VOLVO CONSTRUCTION EQUIPMENT

MATRIS REPORT

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

Company name	Dealer	Report Issuer
volvo	arnold machinery	

Contact name	Technician	Primary Application
mike seifert	CE Tech	Light material handling

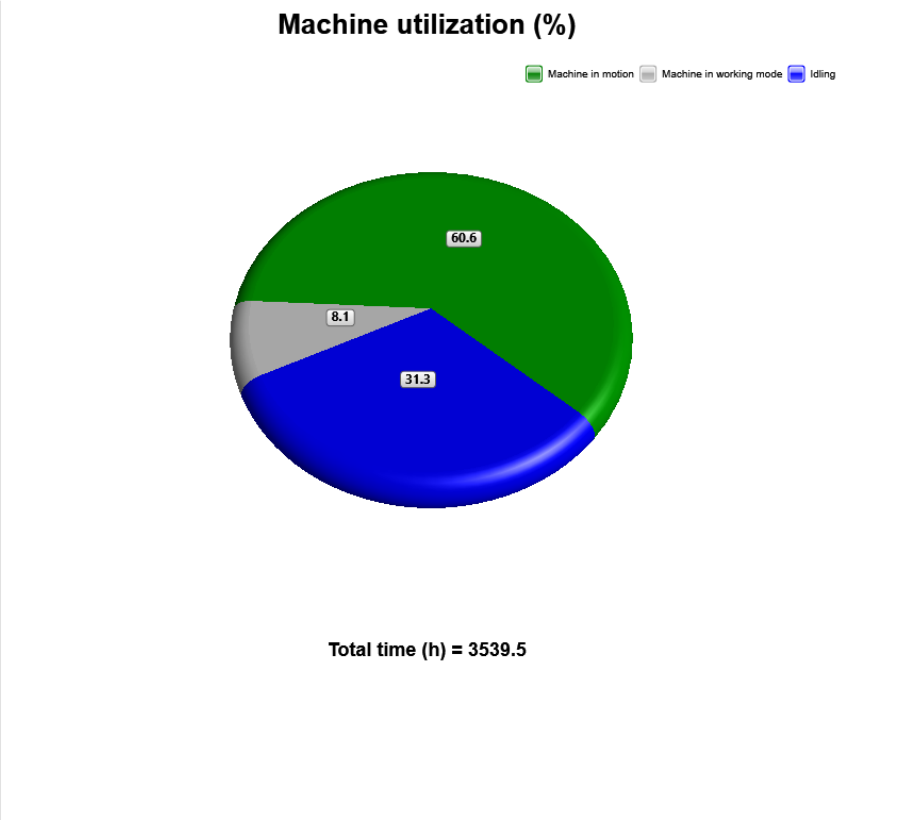
Site	Workorder	Ground Condition

MATRIS Reading, Summary / Recommendation

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



Definition:

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

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

Gear level position: Neutral, forward or reverse.

Green sector = Machine in motion.

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

Gear level position: Forward or reverse.

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

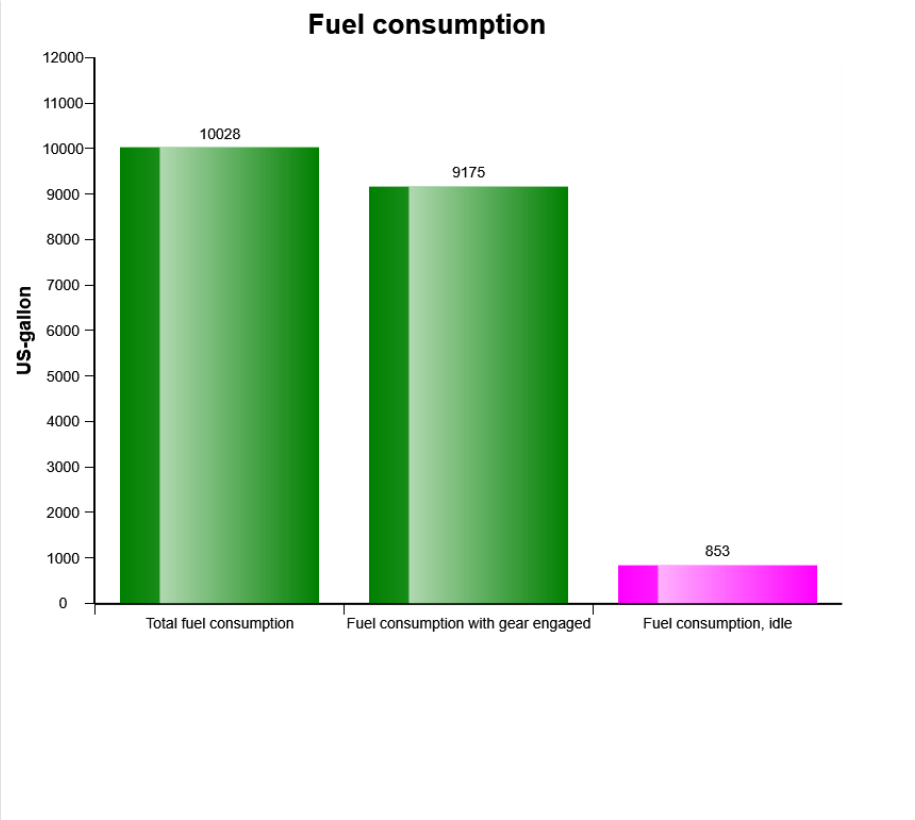
Grey sector = Engine in working mode.

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

Gear level position: Forward or reverse.

Typical application is loading and unloading of the bucket.

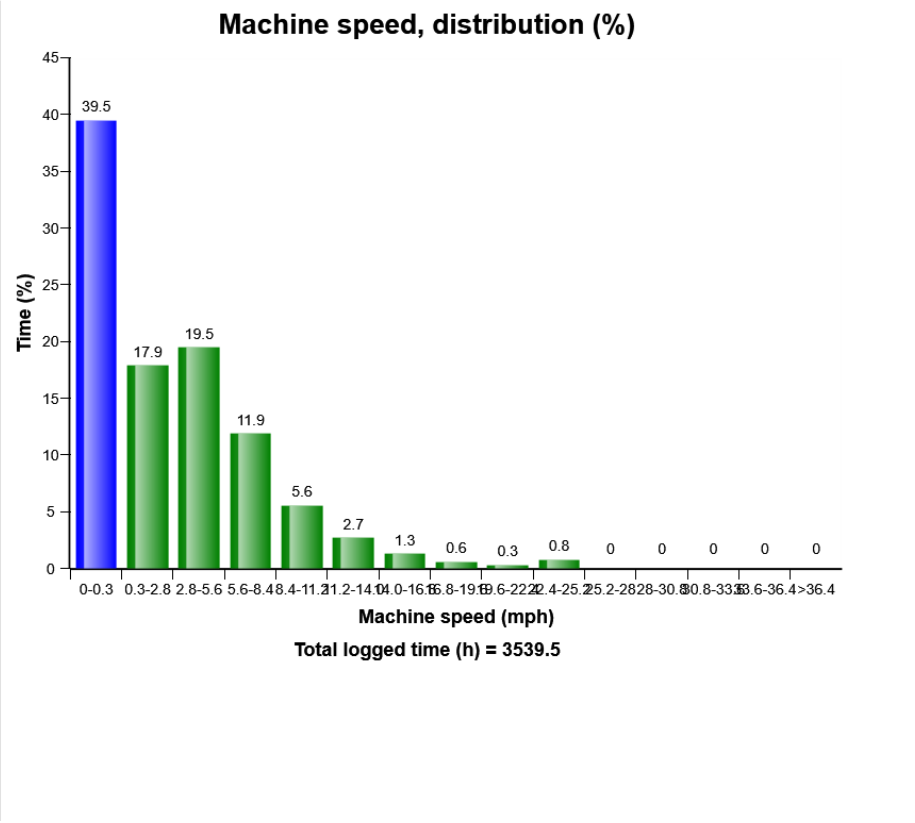
Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



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
L110H	631064	3274	04/12/2019



Definition:

This graph describes the machine speed distribution.

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

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

Explanation:

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

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

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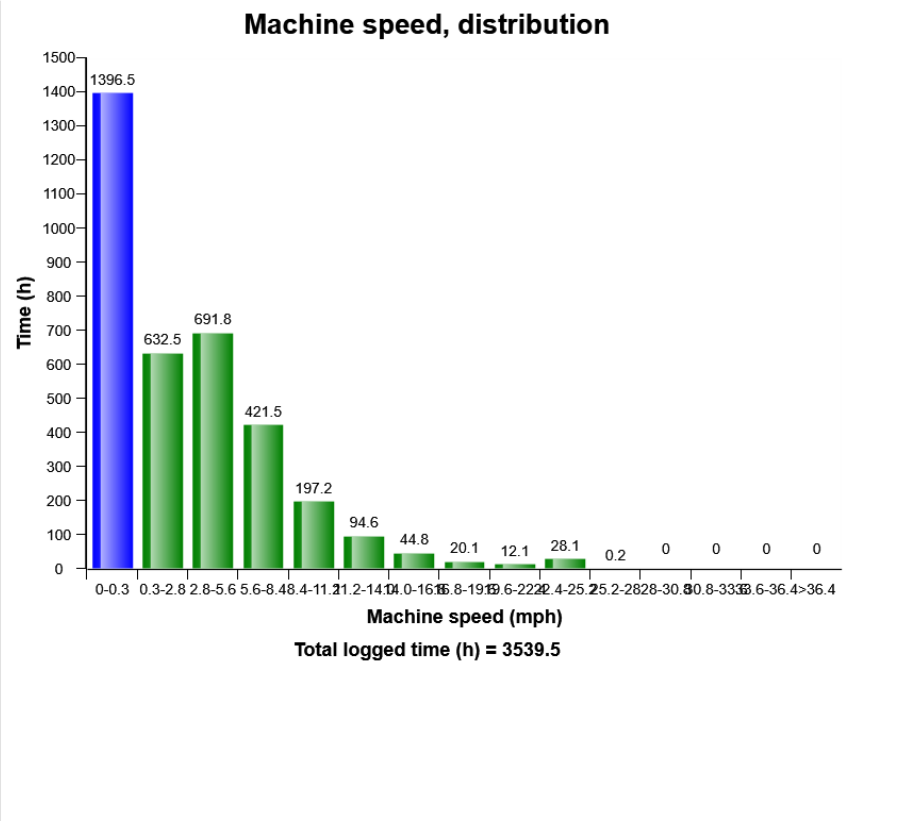
L110H	631064	3274	04/12/2019



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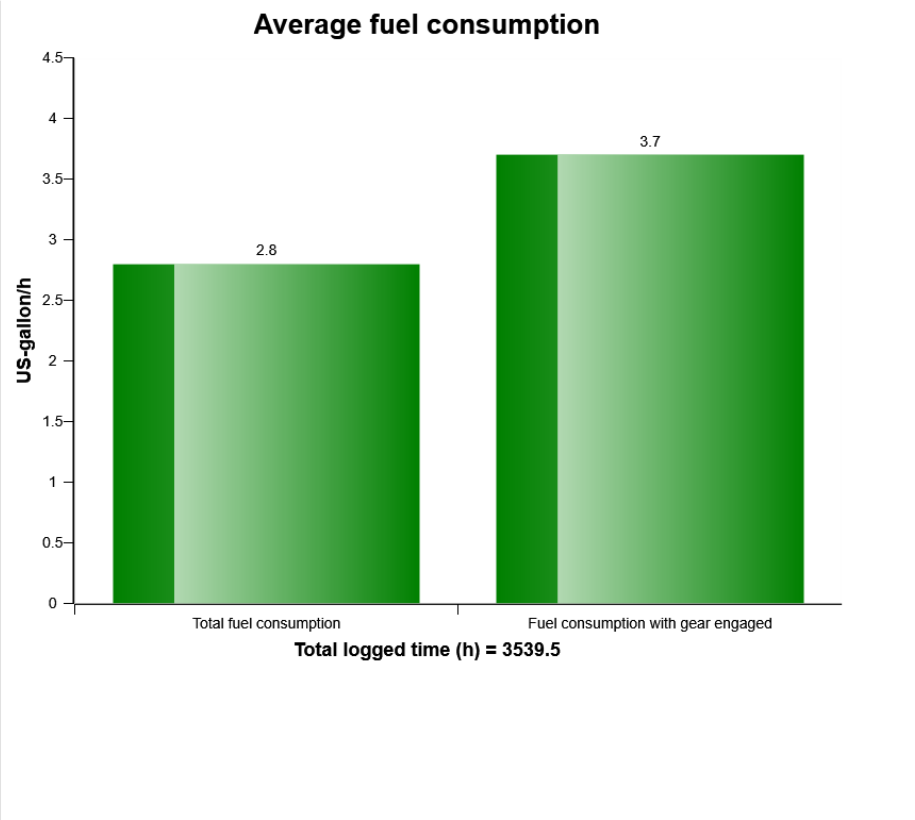

