

VOLVO CONSTRUCTION EQUIPMENT MATRIS REPORT

Machine model A40G	SerialNo 340767	Operating Hours 3876	Reading Date 5/31/2017
Company name VFS-Lease	Dealer Flagler / Penn Jersey	Report Issuer	
Contact name	Technician Steve McDaniel	Primary Application Earth moving construction	
Site	Workorder	Ground Condition	

MATRIS Reading, Summary / Recommendation

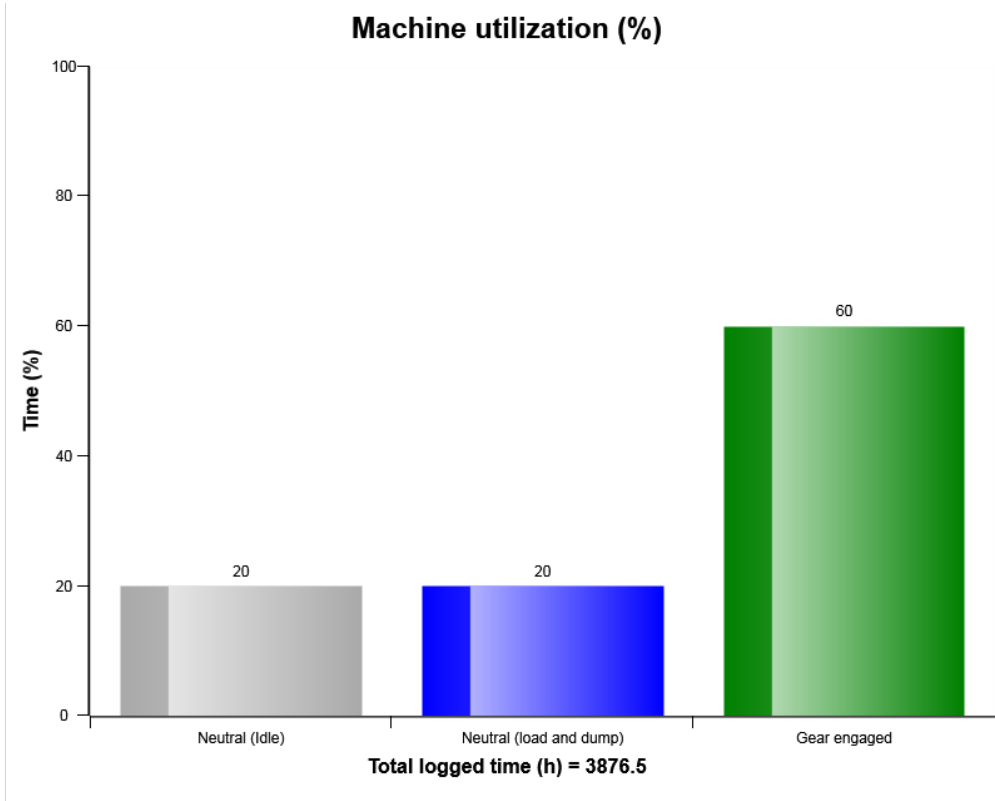


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Main equipment	Type	Equipment
	Tyre size/class	Sold without tyres
	Body extensions	Not mounted
	Tail-gate	Not mounted
	Extra spillguard	Not mounted
	Wear plates	Not mounted
	Pattern	None



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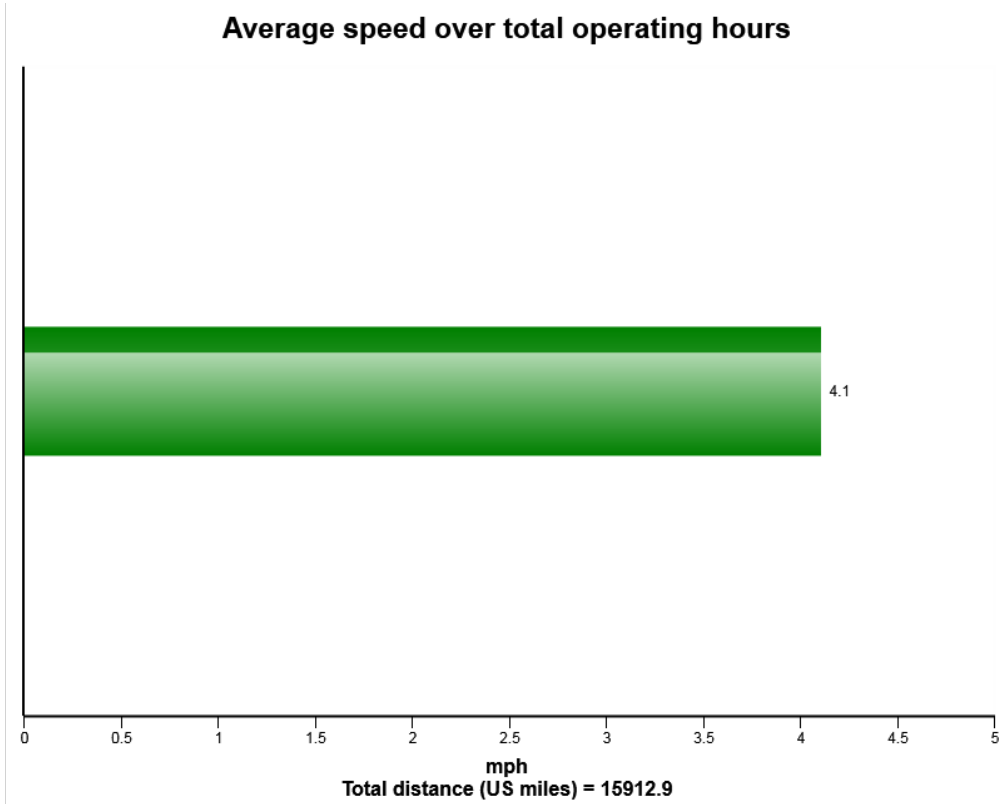
The diagram shows a simplified presentation of the machines utilization based on the relation between time in gear and time in neutral. The "Gear engaged " includes both forward and reverse gears.

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



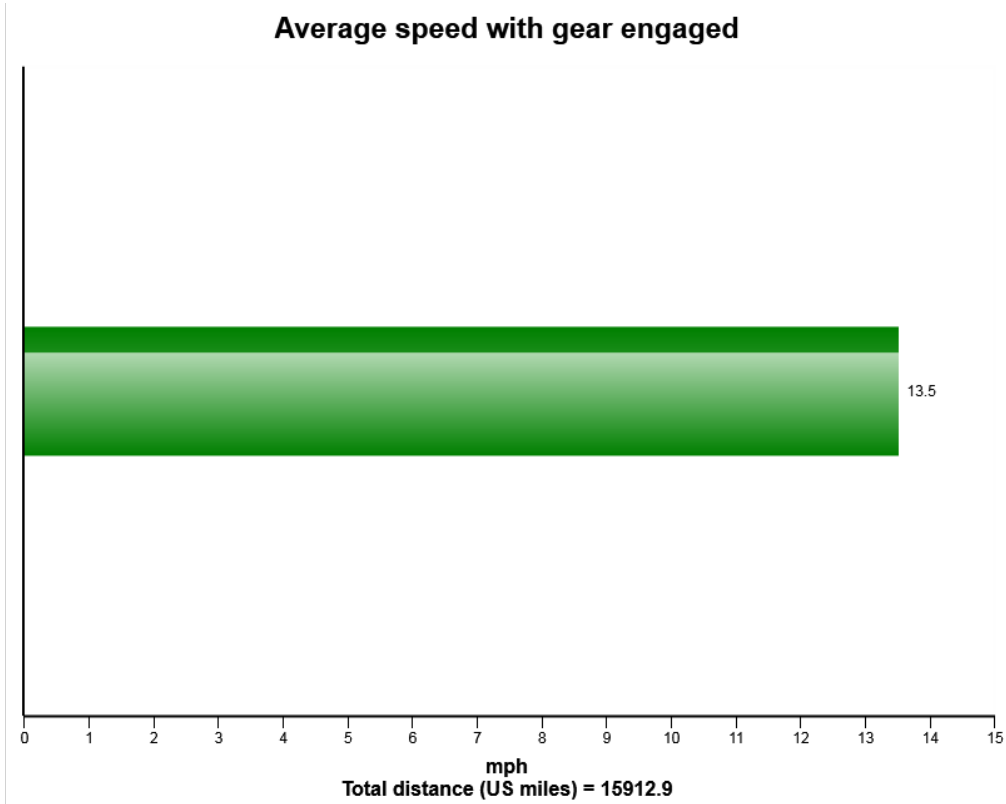
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The diagram shows the machines average speed based on the total operating hours



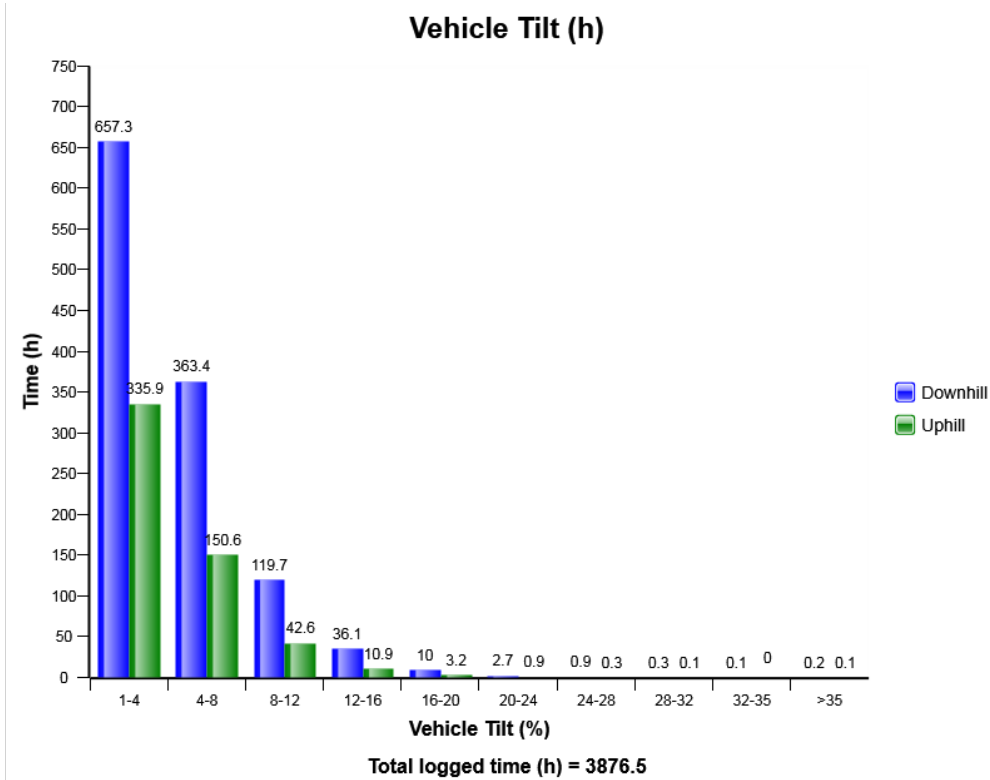
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The diagram shows the machines average speed based on the operating hours with gear engaged.



