

VOLVO CONSTRUCTION EQUIPMENT MATRIS REPORT

Machine model A40G	SerialNo 340820	Operating Hours 5126.5	Reading Date 12/09/2019
Company name Hoffman	Dealer	Report Issuer	
Contact name	Technician Edwin Cabrera	Primary Application Earth moving construction	
Site	Workorder	Ground Condition	

MATRIS Reading, Summary / Recommendation

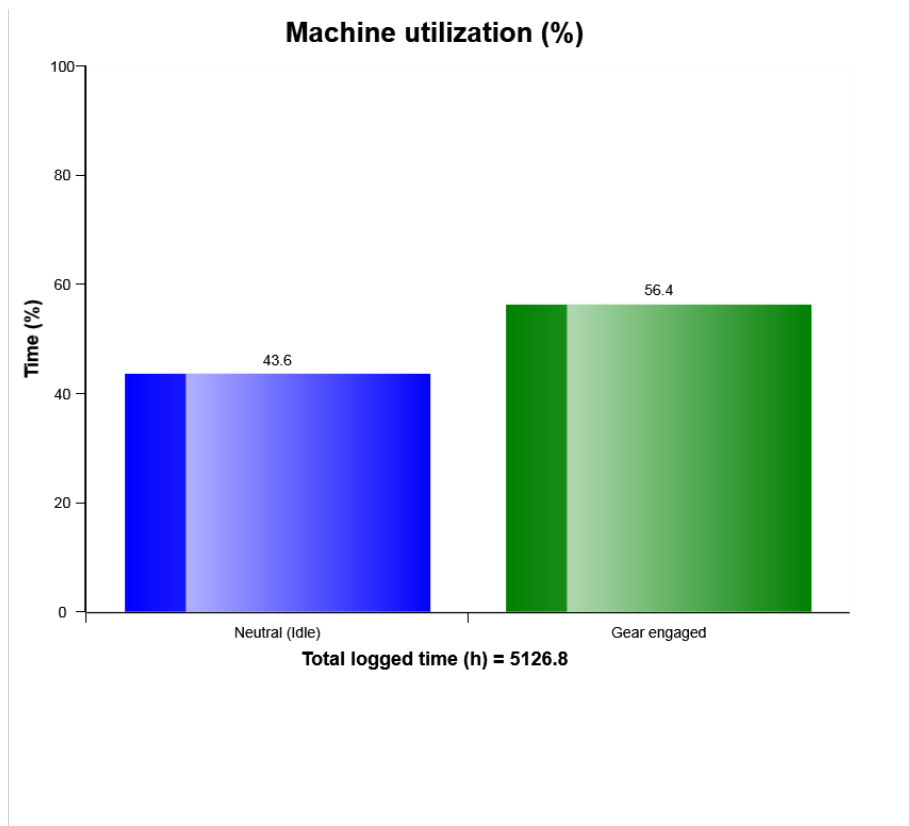


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Main equipment	Type	Equipment
	Tyre size/class	Sold without tyres
	Body extensions	Not mounted
	Tail-gate	Not mounted
	Extra spillguard	Not mounted
	Wear plates	Not mounted
	Pattern	None



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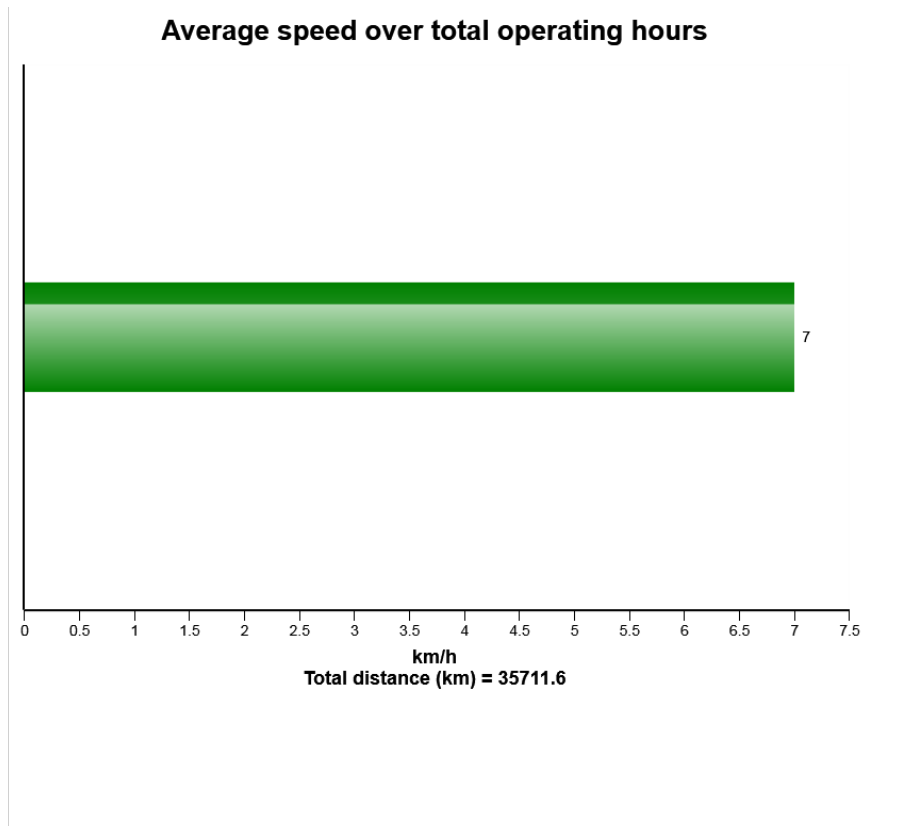
The diagram shows a simplified presentation of the machines utilization based on the relation between time in gear and time in neutral. The "Gear engaged " includes both forward and reverse gears.

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



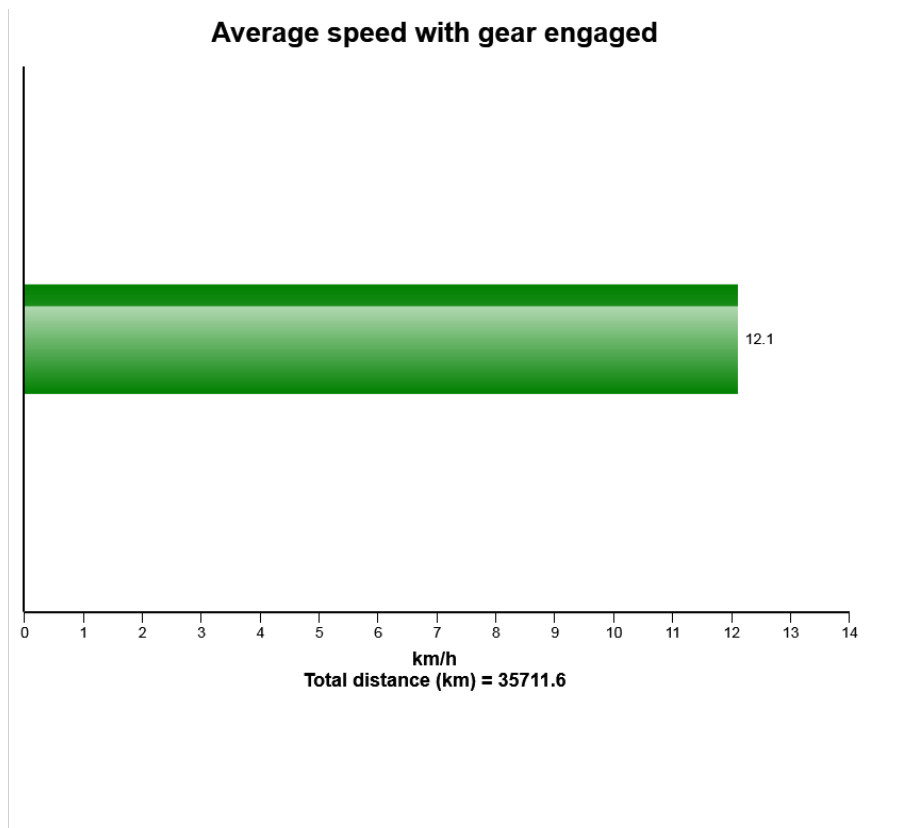
Machine model	SerialNo	Operating Hours	Reading Date
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The diagram shows the machines average speed based on the total operating hours.



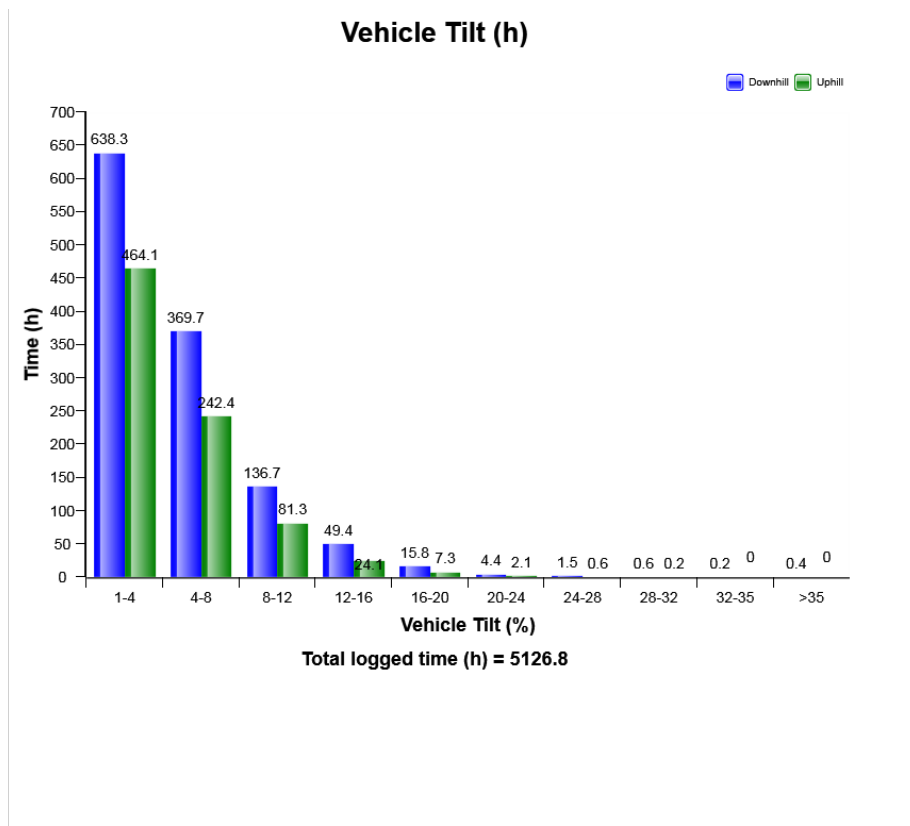
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The diagram shows the machines average speed based on the operating hours with gear engaged.