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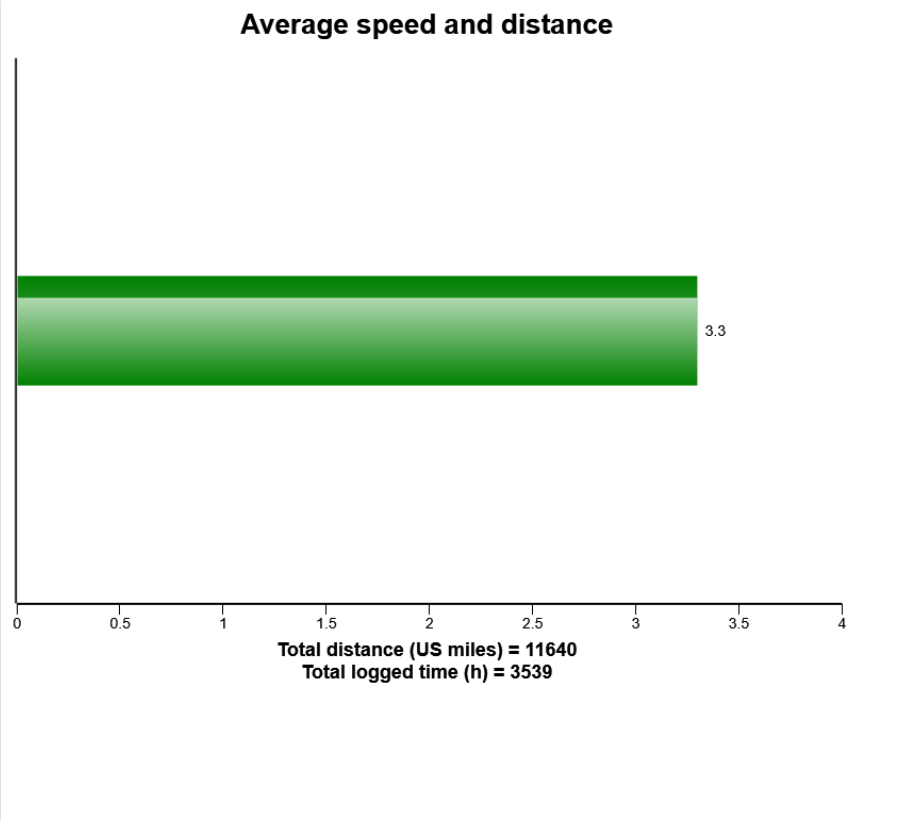

The diagram shows the machines average speed based on the total operating hours.

Machine model	SerialNo	Operating Hours	Reading Date
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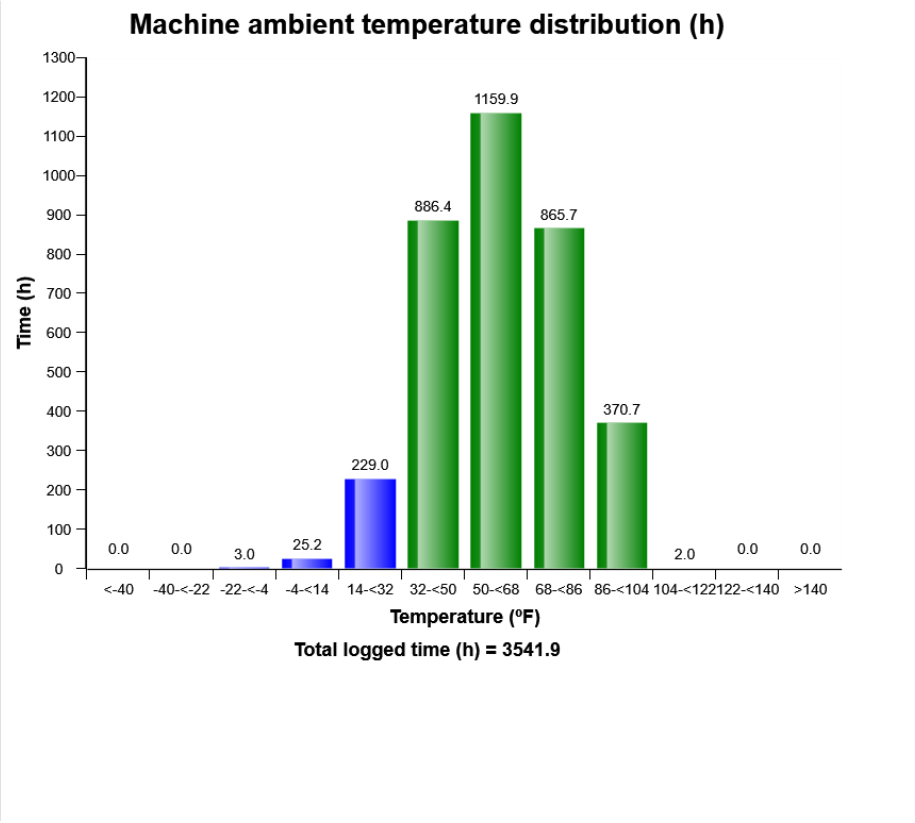
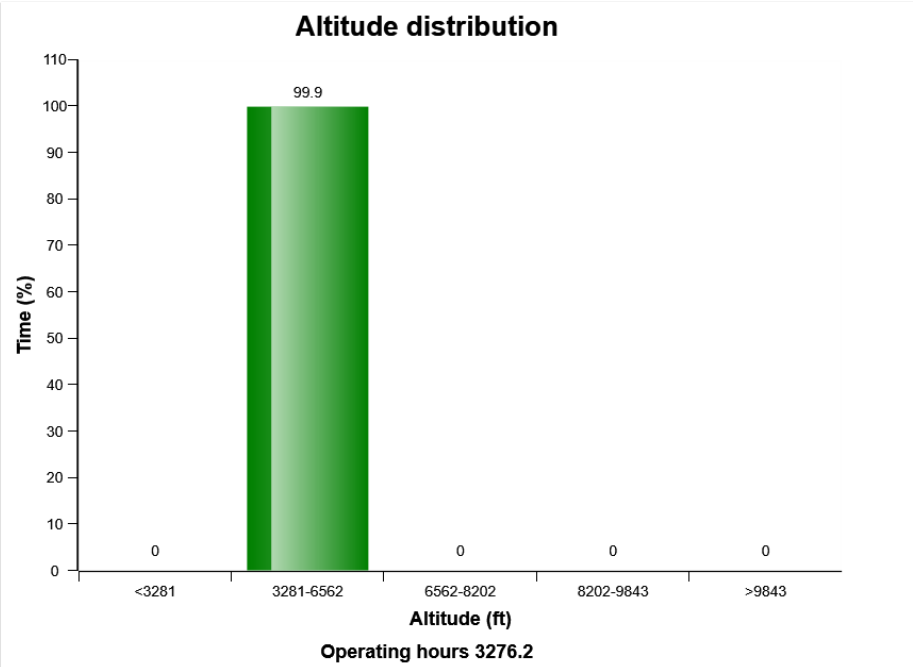


Definition:

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



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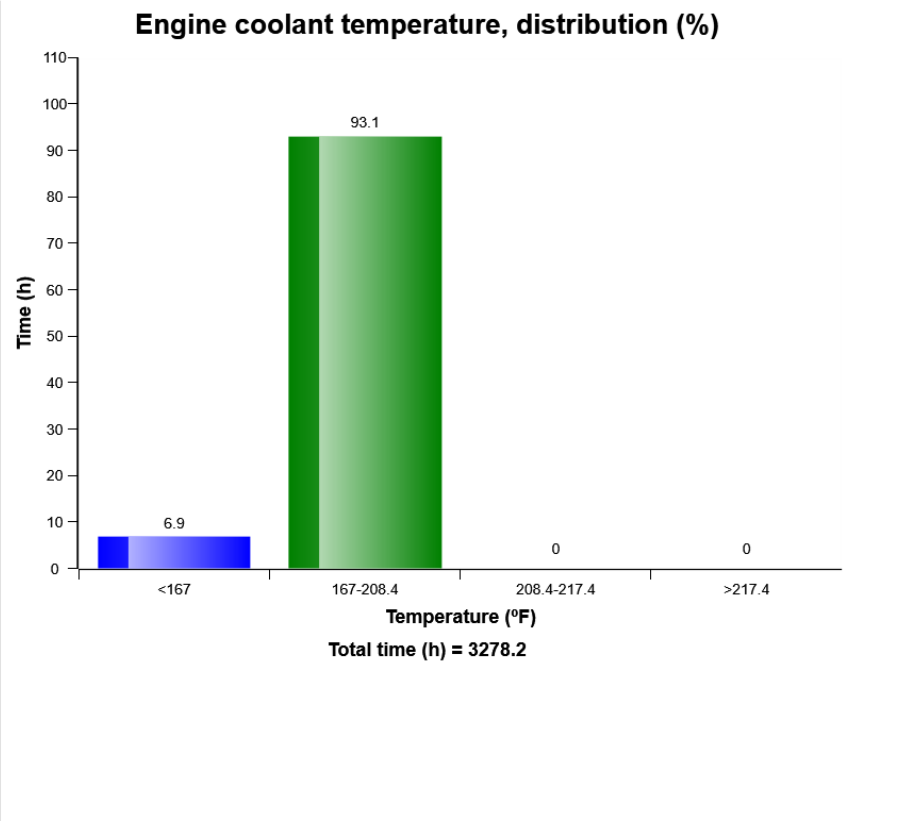


Definition:

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.

It is normal to have registrations in this region.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

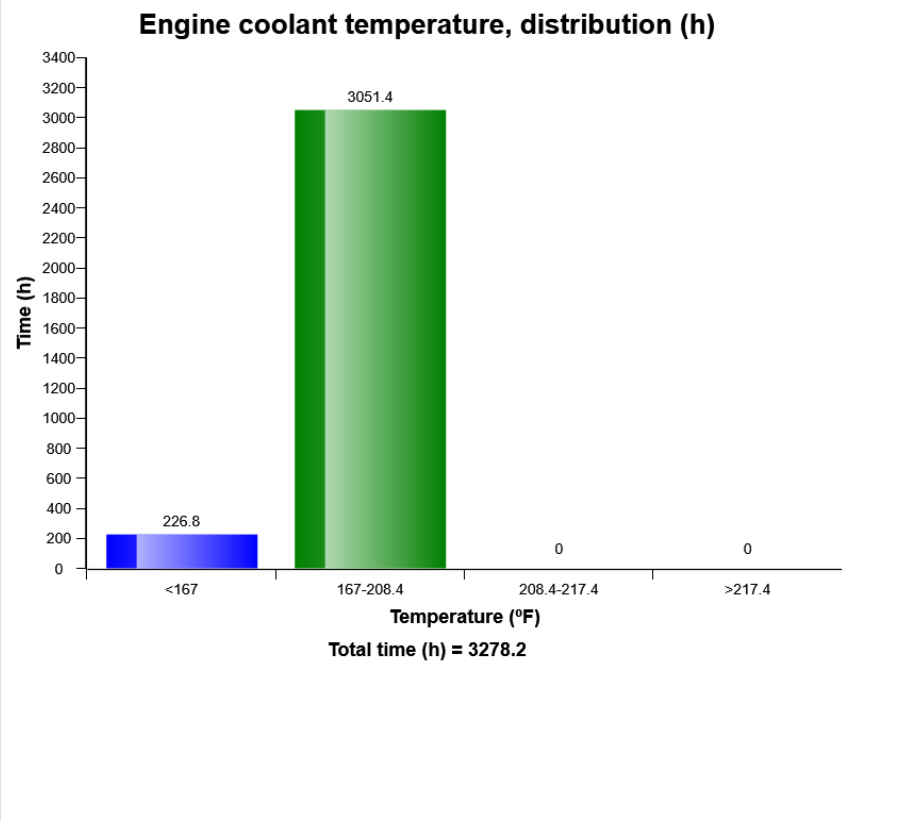
Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

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

Red bar = Alarm.