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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) =

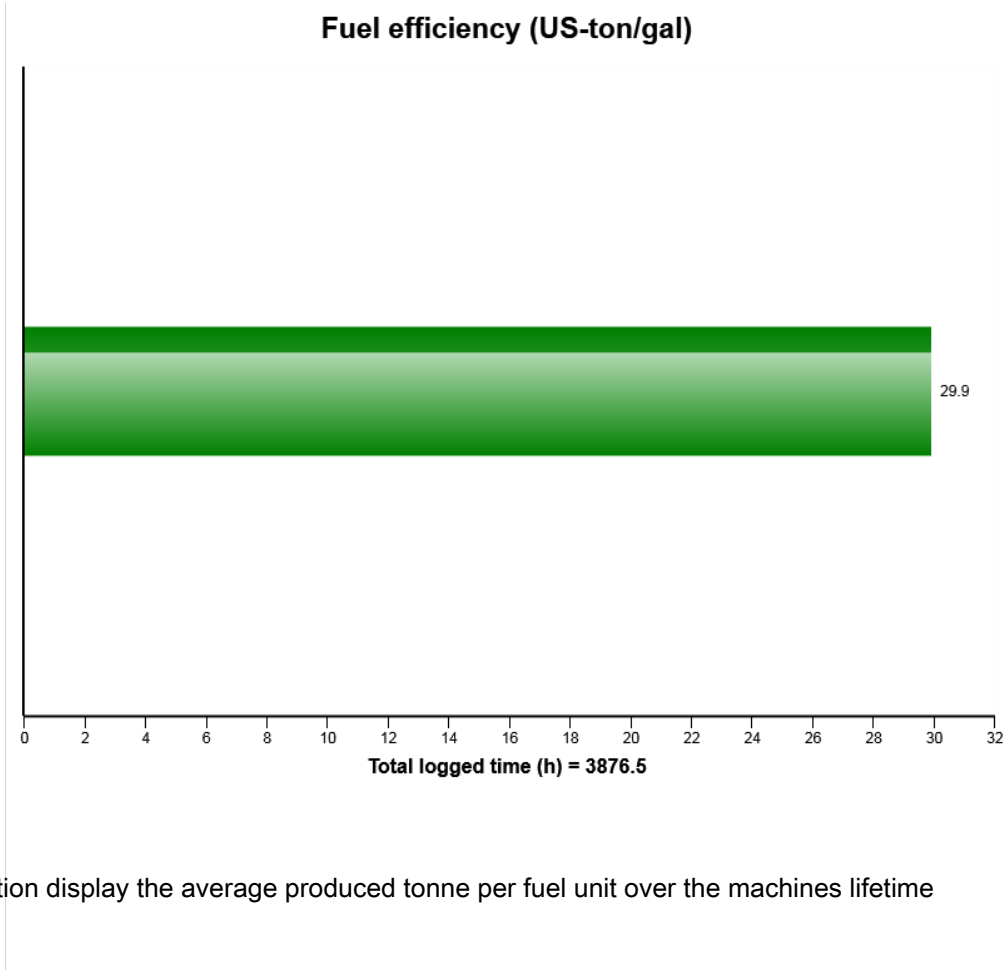
Total logged time (h) =	3876.5
Fuel consumption (US-gallons)	26188
Production (ton,US)	783900
Ton/h	202.2
Ton/gal	29.9
Fuel efficiency (US Gal/ton)	0.03
Number of cycles	21550
Cycles overloaded (%)	1
Load utilisation / cycle (%)	85

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.



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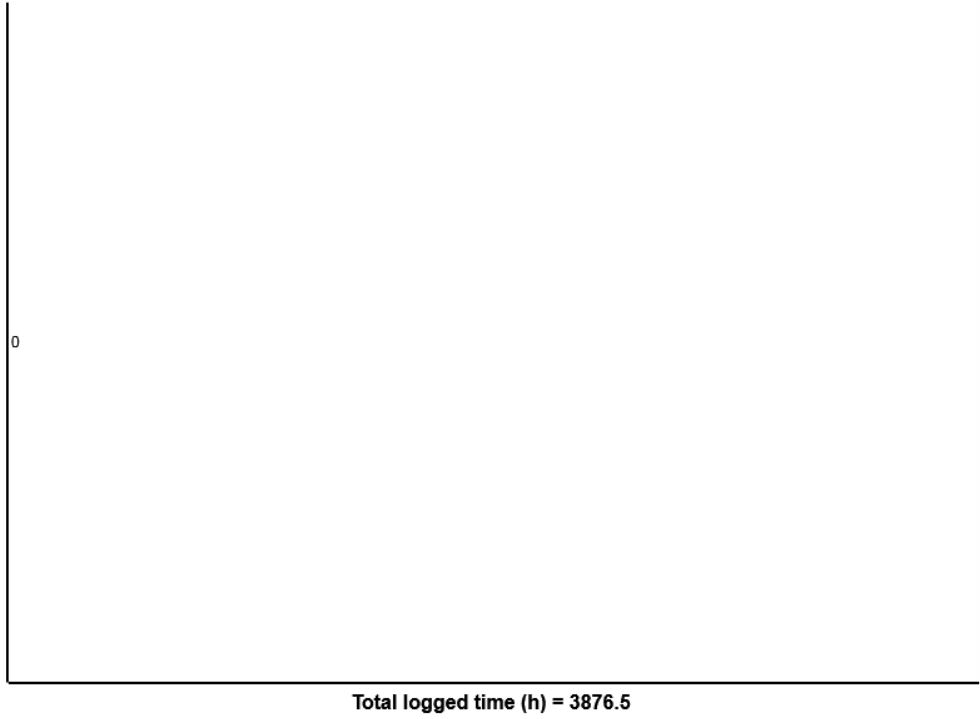


The presentation display the average produced tonne per fuel unit over the machines lifetime



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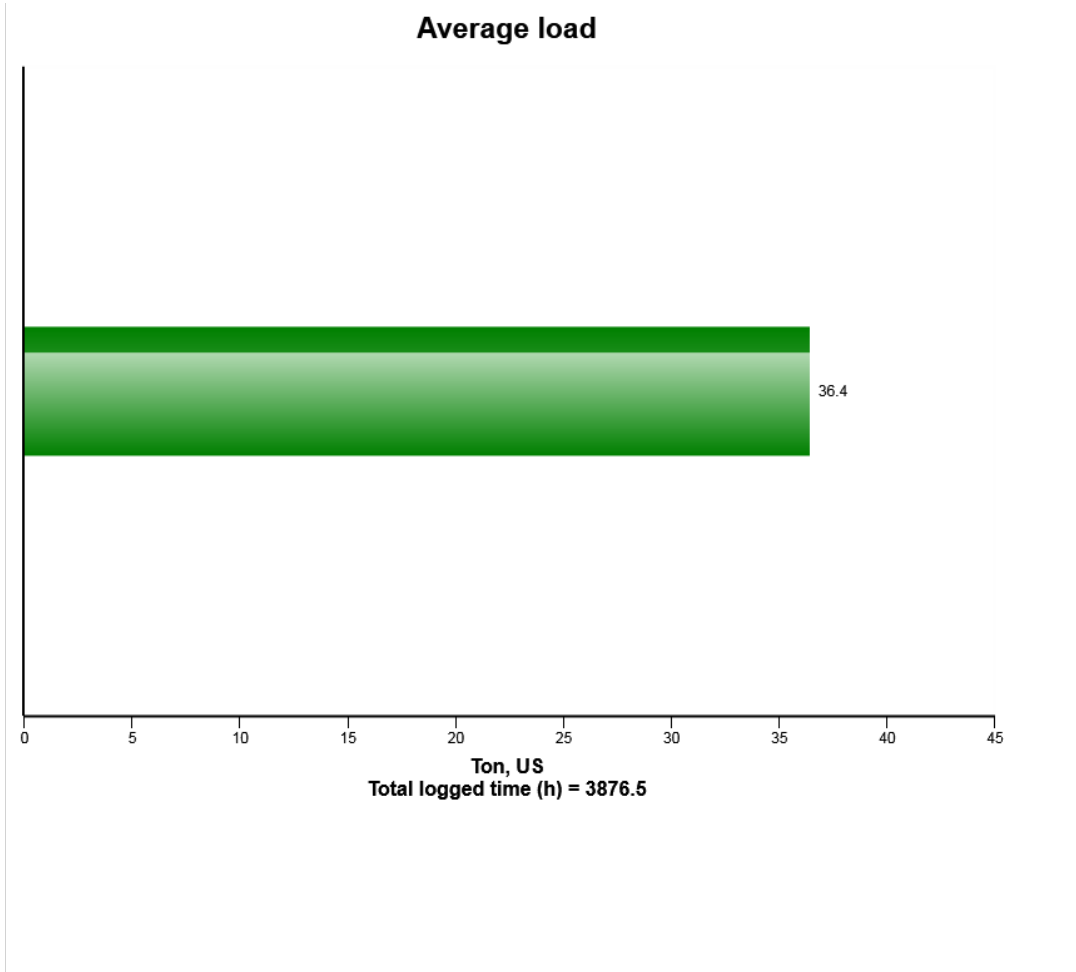
Fuel efficiency (gal/US-ton)



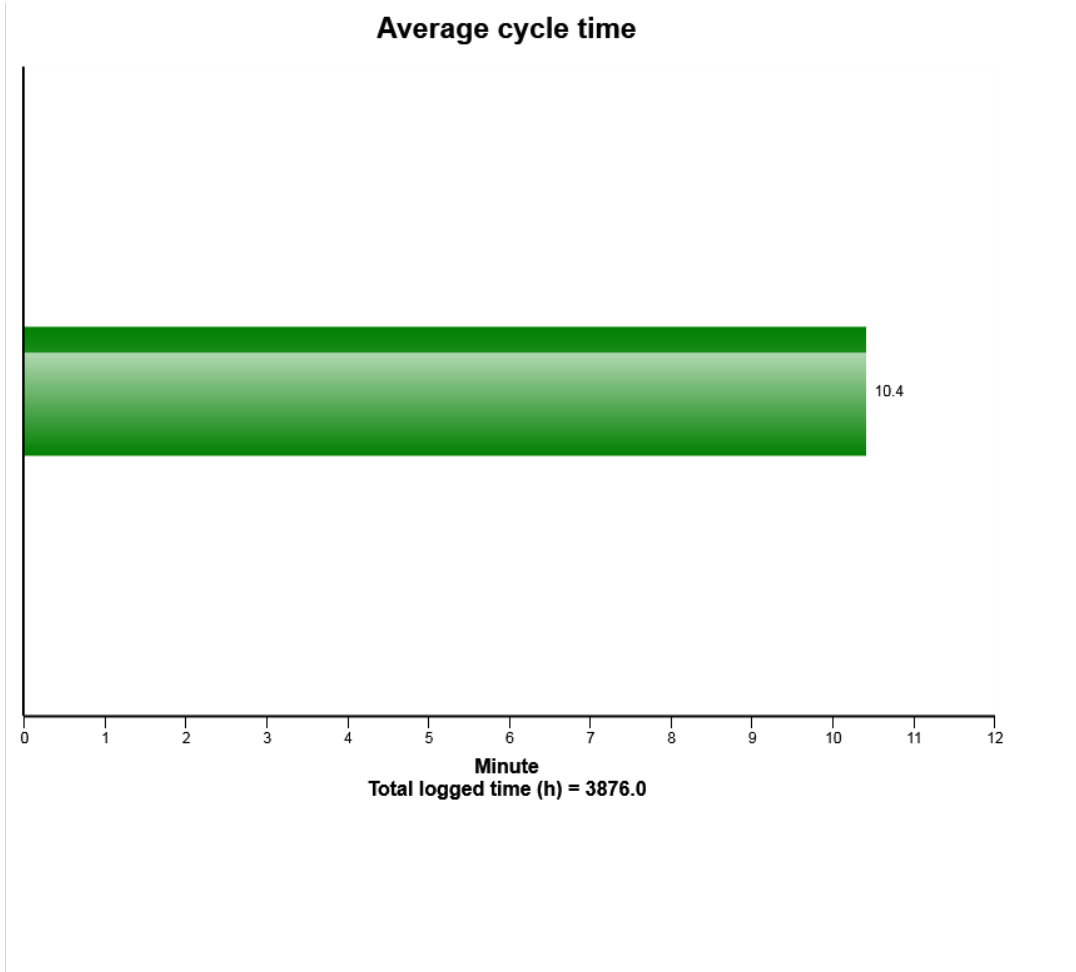
The presentation shows the average fuel consumption per tonne over the machines lifetime