Machine model	SerialNo	Operating Hours	Reading Date
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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) =

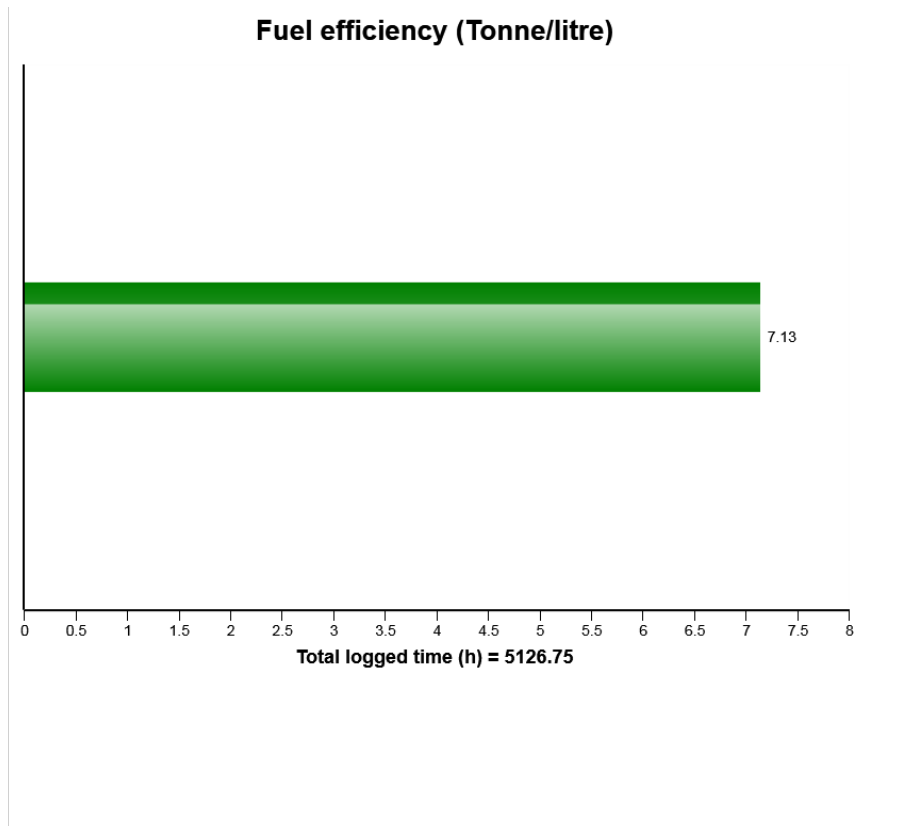
Total logged time (h) =	5126.7
Total fuel consumption	127865.1
Production (tonne)	911386.2
Tonne/h	177.8
Tonne/litre	7.1
Litre/tonne	0.1
Number of cycles	23804
Cycles overloaded (%)	8.8
Load utilisation / cycle (%)	98.2

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.



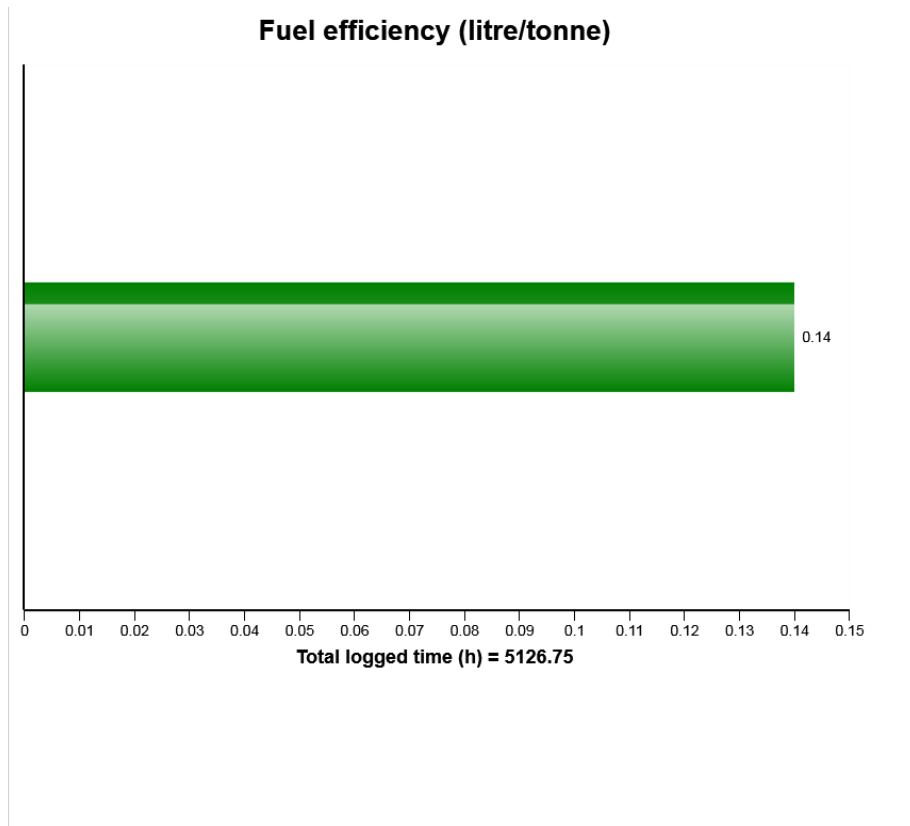
Machine model	SerialNo	Operating Hours	Reading Date
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The presentation display the average produced tonne per fuel unit over the machines lifetime



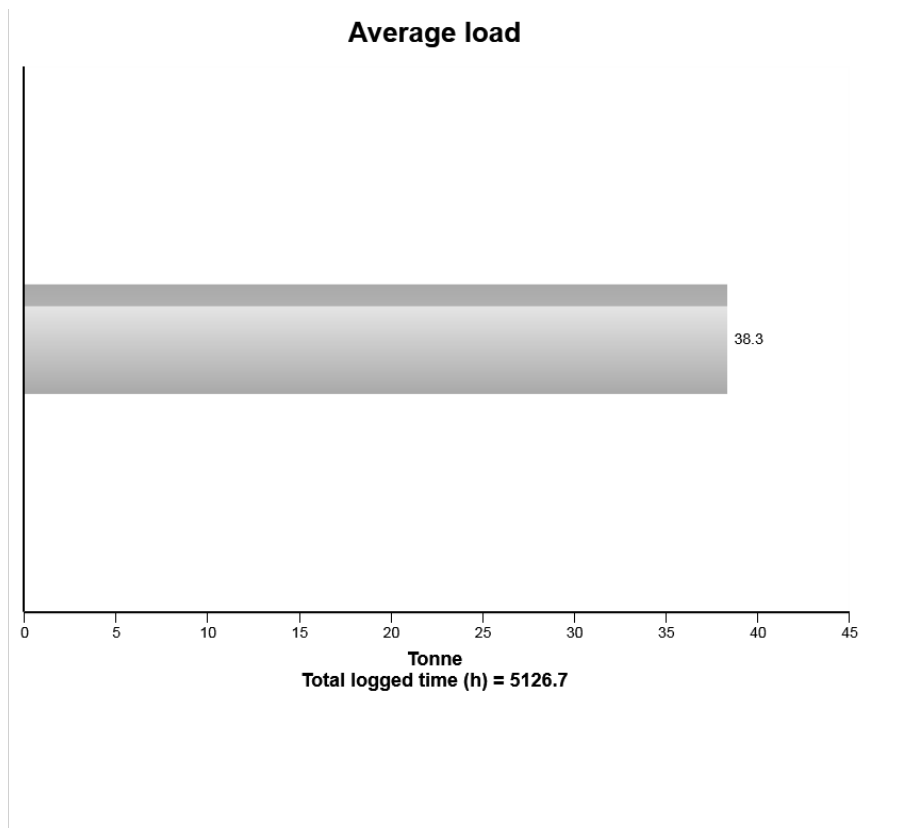
Machine model	SerialNo	Operating Hours	Reading Date
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The presentation shows the average fuel consumption per tonne over the machines lifetime



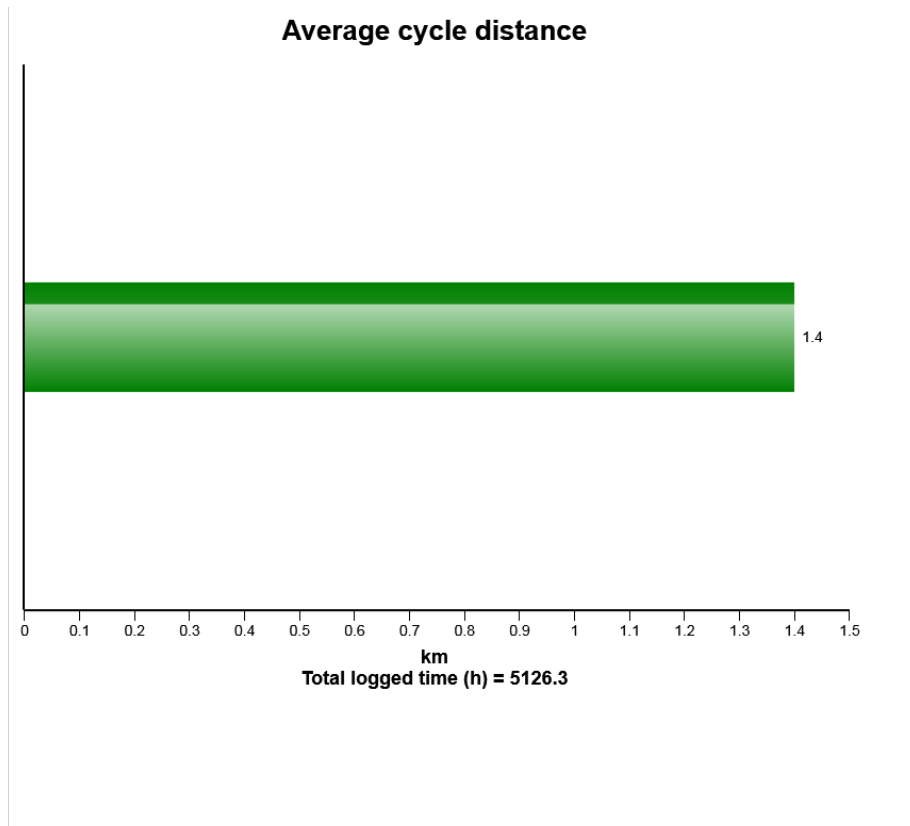
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'WordSection1' is an unexpected token. The expected token is "" or ". Line 1, position 18.