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



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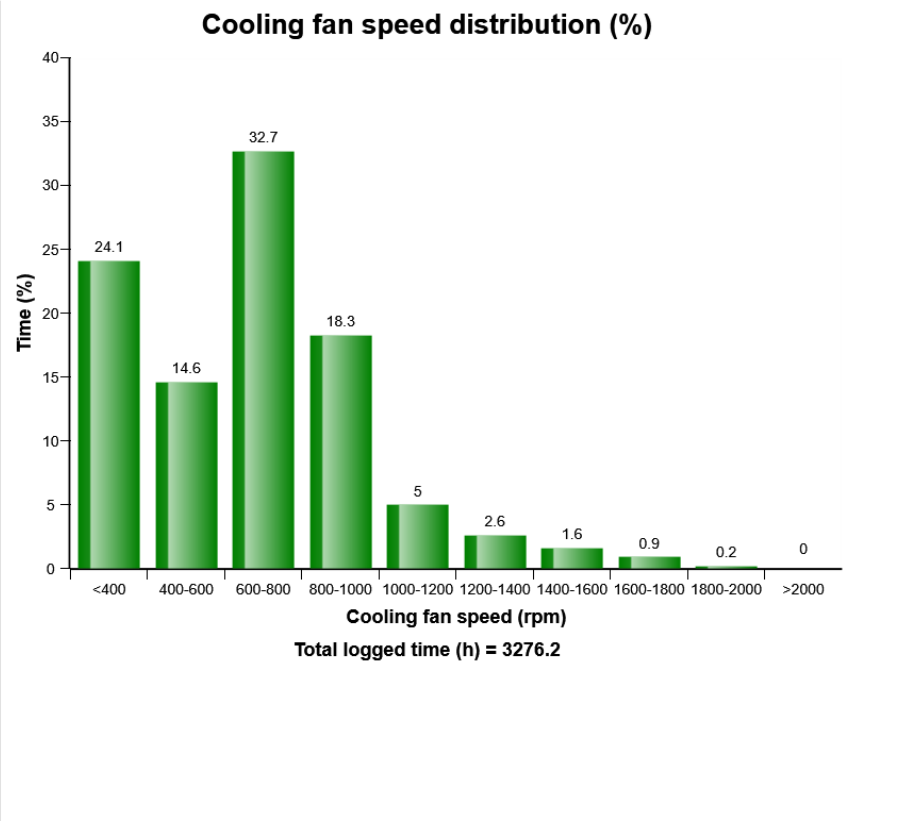

The diagram shows the time distribution for the cooling fan in different rpm ranges.

Machine model	SerialNo	Operating Hours	Reading Date
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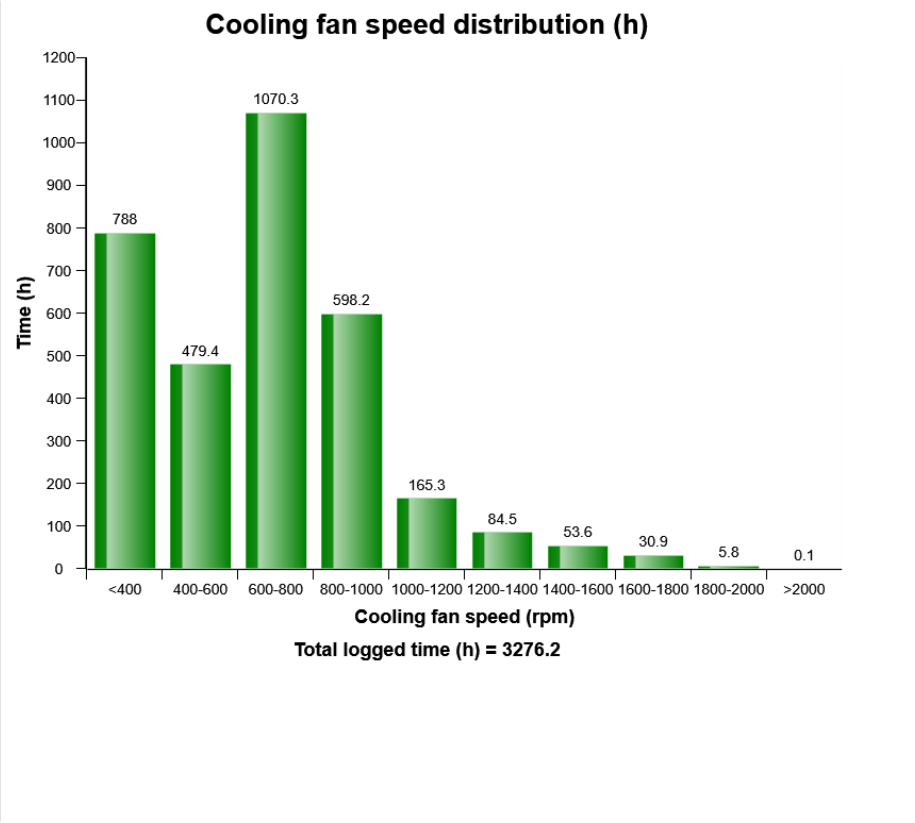

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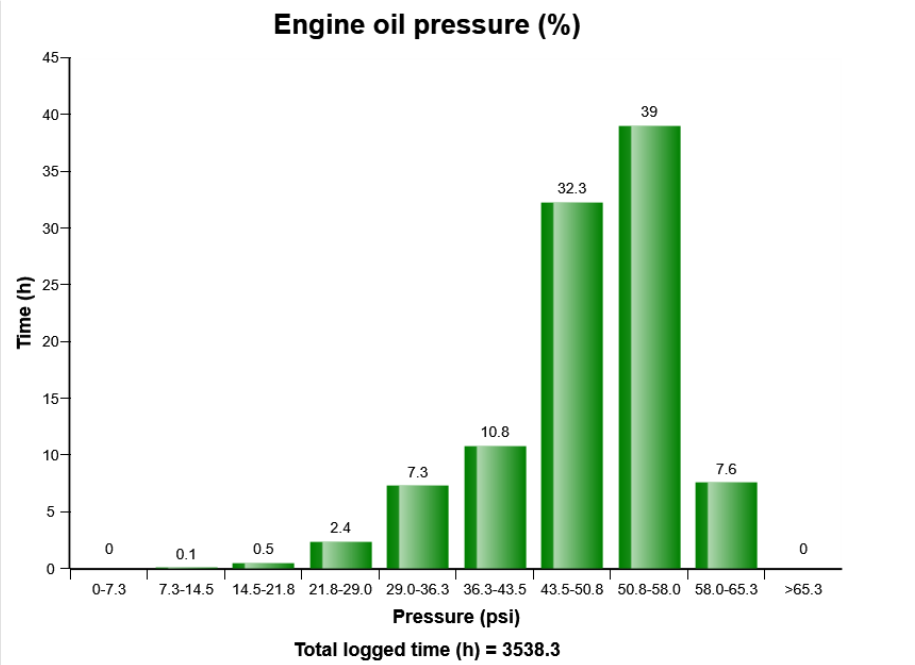

An error has occurred while processing HtmlTextBox 'htmlTextBox1':
The 'span' start tag on line 1 position 43 does not match the end tag of 'BR'. Line 1, position 168.

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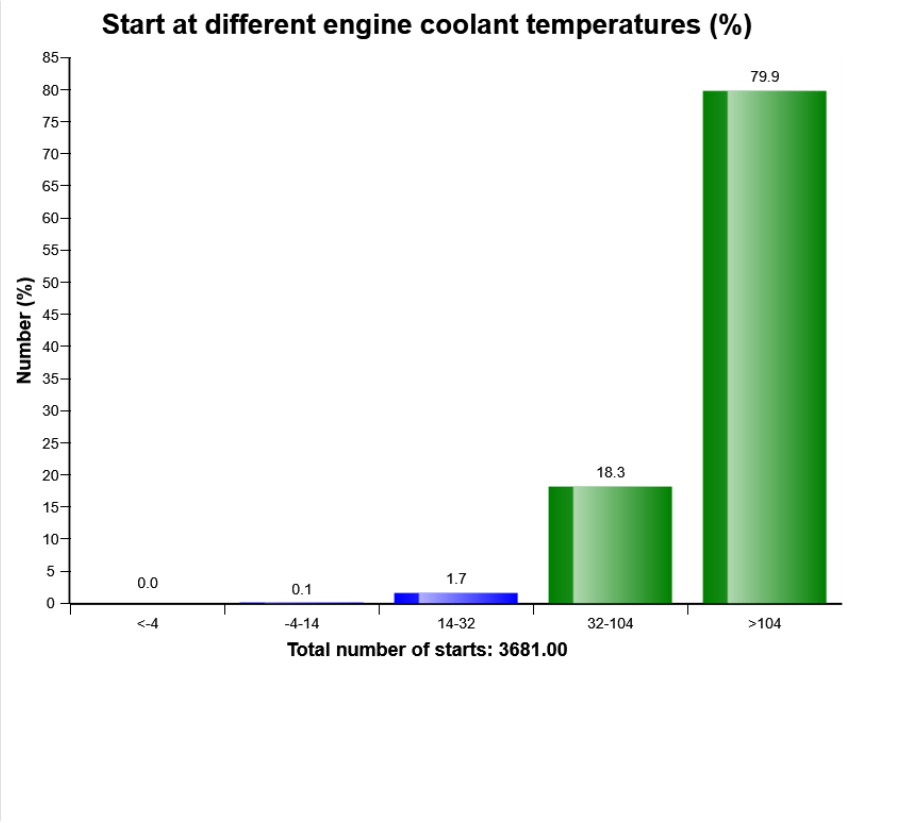
L110H	631064	3274	04/12/2019



Definition:

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

Explanation:

Y-axis: Number of engine starts

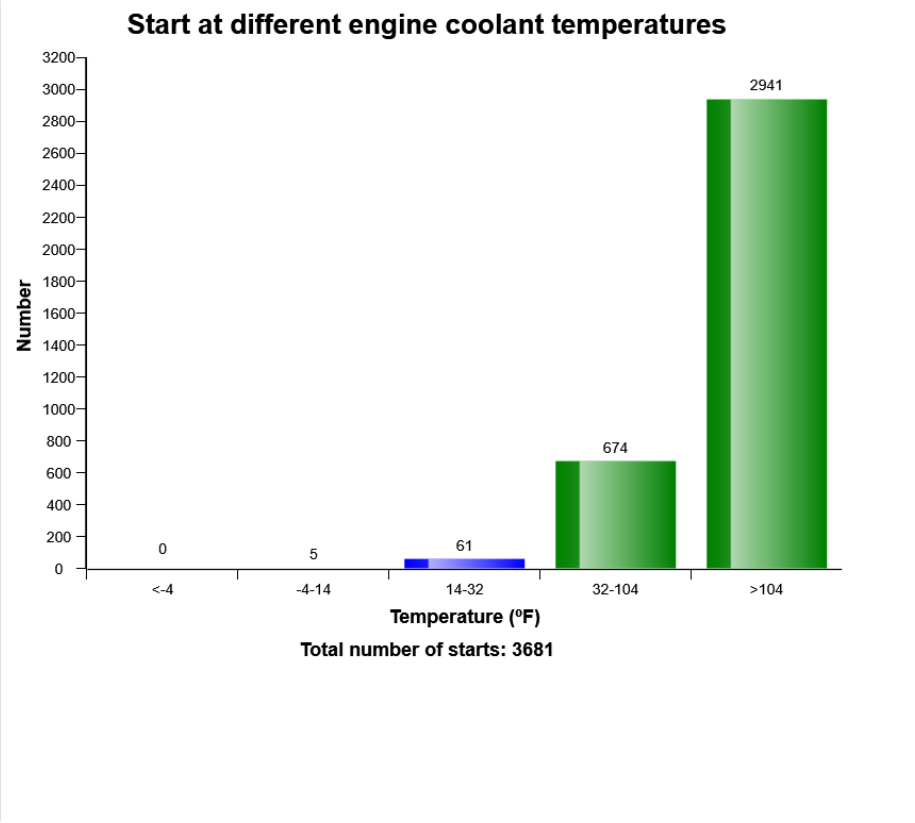
X-axis: Engine coolant temperature.

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
L110H	631064	3274	04/12/2019



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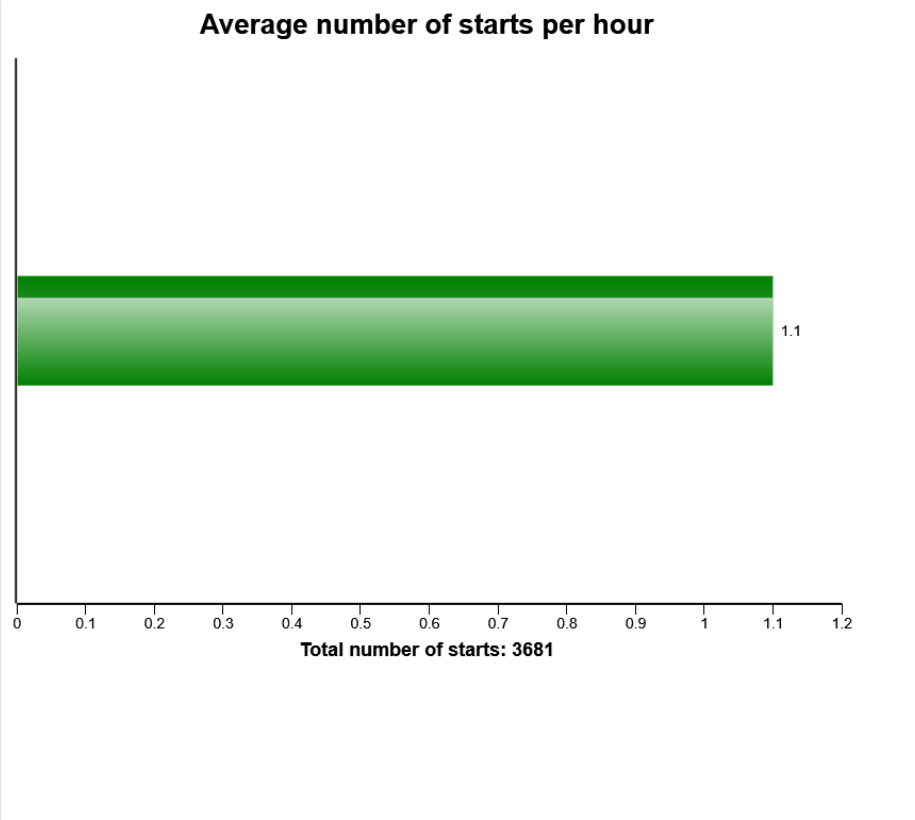

Definition:

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.

