VOLVO CONSTRUCTION EQUIPMENT

MATRIS REPORT

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Company name	Dealer	Report Issuer
Flagler		
Contact name	**Technician**	**Primary Application**
	Boback	Earth moving construction
Site	**Workorder**	**Ground Condition**

MATRIS Reading, Summary / Recommendation

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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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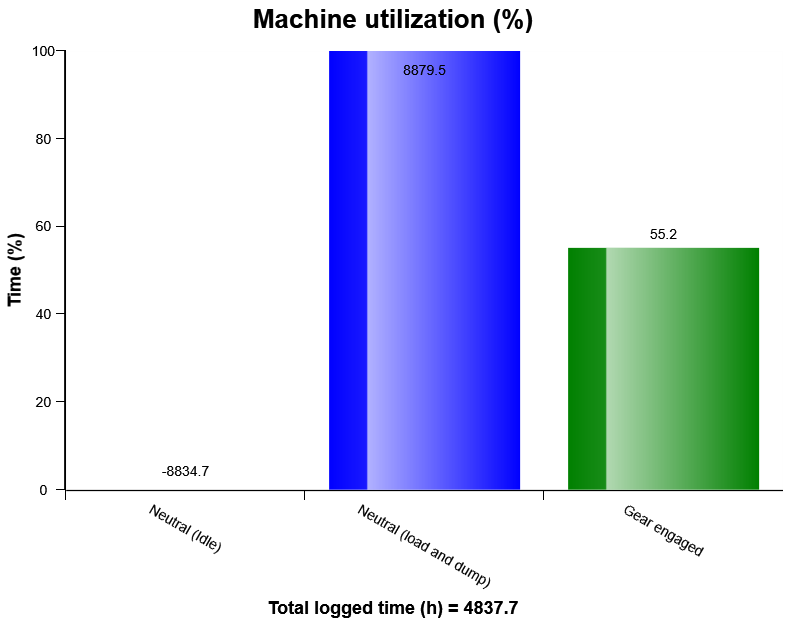

The diagram shows a simplified presentation of the machines utilization based on the relation between time in gear and time in neutral. The "Gear engaged " includes both forward and reverse gears.

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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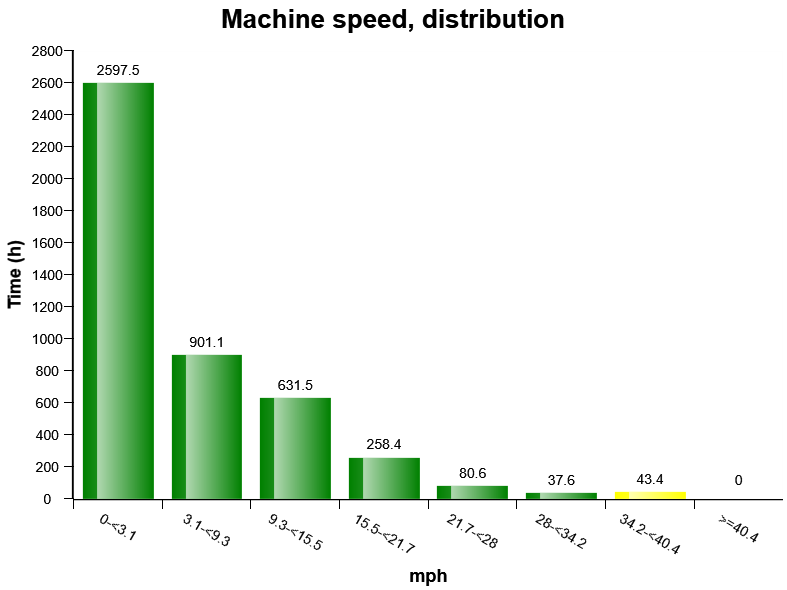

The presentation shows the time in hours in speed-intervals for the machine.

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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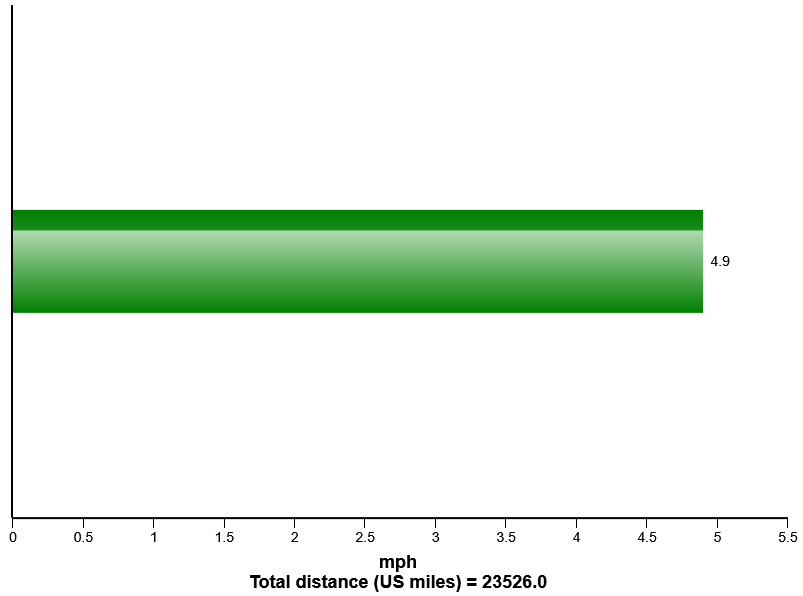
Average speed over total operating hours

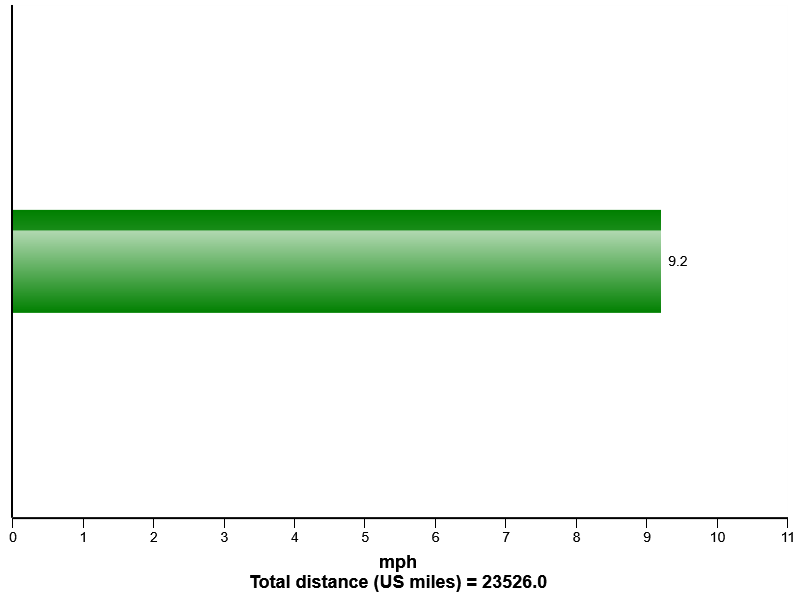


Total distance (US miles) = 23526.0

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

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

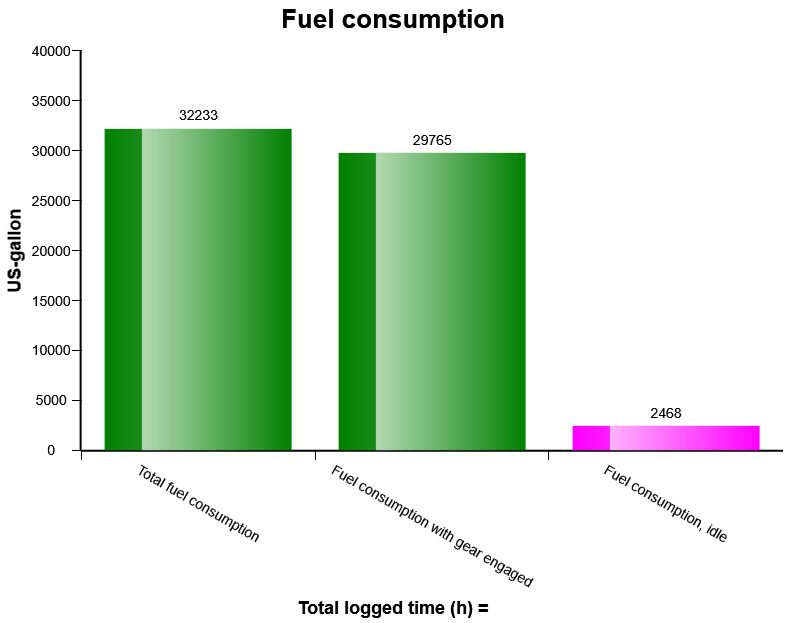
Average speed with gear engaged



Total distance (US miles) = 23526.0

The diagram shows the machines average speed based on the operating hours with gear engaged.

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

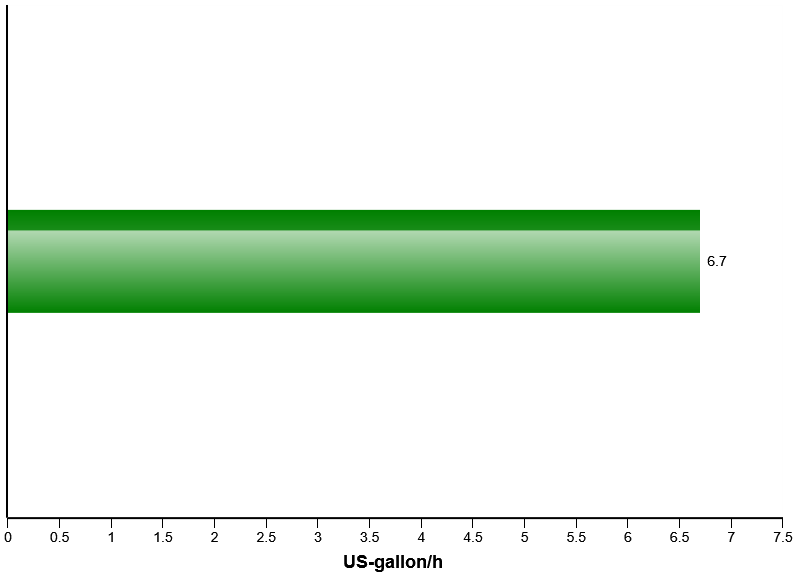


The diagram shows the total fuel consumption, fuel consumption with gear engaged and fuel consumption during idle.

