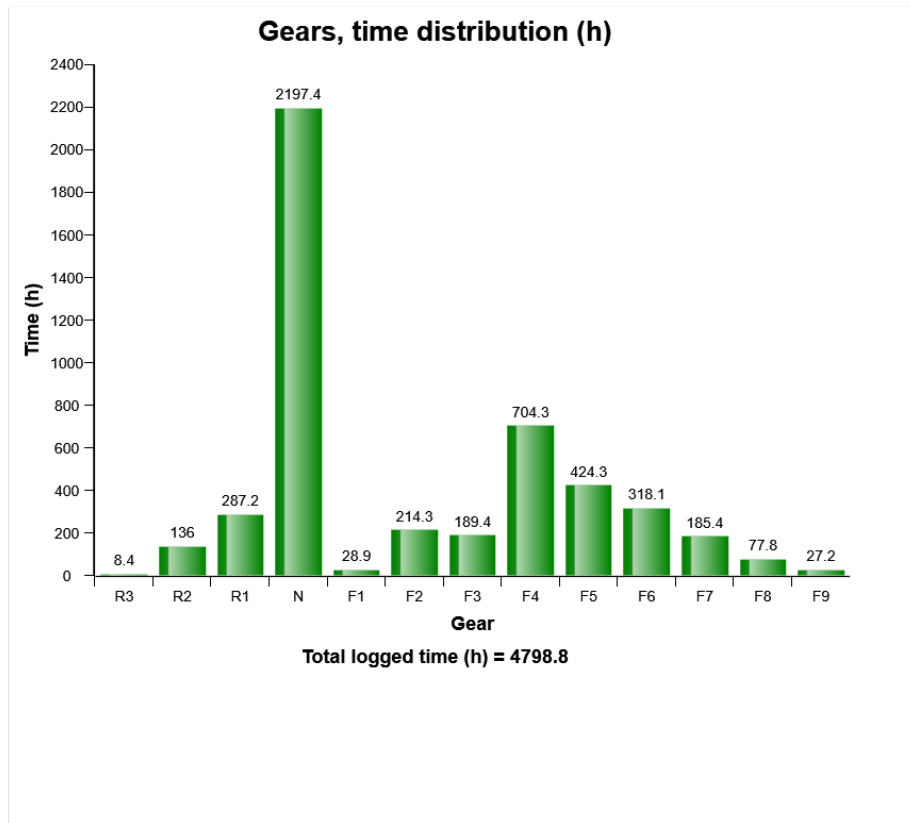
The bar that describes temperatures from 230°F until 248°F is yellow and means that the oil has begun to be overheated. Driver has been given orange central warning

The bar that describes >248°F is red and means that the oil has been overheated. Driver has been given red central warning.

Oil temperatures exceeding 230°F must be avoided since the properties of the oil are degraded



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

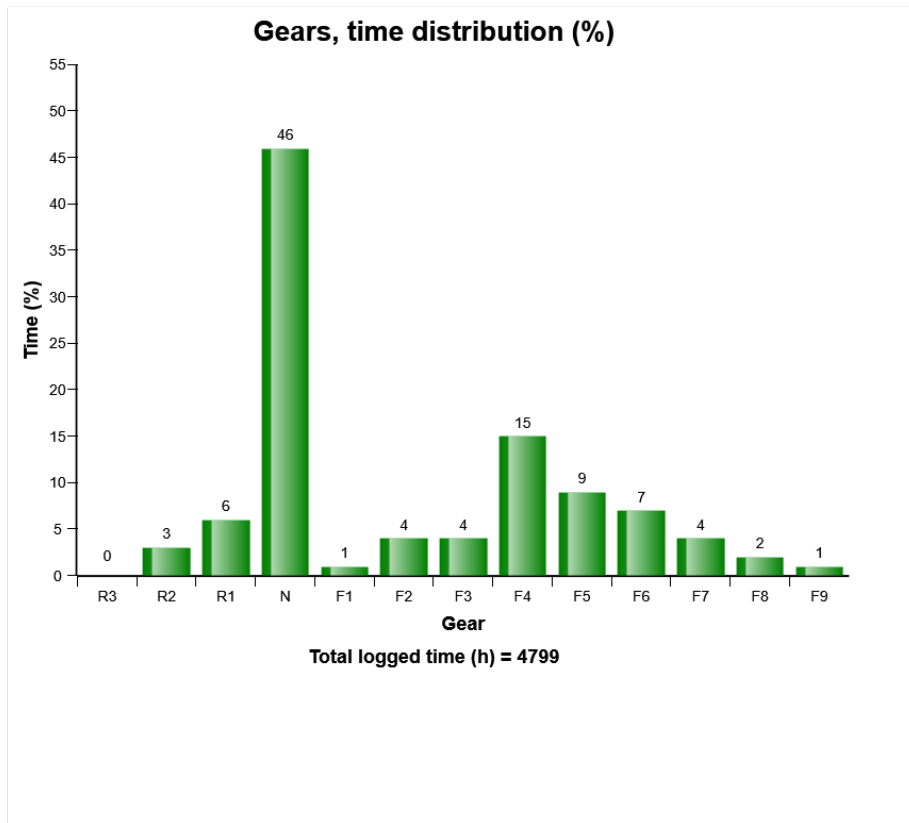


The diagram shows the time for each gear. Each bar represents a gear.

How the time is distributed between the gears depends on the operating conditions.