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

Green bar = Number of average starts per hour

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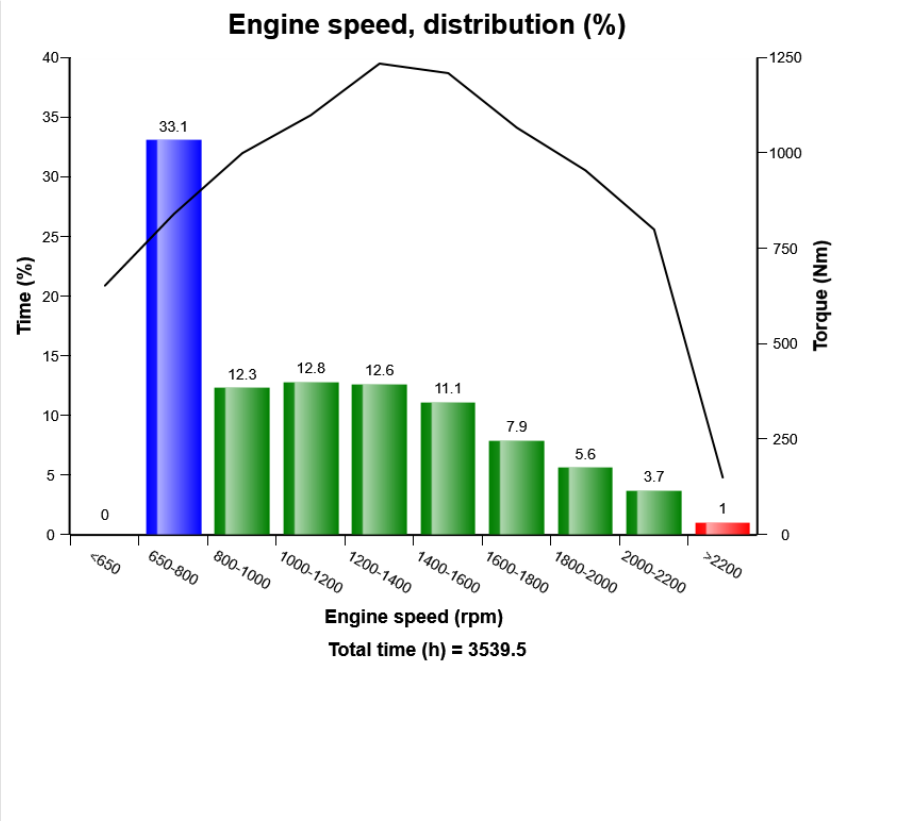


Definition:

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

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

Explanation:

Y-axis_1: Engine running time.

Y-axis_2: Torque (Nm)

X-axis: Engine speed in rpm.

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

Blue bar = Idling interval.

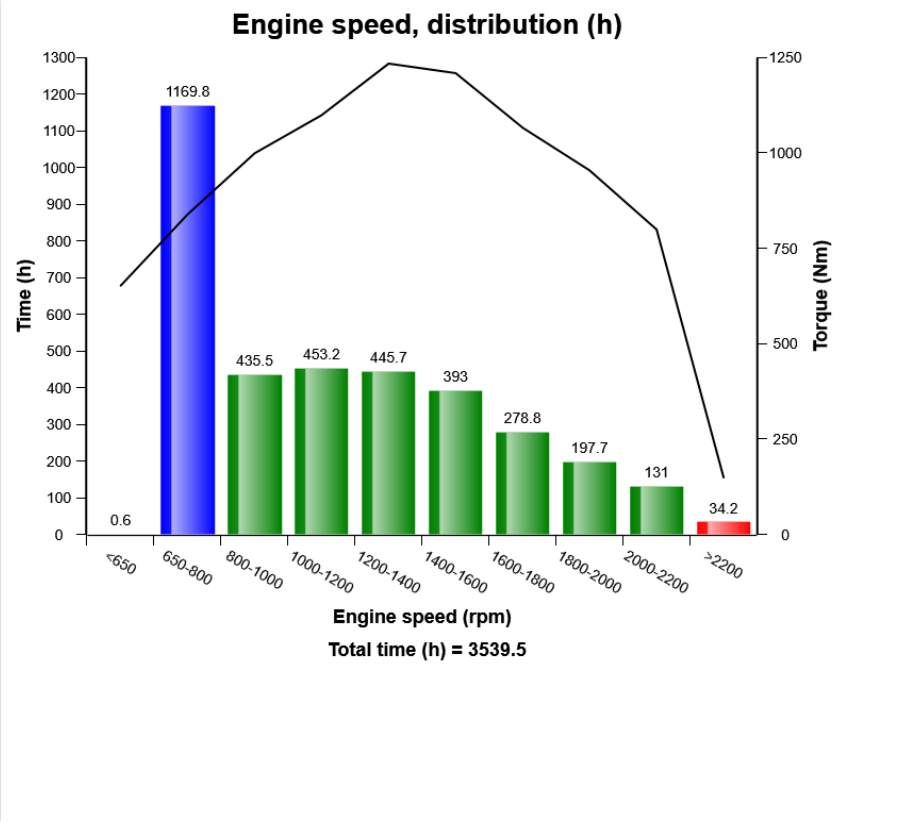
Green bars = Normal engine speed range.

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

Never exceed the maximum engine design speed .

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



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Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

Starter overheating
Total number of occurences = 7

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
1043	2017	6	28	18	10
1043	2017	6	28	18	10
1043	2017	6	28	18	9
2503	2018	7	20	13	5
2503	2018	7	20	13	1
2503	2018	7	20	13	1
2503	2018	7	20	13	1

Definition:

The starter can be damaged if it is overheated.

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

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
L110H	631064	3274	04/12/2019

Low Engine Oil Pressure
Total number of occurences = 221

	Op hours	Year	Month	Day	Hour	Minute	Duration (seconds)
*	511	2016	11	16	4	37	49
*	511	2016	11	16	4	39	365
*	511	2016	11	16	4	48	281
*	511	2016	11	16	4	57	262
*	511	2016	11	16	5	3	265
*	512	2016	11	16	8	9	88
*	512	2016	11	16	5	12	232
*	512	2016	11	16	5	19	240
*	512	2016	11	16	7	53	233
*	512	2016	11	16	8	12	98
*	512	2016	11	16	8	39	32
*	512	2016	11	16	9	13	74
*	512	2016	11	16	9	16	1
*	512	2016	11	16	9	30	56
*	512	2016	11	16	9	36	32
*	513	2016	11	16	9	53	0
*	513	2016	11	16	10	28	113
*	513	2016	11	16	9	55	115
*	513	2016	11	16	9	39	135
*	513	2016	11	16	9	59	2

Definition :

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

Extreme (psi)
11603
9282
6962
9863
9282
11023
9863
10443
9863
11023
11023
11023
22626
16824
15664
25527
9863
11603
13924
20305

and minute to show when an event has occurred.

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

Only one event per minute is registered.

Over the table the total number of events is displayed

Duration :

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

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

Extreme value :

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

Criteria :

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

Regeneration aborted
Total number of occurences = 6573

	Op hours	Year	Month	Day	Hour	Minute
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42
*	264	2016	7	19	9	42

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

Reason
0
0
0
0
0
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0
0
0
0
0
0

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

Regeneration ignored
Total number of occurences = 14

	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
*	261	2016	7	18	14	59
*	262	2016	7	18	15	38
*	263	2016	7	19	8	45
*	263	2016	7	19	7	43
*	264	2016	7	19	9	37
*	443	2016	10	20	9	42
*	515	2016	12	19	15	47
*	516	2016	12	20	13	34
*	1071	2017	7	11	13	7
*	1480	2017	9	20	10	17
*	1481	2017	9	20	11	7
*	1704	2017	11	2	13	33
*	1857	2018	1	30	14	30
*	2602	2018	8	10	12	2

An error has occurred while processing HtmlTextBox 'ExplanationTxb':
The 'span' start tag on line 1 position 43 does not match the end tag of 'BR'. Line 1, position 153.

Duration (min)
0
0
0
0
0
0
34
47
46
22
5
47
40
63
50
47
27
47
48
3

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

Regeneration duration
Total number of occurences = 14

	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
*	262	2016	7	18	15	0
*	263	2016	7	19	7	56
*	263	2016	7	18	16	10
*	264	2016	7	19	8	59
*	443	2016	10	20	9	42
*	515	2016	12	19	15	47
*	516	2016	12	20	13	34
*	1071	2017	7	11	13	8
*	1480	2017	9	20	10	17
*	1704	2017	11	2	13	33
*	1857	2018	1	30	14	30
*	2047	2018	4	12	15	50
*	2602	2018	8	10	12	6
*	2991	2019	5	6	8	46

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Duration (min)
0
0
0
0
0
0
43
8
15
43
46
40
47
49
47
47
48
48
47
47

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

High engine coolant temperature
Total number of occurences = 0

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

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.

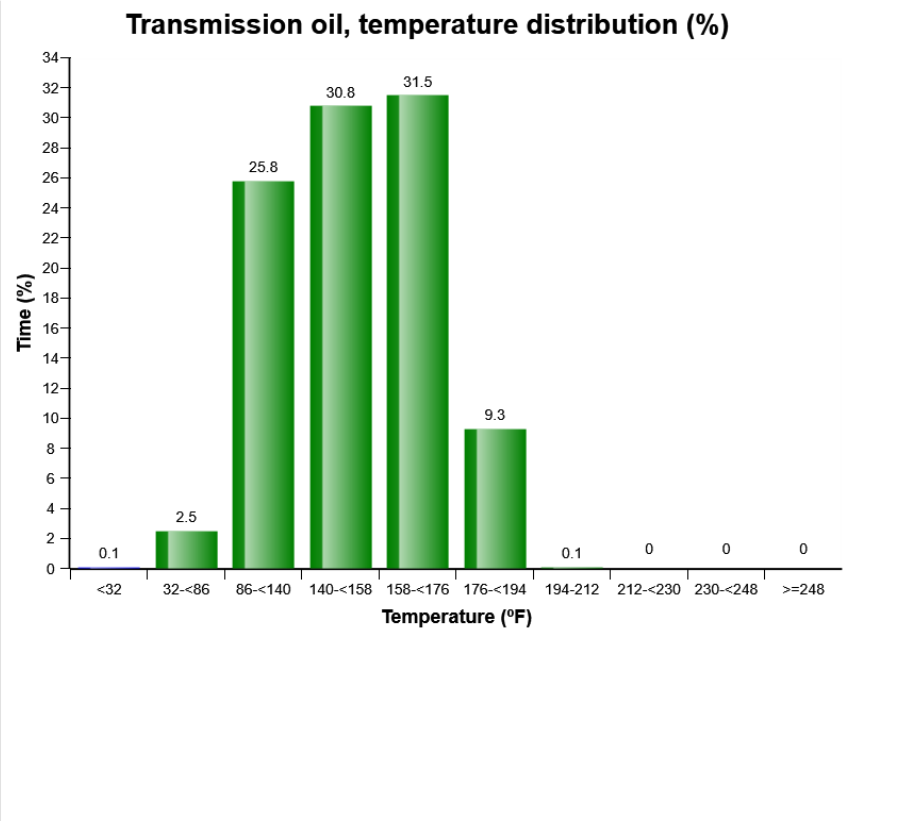
Extreme value :

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
L110H	631064	3274	04/12/2019



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

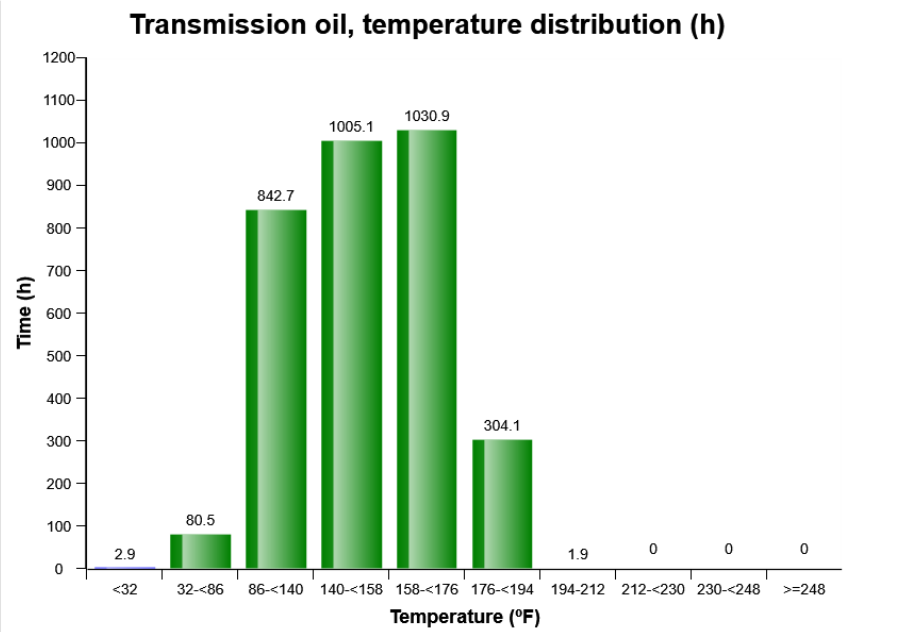
>248ºF Temperatures over 248ºF

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
L110H	631064	3274	04/12/2019