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

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

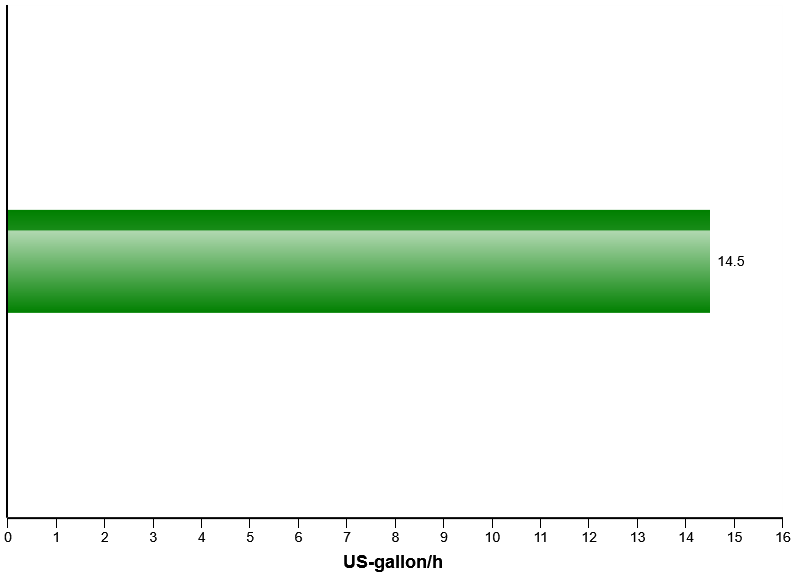
Average fuel consumption per hour



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

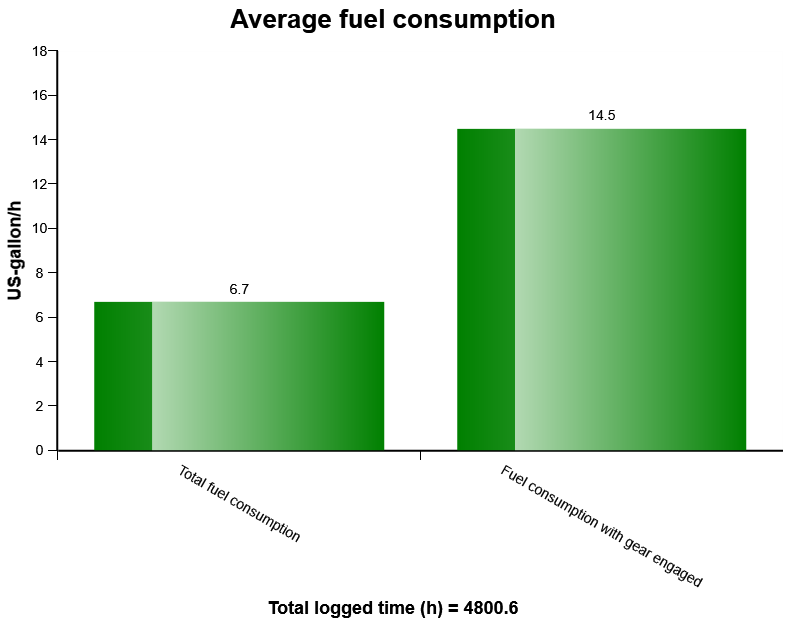
Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Average fuel consumption per hour with gear engaged



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

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019



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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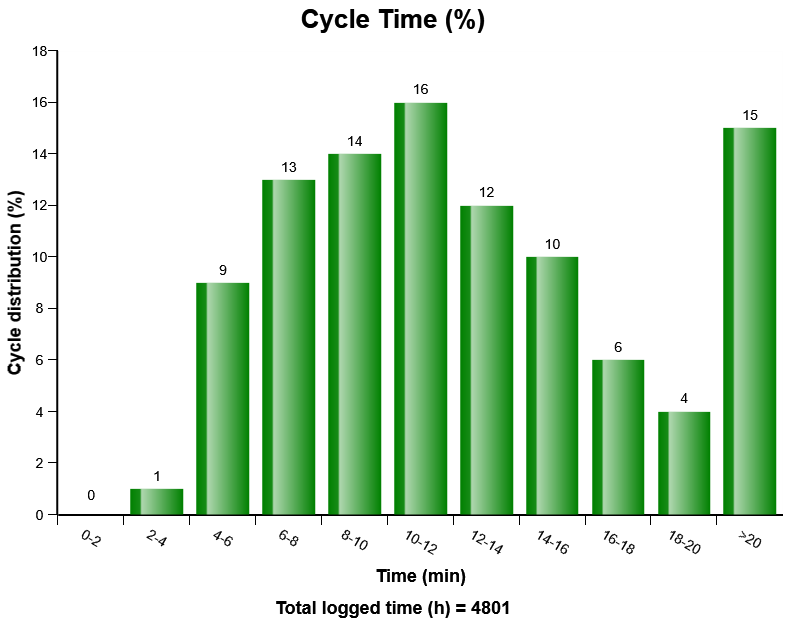

The diagram shows the distribution of the working cycle time. The time between 2 valid cycle registrations is registered. Time starts from lifting the body.

Machine model	SerialNo	Operating Hours	Reading Date
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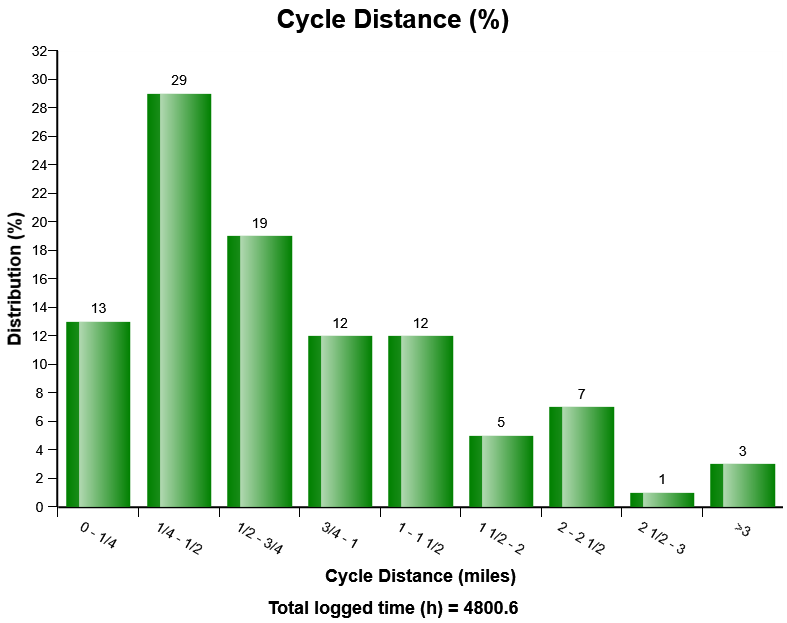
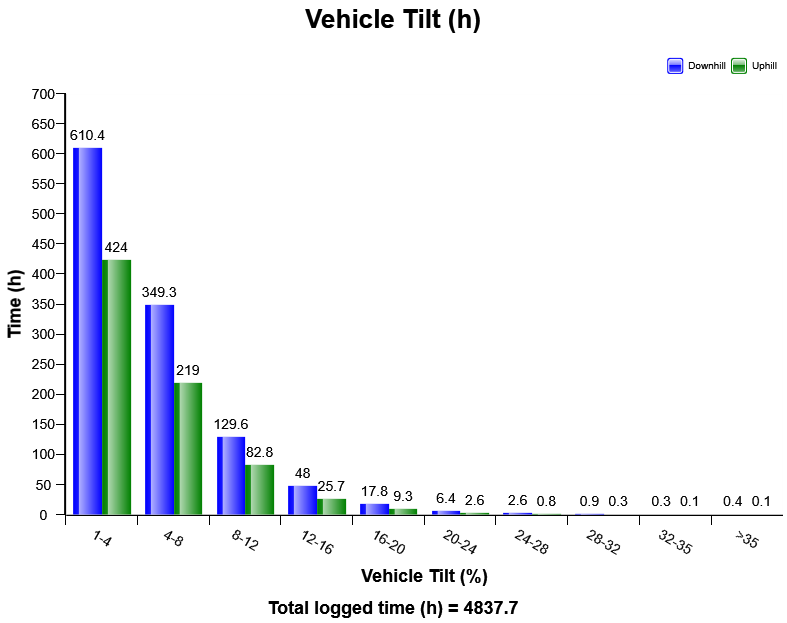


The diagram shows the distribution of the working cycle distance. The distance driven between 2 valid cycle registrations.

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019



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.

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Accumulated performance
Total logged time (h) =

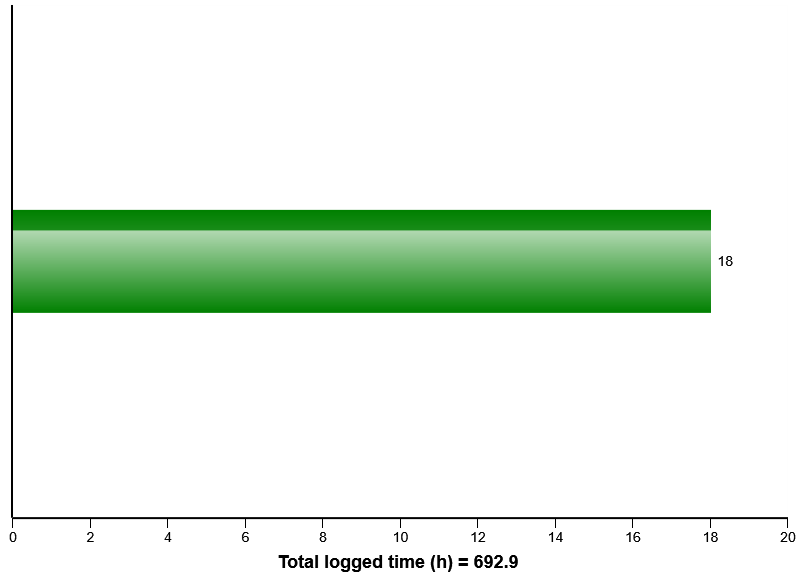
Total logged time (h) =	692.9
Fuel consumption (US-gallons)	5901
Production (ton,US)	106059
Ton/h	153.1
Ton/gal	18.0
Fuel efficiency (US Gal/ton)	0.06
Number of cycles	2575
Cycles overloaded (%)	15
Load utilisation / cycle (%)	96

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.