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

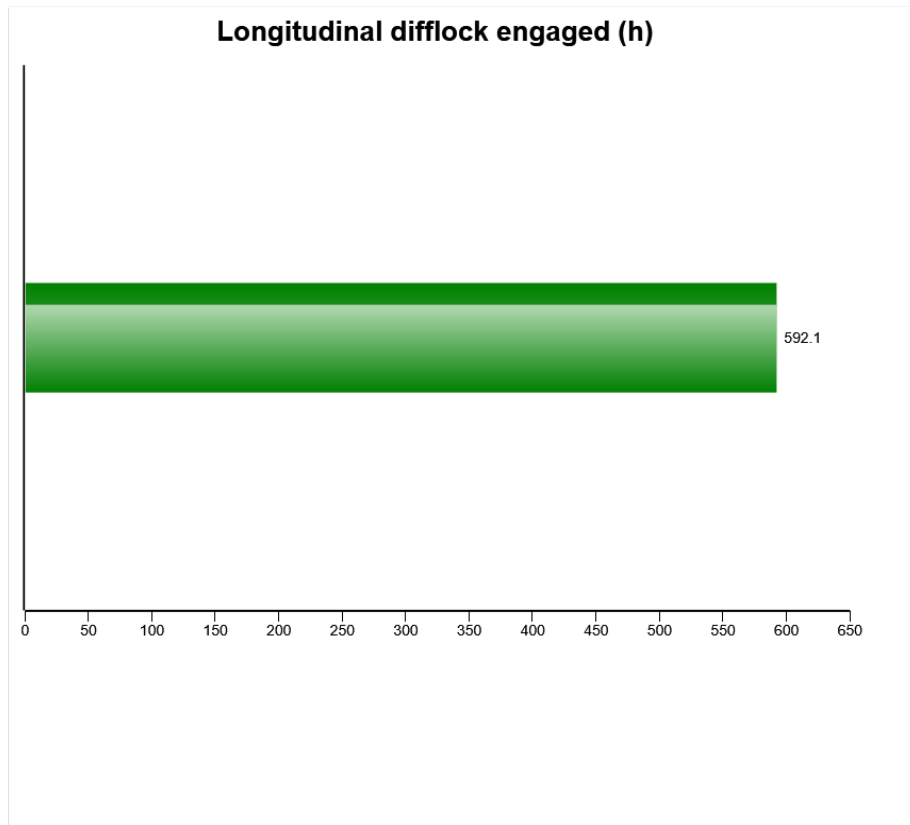


The diagram shows the time for each gear. Each bar represents a gear.

How the time is distributed between the gears depends on the operating conditions.



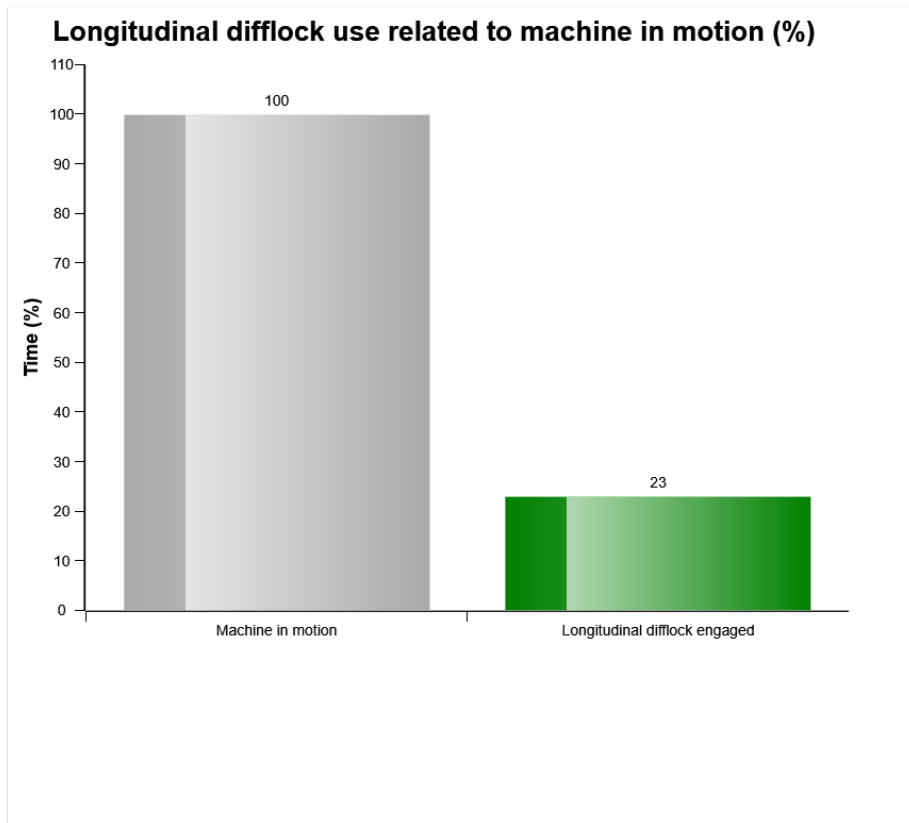
Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



The diagram shows how long time in hours the longitudinal difflock has been engaged. The presentation only shows time when the machine is moving as this is when the wear on the difflock occurs. The difflock should always be disengage when not needed to avoid unnecessary wear.



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



The diagram shows the percentage of engaged longitudinal difflock in relation to machine in motion.

The longitudinal difflock should always be disengaged when not needed to reduce wear.

The normal use of the longitudinal difflock in relation to the time that the machine has been operated depends on the operating conditions. Generally, the more offroad applications the machine operates in, the higher the longitudinal difflock use shall be in relation to the time that the machine has been operated. Also operating in uphill conditions on slippery surface can require longitudinal difflock.