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

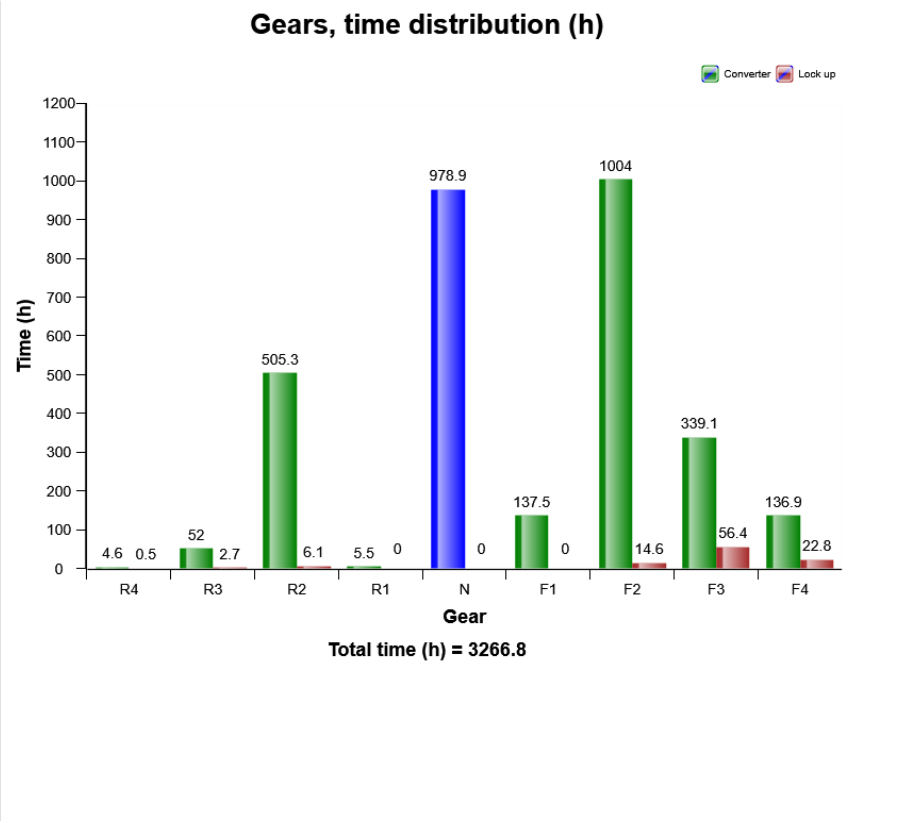
>248ºF Temperatures over 248ºF

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
L110H	631064	3274	04/12/2019



Definition:

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

The sum of all bars = Total engine running time.

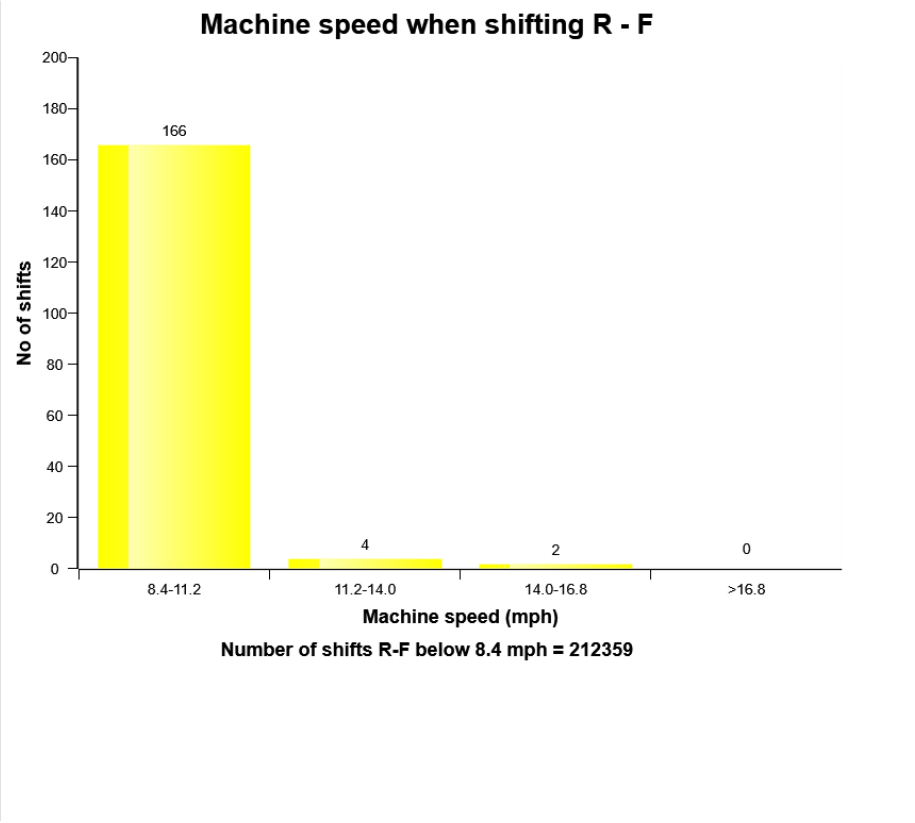
Under the graph the total engine running time (in hours) is displayed.

Explanation:

Y-axis: Engine running time, in hours.

X-axis: Active gear.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



Definition:

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

Explanation:

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

X-axis: Machine speed in mph.

Under the graph the total number of directional gear shifts R-F below 8,4 mph is displayed. Below the diagram the total number of gearshifts is displayed.

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

Yellow bar = From 8.4 mph to 11.2 mph

Red bar = From 11.2 mph to 14.0 mph

Red bar = From 14.0 mph to16.8 mph

Red bar = Over 16.8 mph

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

Transmission oil temperature high
Total number of occurences = 0

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

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.

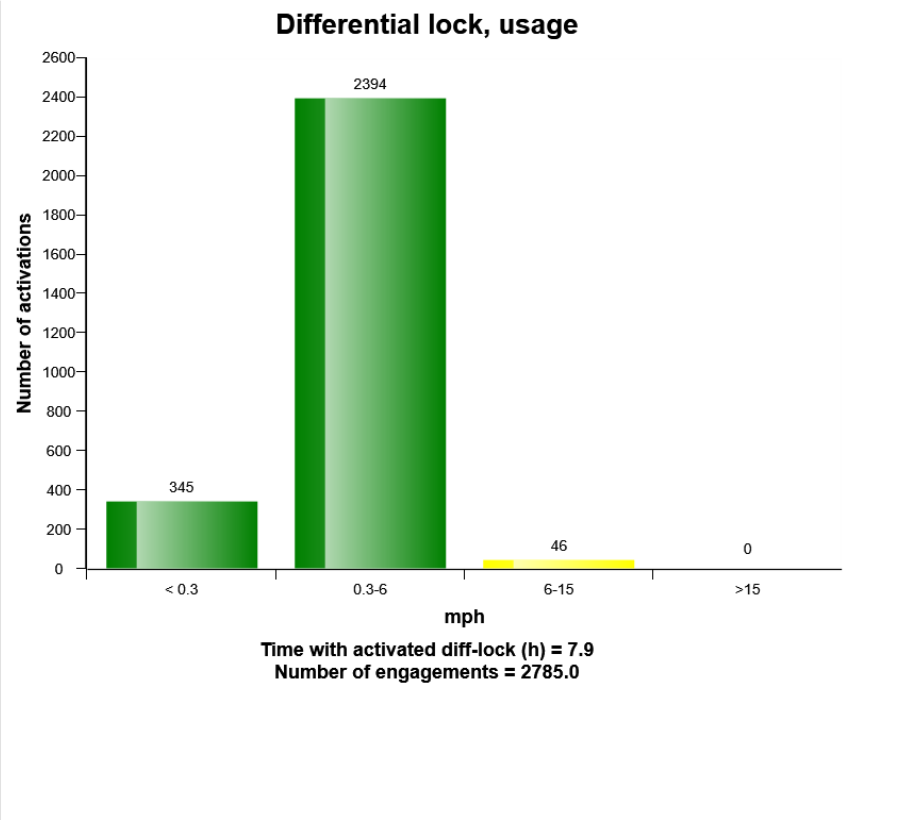
Extreme value :

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

Criteria :

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

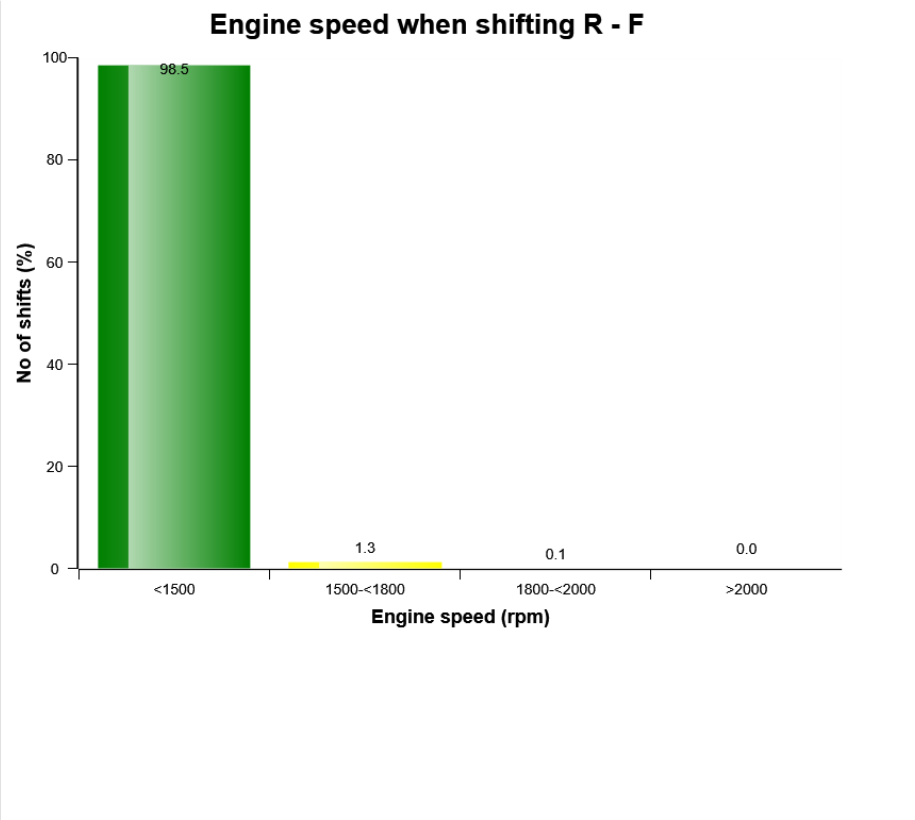
Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



Definition:

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



Definition:

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

Explanation:

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

X-axis: Machine speed in km/h.

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

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

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

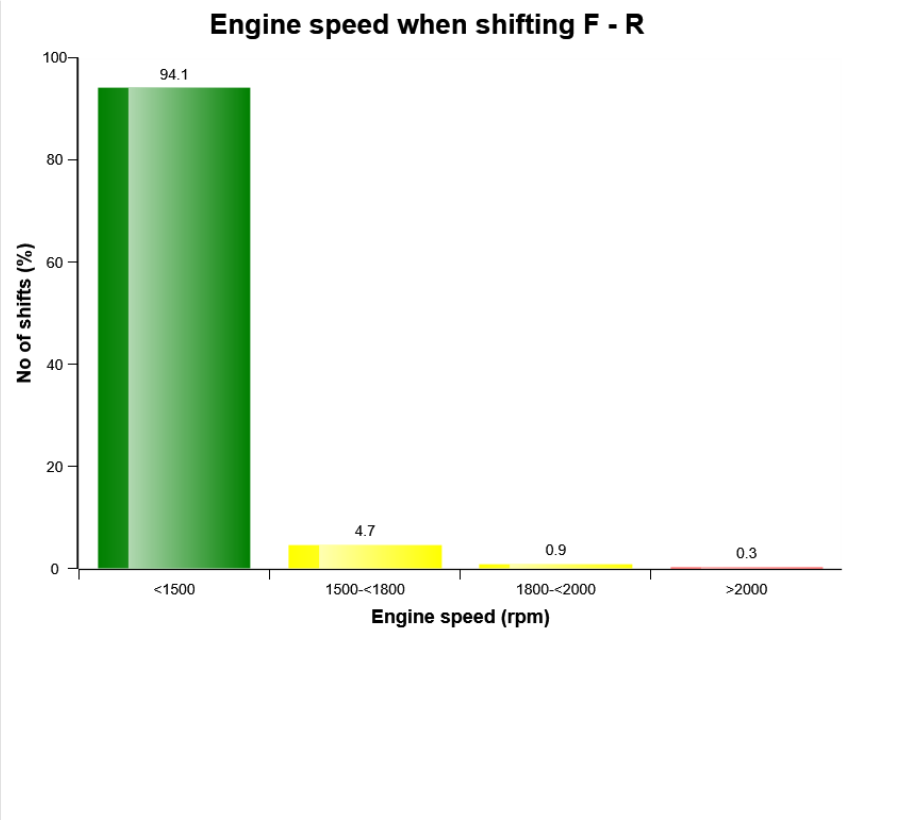
Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

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

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

Red bar = Over 27 km/h

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



Definition:

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

Explanation:

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

X-axis: Machine speed in km/h.