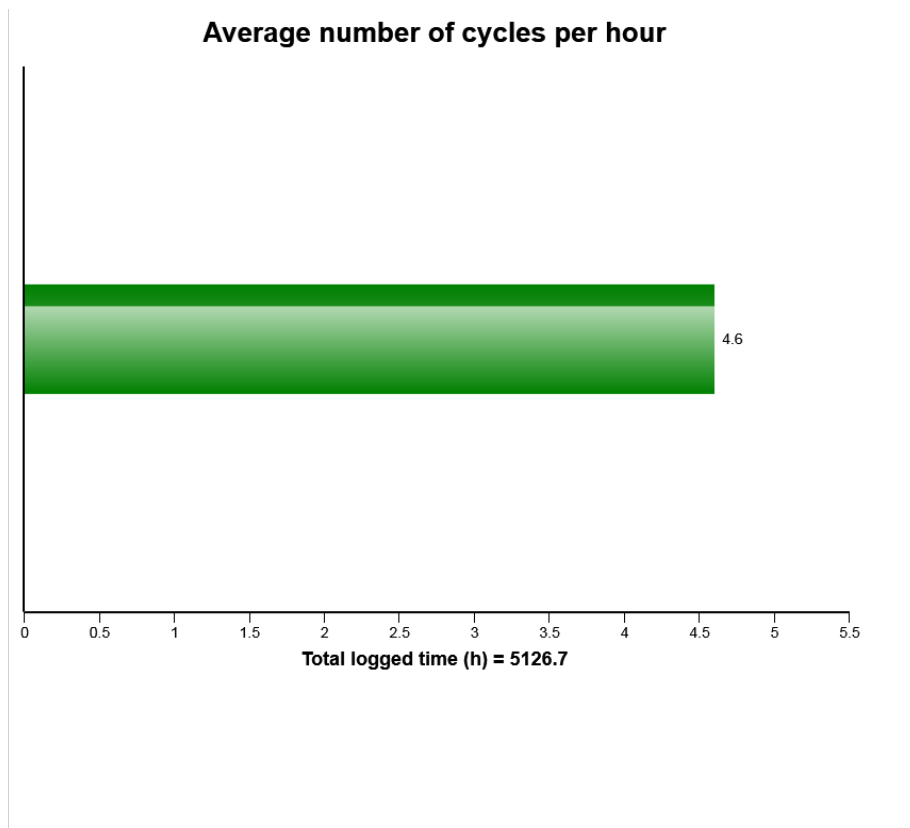
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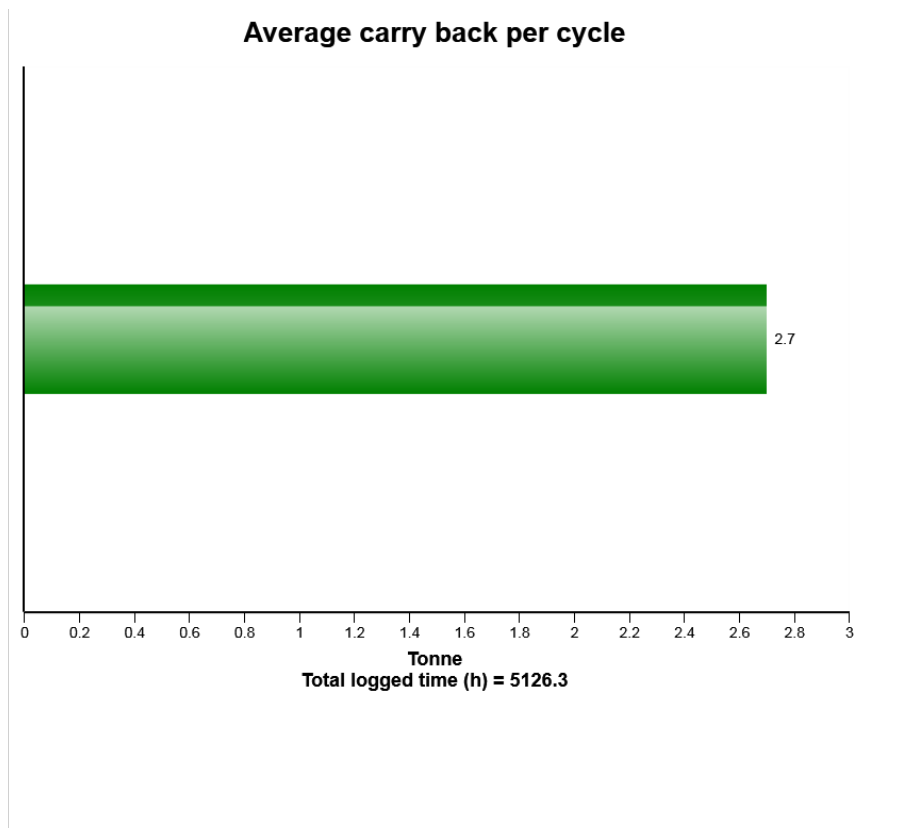
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The presentation shows the average number of cycles per hour over the machines lifetime.



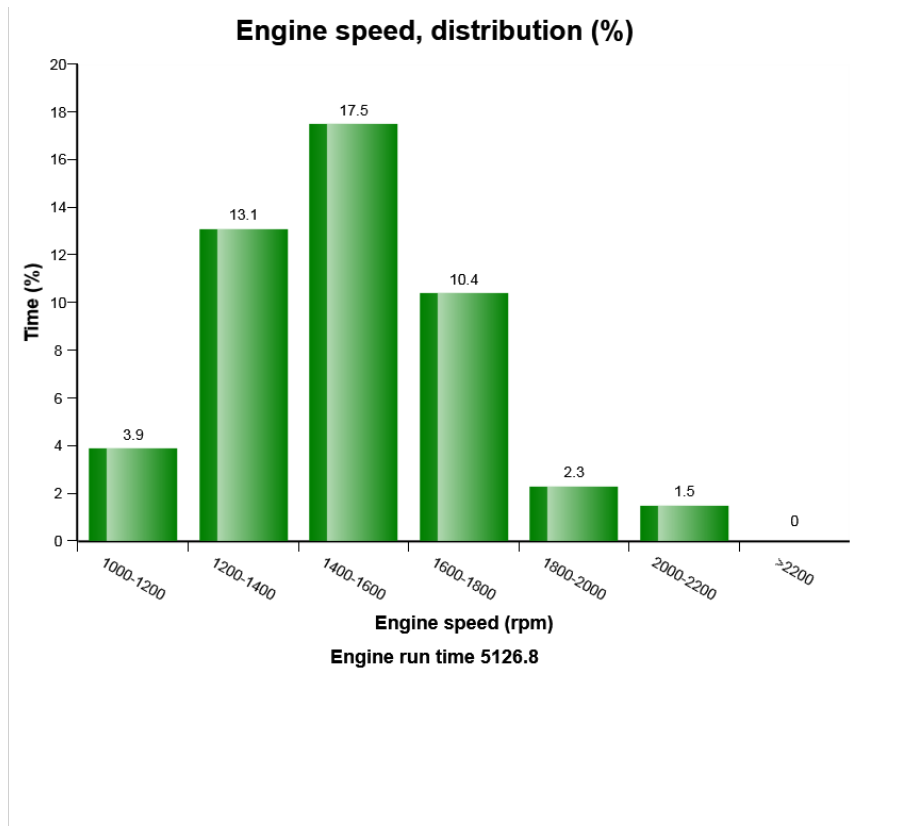
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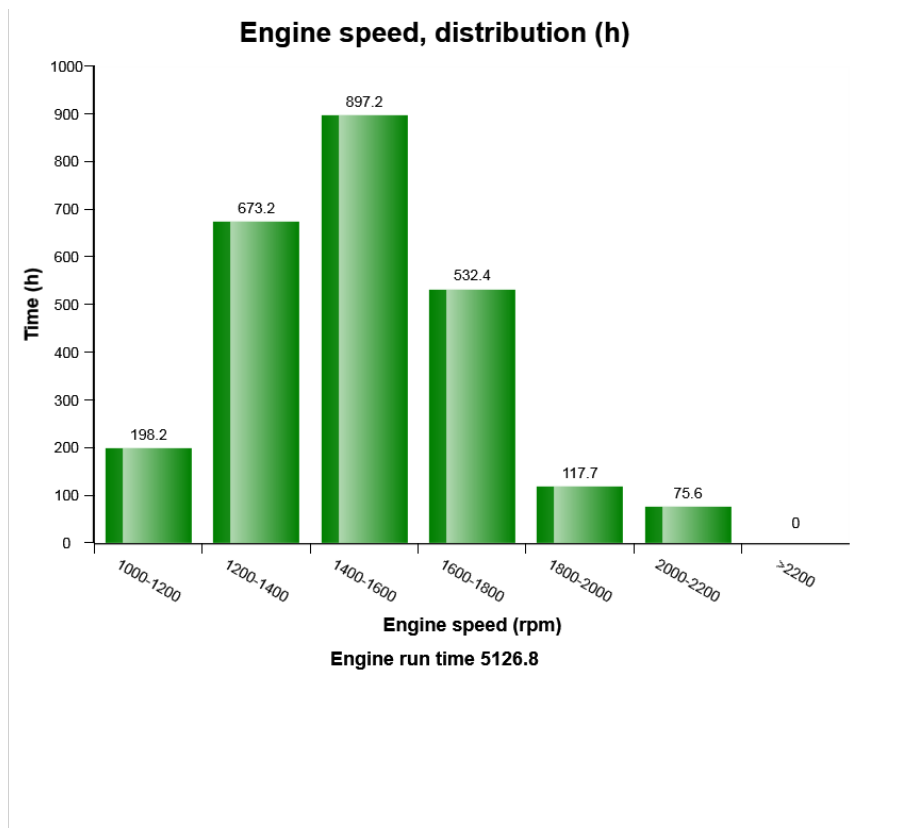
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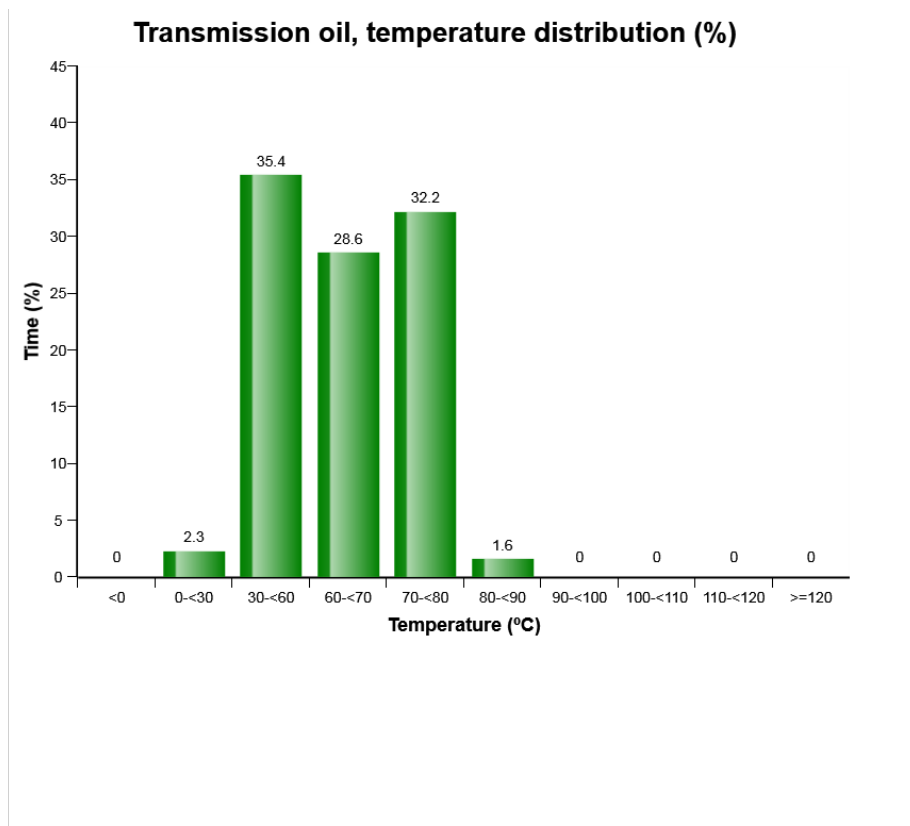
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The diagram shows the transmission oil temperature in various temperature ranges. The time is displayed in the following ten temperature ranges:

<0°C Temperatures below 0°C

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

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

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

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

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



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

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

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

≥120°C Temperatures over 120°C

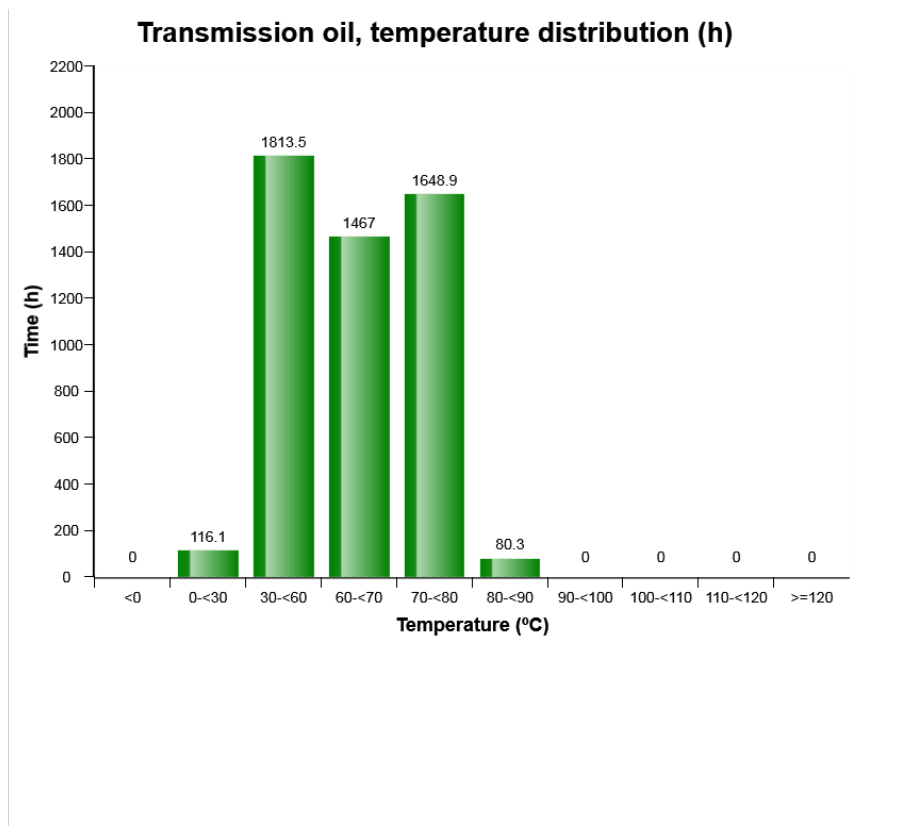
The bar that describes temperatures from 110°C until 120°C is yellow and means that the oil has begun to be overheated. Driver has been given orange central warning

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

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



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

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

≥120°C Temperatures over 120°C

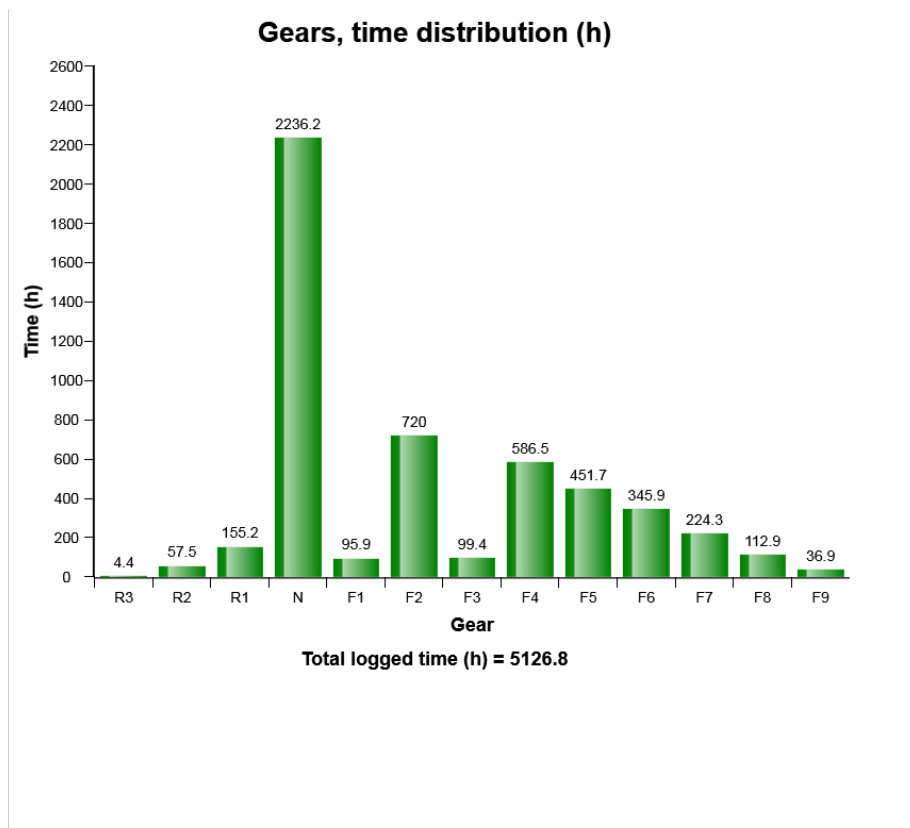
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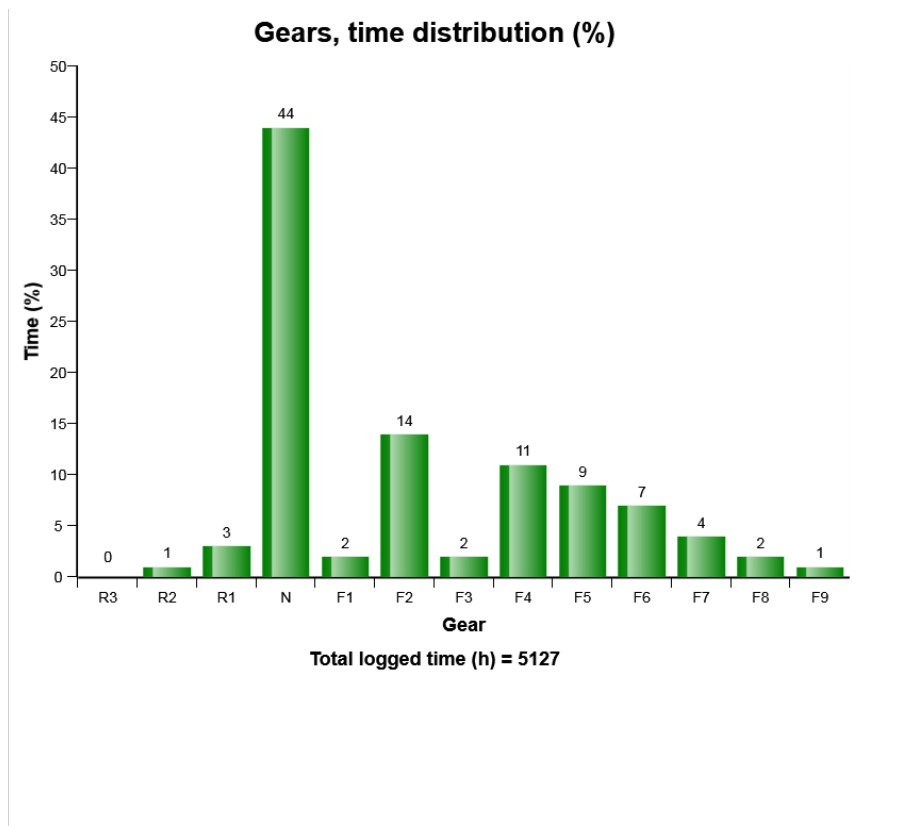


The diagram shows the time for each gear. Each bar represents a gear.