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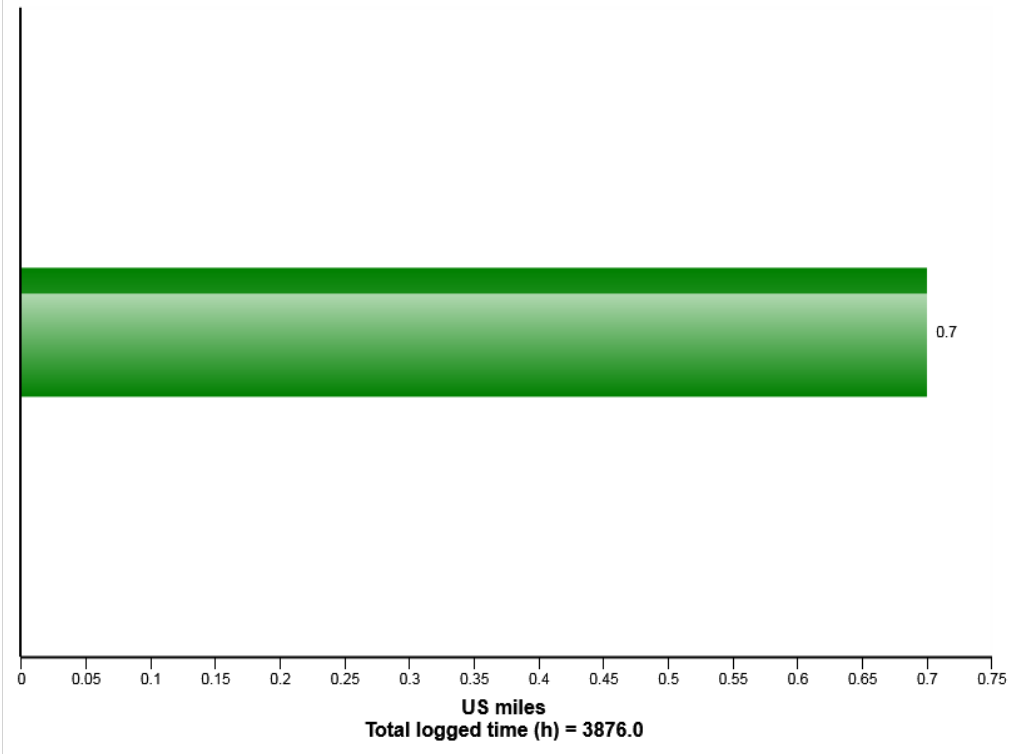


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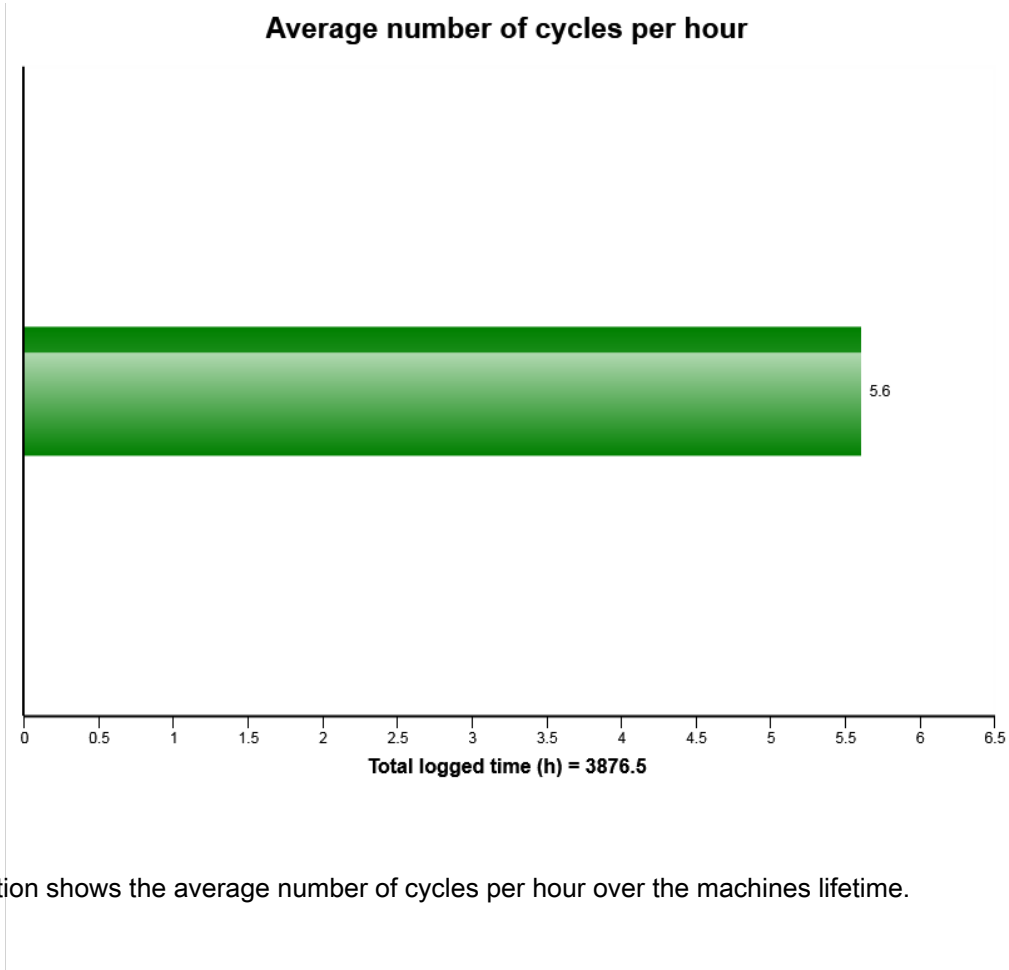


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Average cycle distance



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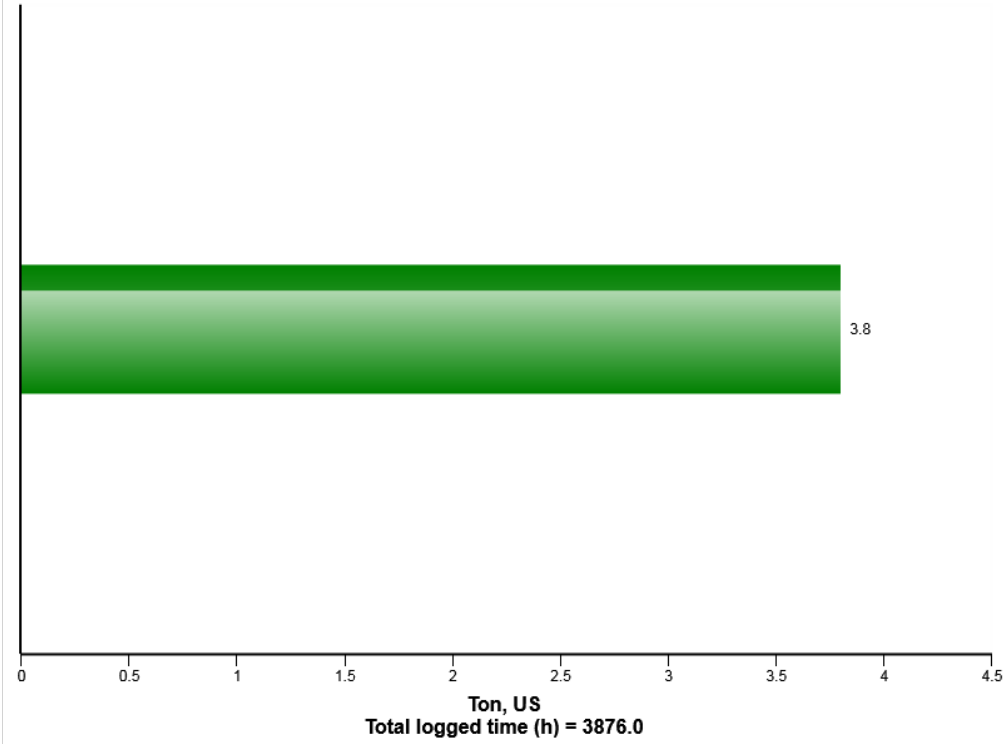


The presentation shows the average number of cycles per hour over the machines lifetime.



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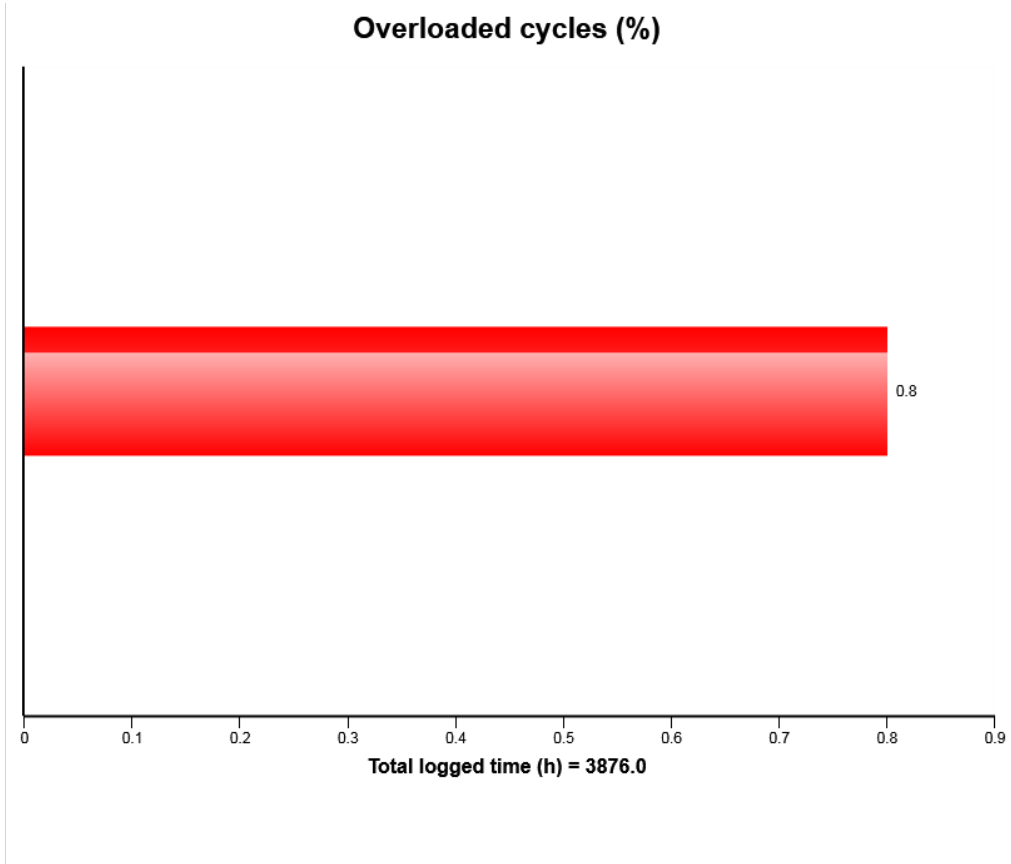
Average carry back per cycle



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



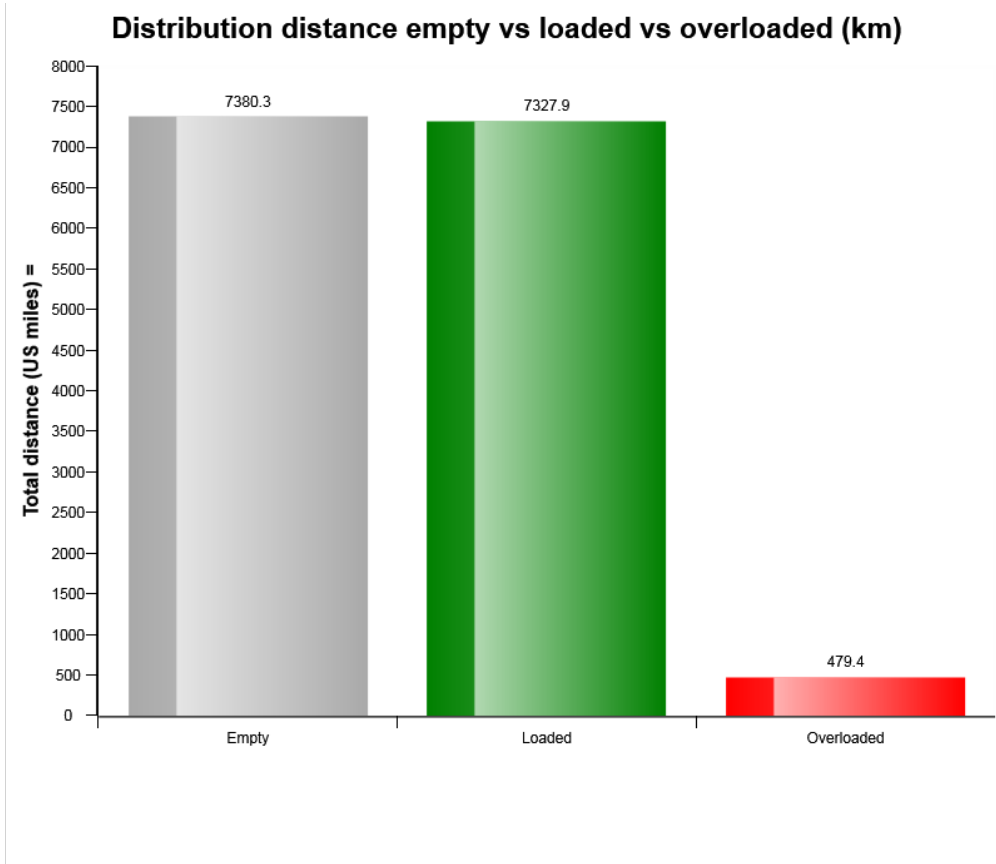
Machine model	SerialNo	Operating Hours	Reading Date
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An error has occurred while processing HtmlTextBox 'htmlTextBox1':
The ':' character, hexadecimal value 0x3A, cannot be included in a name. Line 1, position 656.