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

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

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

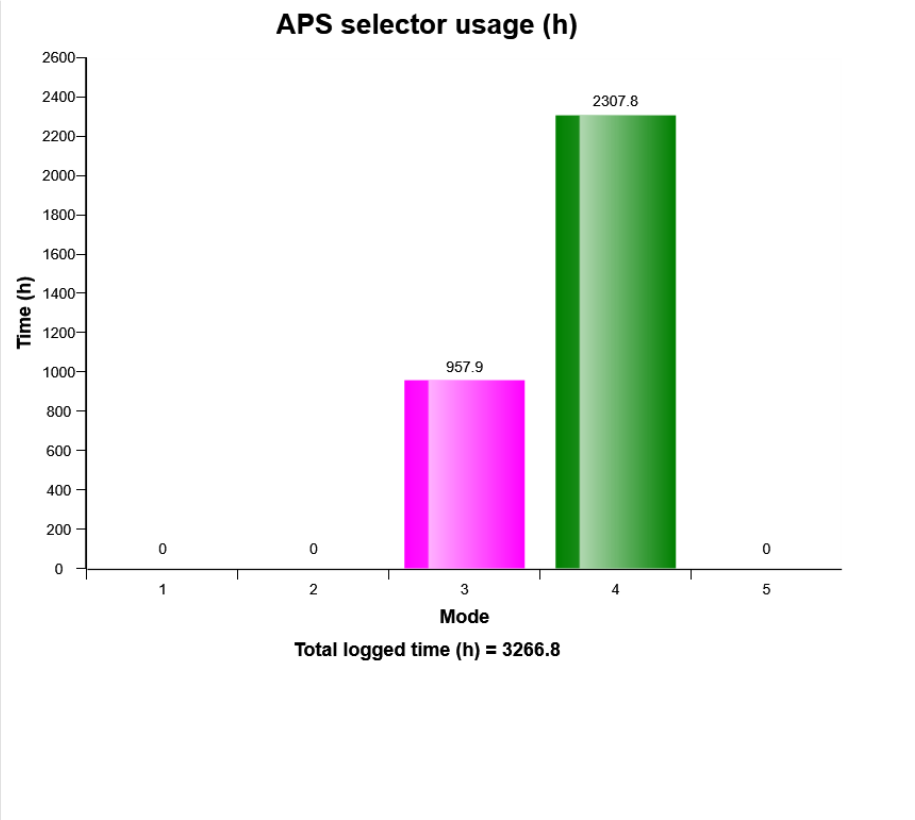
Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

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

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

Red bar = Over 27 km/h

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



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

For WLO :

Mode1 = Light

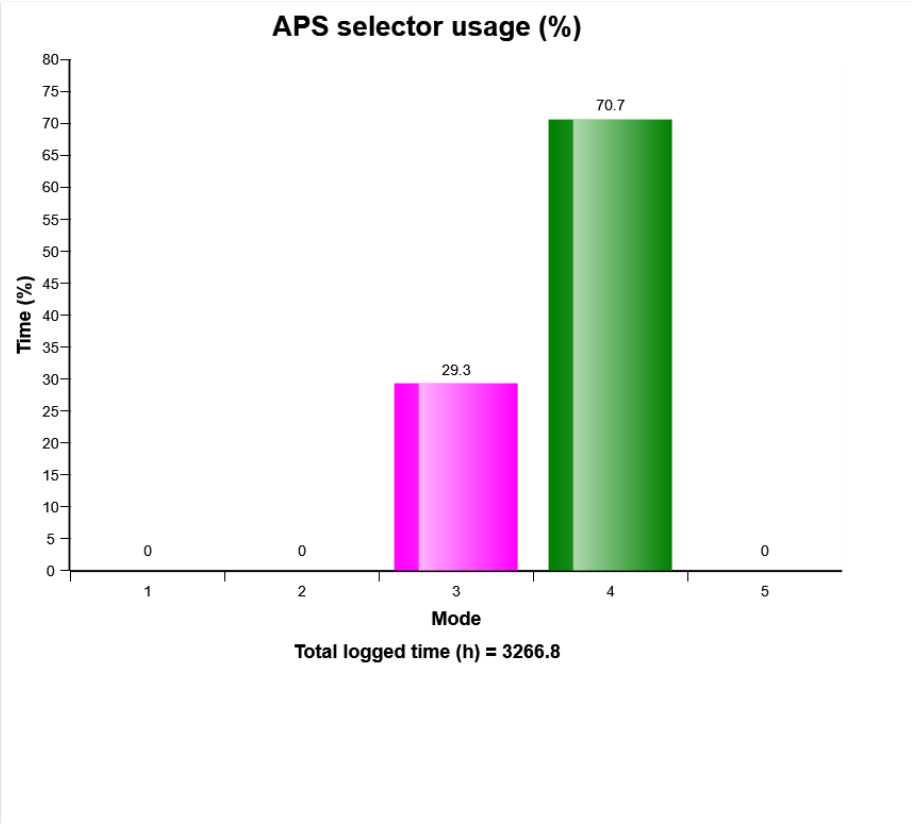
Mode2 = Normal

Mode3 = Heavy

Mode4 = Auto

Mode5 = Service.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



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

For WLO :

Mode1 = Light

Mode2 = Normal

Mode3 = Heavy

Mode4 = Auto

Mode5 = Service.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

Transmission oil pressure low
Total number of occurences = 1

0	Year	Month	Day	Hour	Minute	Duration (seconds)	Extreme (psi)
0	2016	12	19	17	22	8	25
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0

Definition :

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

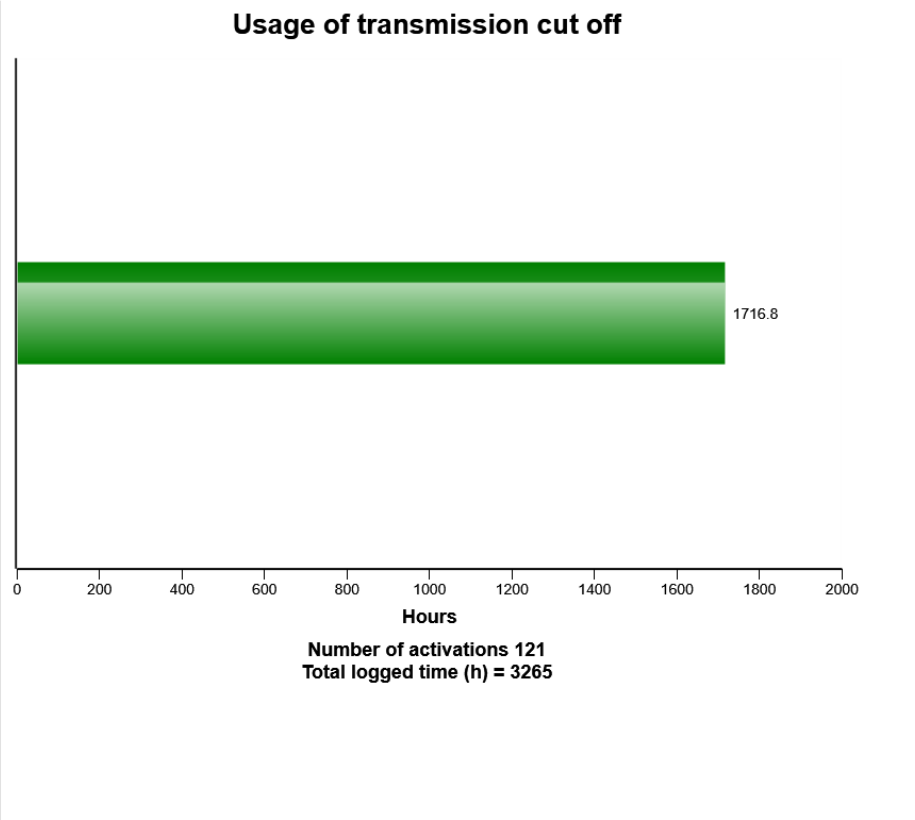
Extreme value :

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.”

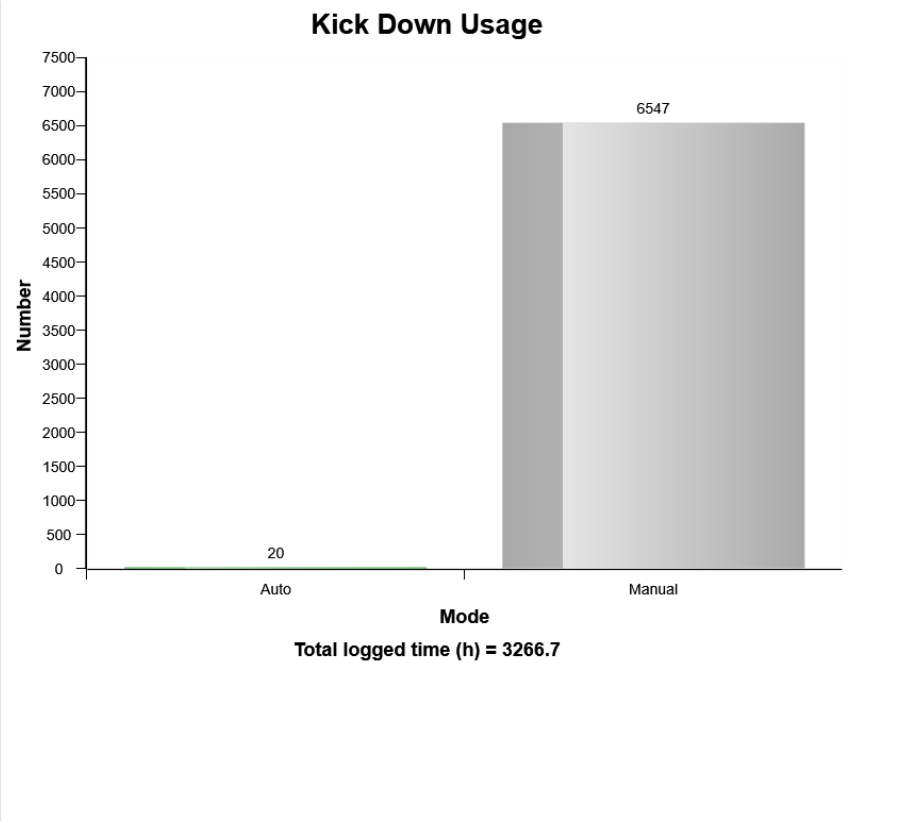
Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



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

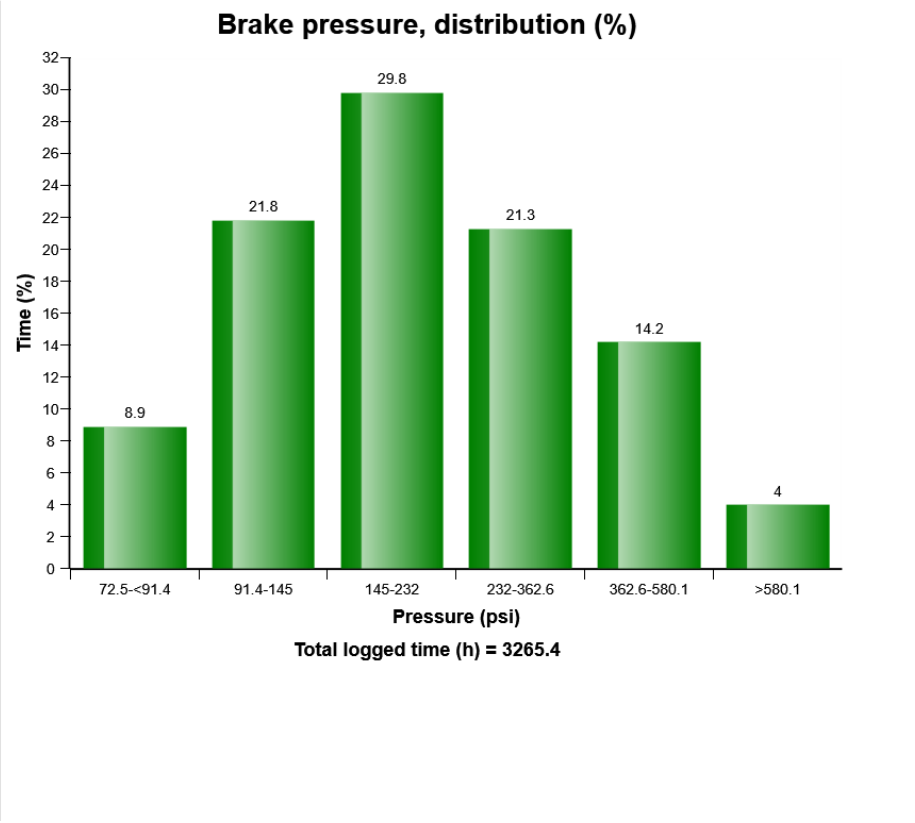
Below the diagram total number of activations is presented.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



Definition:

The graph describes the brake pressure distribution.