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

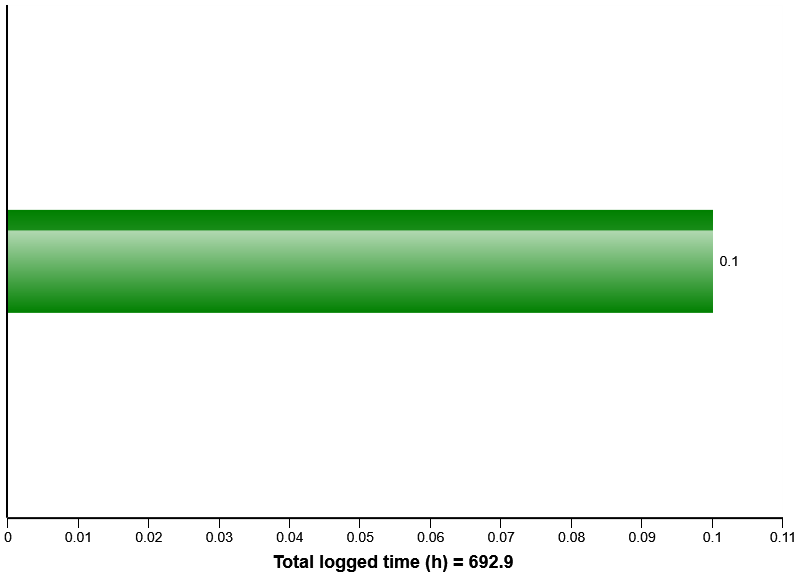
Fuel efficiency (US-ton/gal)



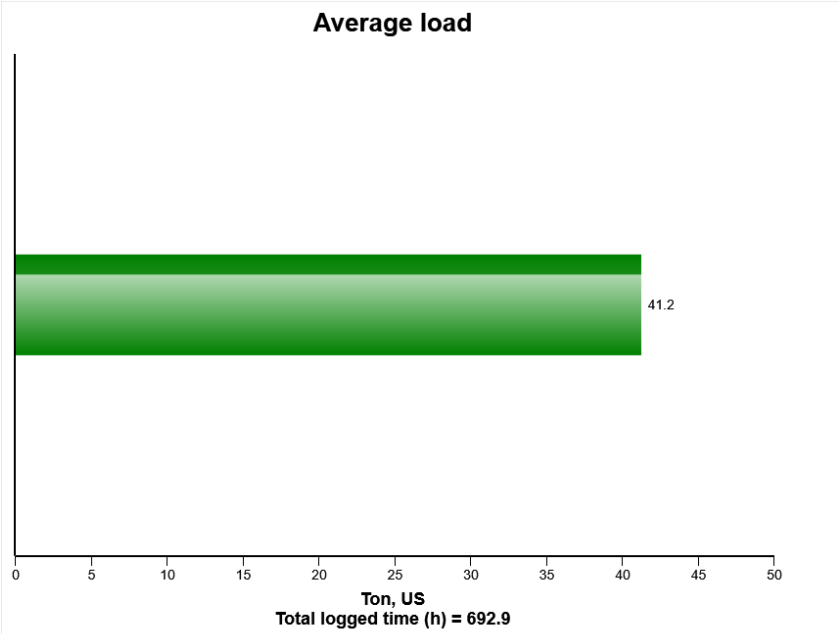
The presentation display the average produced tonne per fuel unit over the machines lifetime

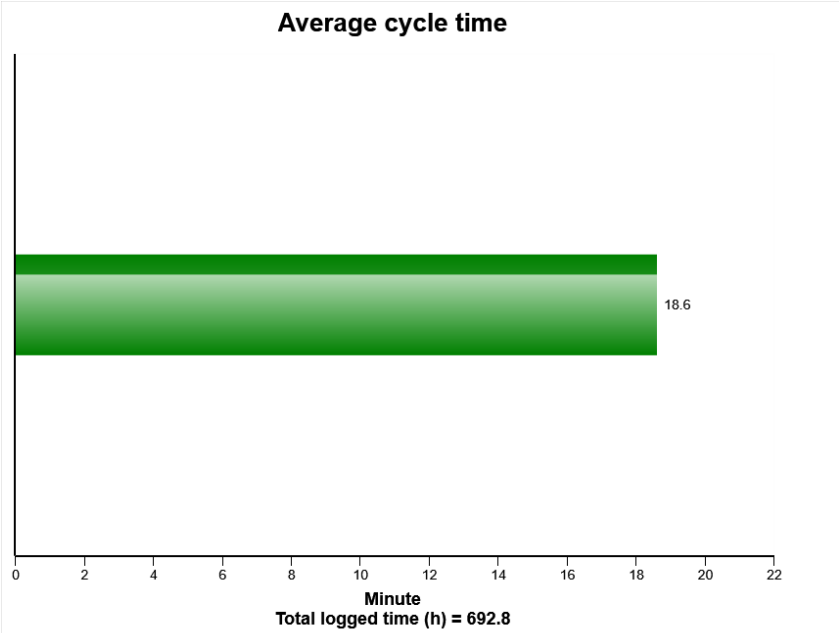
Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Fuel efficiency (gal/US-ton)



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


Average load
41.2
0
5
10
15
20
25
30
35
40
45
50
Ton, US
Total logged time (h) = 692.9


Average cycle time
18.6
0
2
4
6
8
10
12
14
16
18
20
22
Minute
Total logged time (h) = 692.8

Machine model	SerialNo	Operating Hours	Reading Date
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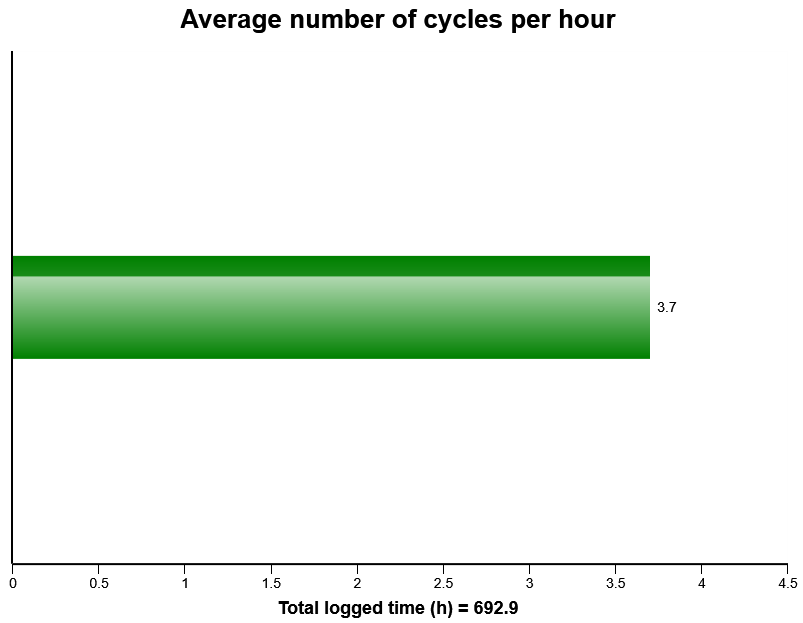
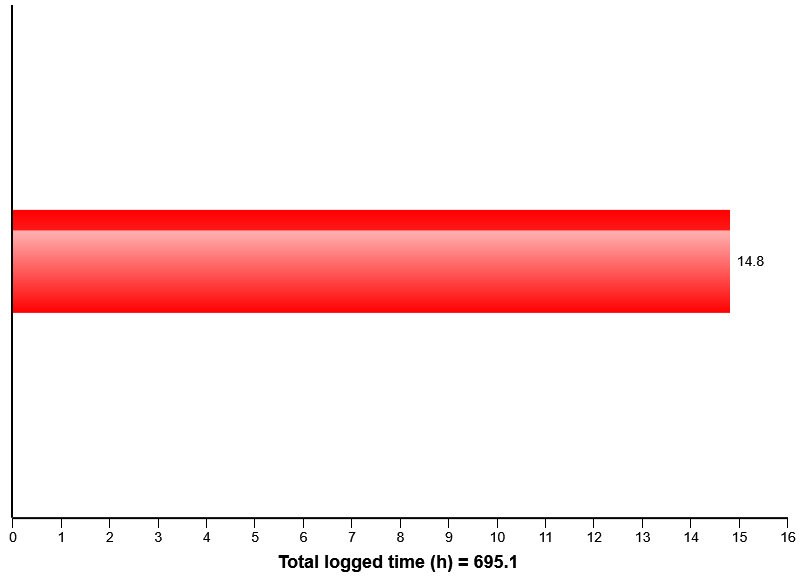


The presentation shows the average number of cycles per hour over the machines lifetime.

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Overloaded cycles (%)



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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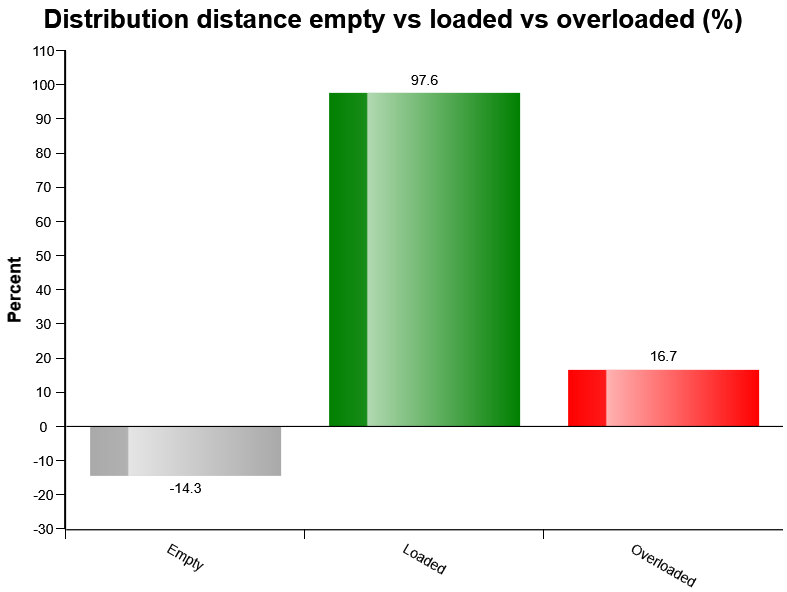

Much time operated with overload puts unnessesery stress to the machine which could lead to shorter machine life and higher repair and maintenance cost.