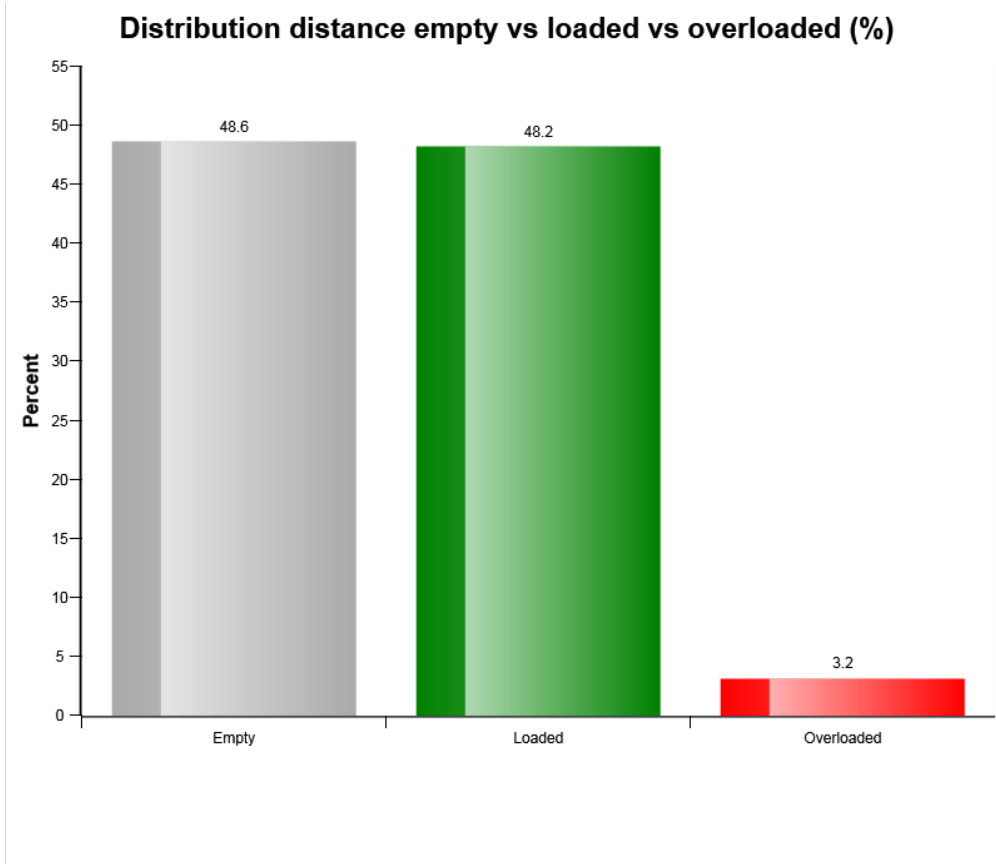
Machine model	SerialNo	Operating Hours	Reading Date
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An error has occurred while processing HtmlTextBox 'htmlTextBox1':
The ':' character, hexadecimal value 0x3A, cannot be included in a name. Line 1, position 1402.



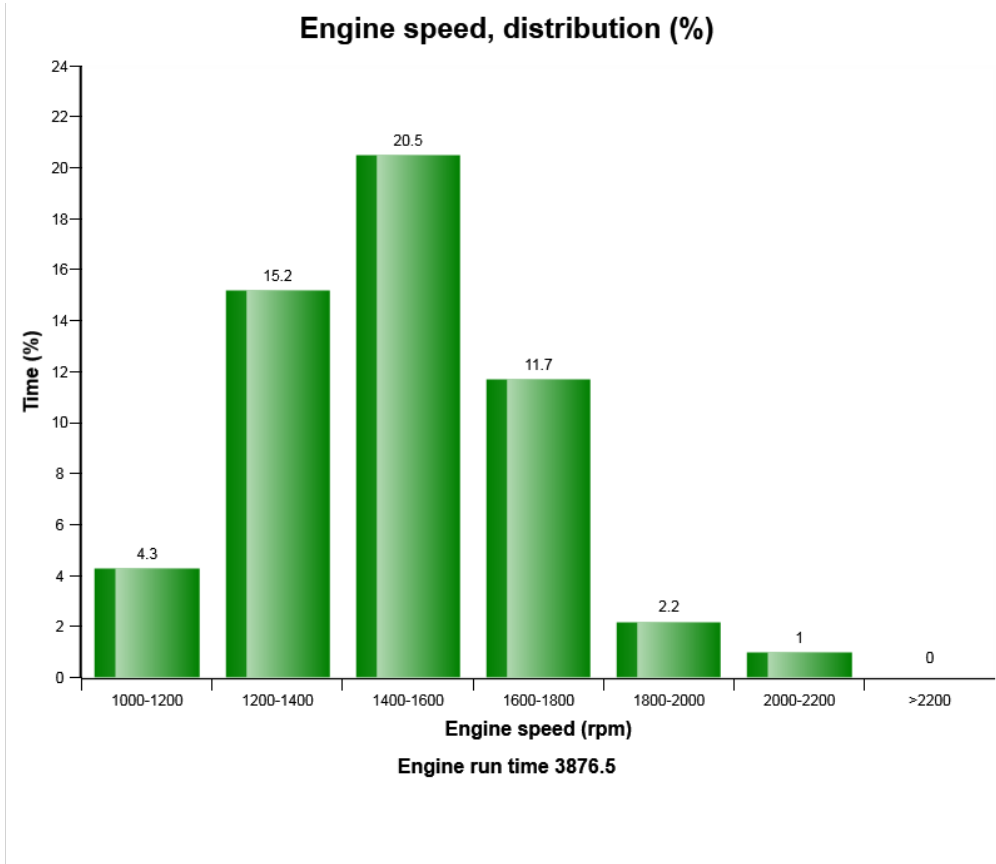
Machine model	SerialNo	Operating Hours	Reading Date
A40G	340767	3876	5/31/2017



An error has occurred while processing HtmlTextBox 'htmlTextBox1':
The ':' character, hexadecimal value 0x3A, cannot be included in a name. Line 1, position 1402.



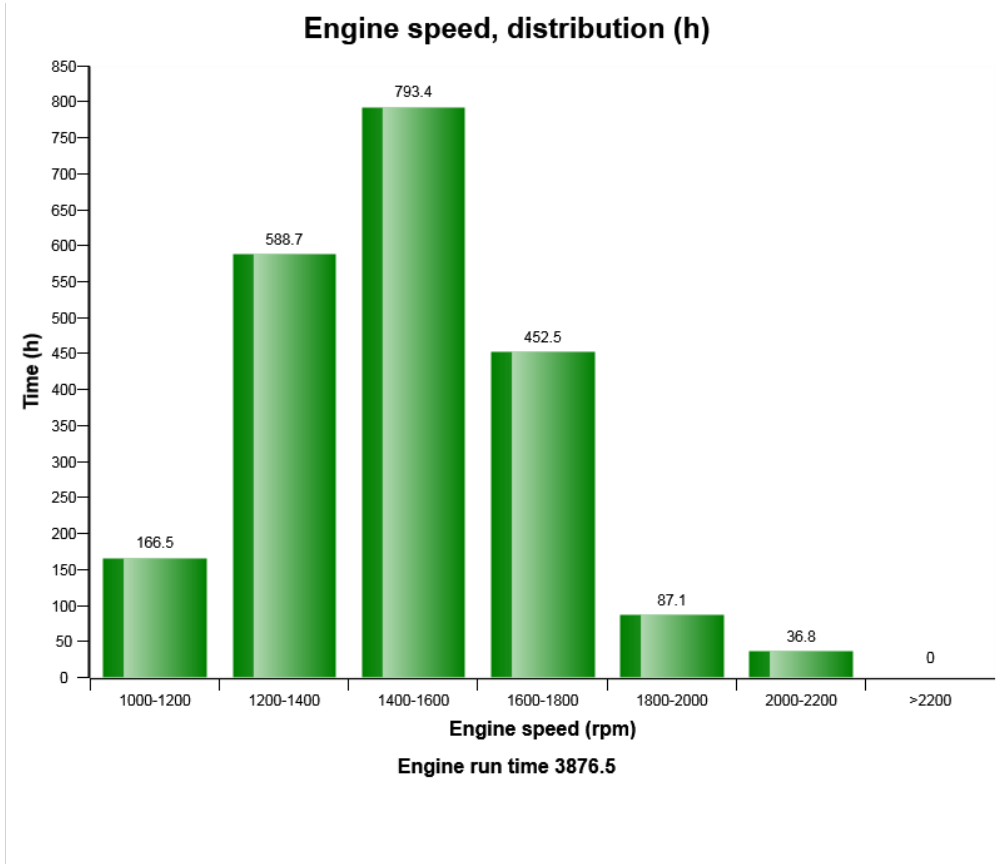
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An error has occurred while processing HtmlTextBox 'htmlTextBox1':
'WordSection1' is an unexpected token. The expected token is "" or ". Line 1, position 18.



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



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**High engine oil temperature
Total number of occurrences = 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

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 :



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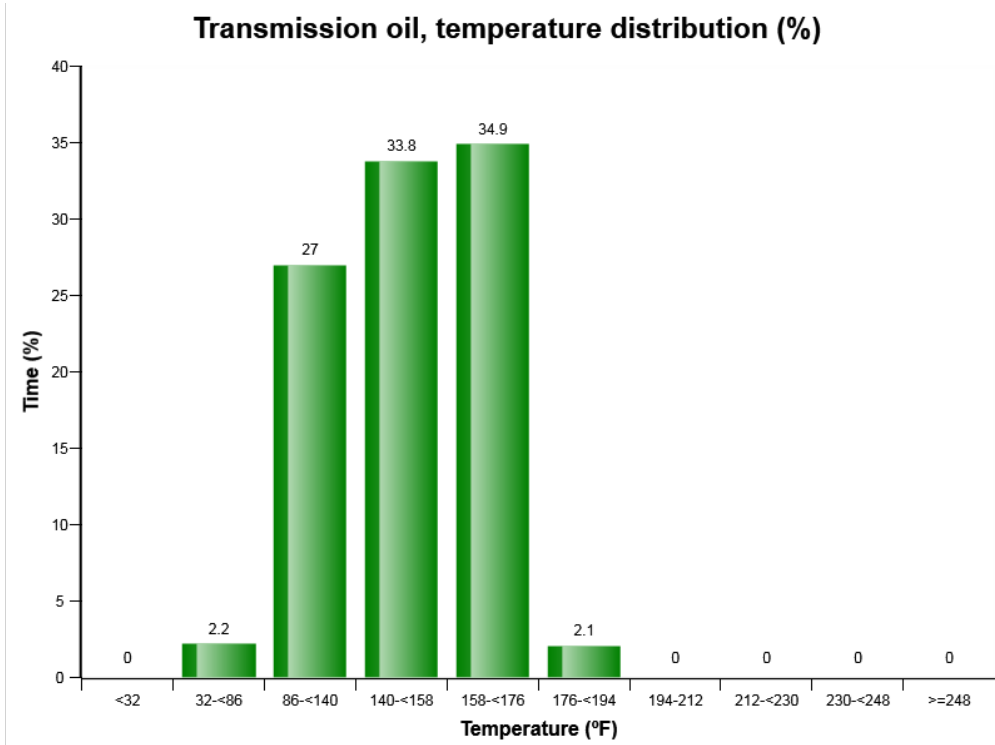
The extreme value column displays the most extreme value during the event.

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.