The sum of bars=100% of brake engagements.

Explanation:

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

X-axis: Brake pressure distribution in bar.

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

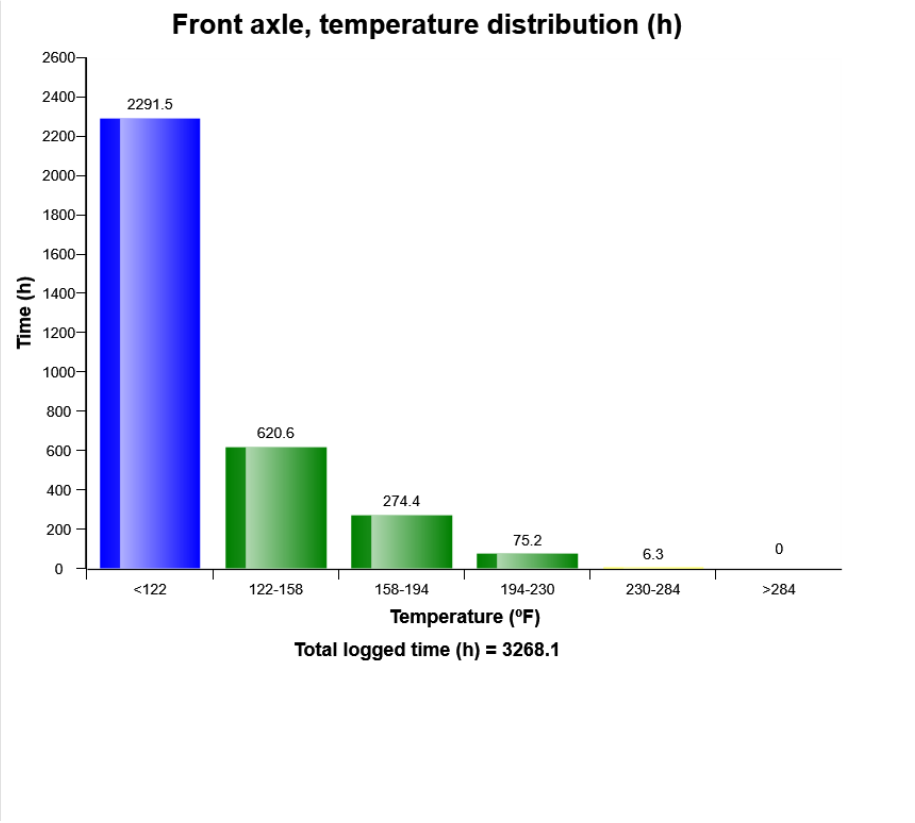
A concentration in the highest range indicates that the machine is operated hard and in an inefficient

manner.

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

Green bars = Brake pressure ranges

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



Definition:

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

Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

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

It is normal to have registrations in this region.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

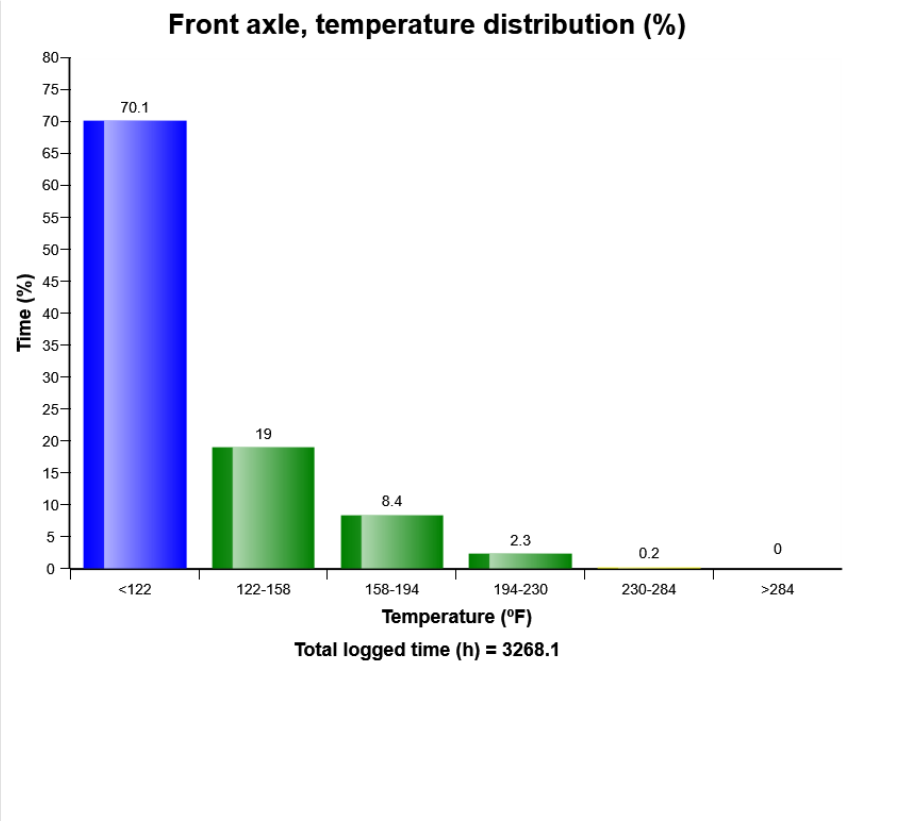
Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

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

Red bar = Alarm.

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



Definition:

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

Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

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

It is normal to have registrations in this region.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

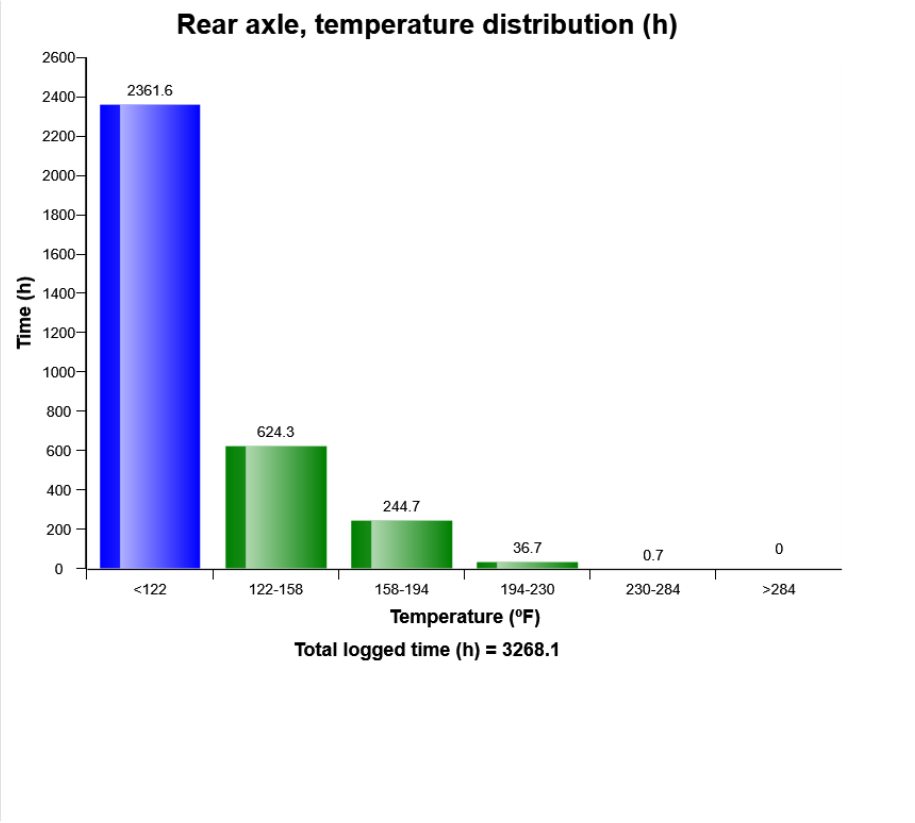
Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

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

Red bar = Alarm.

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



Definition:

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

Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

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

It is normal to have registrations in this region.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

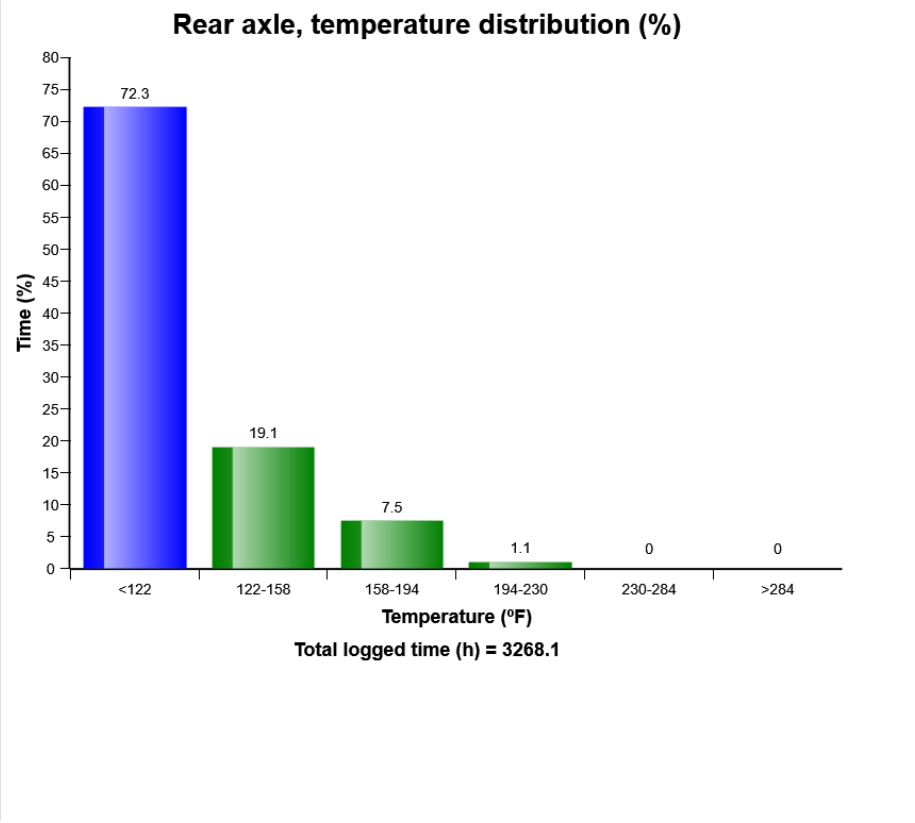
Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

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

Red bar = Alarm.

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



Definition:

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

Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

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

It is normal to have registrations in this region.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

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

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

Red bar = Alarm.

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

Parking brake usage
Total number of occurences = 8112

Op hours	Year	Month	Day	Hour	Minute	Duration (minutes)
0	2019	11	29	13	42	15
0	2019	11	29	12	54	1
0	2019	11	29	12	25	1
0	2019	11	26	13	48	0
0	2019	11	26	13	18	23
0	2019	11	26	13	8	4
0	2019	11	26	13	1	2
0	2019	12	4	10	29	0
0	2019	12	4	9	31	0
0	2019	12	4	9	29	0
0	2019	12	3	16	42	1
0	2019	12	3	16	34	0
0	2019	12	3	8	48	0
0	2019	12	2	16	29	1
0	2019	12	2	16	23	0
0	2019	12	2	16	19	1
0	2019	12	2	14	34	1
0	2019	11	29	13	58	4
0	2019	11	29	12	58	18
0	2019	11	29	13	16	1

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

Parking brake abuse
Total number of occurences = 1

Op hours	Year	Month	Day	Hour	Minute	Duration (seconds)	Extreme (km/h)
0	2019	10	31	17	11	0	3
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0