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



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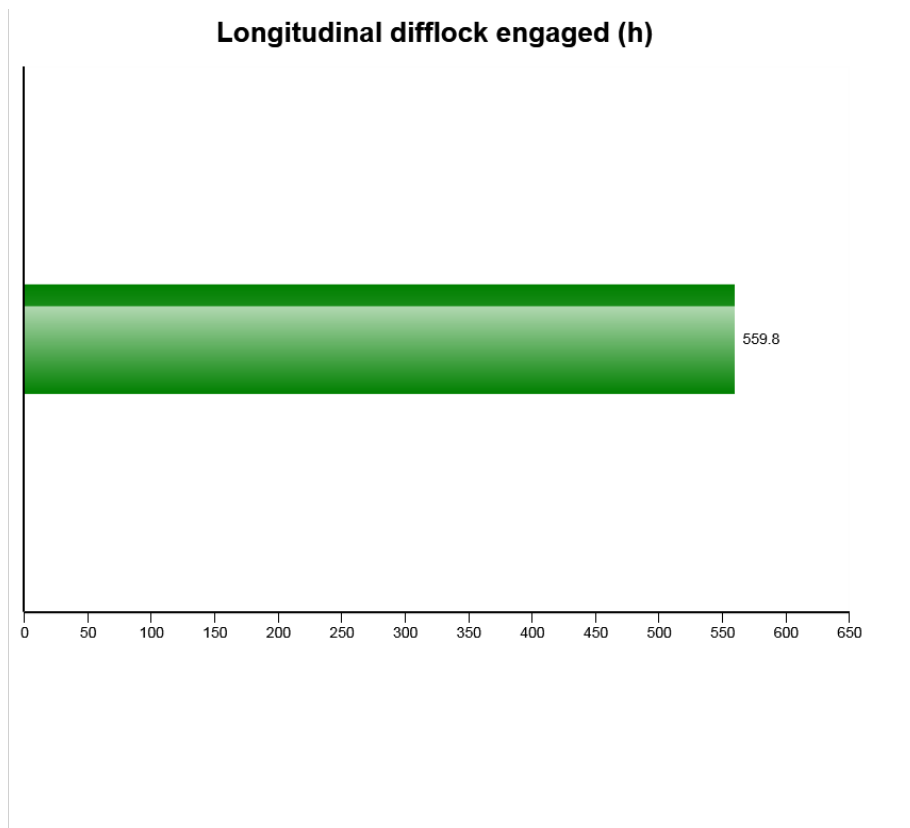


The diagram shows the time for each gear. Each bar represents a gear.

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



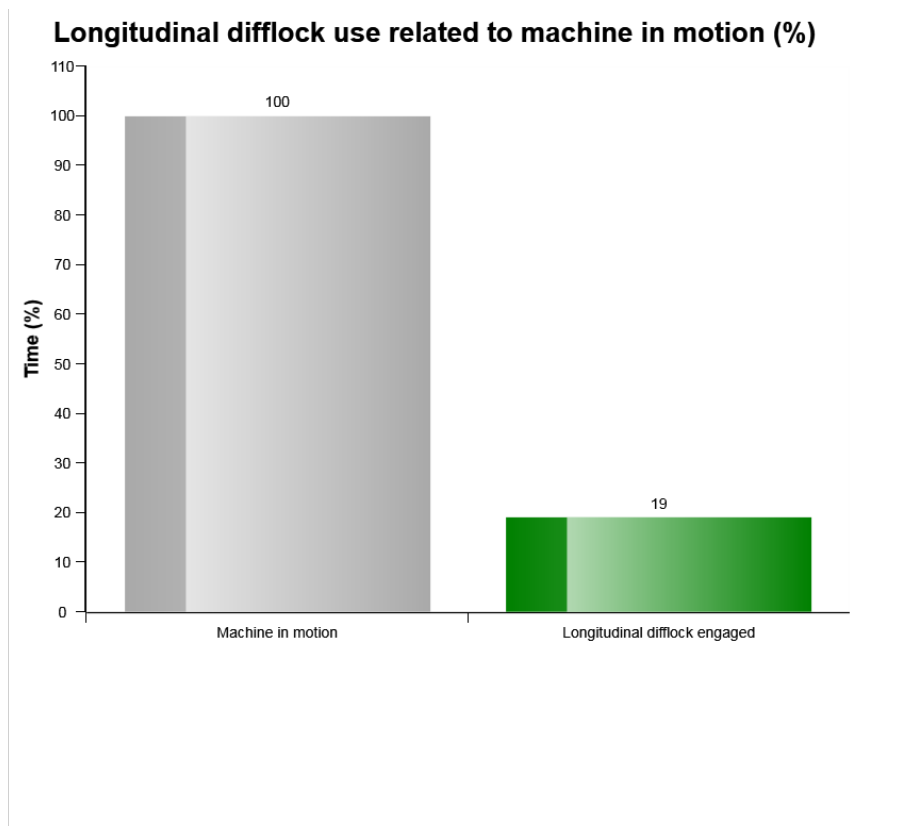
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The diagram shows how long time in hours the longitudinal difflock has been engaged. The presentation only shows time when the machine is moving as this is when the wear on the difflock occurs. The difflock should always be disengage when not needed 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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**Transmission oil pressure low
Total number of occurrences = 8**

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (bar)
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
0	2000	0	0	0	0	0	0.0
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
757	2016	3	22	12	32	0	90.1
2470	2017	2	7	8	36	0	119.0
2549	2017	2	22	7	19	0	0.0
2568	2017	2	23	16	24	0	0.0
2724	2017	3	20	14	34	0	0.0
2757	2017	3	23	20	19	0	0.0
2956	2017	4	24	15	4	0	0.0
3613	2017	10	20	8	49	0	0.0

Definition :

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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.

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 :

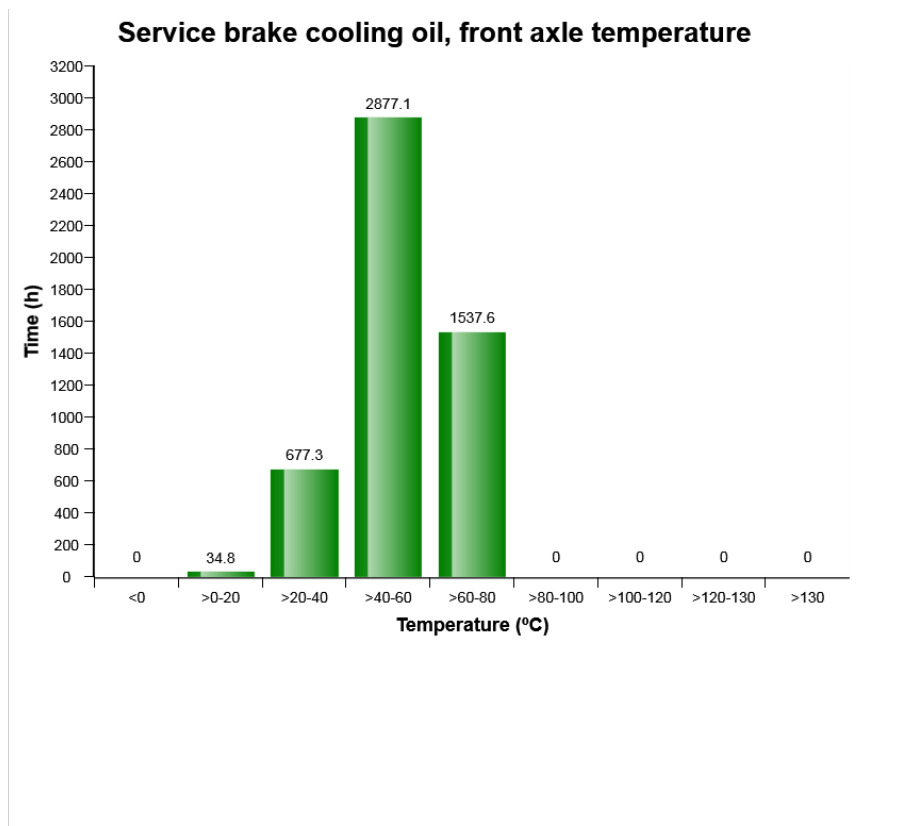
The extreme value column displays the most extreme value during the event.

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."