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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



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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

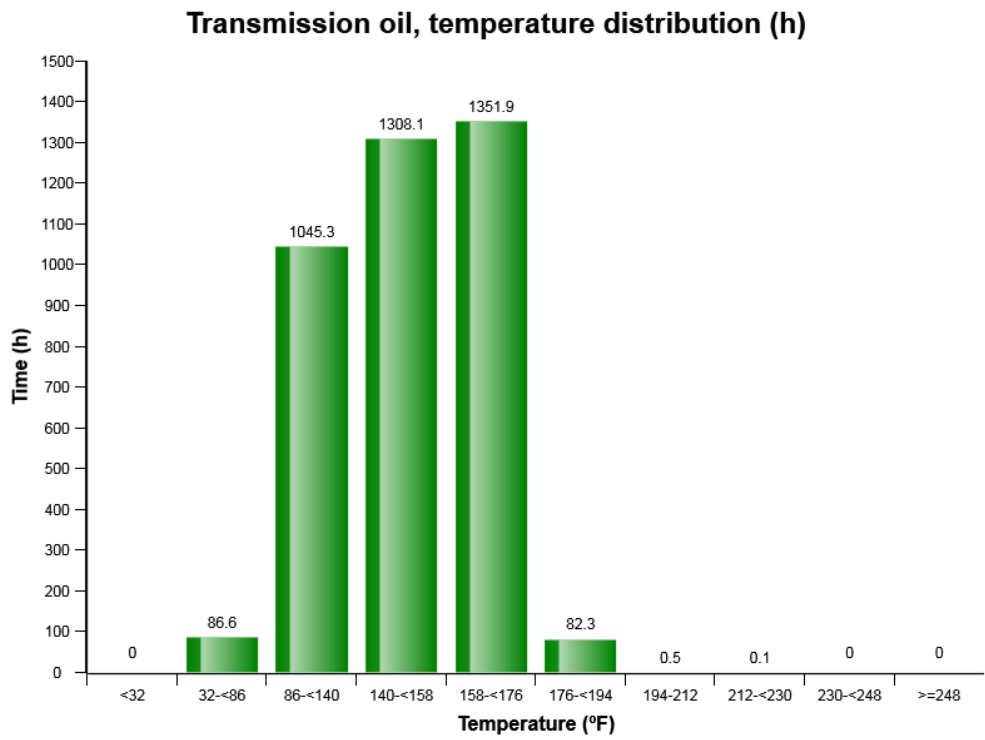
The bar that describes temperatures from 230°F until 248°F is yellow and means that the oil has begun to be overheated. Driver has been given orange central warning

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



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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



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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

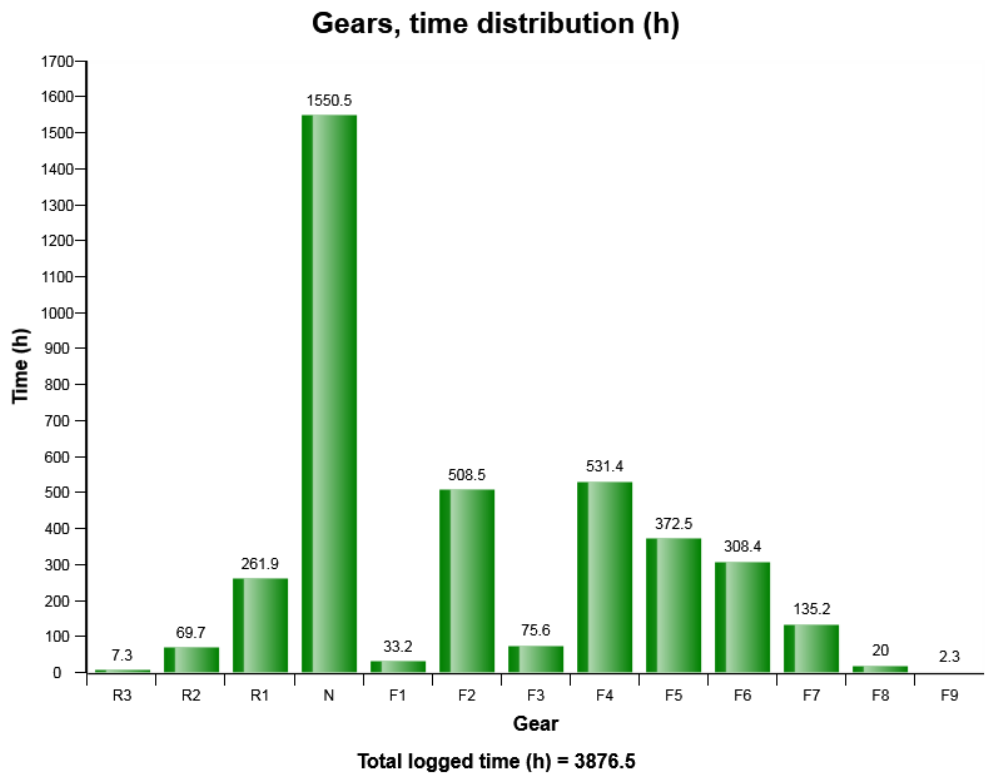
The bar that describes temperatures from 230°F until 248°F is yellow and means that the oil has begun to be overheated. Driver has been given orange central warning

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



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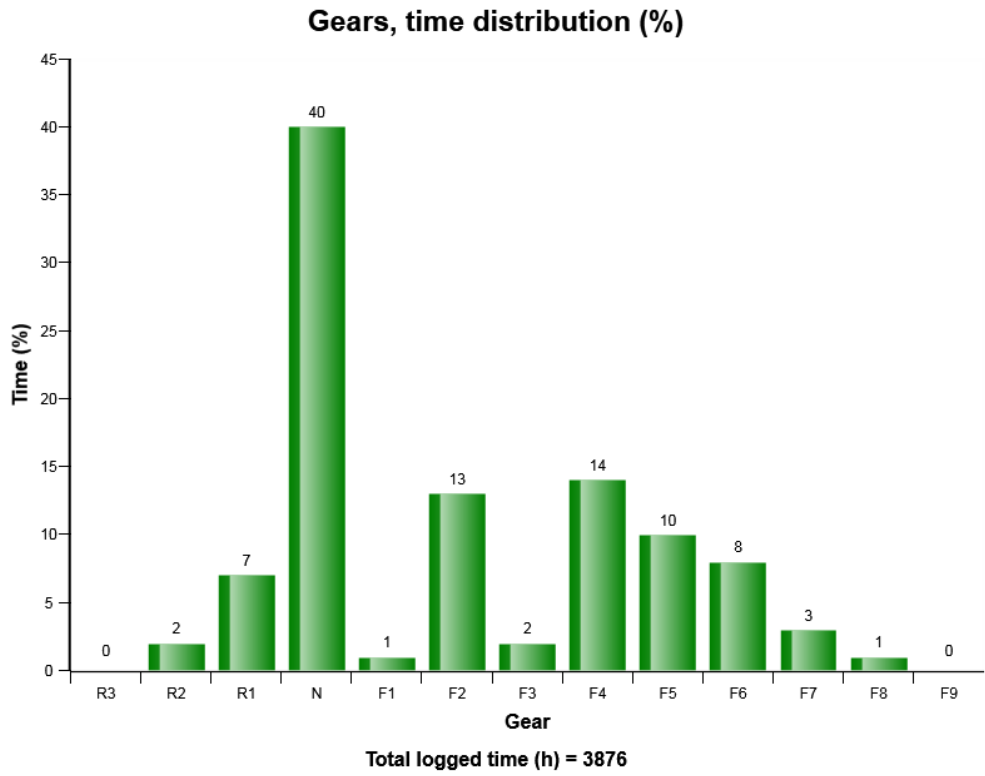


The diagram shows the time for each gear. Each bar represents a gear.

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



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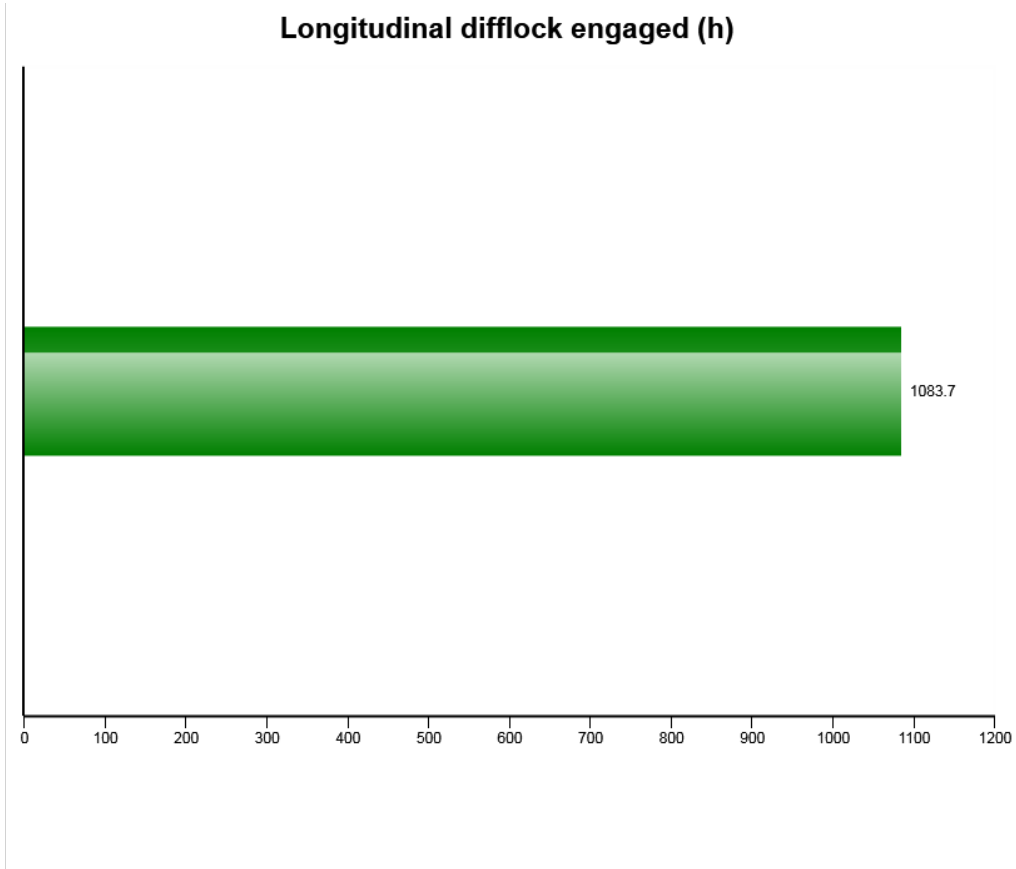


The diagram shows the time for each gear. Each bar represents a gear.

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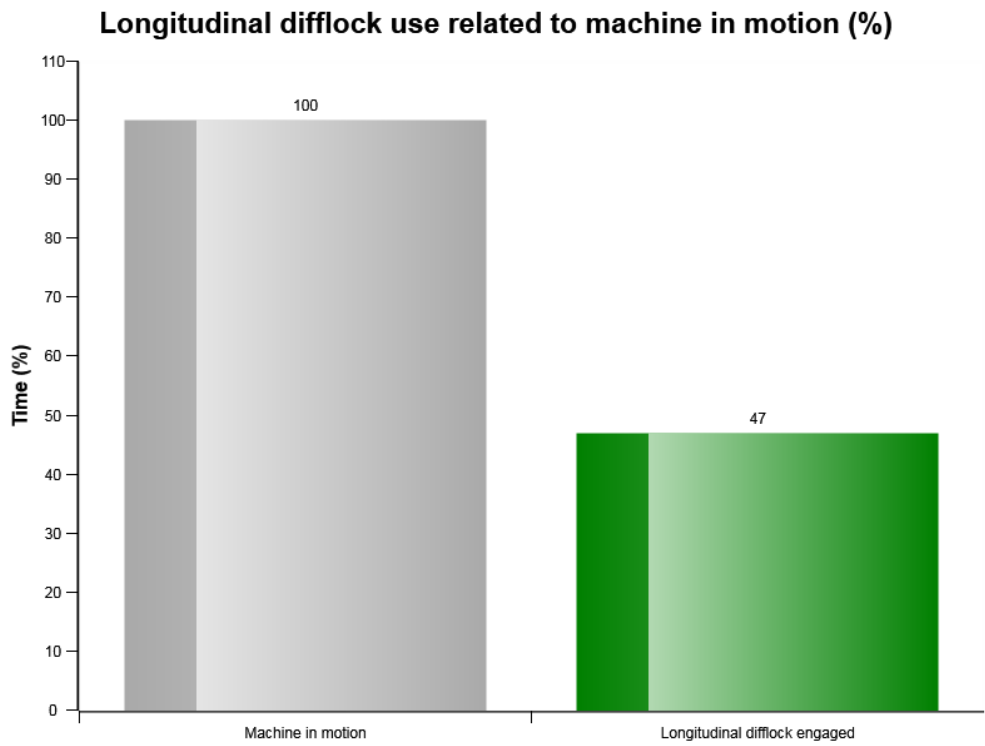
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The diagram shows how long time in hours the longitudinal difflock has been engaged. The presentation only shows time when the machine is moving as this is when the wear on the difflock occurs. The difflock should always be disengage when not needed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



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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)"



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

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Only one event per minute is registered.