Also check " Longitudinal difflock engaged (h)"



Machine model A45G	SerialNo 342056	Operating Hours 4798.5	Reading Date 01/08/2019
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**Transmission oil pressure low
Total number of occurrences = 1**

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (psi)
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
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
4795	2018	4	9	15	15	10	80

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 and minute to show when an



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

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 :

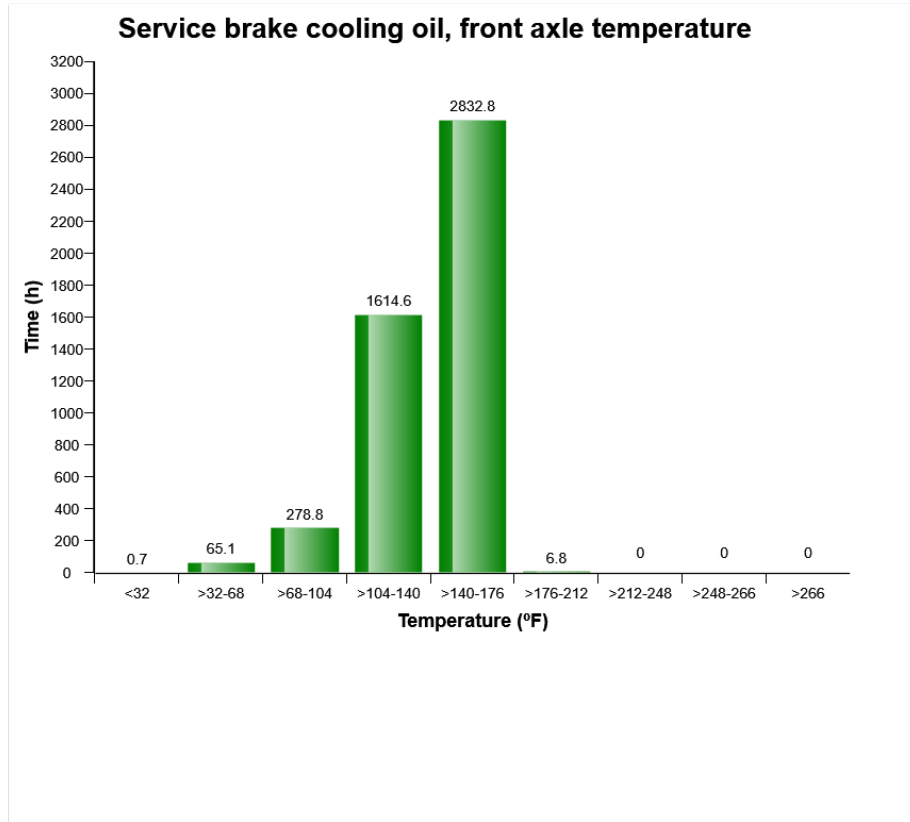
The extreme value column displays the most extreme value during the event.

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
A45G	342056	4798.5	01/08/2019

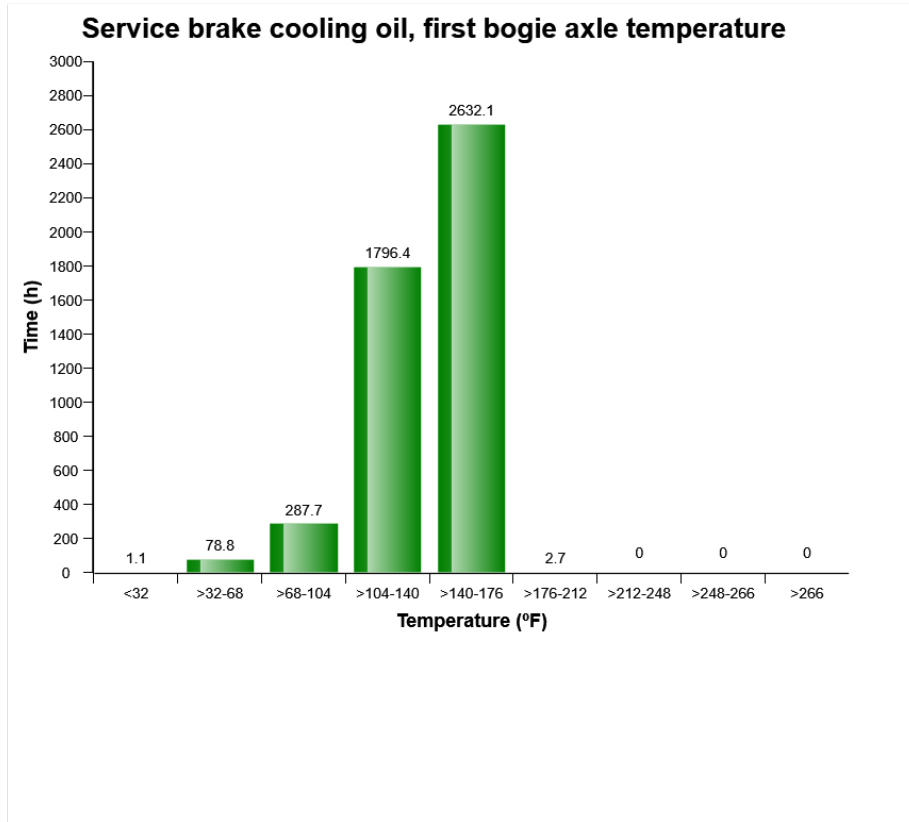


The diagram shows the front axle brake cooling oil temperature. The temperatures are divided into ranges, yellow bar (>248-266°F) and red bar (>266°F) shows abnormal temperatures. The temperature is registered in the line from the front axle to the oil cooler, that is, the warmest oil in the circuit.

The temperature shown by yellow and red bars degrade the properties of the cooling oil, and may be the result of incorrect and hard operation of the machine. Check the brake pressure distribution in the diagram "Service brake pressure, distribution (%)". If the brake cooling oil temperature is high despite normal distribution of service brake pressure, there is probably a malfunction in the brake cooling circuit