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

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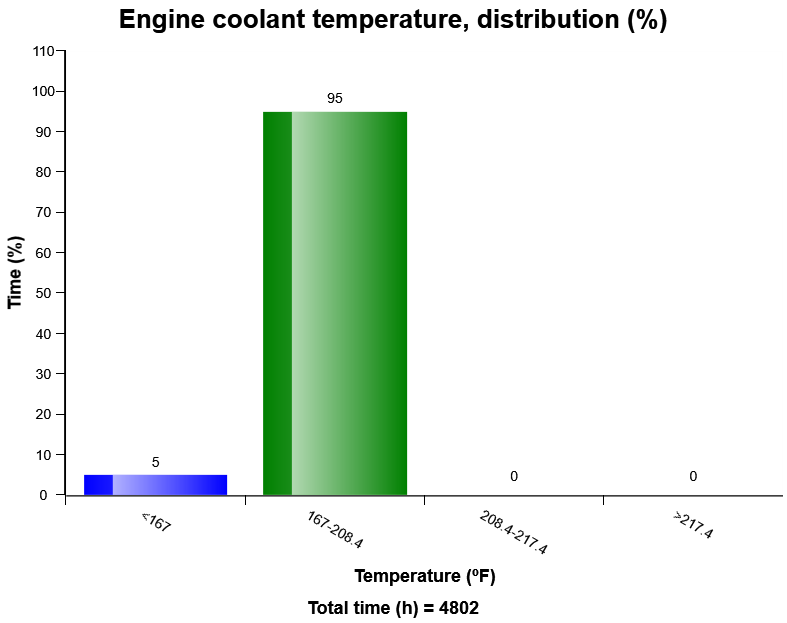


Definition:

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.

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

It is normal to have registrations in this region.

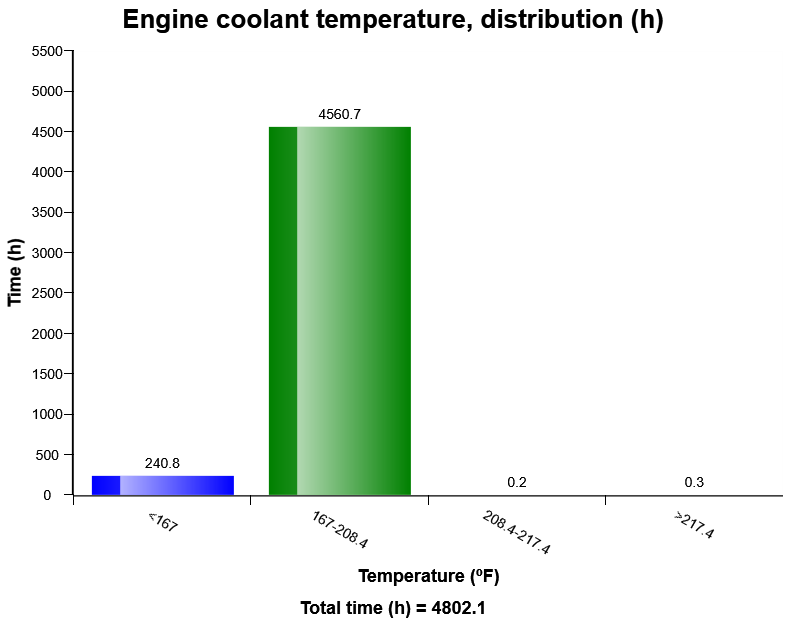
Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

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
A40G	340781	4837.2	1/6/2019



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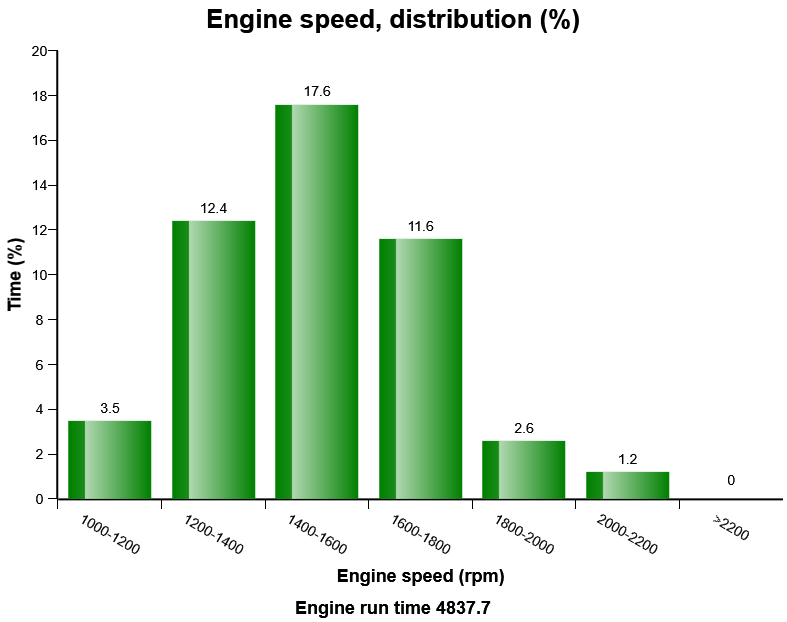
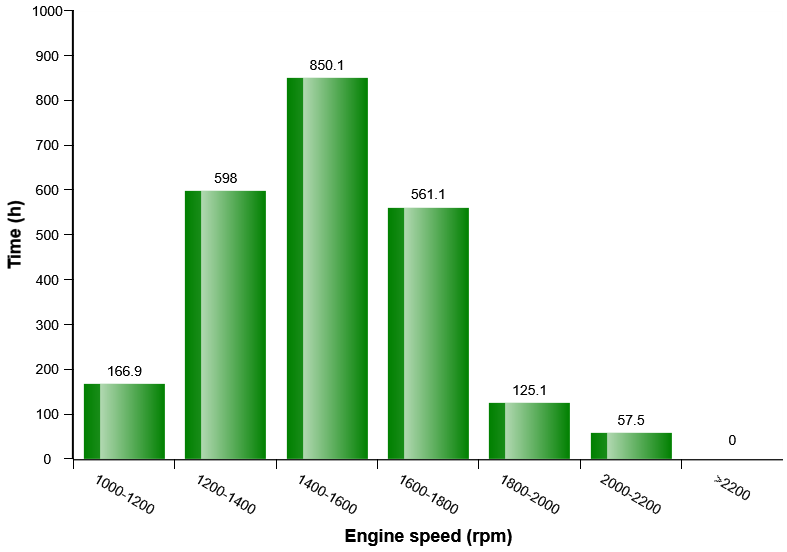


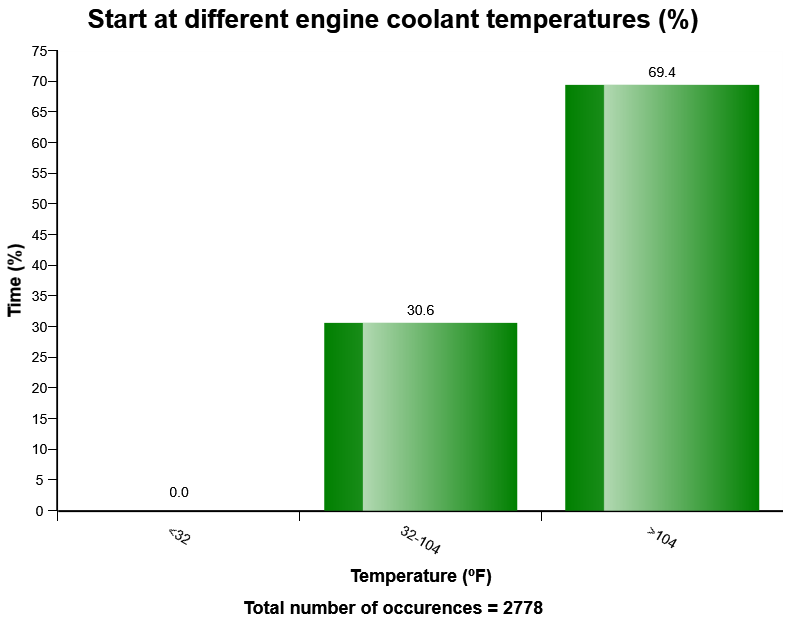
Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Engine speed, distribution (h)



Engine run time 4837.7

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019



Definition:

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

Explanation:

Y-axis: Number of engine starts

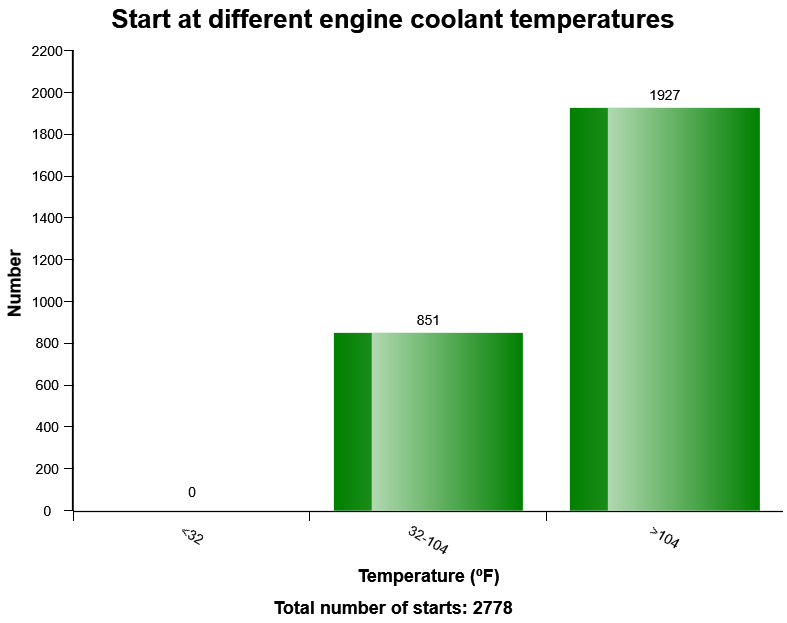
X-axis: Engine coolant temperature.