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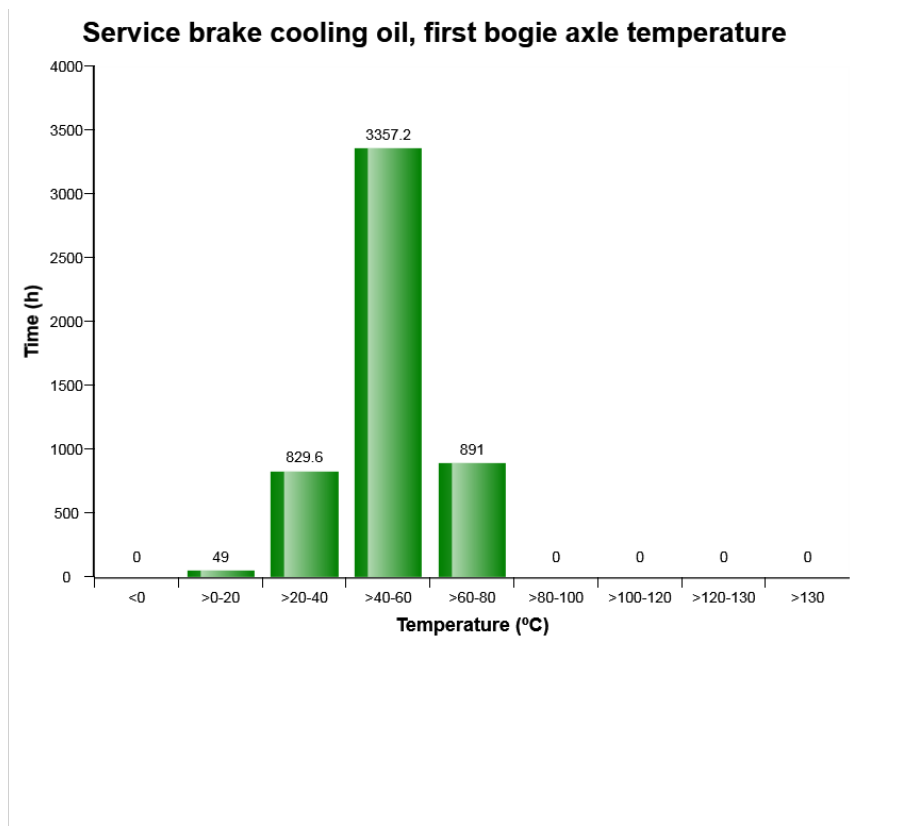


The diagram shows the front axle brake cooling oil temperature. The temperatures are divided into ranges, yellow bar (>120-130°C) and red bar (>130°C) shows abnormal temperatures. The temperature is registered in the line from the front axle to the oil cooler, that is, the warmest oil in the circuit.

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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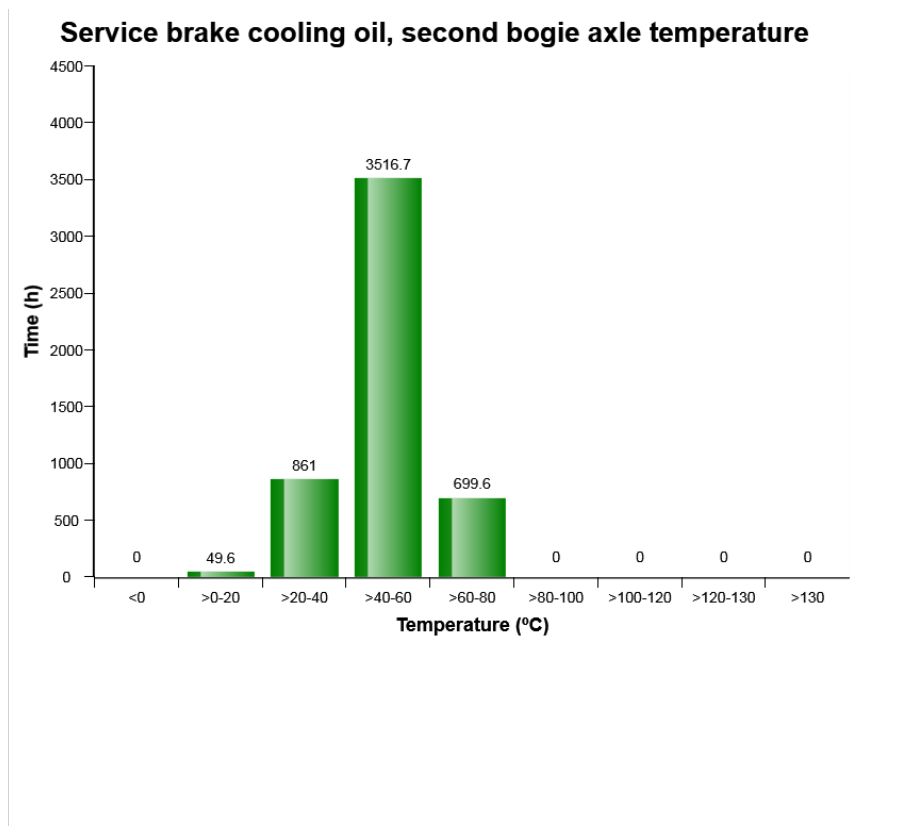


The diagram shows the first bogie axle brake cooling oil temperature. The temperatures are divided into ranges, yellow bar (>120-130°C) and red bar (>130°C) shows abnormal temperatures. The temperature is registered in the line from the first bogie axle to the oil cooler, that is, the warmest oil in 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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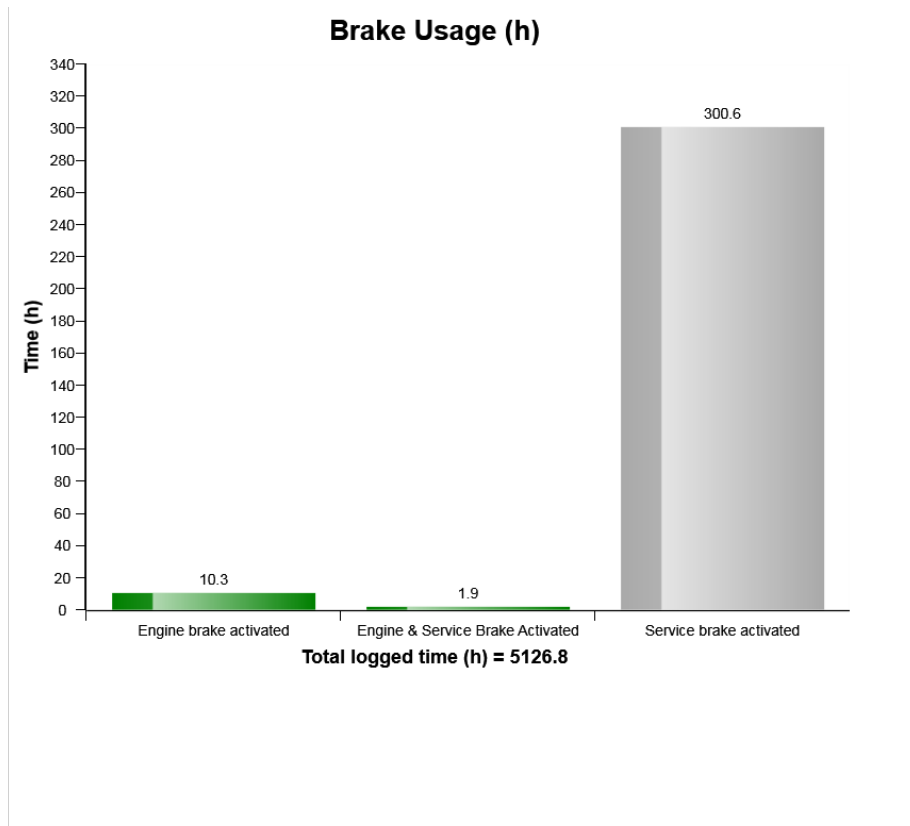


The diagram shows the Service brake cooling oil, second bogie axle temperature. The temperatures are divided into ranges, yellow bar (>120-130°C) and red bar (>130°C) shows abnormal temperatures. The temperature is registered in the line from the second bogie axle to the oil cooler, that is, the warmest 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



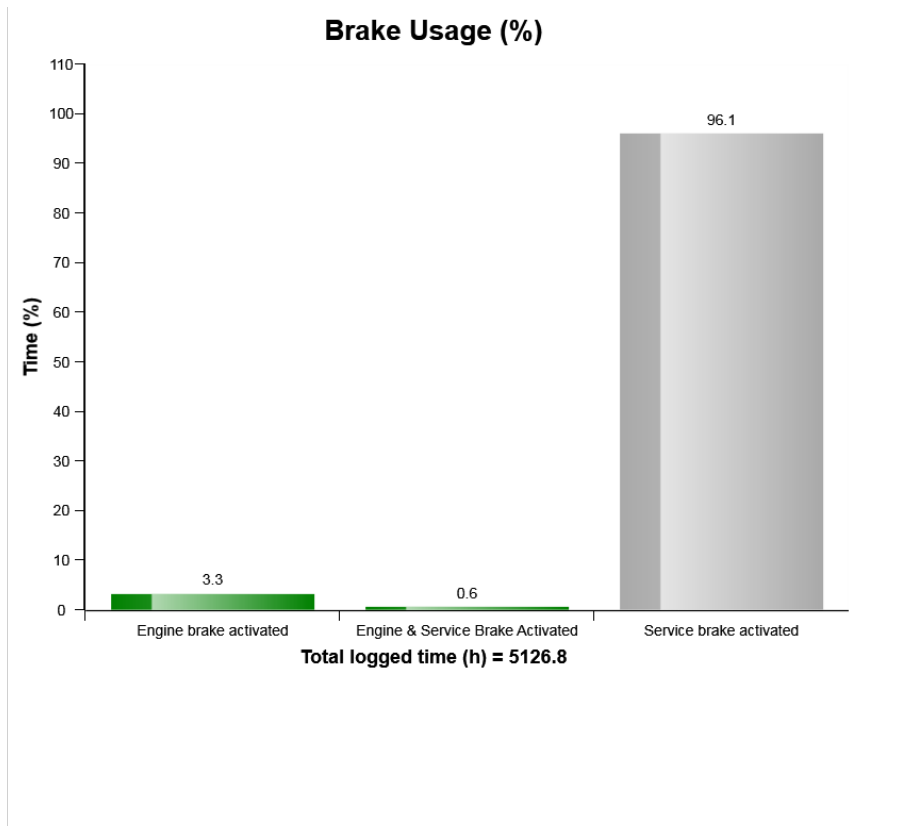
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Low Brake Servo Pressure
Total number of occurrences = 11

	Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (bar)
B	412	2016	2	1	7	12	0	147
C	1275	2016	6	16	7	1	0	153
D	1277	2016	6	17	7	54	0	158
E	3141	2017	5	29	7	43	0	128
F	3663	2018	1	10	15	21	10	139
G	3744	2018	2	21	11	25	10	153
H	3758	2018	2	27	16	59	0	155
I	3783	2018	3	6	7	10	6	160
J	3947	2018	4	2	9	30	0	147
A	4694	2018	8	11	9	47	0	134