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

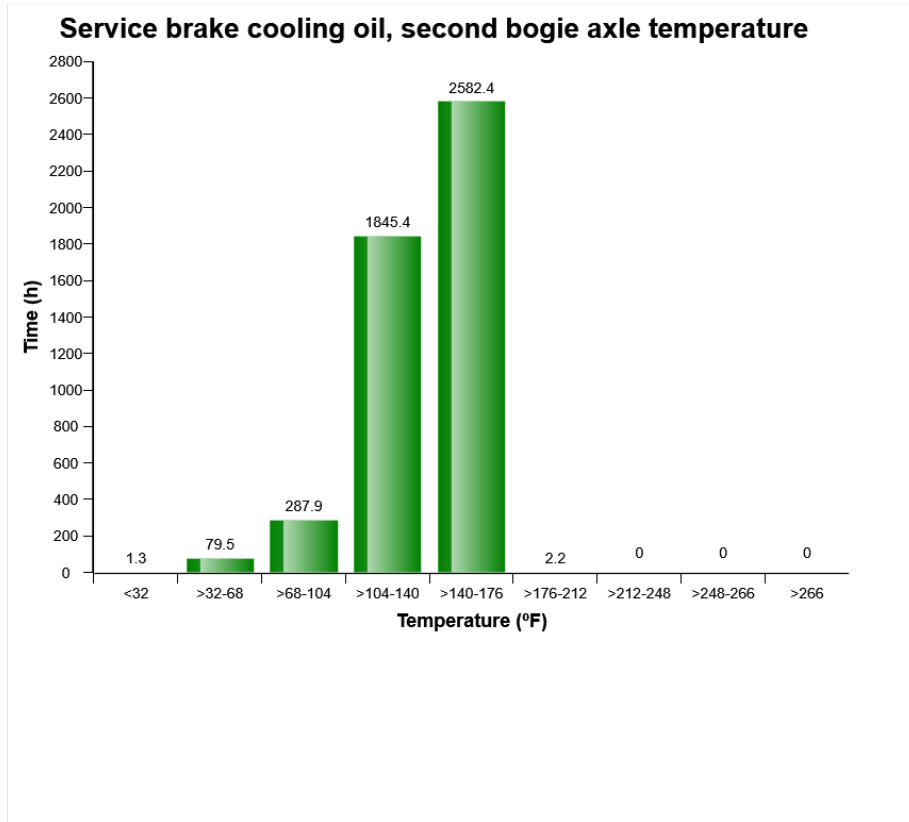


The diagram shows the first bogie axle brake cooling oil temperature. The temperatures are divided into ranges, yellow bar (>248-266°F) and red bar (>266°F) shows abnormal temperatures. The temperature is registered in the line from the first bogie axle to the oil cooler, that is, the warmest oil in the circuit.

The temperature shown by yellow and red bars degrade the properties of the cooling oil, and may be the result of incorrect and hard operation of the machine. Check the brake pressure distribution in the diagram "Service brake pressure, distribution (%)". If the brake cooling oil temperature is high despite normal distribution of service brake pressure, there is probably a malfunction in the brake cooling circuit.



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

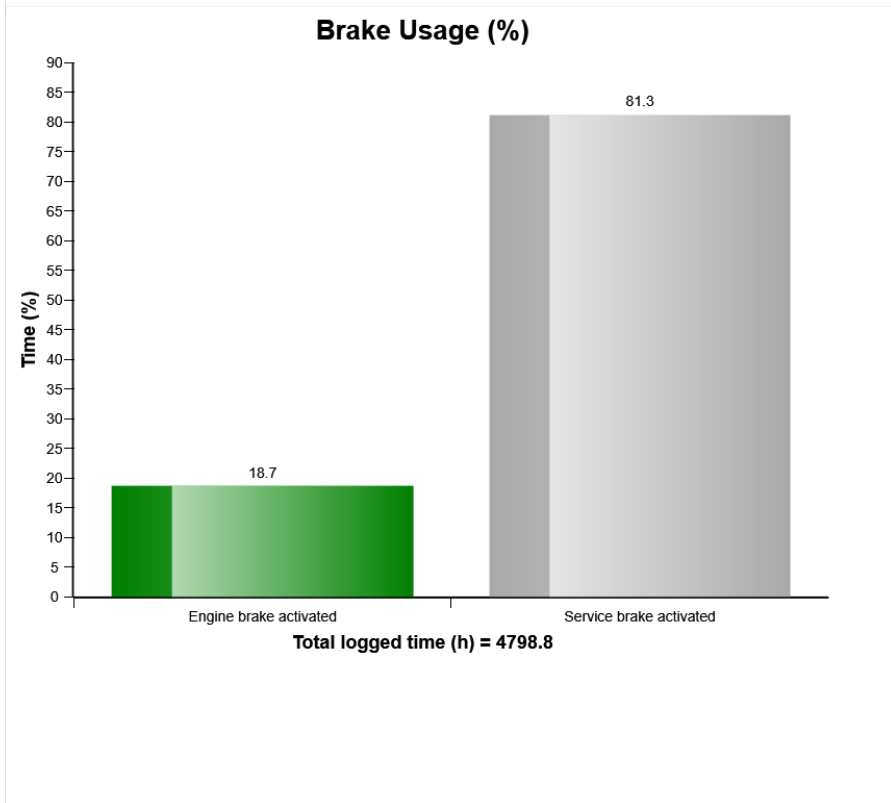
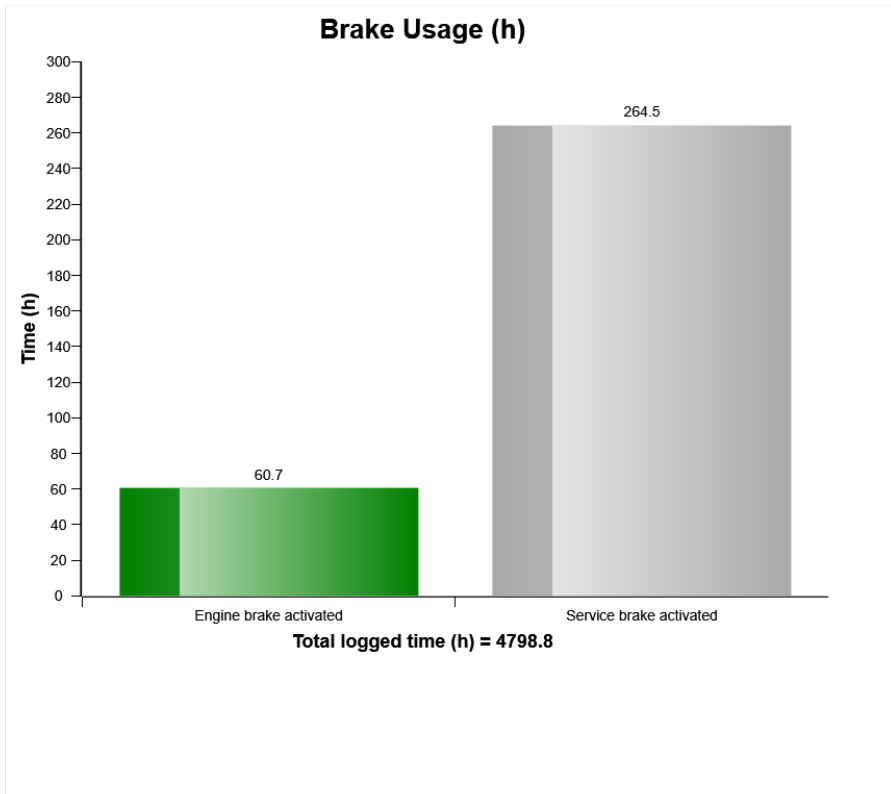