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

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
A40G	340781	4837.2	1/6/2019



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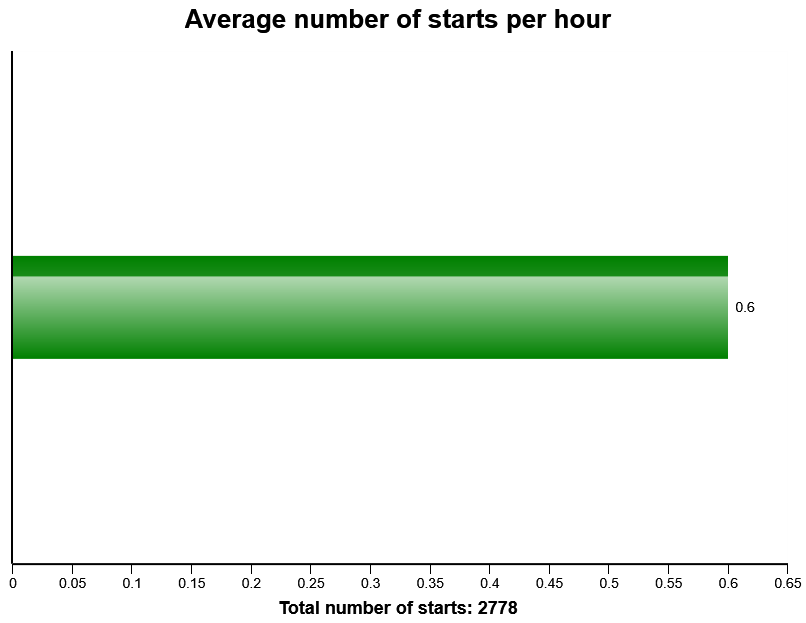

Definition:

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.

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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
A40G	340781	4837.2	1/6/2019

High engine coolant temperature
Total number of occurences = 7

	Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° F)
H	0	2000	0	0	0	0	0	32
I	0	2000	0	0	0	0	0	32
J	0	2000	0	0	0	0	0	32
A	1273	2016	7	6	12	58	84	228
B	1273	2016	7	6	13	4	244	228
C	1273	2016	7	6	13	13	192	230
D	1273	2016	7	6	13	17	34	231
E	1274	2016	7	6	14	2	125	228
F	1274	2016	7	6	14	5	9	228
G	4113	2018	8	8	15	30	93	224

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.

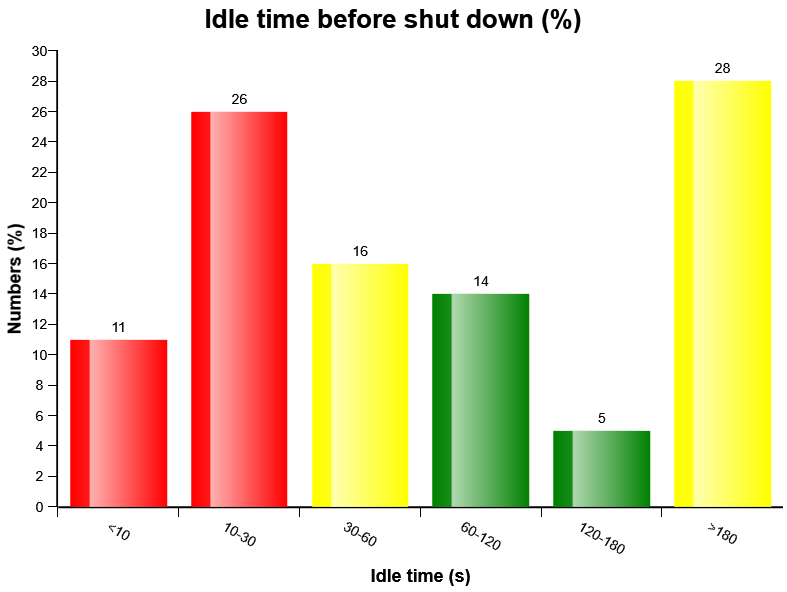
Extreme value :

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

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
A40G	340781	4837.2	1/6/2019



Low speed shutdown= 279
Total number of engine shutdowns= 280

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%.

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

High engine oil temperature
Total number of occurences = 0

	Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° F)
A	0	2000	0	0	0	0	0	32
B	0	2000	0	0	0	0	0	32
C	0	2000	0	0	0	0	0	32
D	0	2000	0	0	0	0	0	32
E	0	2000	0	0	0	0	0	32
F	0	2000	0	0	0	0	0	32
G	0	2000	0	0	0	0	0	32
H	0	2000	0	0	0	0	0	32
I	0	2000	0	0	0	0	0	32
J	0	2000	0	0	0	0	0	32

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Duration :

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

Extreme value :

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

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 oil temperature is active and that the diesel engine is running.

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

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
A40G	340781	4837.2	1/6/2019

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
A40G	340781	4837.2	1/6/2019

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
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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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
A40G	340781	4837.2	1/6/2019

Regeneration ignored
Total number of ignored regenerations 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

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Regeneration aborted
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

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Regeneration duration
Total number of occurences = 28

Op hours	Year	Month	Day	Hour	Minute	Duration (min)
1155	2016	6	16	12	3	63
1228	2016	6	28	11	15	47
1251	2016	7	1	10	1	46
1337	2016	7	15	14	32	47
1838	2017	2	10	8	48	44
2338	2017	4	19	15	36	45
2444	2017	5	20	12	45	45
2571	2017	6	9	8	0	44
3072	2017	10	6	8	34	21
3073	2017	10	16	8	4	40
3193	2017	11	6	13	29	12
3193	2017	11	6	12	3	5
3193	2017	11	6	12	8	40
3194	2017	11	6	15	57	32
3321	2017	12	1	8	26	45
3470	2018	1	22	16	5	5
3470	2018	1	22	16	3	2
3471	2018	1	22	16	10	47
3972	2018	5	22	9	24	43
4474	2018	10	26	12	47	45

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Water level warning in water separator
Total number of occurences = 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

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

High 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

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 system voltage , is active.

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

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

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.

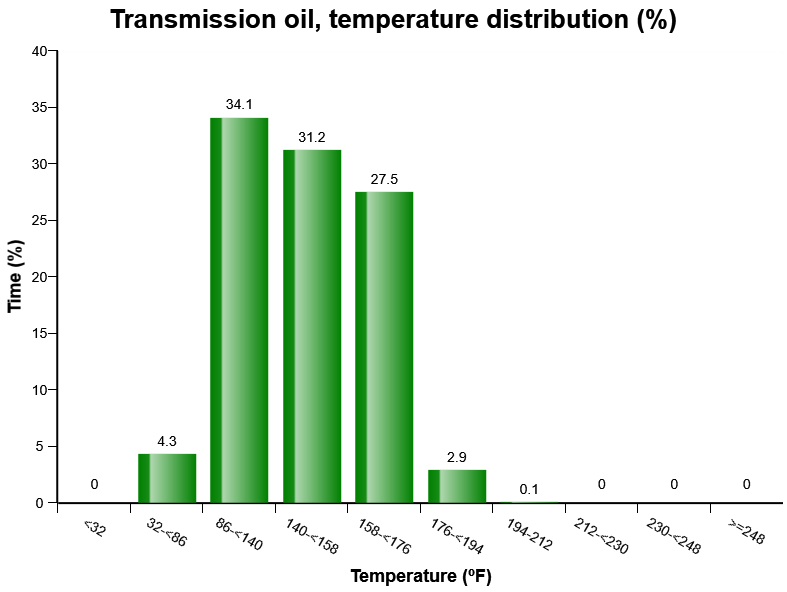
Extreme value：

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
A40G	340781	4837.2	1/6/2019