Over the table the total number of events is displayed.

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 :

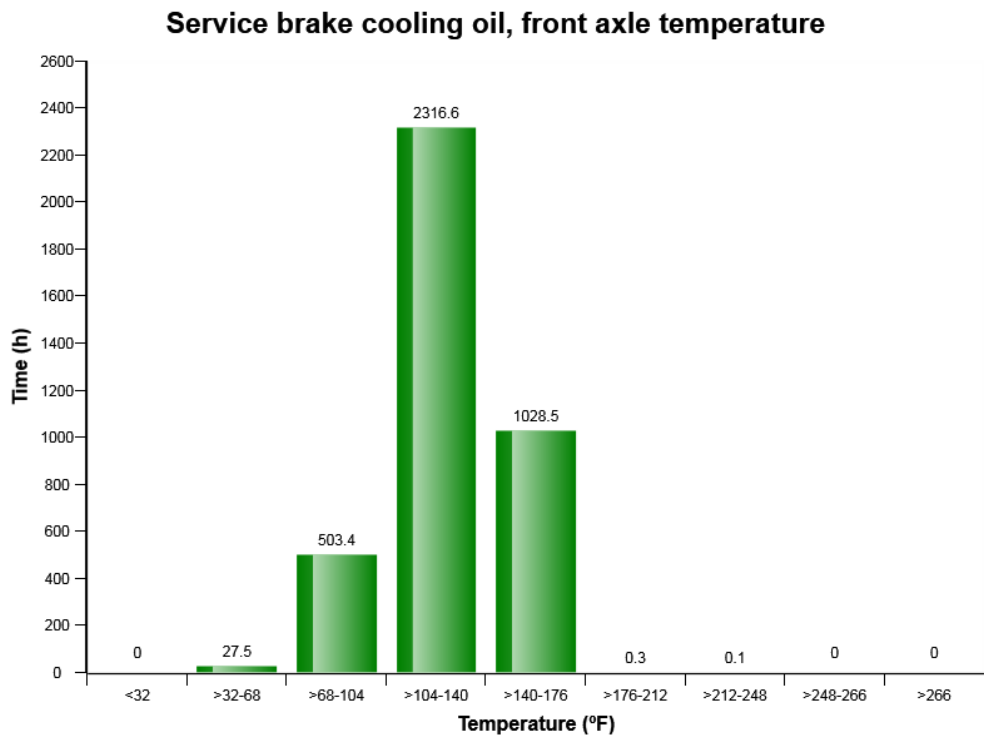
The extreme value column displays the most extreme value during the event.

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."



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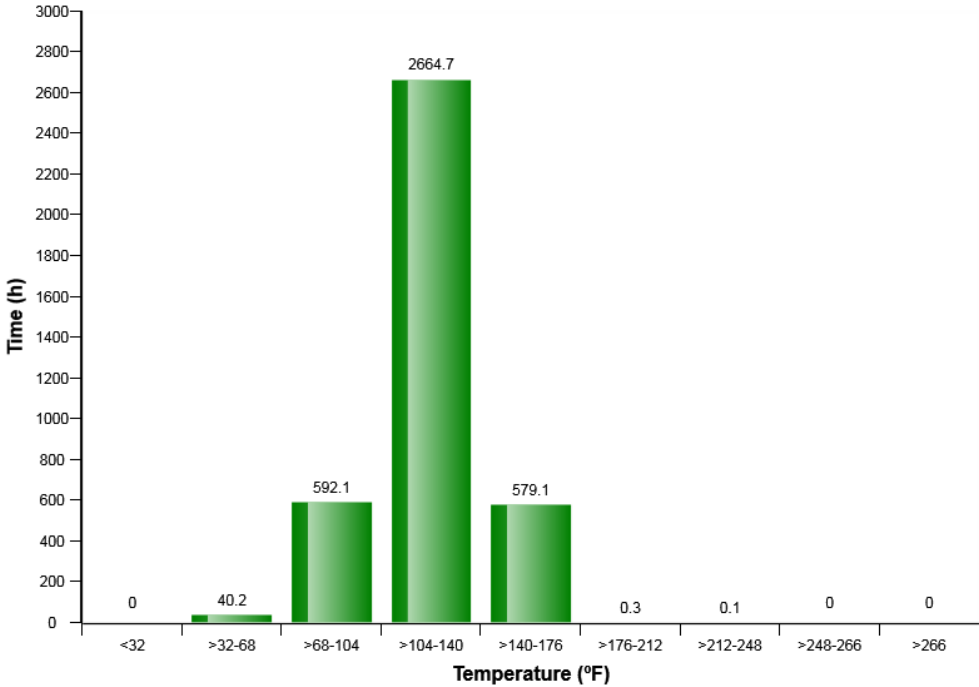
The diagram shows the front axle brake cooling oil temperature. The temperatures are divided into ranges, yellow bar (>248-266°F) and red bar (>266°F) shows abnormal temperatures. The temperature is registered in the line from the front axle to the oil cooler, that is, the warmest oil in the circuit.

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



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Service brake cooling oil, first bogie axle temperature

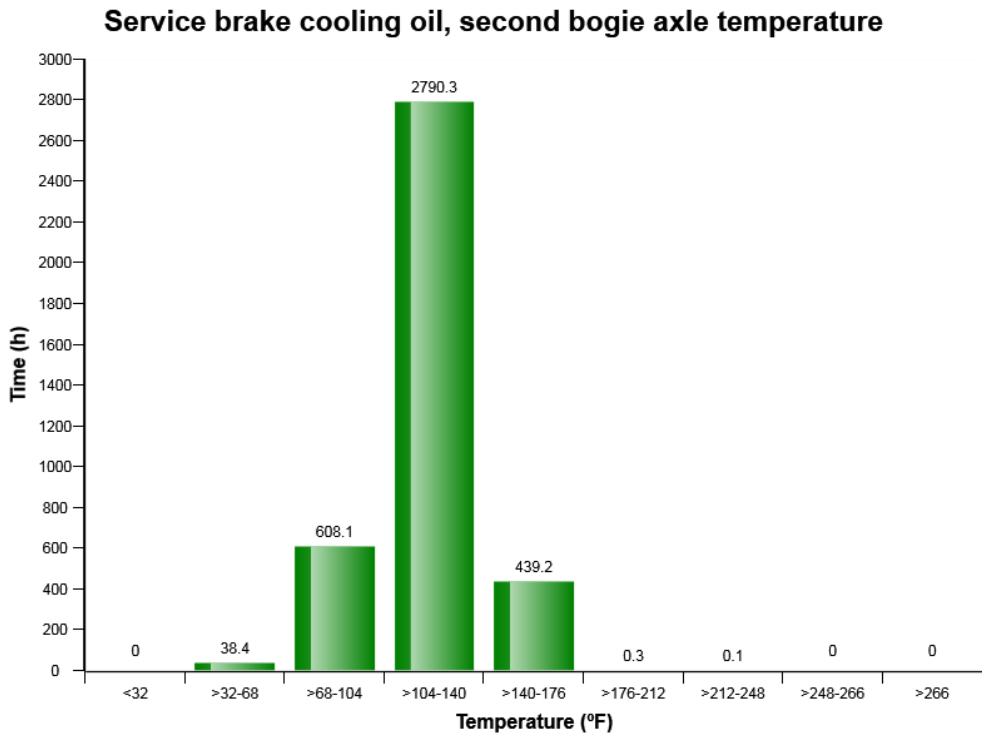


The diagram shows the first bogie axle brake cooling oil temperature. The temperatures are divided into ranges, yellow bar (>248-266°F) and red bar (>266°F) shows abnormal temperatures. The temperature is registered in the line from the first bogie axle to the oil cooler, that is, the warmest oil in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



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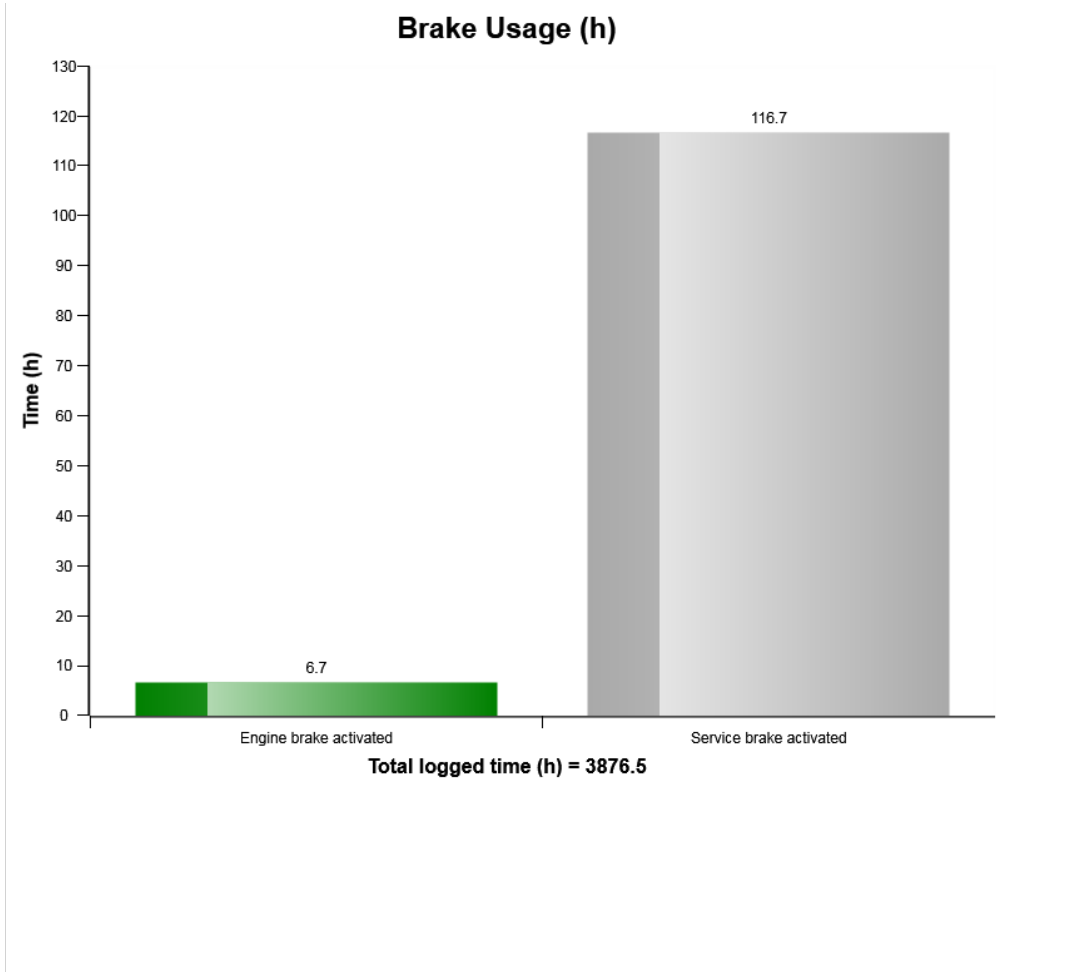


The diagram shows the front axle brake cooling oil temperature. The temperatures are divided into ranges, yellow bar (>248-266°F) and red bar (>266°F) shows abnormal temperatures. The temperature is registered in the line from the second bogie axle to the oil cooler, that is, the warmest oil in the circuit.