The diagram shows the front axle brake cooling oil temperature. The temperatures are divided into ranges, yellow bar (>248-266°F) and red bar (>266°F) shows abnormal temperatures. The temperature is registered in the line from the second bogie axle to the oil cooler, that is, the warmest oil in the circuit.

The temperature shown by yellow and red bars degrade the properties of the cooling oil, and may be the result of incorrect and hard operation of the machine. Check the brake pressure distribution in the diagram "Service brake pressure, distribution (%)". If the brake cooling oil temperature is high despite normal distribution of service brake pressure, there is probably a malfunction in the brake cooling circuit.



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

Low Brake Servo Pressure
Total number of occurrences = 7

	Op hours	Year	Month	Day	Hour	Minute	Duration (sec)
A	0	2017	2	21	13	1	0
H	0	2000	0	0	0	0	0
I	0	2000	0	0	0	0	0
J	0	2000	0	0	0	0	0
B	1	2017	3	15	15	27	0
C	992	2017	8	31	6	49	0
D	1961	2017	1	27	11	20	0
E	3940	2017	11	7	7	34	9
F	4067	2017	11	30	6	30	0
G	4795	2018	4	11	6	39	10

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 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.



**Extreme
(psi)**

2269

0

0

0

2244

1903

2101

1636

1804

1742



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

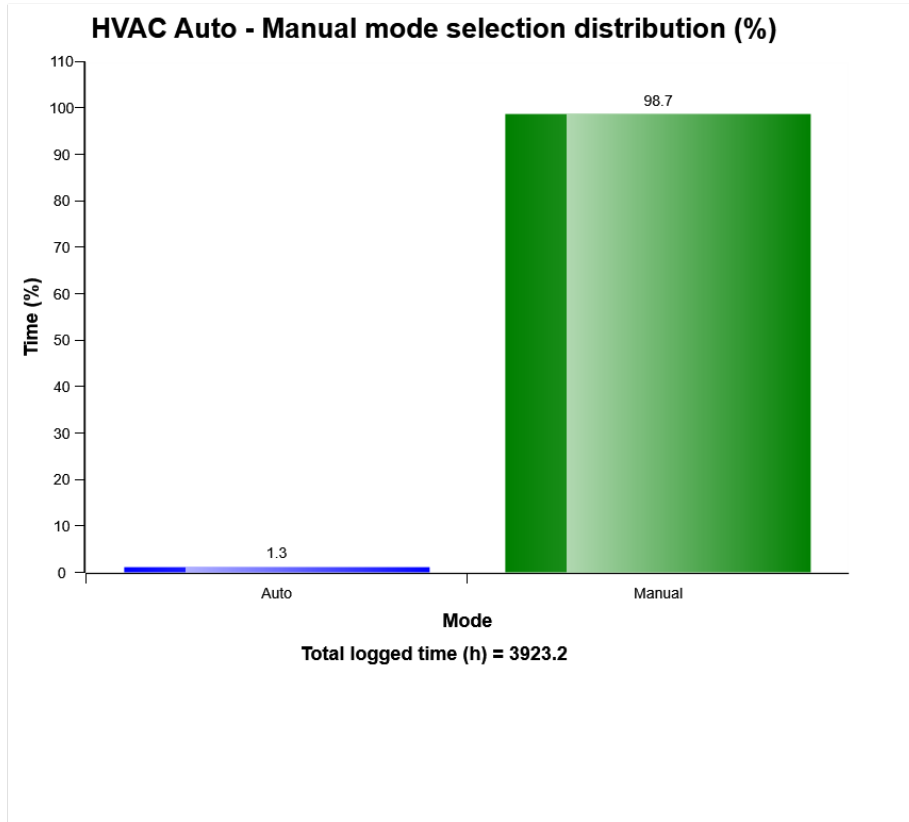
Criteria :

In order for an occurrence of low brake servo pressure to be recorded in a data point and the count to increment by 1, the low brake servo pressure state must be alarm. Gear not in Neutral and engine must be on.





Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



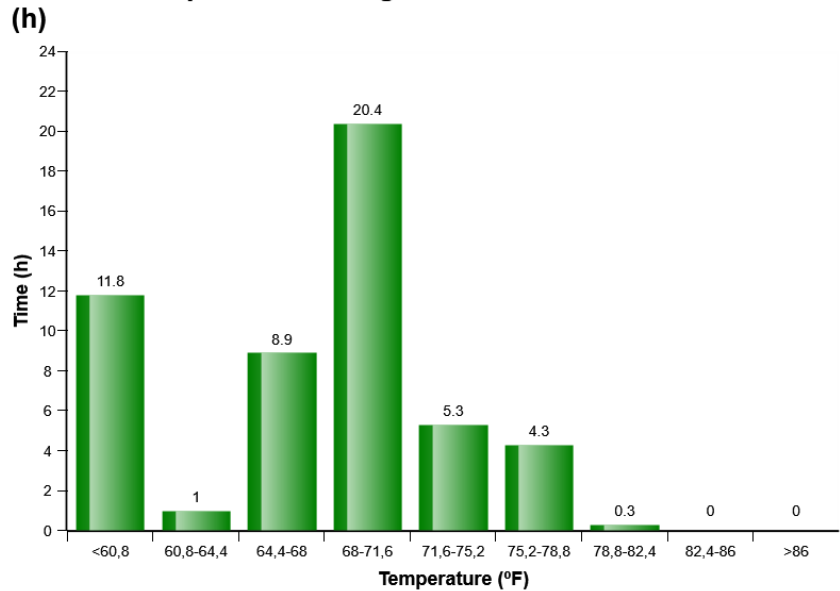
Definition:

The diagram describes auto-manual mode selection 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
A45G	342056	4798.5	01/08/2019

HVAC air temperature setting in auto control mode distribution

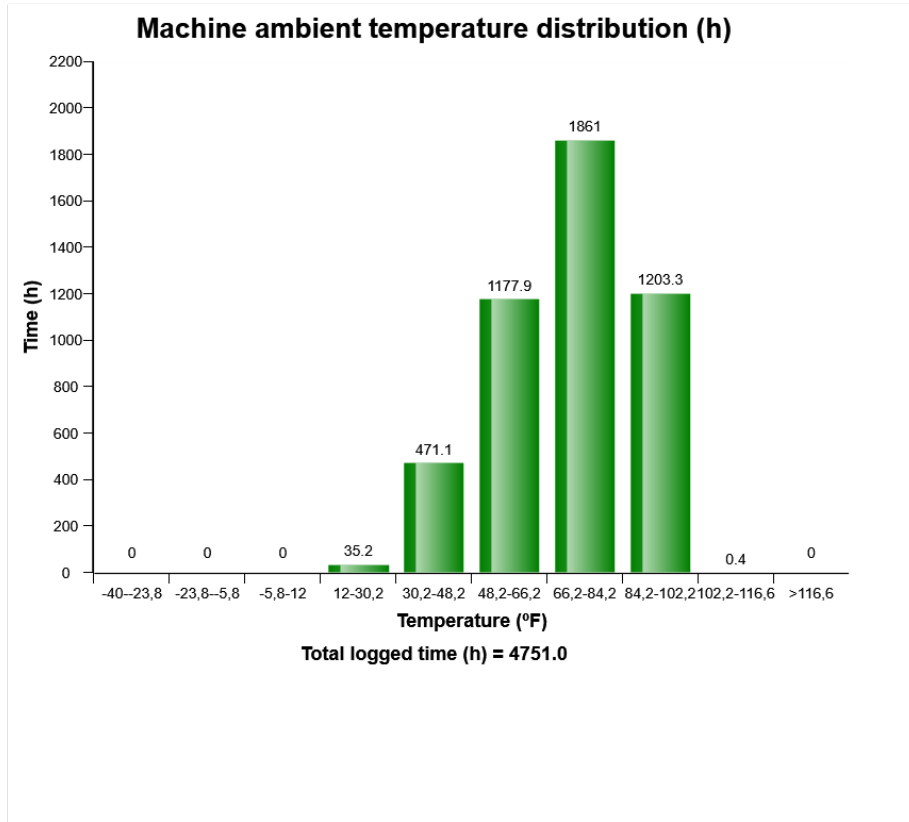


Definition:

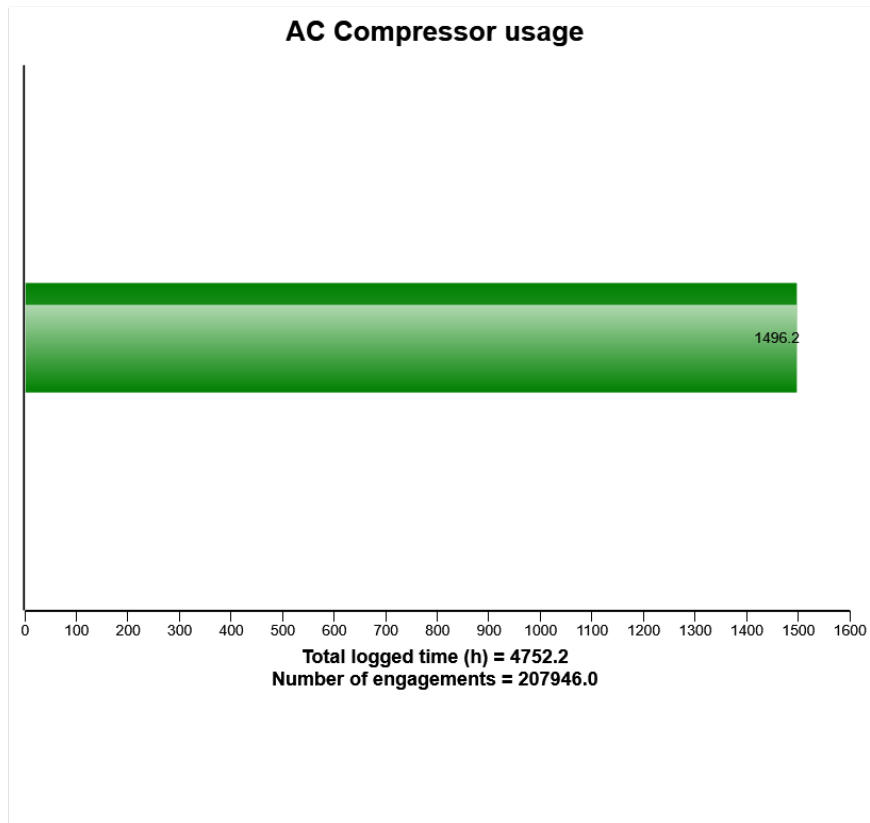
The diagram describes air temperature setting distribution for HVAC auto control mode established by operator in Cabin



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



Definition:

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.