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 :

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

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Extreme value :



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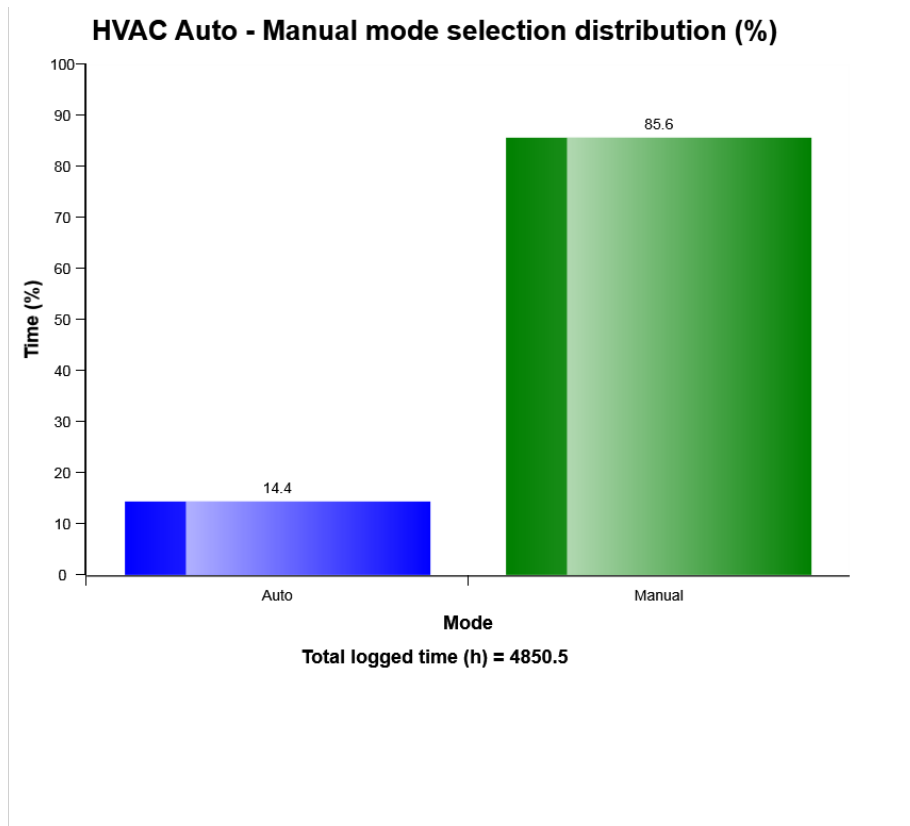
The extreme value column displays the most extreme value during the event.

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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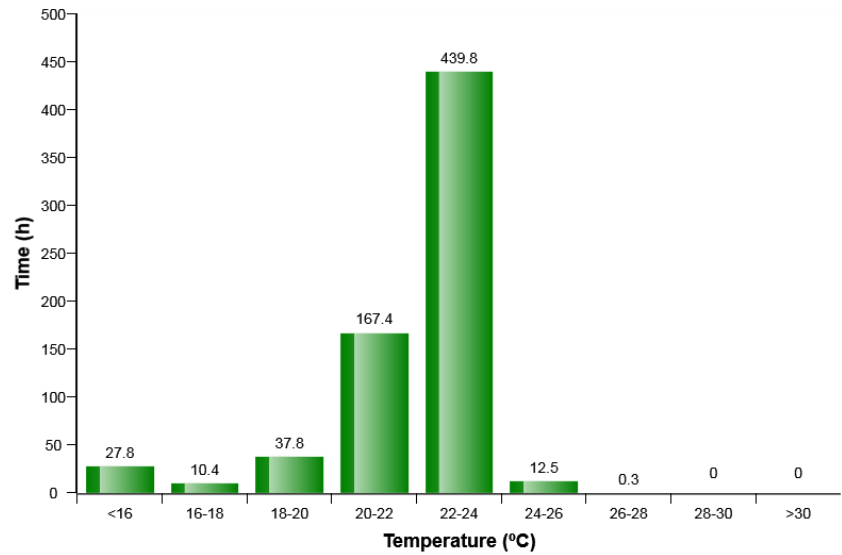
Definition:

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)

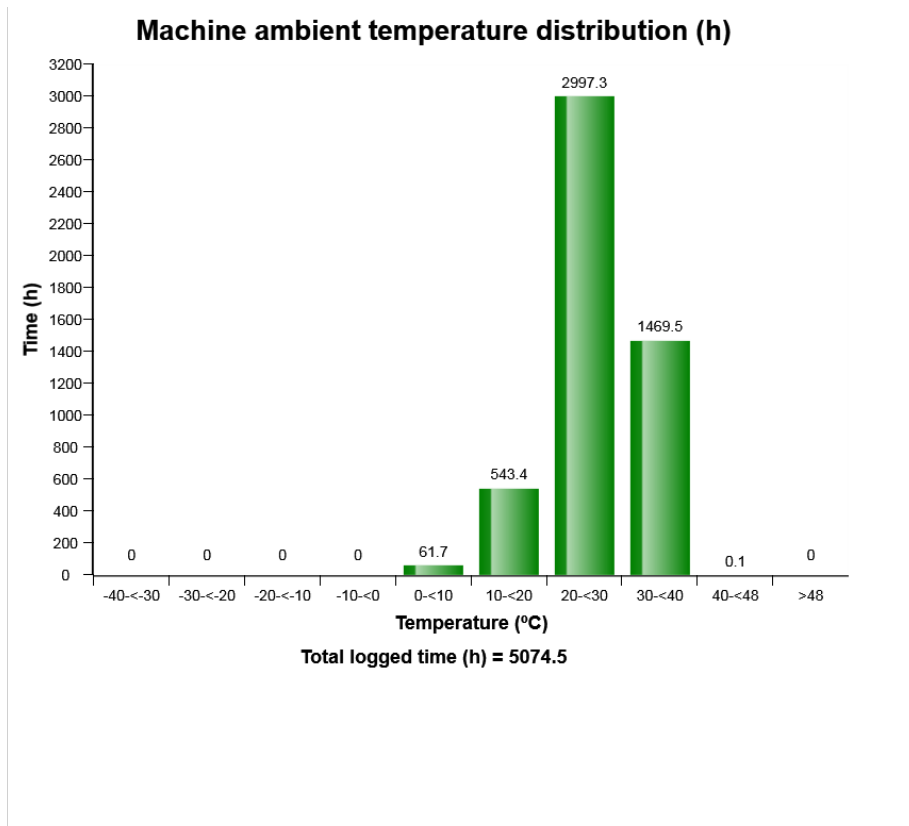


Definition:

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



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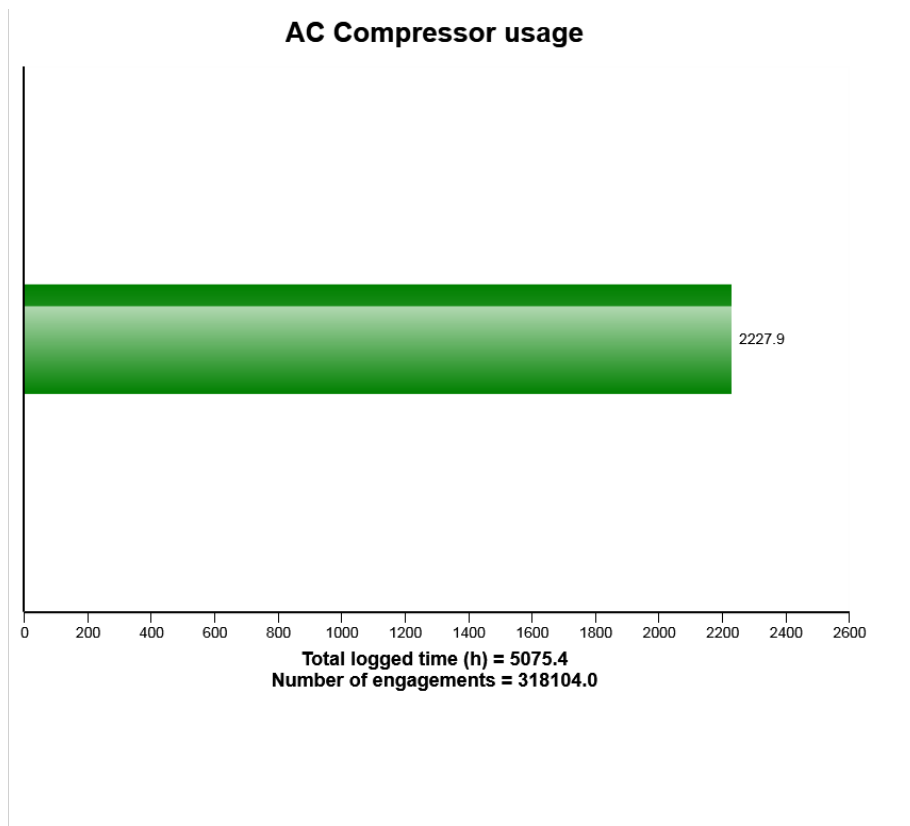


Definition:

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



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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.