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

<32ºF Temperatures below 32ºF

32-<86ºF Temperatures from 32ºF until 86ºF

86-<140ºF Temperatures from 86ºF until 140ºF

140-<158ºF Temperatures from 140ºF until 158ºF

158-<176ºF Temperatures from 158ºF until 176ºF

176-<194ºF Temperatures from 176ºF until 194ºF

194-<212ºF Temperatures from 194ºF until 212ºF

212-<230ºF Temperatures from 212ºF until 230ºF

230-<248ºF Temperatures from 230ºF until 248ºF

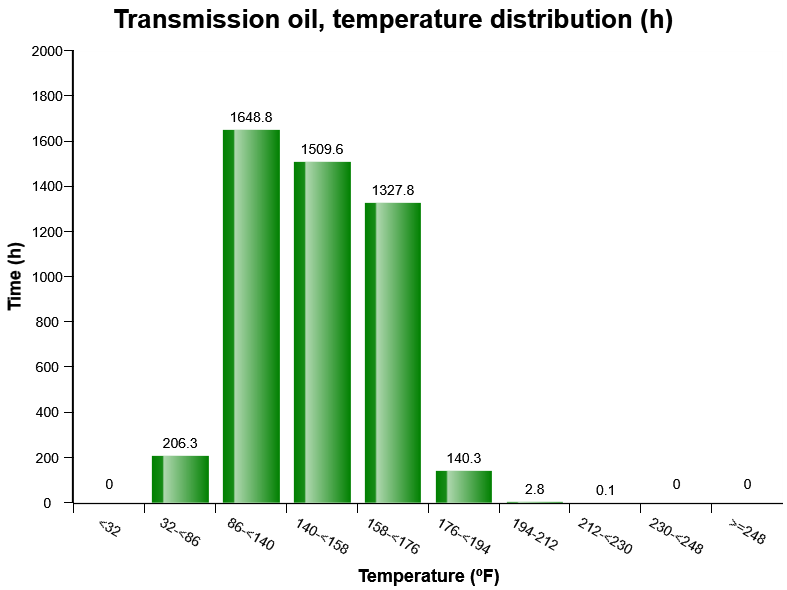
>248ºF Temperatures over 248ºF

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

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

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

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019



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

<32ºF Temperatures below 32ºF

32-<86ºF Temperatures from 32ºF until 86ºF

86-<140ºF Temperatures from 86ºF until 140ºF

140-<158ºF Temperatures from 140ºF until 158ºF

158-<176ºF Temperatures from 158ºF until 176ºF

176-<194ºF Temperatures from 176ºF until 194ºF

194-<212ºF Temperatures from 194ºF until 212ºF

212-<230ºF Temperatures from 212ºF until 230ºF

230-<248ºF Temperatures from 230ºF until 248ºF

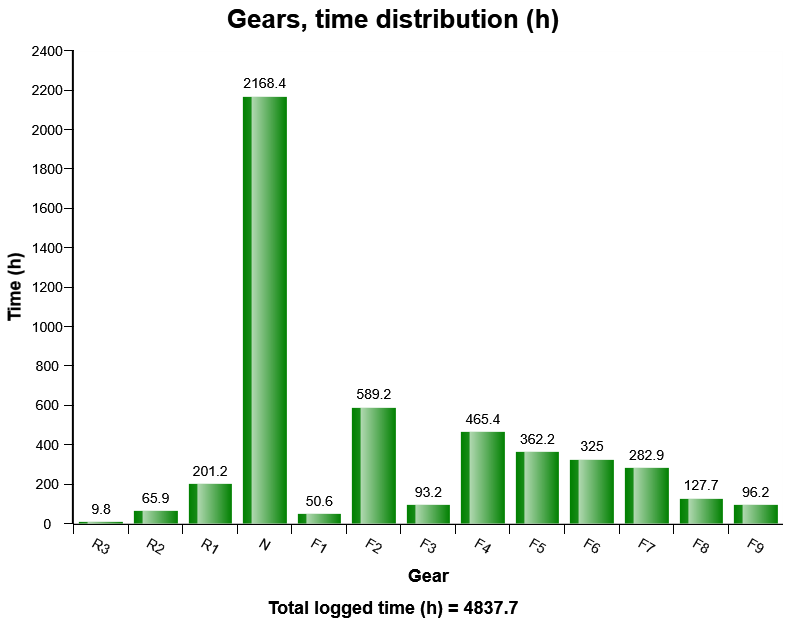
>248ºF Temperatures over 248ºF

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

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

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

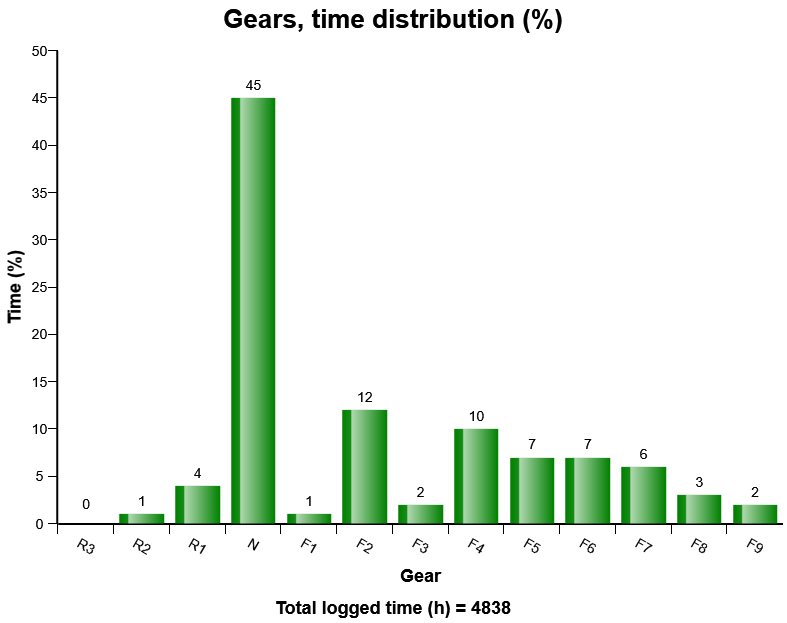
Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019



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
A40G	340781	4837.2	1/6/2019

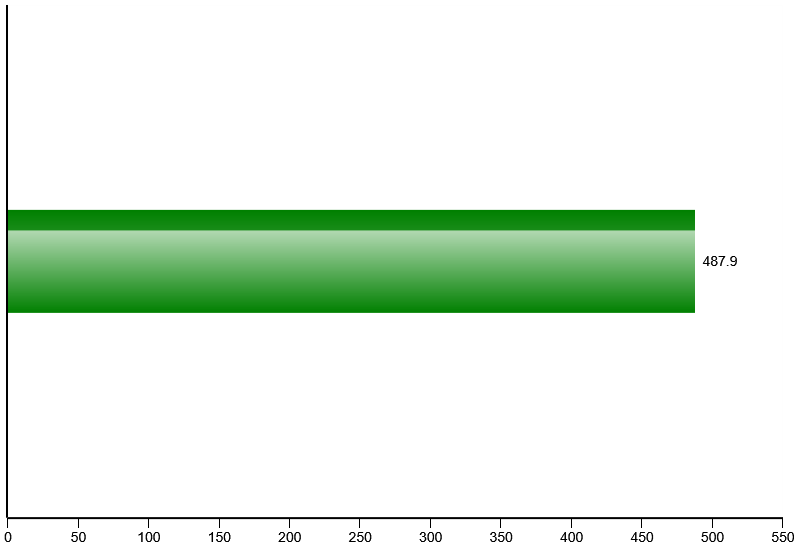


The diagram shows the time for each gear. Each bar represents a gear.

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

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

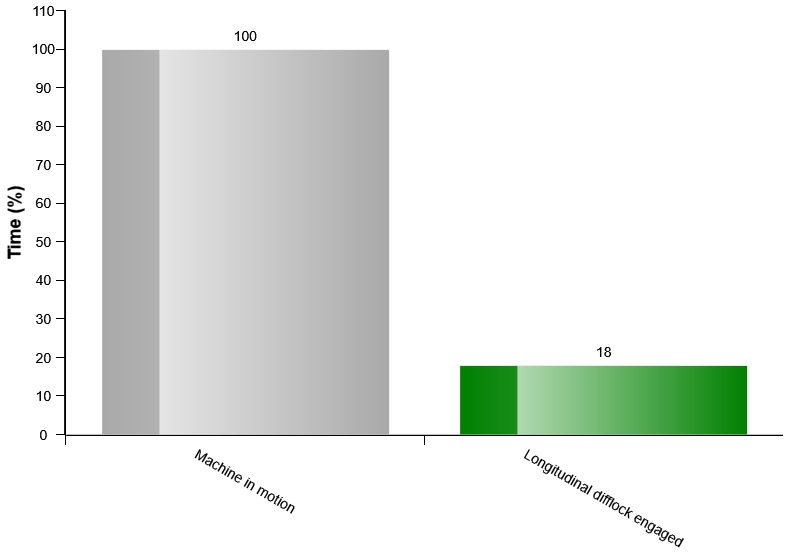
Longitudinal difflock engaged (h)



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
A40G	340781	4837.2	1/6/2019

Longitudinal difflock use related to machine in motion (%)



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	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Transmission oil pressure low
Total number of occurences = 4

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
1120	2016	4	26	8	44	40	776
1122	2016	5	12	12	30	0	0
1400	2016	10	17	11	6	10	1159
2182	2017	3	24	10	52	0	1169

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.

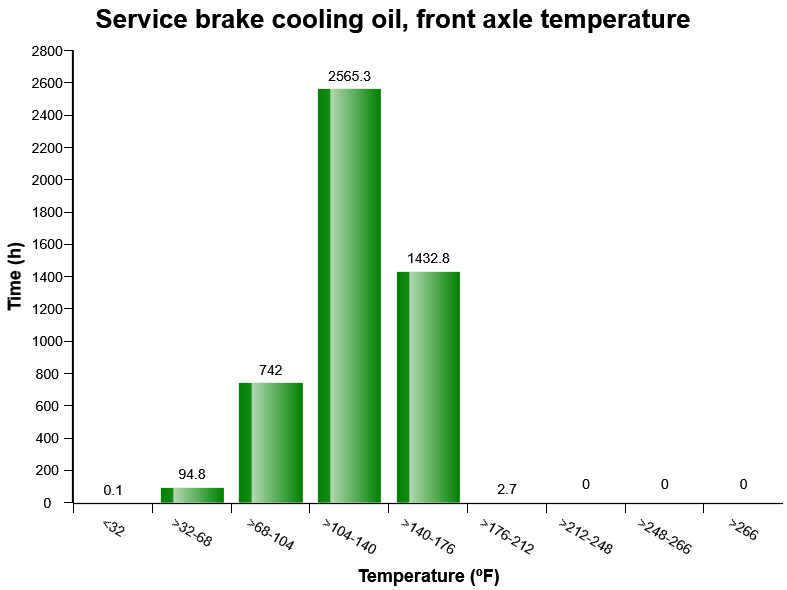
Extreme value :

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

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.”

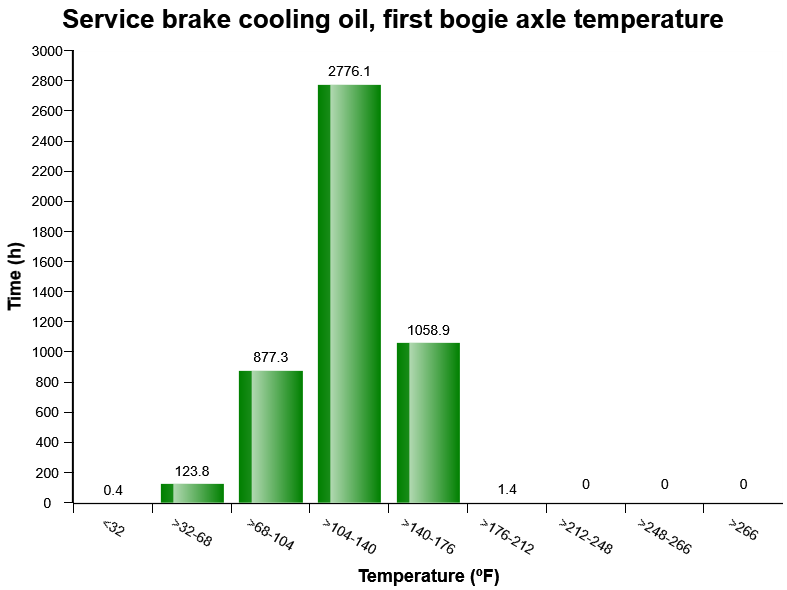
Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019



The diagram shows the front axle brake cooling oil temperature. The temperatures are divided into ranges, yellow bar (>248-266ºF) and red bar (>266ºF) 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

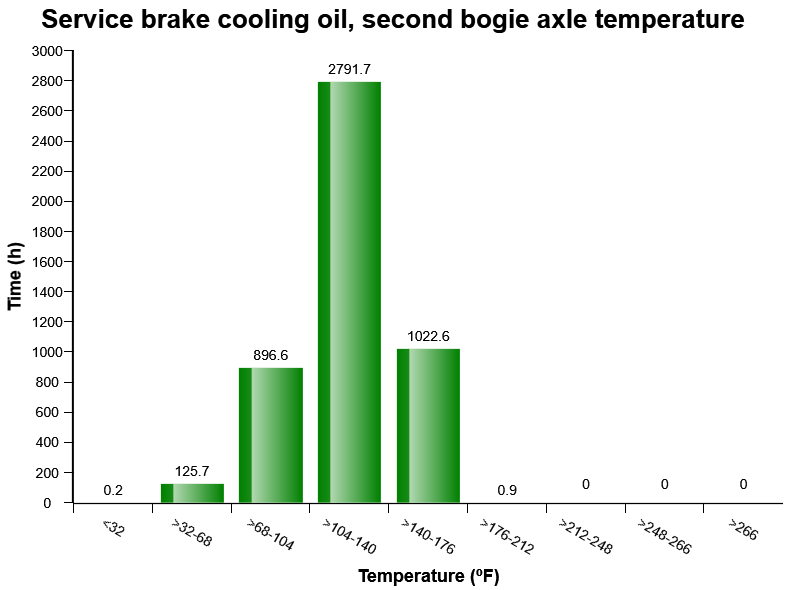
Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019



The diagram shows the first bogie axle brake cooling oil temperature. The temperatures are divided into ranges, yellow bar (>248-266ºF) and red bar (>266ºF) 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.