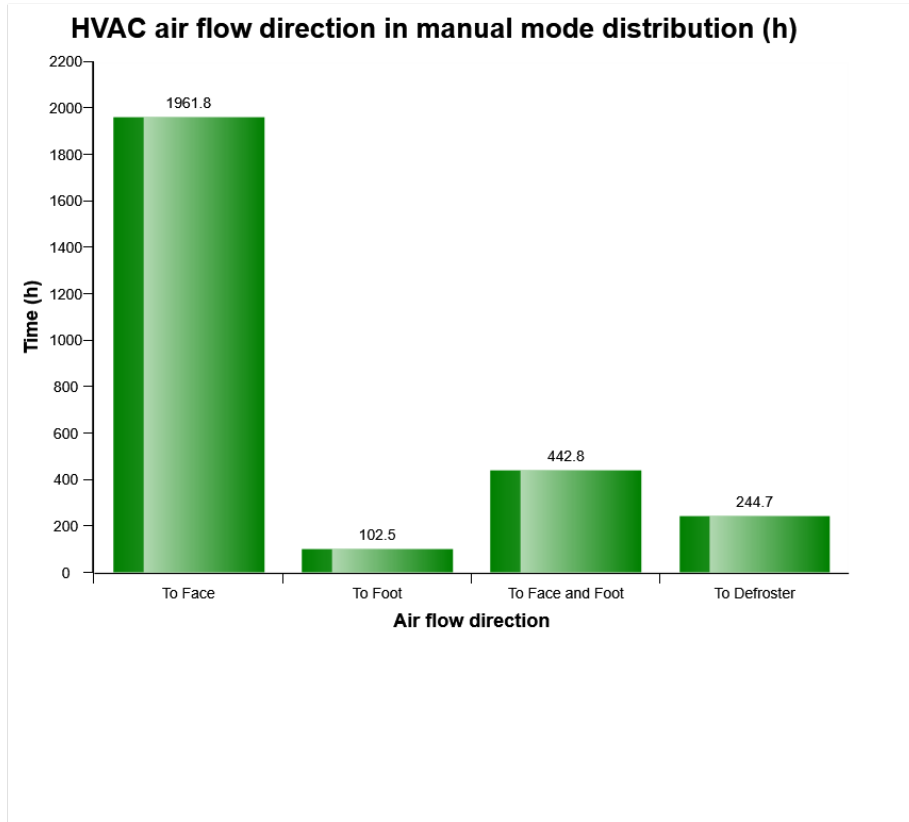
Total number of AC compressor activations is also displayed.



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

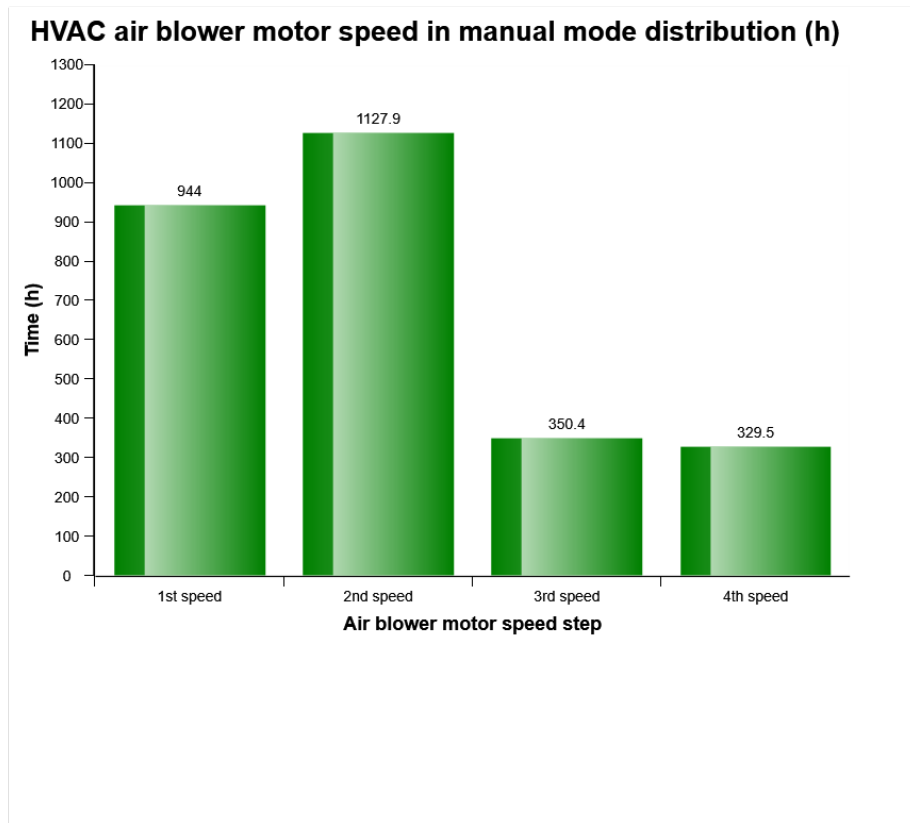


Definition:

The diagram describes air flow direction distribution for HVAC manual control mode established by operator in Cabin.



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



Definition:

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
A45G	342056	4798.5	01/08/2019

AC High Pressure
Total number of occurrences = 21

Op hours	Year	Month	Day	Hours	Minute	Duration (sec)	Extreme (° F)
429	2017	6	23	14	45	44	97
429	2017	6	23	14	52	39	97
429	2017	6	23	15	0	42	97
429	2017	6	23	15	24	35	95
429	2017	6	23	15	30	38	95
492	2017	7	5	13	3	34	95
495	2017	7	5	16	7	46	99
500	2017	7	6	12	46	36	97
501	2017	7	6	13	19	40	97
503	2017	7	6	15	26	46	99
503	2017	7	6	15	32	43	99
528	2017	7	11	15	46	33	95
552	2017	7	13	17	28	35	99
561	2017	7	14	15	22	32	99
562	2017	7	14	15	45	36	99
612	2017	7	21	13	28	7	99
612	2017	7	21	13	16	28	97
784	2017	8	16	15	58	27	99
784	2017	8	16	15	45	6	99
841	2017	8	19	13	33	28	97

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 and minute to show when



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

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
A45G	342056	4798.5	01/08/2019

**AC Boiling Protection
Number of engagements = 0**

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32

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 and minute to show when



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

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
A45G	342056	4798.5	01/08/2019

AC System Cut Out Pressure
Total number of occurrences = 11

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
1227	2119	12	27	7	58	-56359	86
1229	2119	12	28	0	8	8542	59
1232	2119	12	28	2	37	10919	68
1235	2000	2	3	12	31	-511259623	86
1239	2000	2	4	6	52	-511249414	70
1247	2119	12	31	1	15	14915	72
1251	2119	12	31	5	55	-49668	86
1255	2119	12	31	23	59	69016	70
1794	2000	5	1	7	18	1369	18
1873	2000	5	14	7	22	0	32
1893	2000	5	17	7	24	979	19

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 and minute to show when



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

an event has occurred.