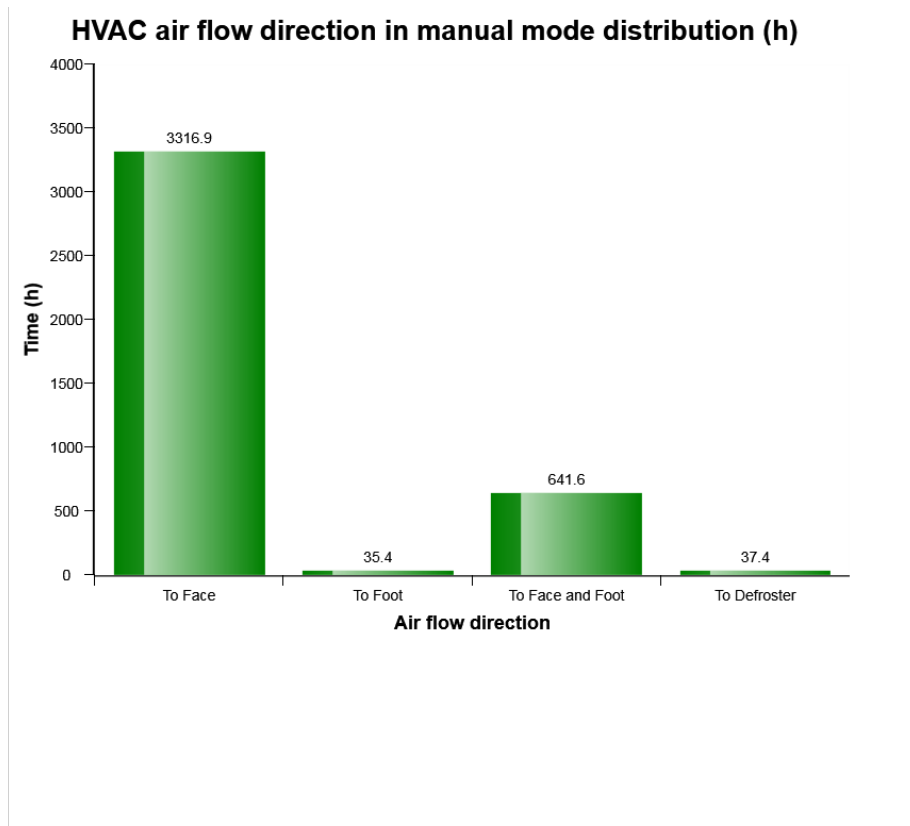


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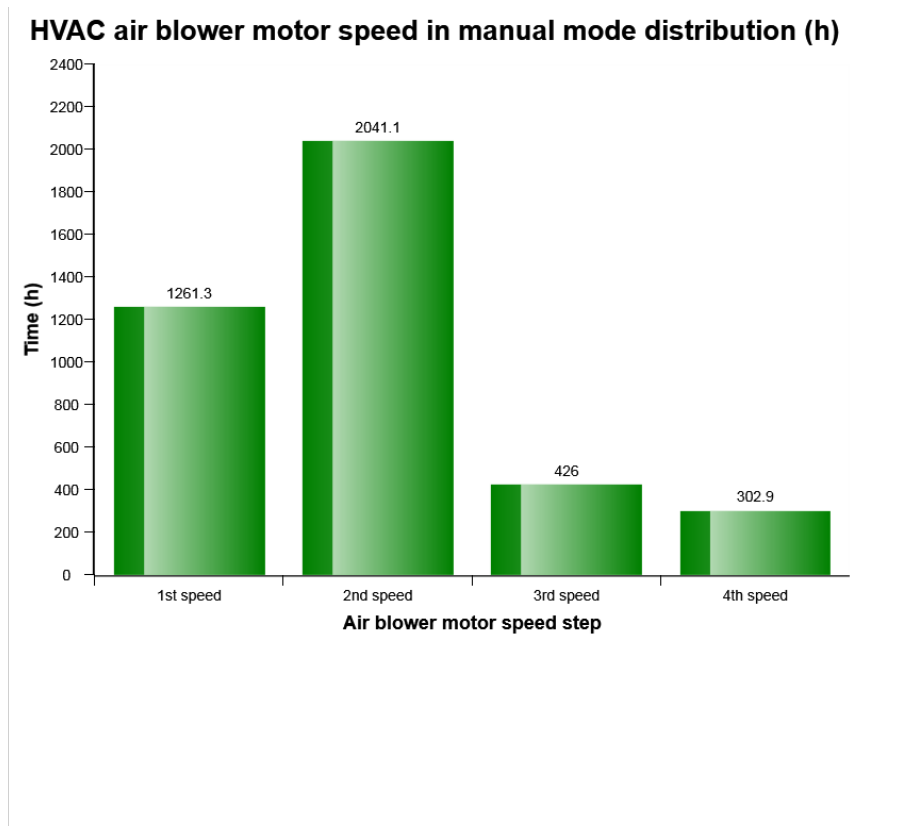


Definition:

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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AC High Pressure
Total number of occurrences = 18

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° C)
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
3099	2017	5	19	11	51	4	34
3433	2017	8	22	14	59	80	36
3434	2017	8	22	15	39	94	36
4297	2018	6	4	11	44	25	32
4549	2018	7	20	16	13	51	33
4577	2018	7	25	14	12	54	35
4588	2018	7	26	15	33	166	36
4589	2018	7	26	16	6	287	35
4589	2018	7	26	15	45	130	35
4589	2018	7	26	15	55	125	35
4590	2018	7	26	16	41	131	35
4597	2018	7	27	14	36	81	37
4598	2018	7	27	14	49	35	37
4723	2018	8	16	16	39	5	33
4956	2018	9	25	14	49	16	33
5070	2018	10	18	16	52	27	33
5077	2018	10	19	14	58	19	33
5080	2018	10	20	14	42	26	32

Definition :

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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 :

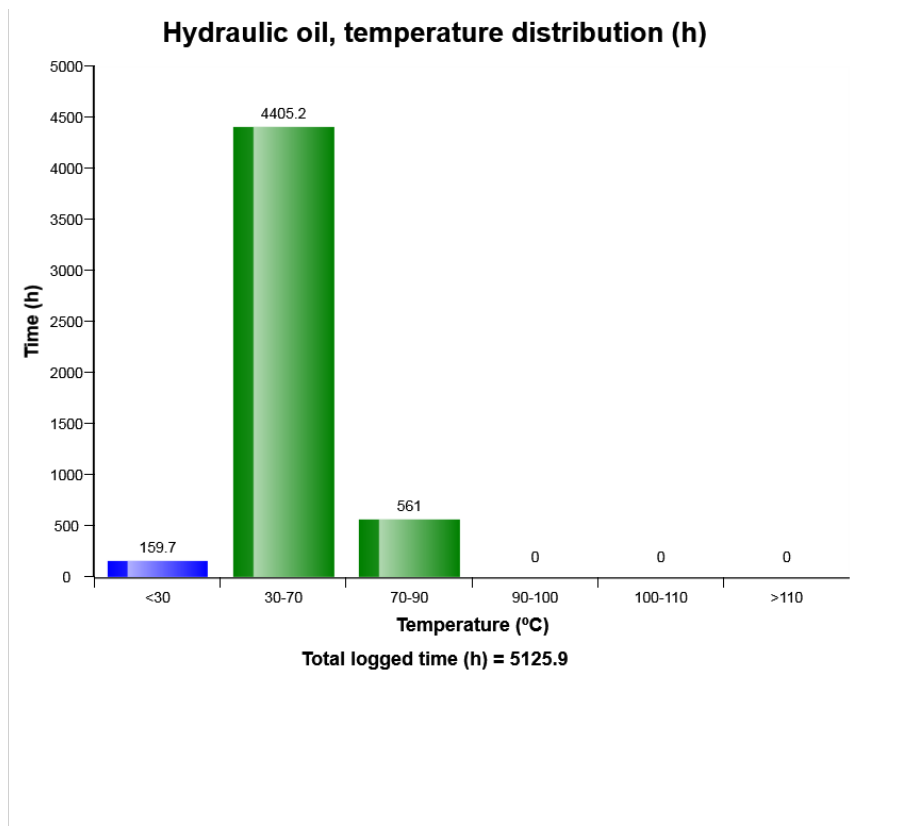
The extreme value column displays the most extreme value during the event.

Criteria :

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



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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.



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A40G	340820	5126.5	12/09/2019

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.

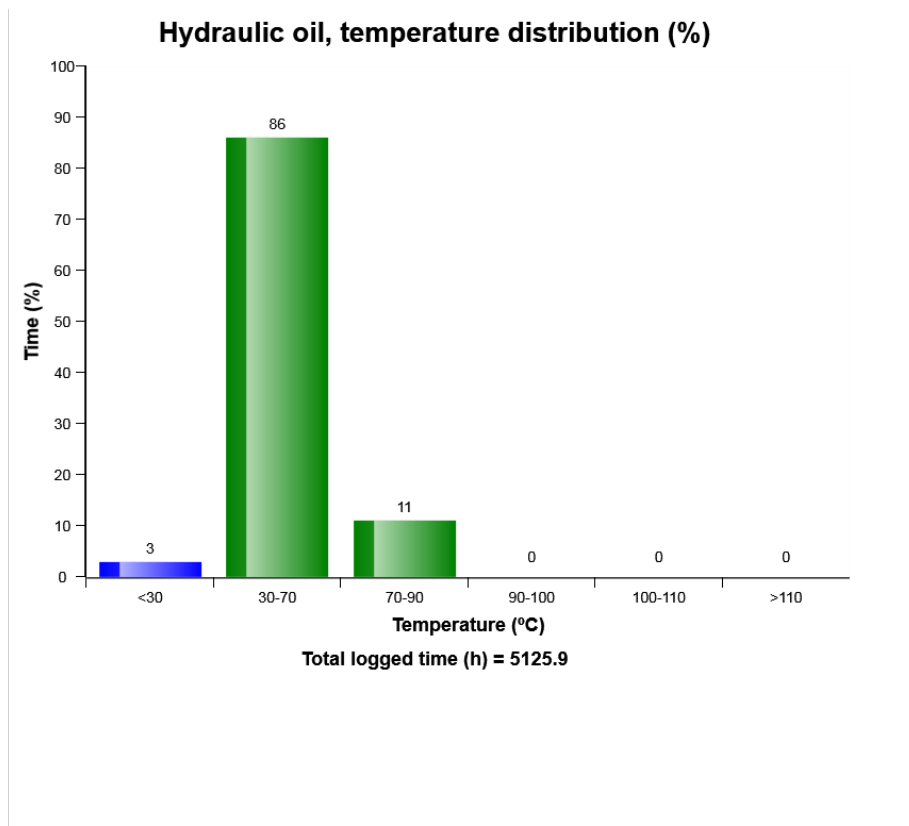
Yellow bar = High working temperature. It is normal to have some registrations in this region.

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	340820	5126.5	12/09/2019



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	340820	5126.5	12/09/2019

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.

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