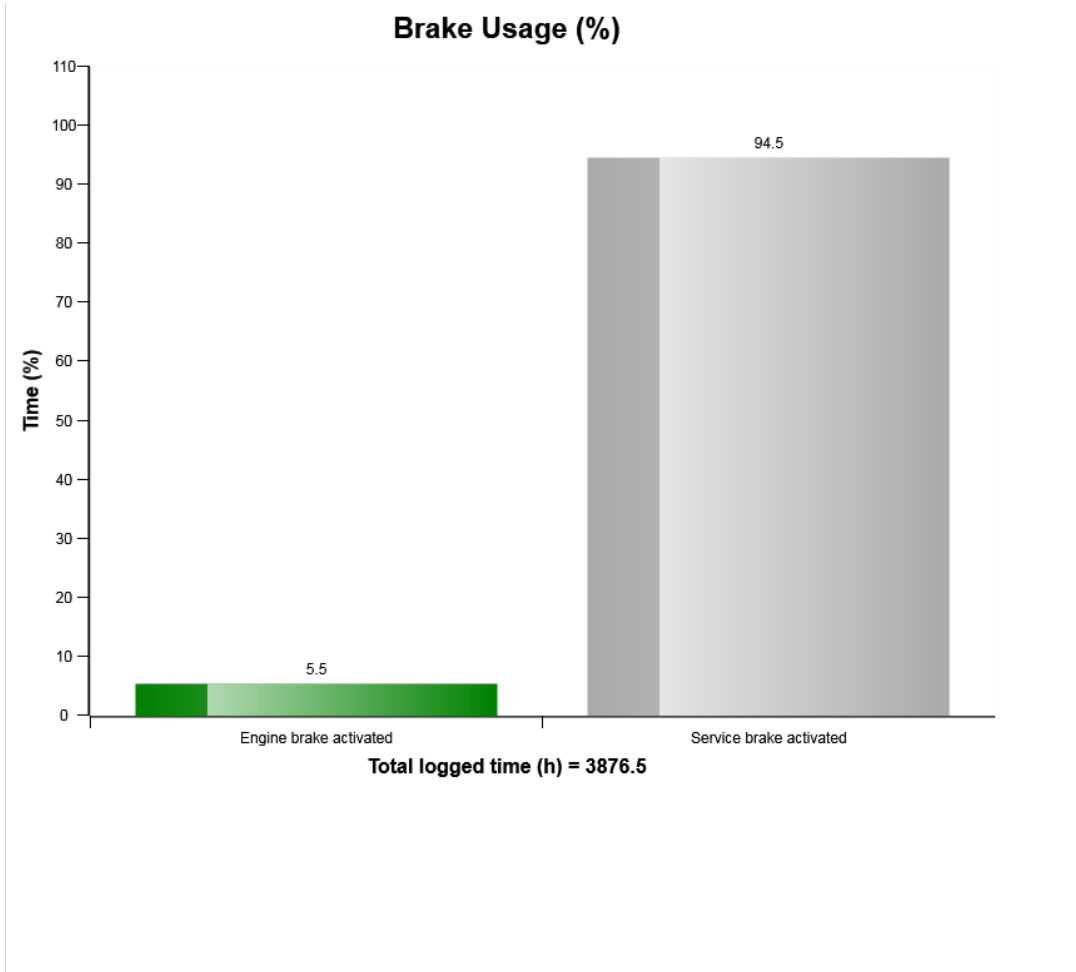
The temperature shown by yellow and red bars degrade the properties of the cooling oil, and may be the result of incorrect and hard operation of the machine. Check the brake pressure distribution in the diagram "Service brake pressure, distribution (%)". If the brake cooling oil temperature is high despite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



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Low Brake Servo Pressure
Total number of occurrences = 4

	Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (psi)
E	0	2000	0	0	0	0	0	0
F	0	2000	0	0	0	0	0	0
G	0	2000	0	0	0	0	0	0
H	0	2000	0	0	0	0	0	0
I	0	2000	0	0	0	0	0	0
J	0	2000	0	0	0	0	0	0
A	2056	2016	5	31	6	41	0	2157
B	2158	2016	6	22	6	41	0	2219
C	2683	2016	10	13	7	10	0	2324
D	3638	2017	4	12	7	4	0	2293

Definition :

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

Only one event per minute is registered.

Over the table the total number of events is displayed

Duration :

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

Extreme value :



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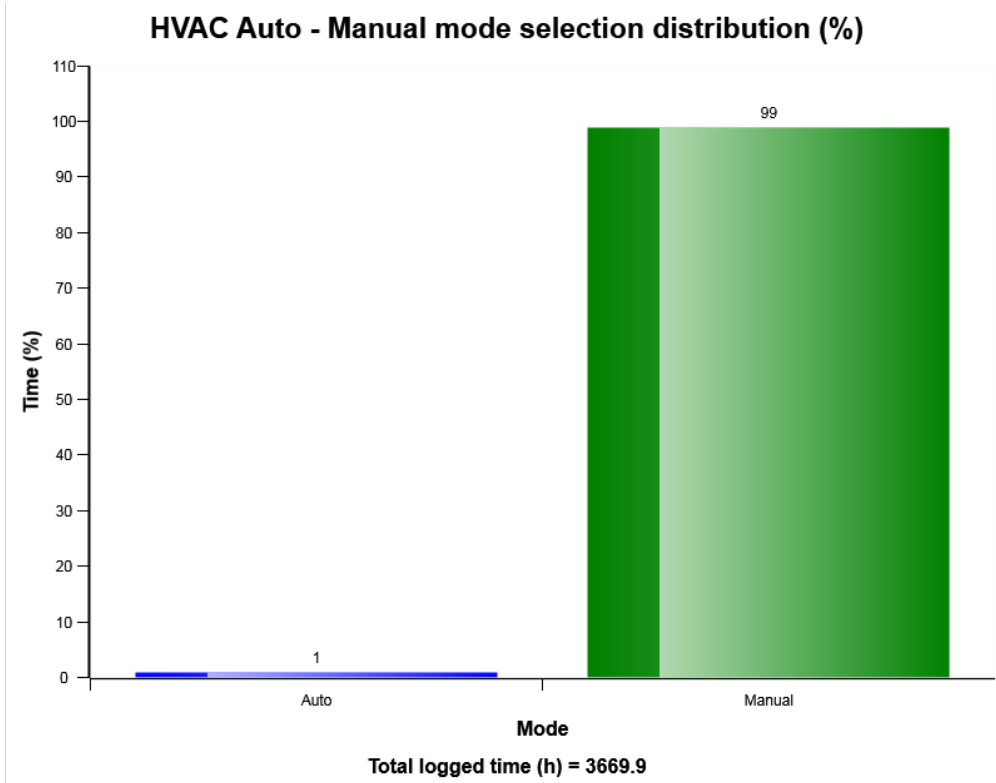
The extreme value column displays the most extreme value during the event.

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.



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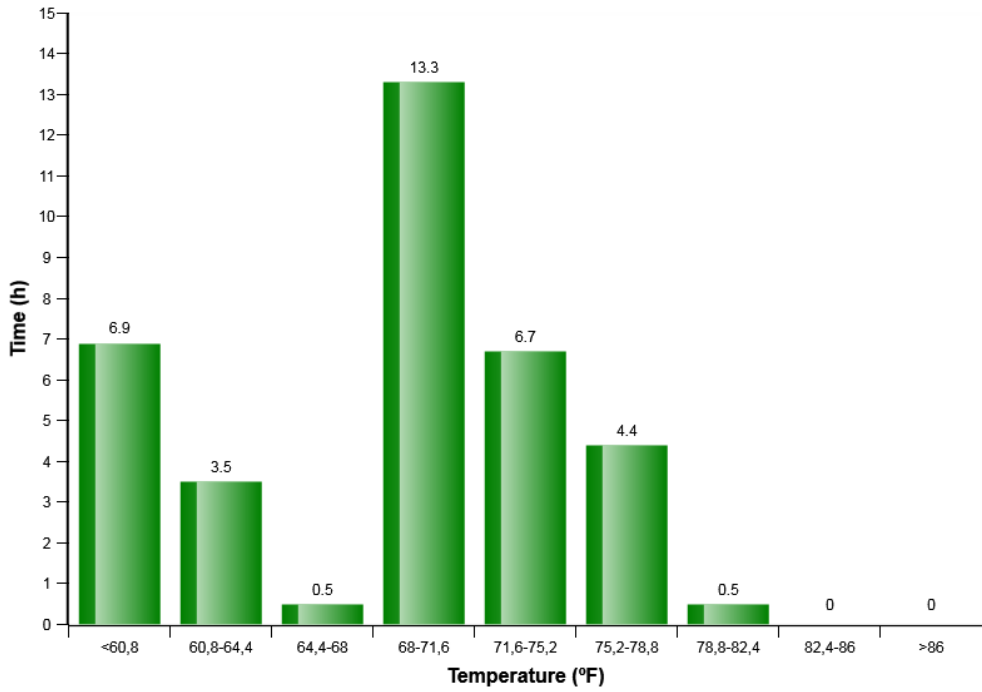
Definition:

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.



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



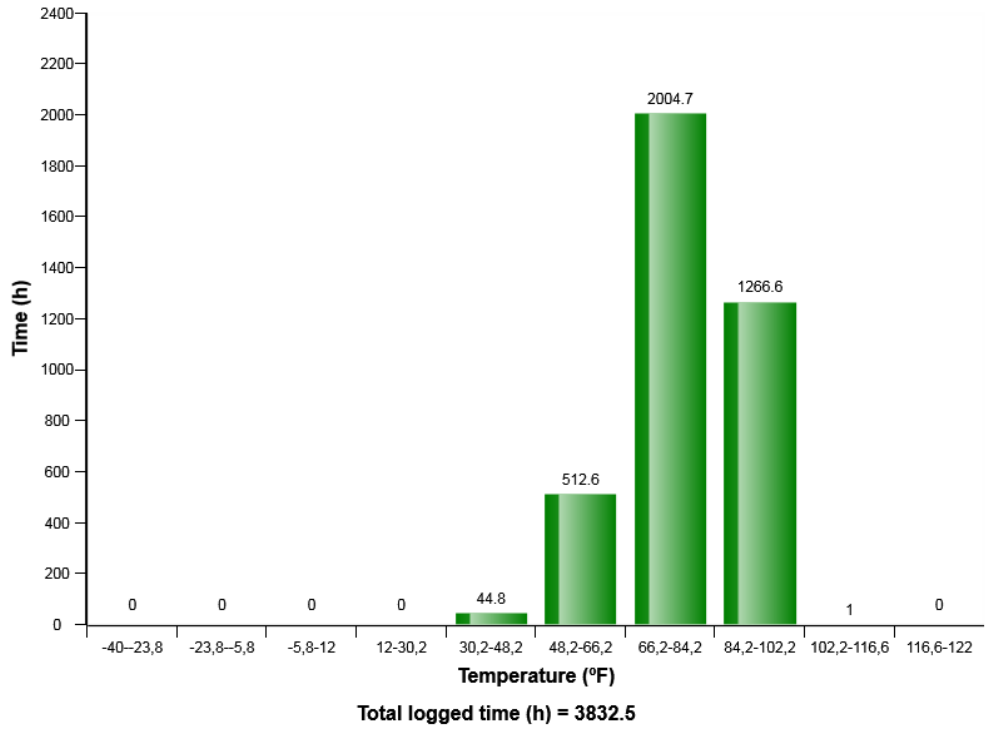
Definition:

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

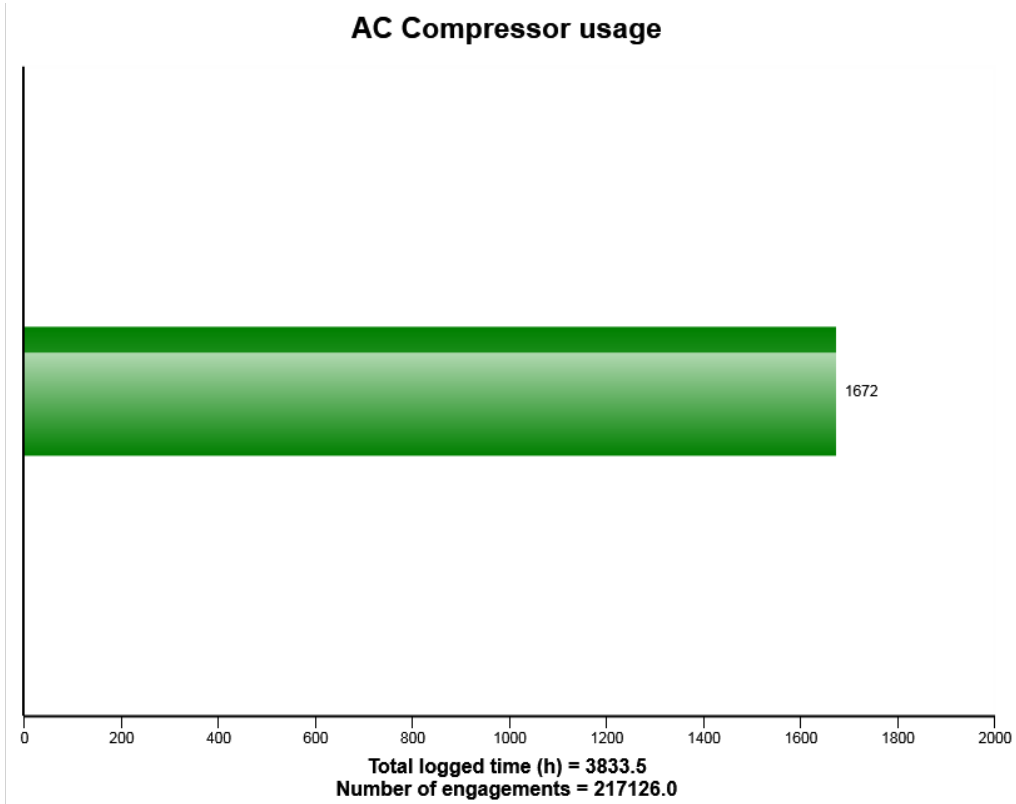


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Machine ambient temperature distribution (h)



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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.