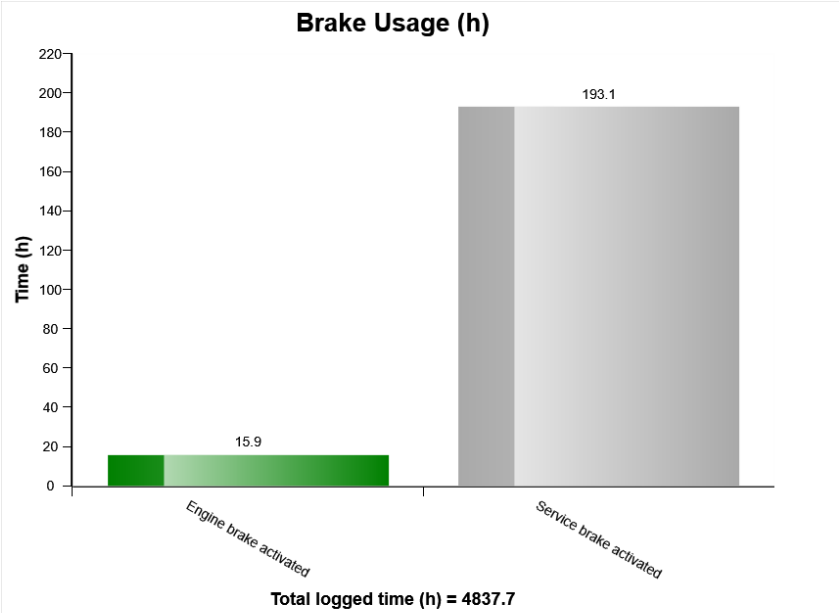
The temperature shown by yellow and red bars degrade the properties of the cooling oil, and may be the result of incorrect and hard operation of the machine. Check the brake pressure distribution in the diagram "Service brake pressure, distribution (%)". If the brake cooling oil temperature is high despite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

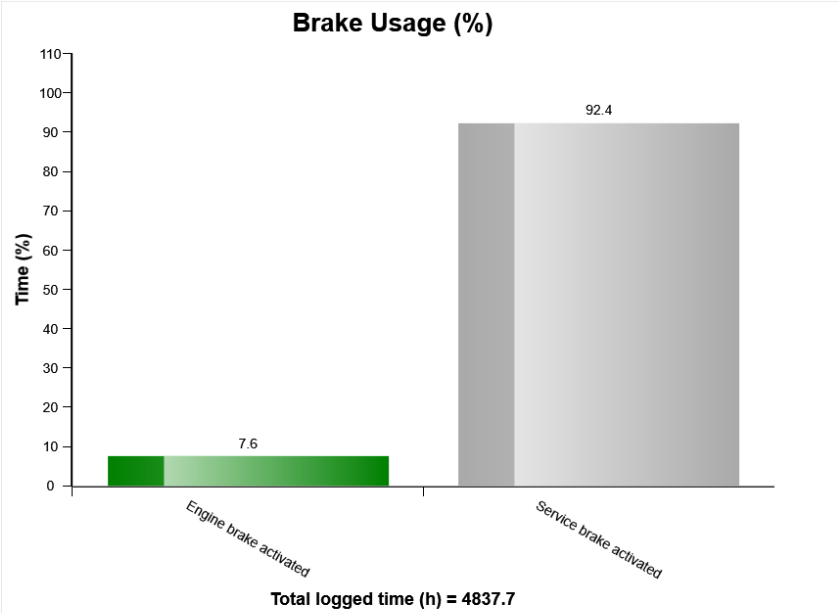
Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019



The diagram shows the front axle brake cooling oil temperature. The temperatures are divided into ranges, yellow bar (>248-266ºF) and red bar (>266ºF) 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.


Brake Usage (h)
Time (h)
220
200
180
160
140
120
100
80
60
40
20
0
193.1
15.9
Engine brake activated
Service brake activated
Total logged time (h) = 4837.7


Brake Usage (%)
Time (%)
110
100
90
80
70
60
50
40
30
20
10
0
92.4
7.6
Engine brake activated
Service brake activated
Total logged time (h) = 4837.7

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Low Brake Servo Pressure
Total number of occurences = 12

	Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (psi)
C	2385	2017	5	11	7	33	9	2182
D	2436	2017	5	18	6	48	0	2151
E	2906	2017	8	16	7	11	0	2213
F	2925	2017	8	18	7	11	0	2182
G	3211	2017	11	6	8	0	9	2182
H	3350	2017	12	2	8	8	0	2281
I	3522	2018	1	29	8	4	0	2207
J	3964	2018	5	12	6	45	0	2157
A	4162	2018	8	15	8	14	1	2107
B	4289	2018	9	19	11	10	1	1996

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 :

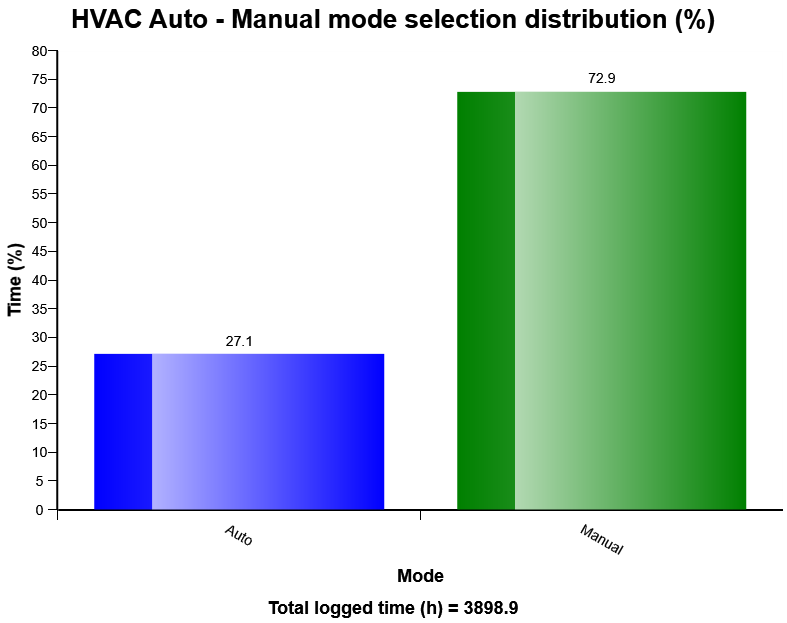
Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

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

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
A40G	340781	4837.2	1/6/2019

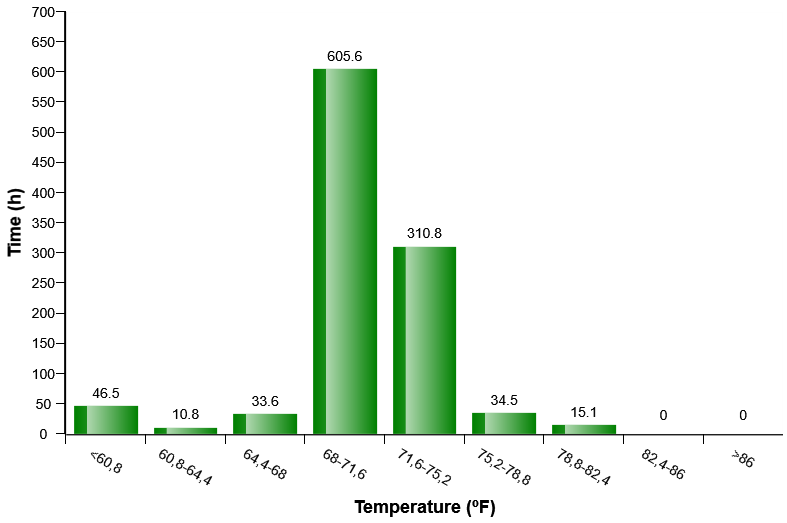


Definition:

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
A40G	340781	4837.2	1/6/2019

HVAC air temperature setting in auto control mode distribution (h)

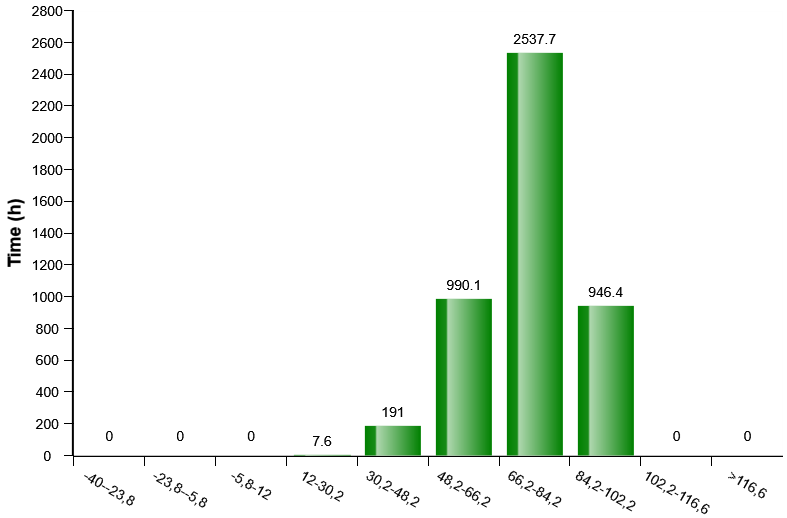


Definition:

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

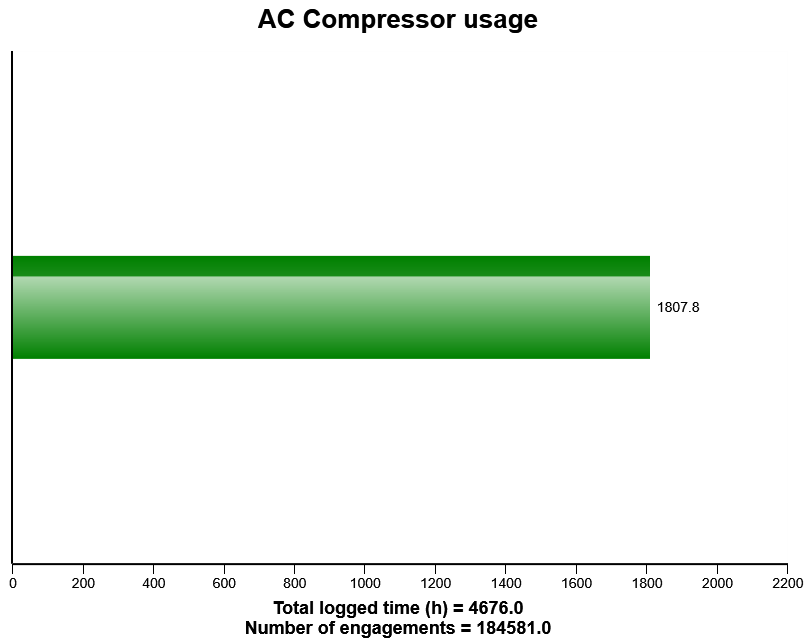
Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

Machine ambient temperature distribution (h)



Total logged time (h) = 4674.7

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019



Definition:

The graph shows the total time of AC compressor engagement.

Explanation:

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

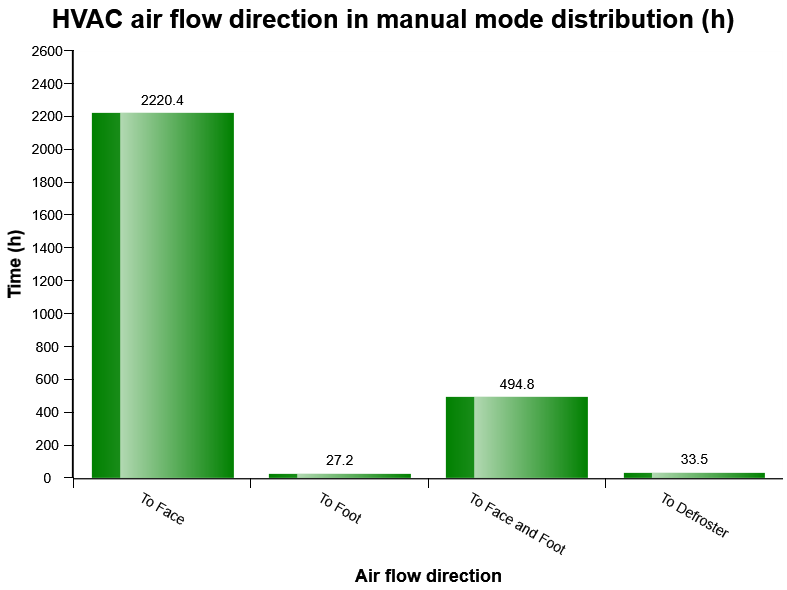
Under the graph the total engine running time (in hours) is displayed.

Total number of AC compressor activations is also displayed.

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

-

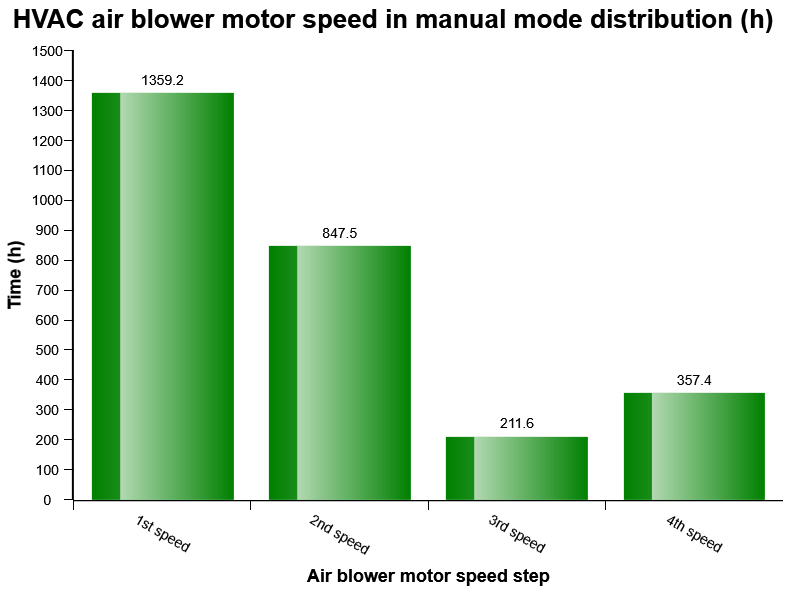
Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019



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
A40G	340781	4837.2	1/6/2019



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
A40G	340781	4837.2	1/6/2019

AC High Pressure
Total number of occurences = 4

0	Year	Month	Day	Hours	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
889	2255	12	13	18	9	29	50
889	2255	12	13	18	3	140	48
4029	2018	6	4	10	20	66	86
4160	2018	8	14	14	50	19	91

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.

Criteria：

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

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

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

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

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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：

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

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

AC System Cut Out Pressure
Total number of occurences = 40

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° F)
1428	2016	10	24	7	53	104	59
1428	2016	10	24	8	27	-57844	59
1431	2016	10	24	11	1	3111	77
1431	2016	10	24	11	57	153	77
1431	2016	10	24	12	32	15669	77
1436	2016	10	24	17	3	139	81
1436	2016	10	25	10	28	5426	81
1437	2016	10	25	12	46	11672	81
1441	2016	10	26	7	32	565	82
1441	2016	10	25	16	15	2848	82
1442	2016	10	26	7	49	58	63
1442	2016	10	26	11	20	2503	61
1442	2016	10	26	12	31	17136	82
1447	2016	10	27	11	16	2519	82
1448	2016	10	27	12	33	14097	82
1452	2016	10	28	13	6	1039	82
1452	2016	10	28	8	27	236	66
1452	2016	10	28	10	51	592	68
1452	2016	10	28	12	49	178	81
1452	2016	11	7	8	53	253	64

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.

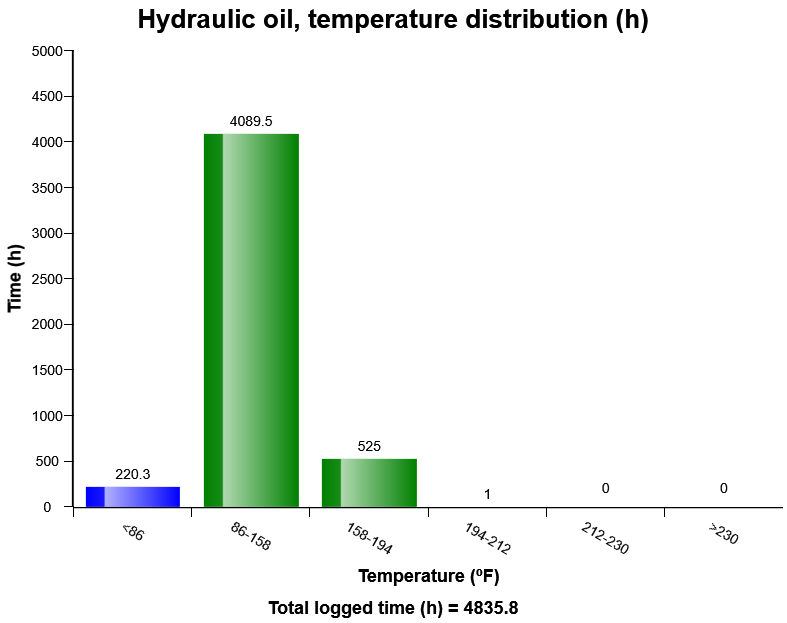
Extreme value：

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

Criteria：

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

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019



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.

Machine model	SerialNo	Operating Hours	Reading Date
A40G	340781	4837.2	1/6/2019

It is normal to have registrations in this region.

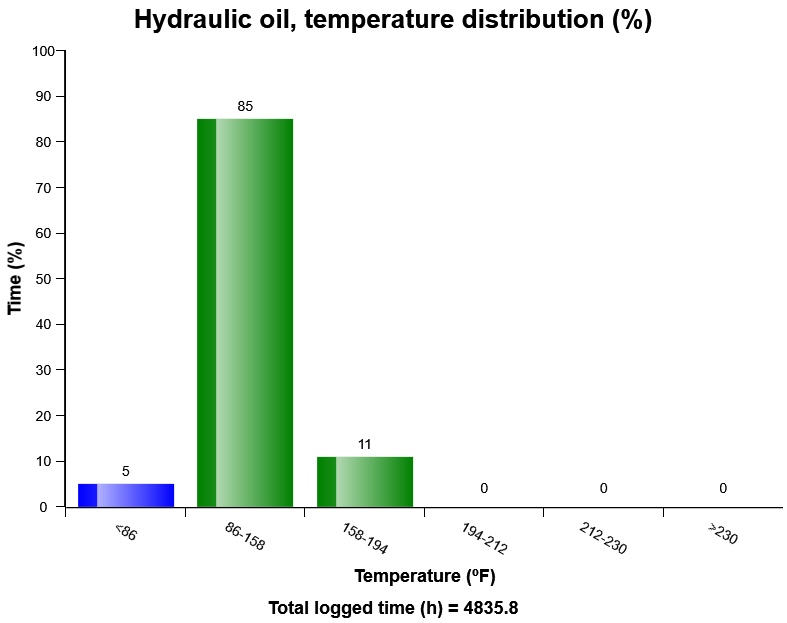
Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

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
A40G	340781	4837.2	1/6/2019



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