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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 :

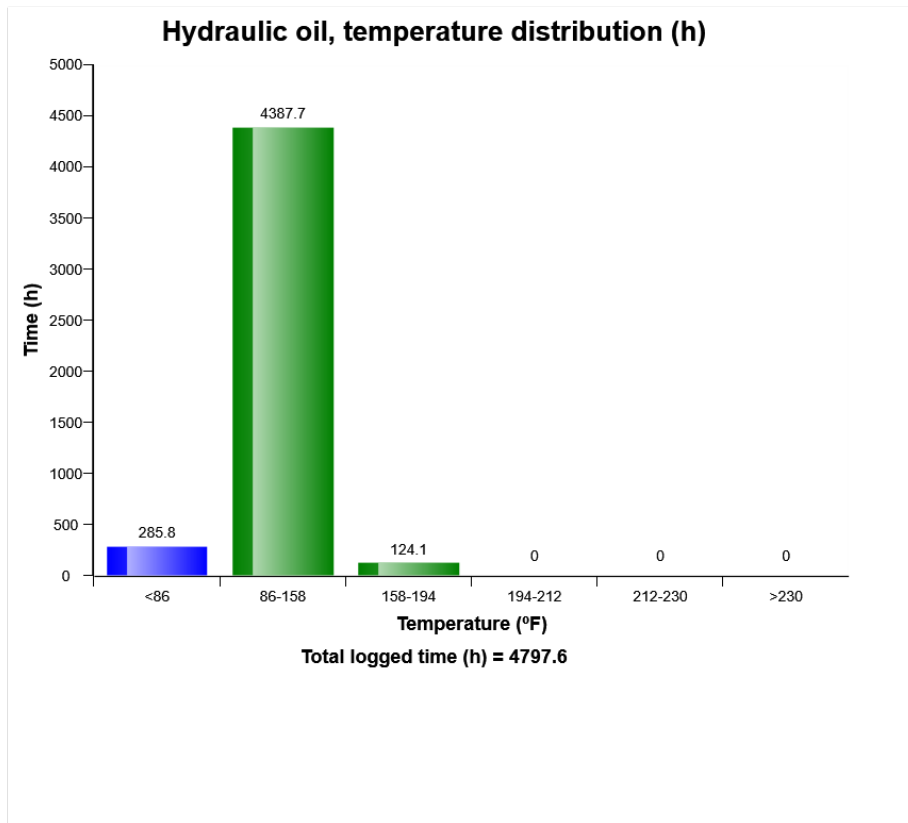
The extreme value column displays the most extreme value during the event.

Criteria :

Logging is performed when, AC cut out pressure signal is active. Ambient temp is viewed.



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019



Definition:

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.

It is normal to have registrations in this region.



Machine model	SerialNo	Operating Hours	Reading Date
A45G	342056	4798.5	01/08/2019

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

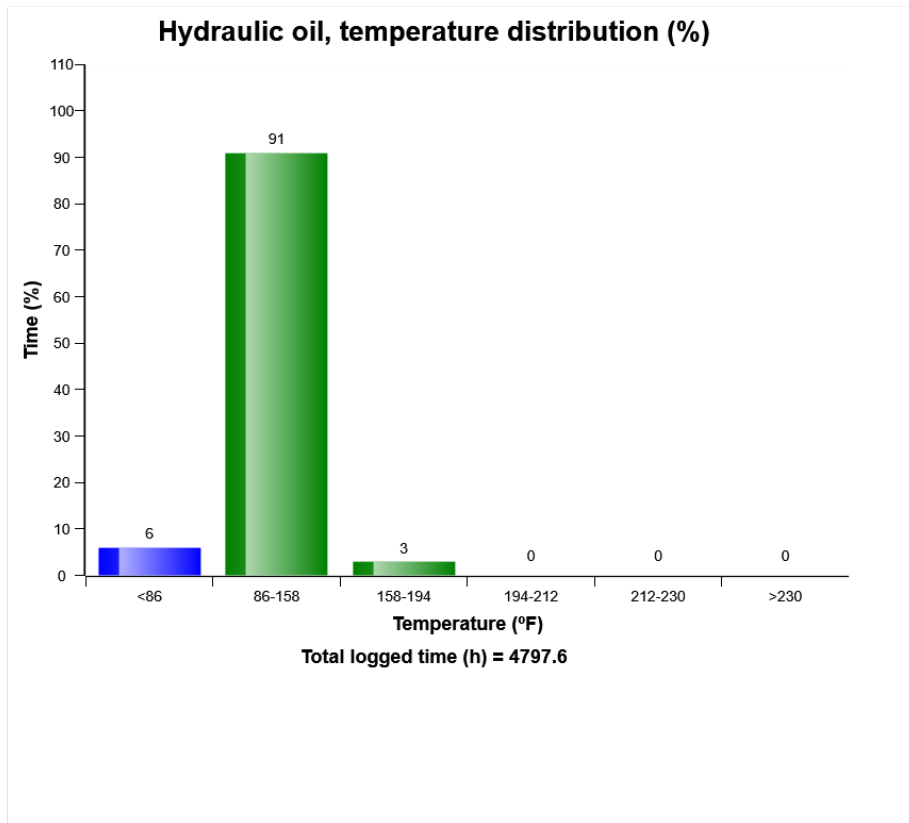
Yellow bar = High working temperature. It is normal to have some registrations in this region.

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
A45G	342056	4798.5	01/08/2019



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

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