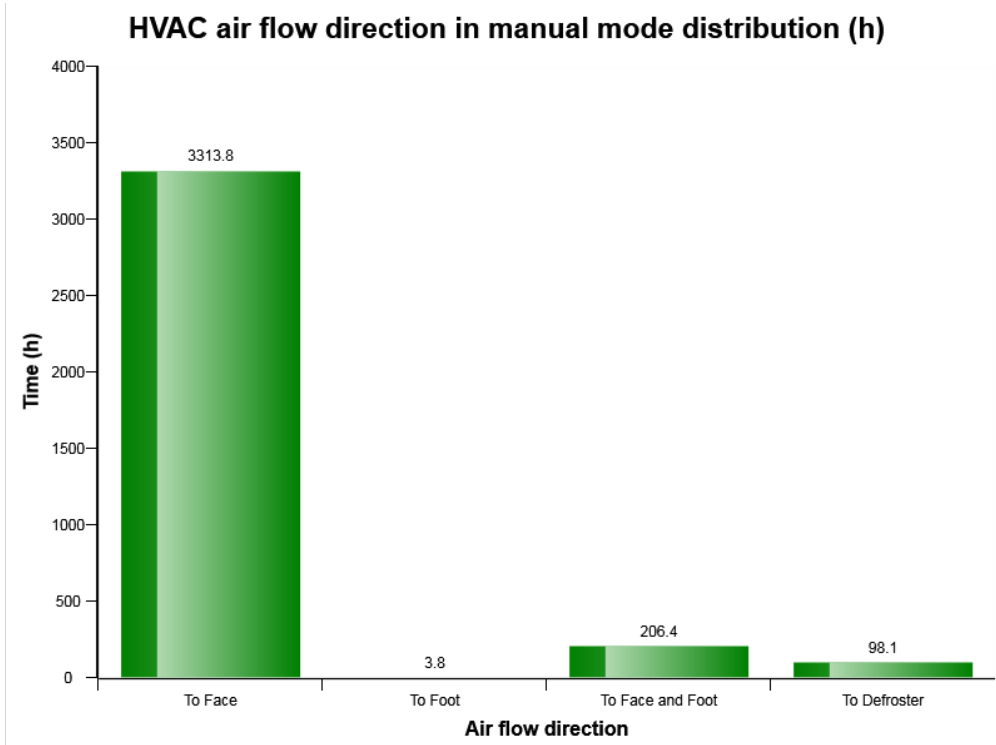
Total number of AC compressor activations is also displayed.



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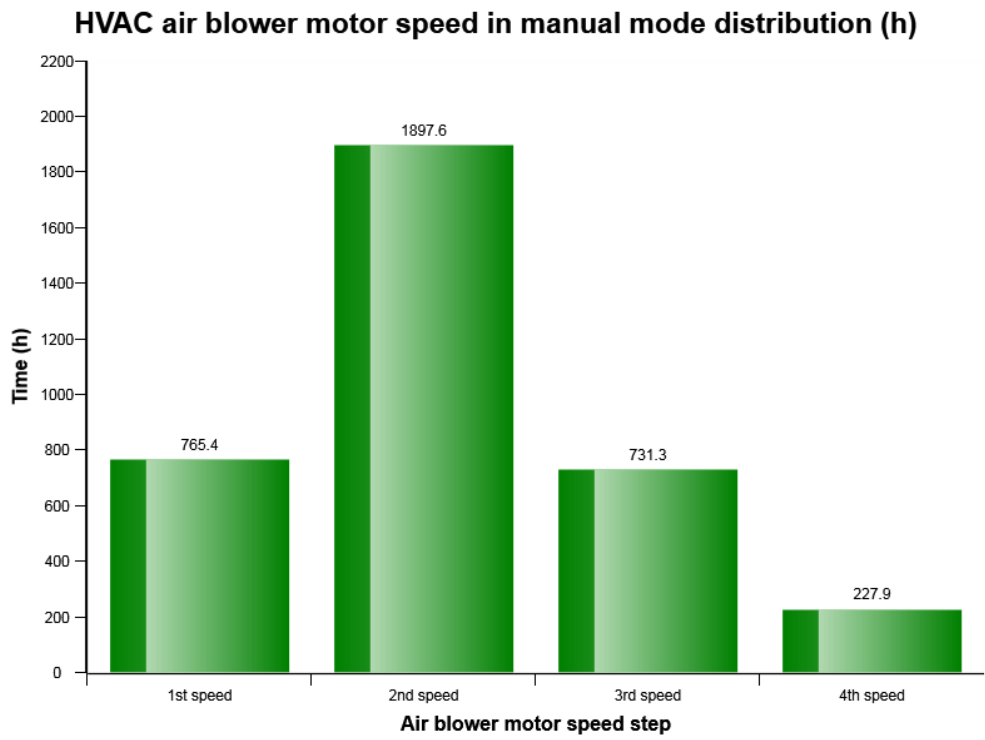


Definition:

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



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Definition:

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



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

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Only one event per minute is registered.

Over the table the total number of events is displayed

Duration :

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

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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.



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

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Only one event per minute is registered.

Over the table the total number of events is displayed

Duration :

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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
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AC System Cut Out Pressure
Total number of occurrences = 8

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
816	2015	10	28	10	34	5258	79
816	2015	10	28	9	26	-63437	77
818	2015	10	28	12	35	10383	84
821	2015	10	28	15	34	5387	86
822	2015	10	29	6	51	5034	86
824	2015	10	29	8	39	3851	72
2152	2016	6	20	15	3	1	95
2152	2016	6	20	14	58	0	95

Definition :

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



Machine model	SerialNo	Operating Hours	Reading Date
A40G	340767	3876	5/31/2017

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 :

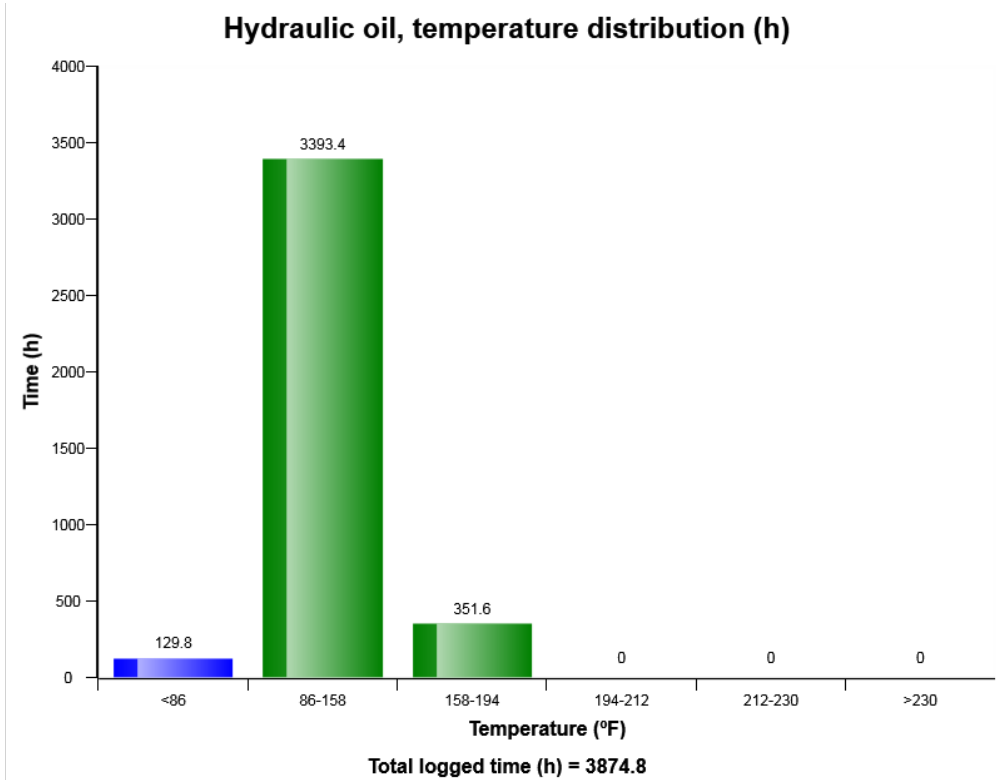
The extreme value column displays the most extreme value during the event.

Criteria :

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



Machine model	SerialNo	Operating Hours	Reading Date
A40G	340767	3876	5/31/2017



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.

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



Machine model	SerialNo	Operating Hours	Reading Date
A40G	340767	3876	5/31/2017

region.

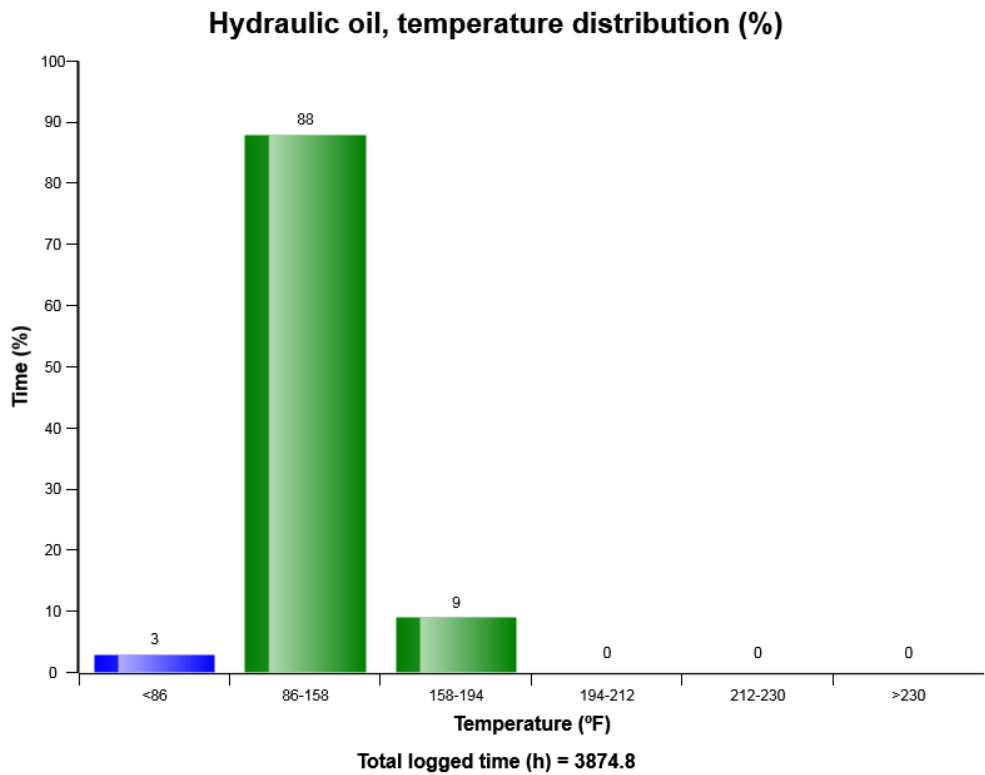
Yellow bar = High working temperature. It is normal to have some registrations in this region.

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	340767	3876	5/31/2017



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