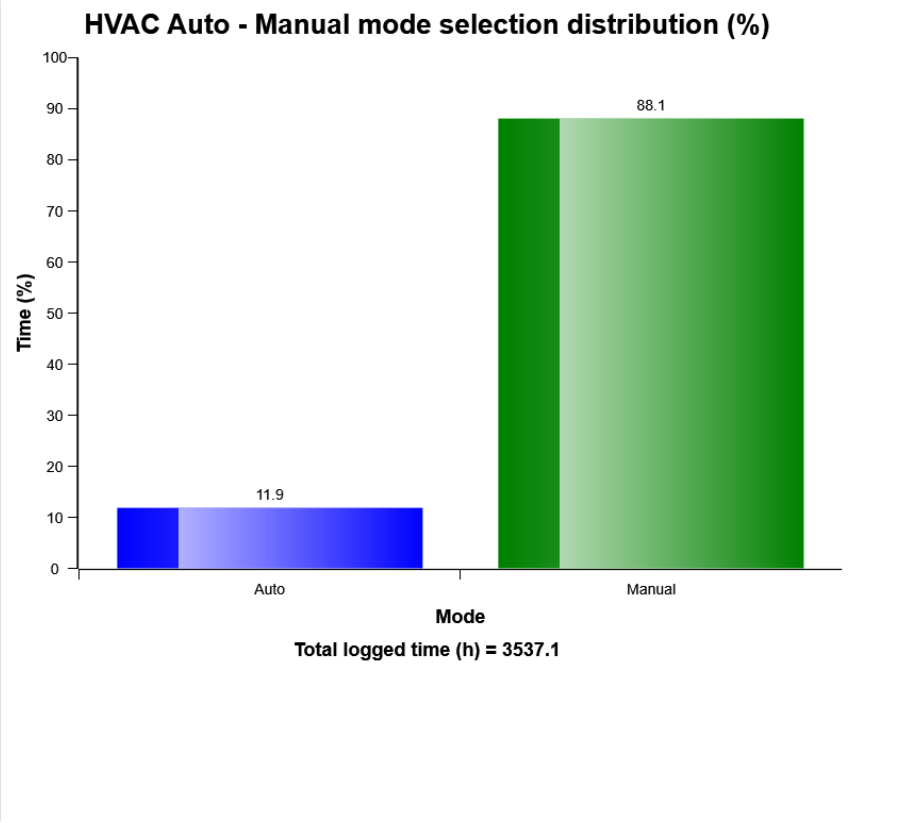
Definition : This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating hours is displayed in the first column, followed by year, month , day , hour and minute to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

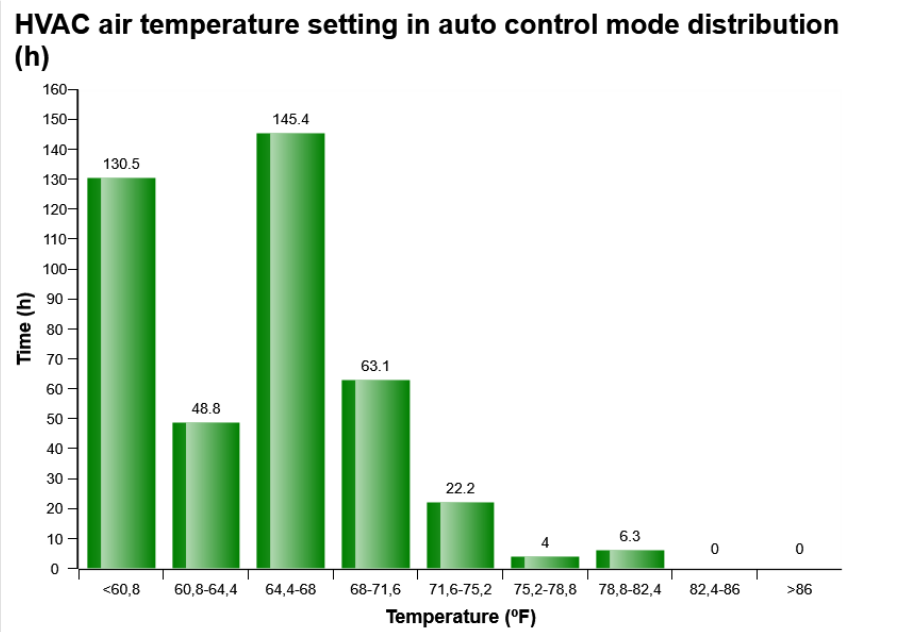
Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



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.

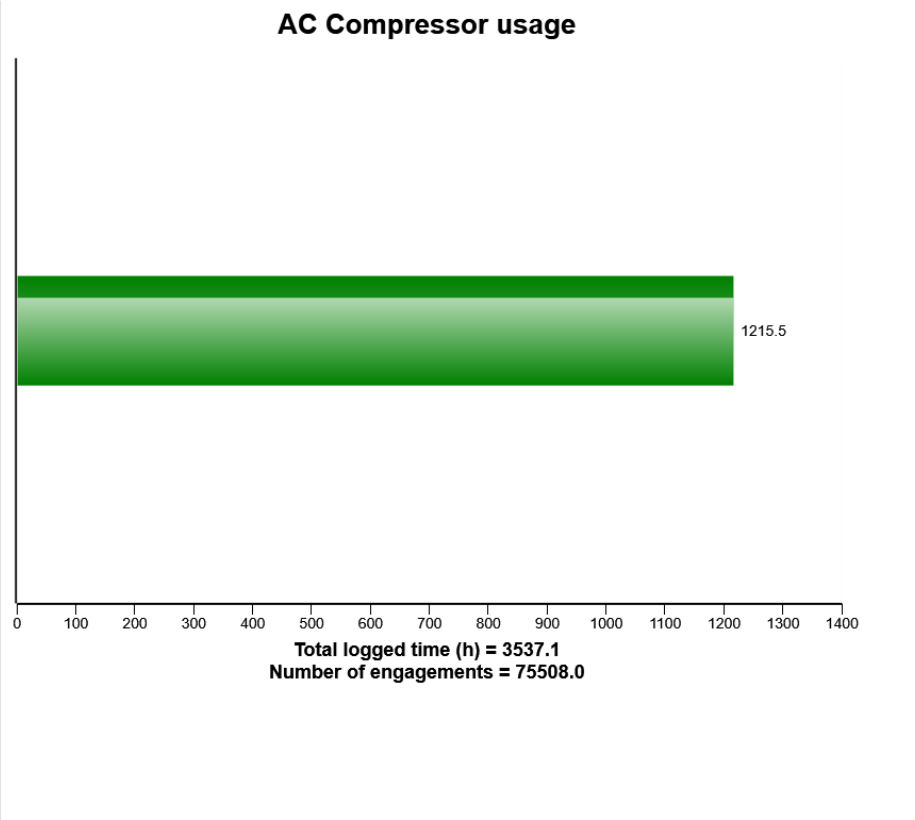
Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



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
L110H	631064	3274	04/12/2019



Definition:

The graph shows the total time of AC compressor engagement.

Explanation:

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

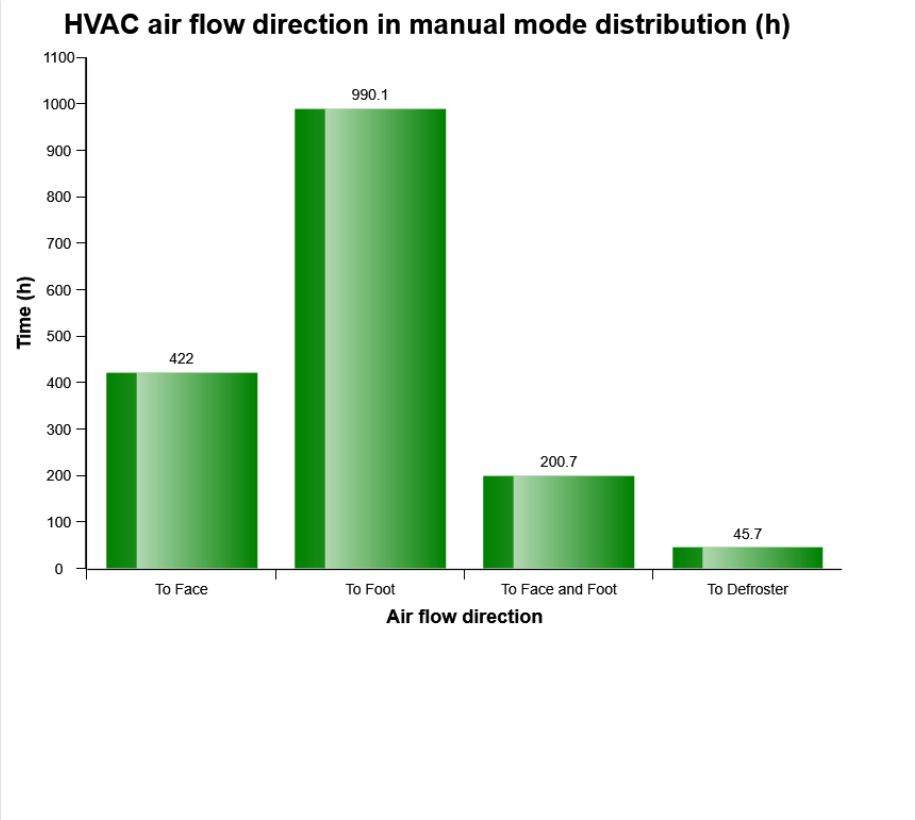
Under the graph the total engine running time (in hours) is displayed.

Total number of AC compressor activations is also displayed.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

-

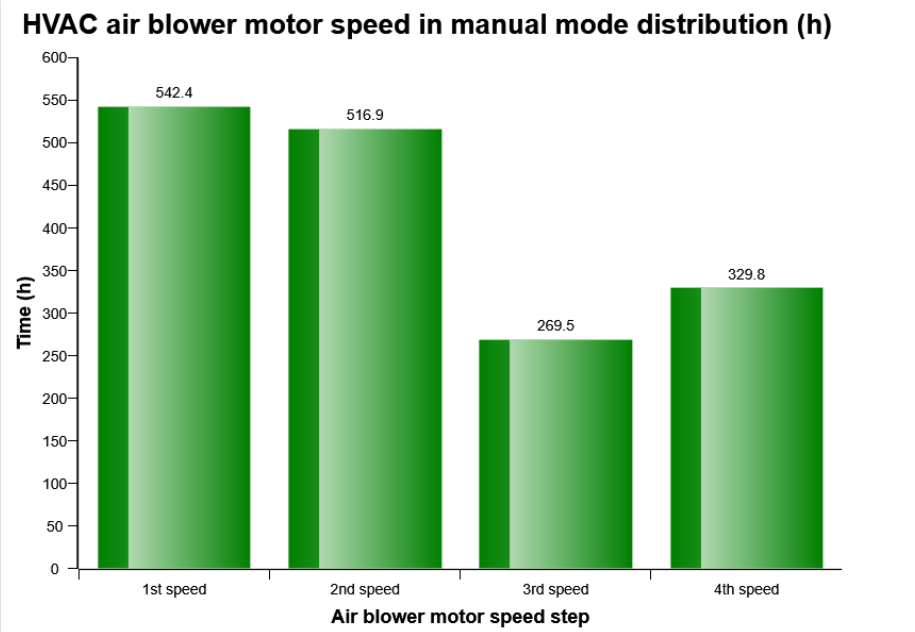
Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



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
L110H	631064	3274	04/12/2019



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
L110H	631064	3274	04/12/2019

AC High Pressure
Total number of occurences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (seconds)	Ambient temperature (°F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32

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.

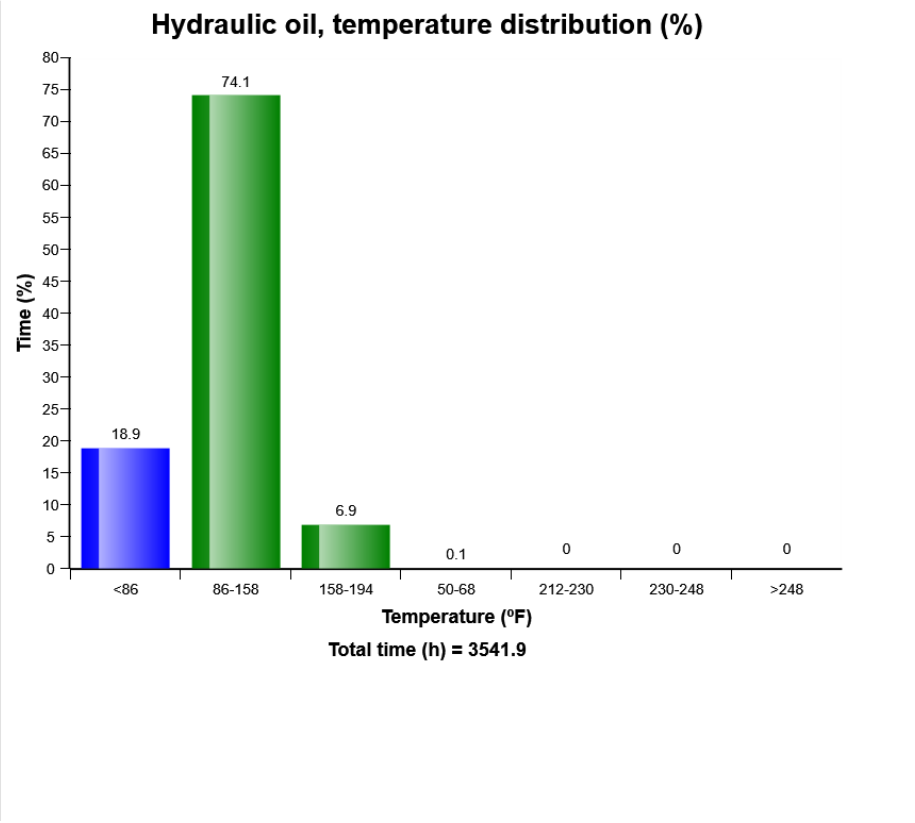
Extreme value：

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
L110H	631064	3274	04/12/2019



Definition:

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

Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

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

It is normal to have registrations in this region.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

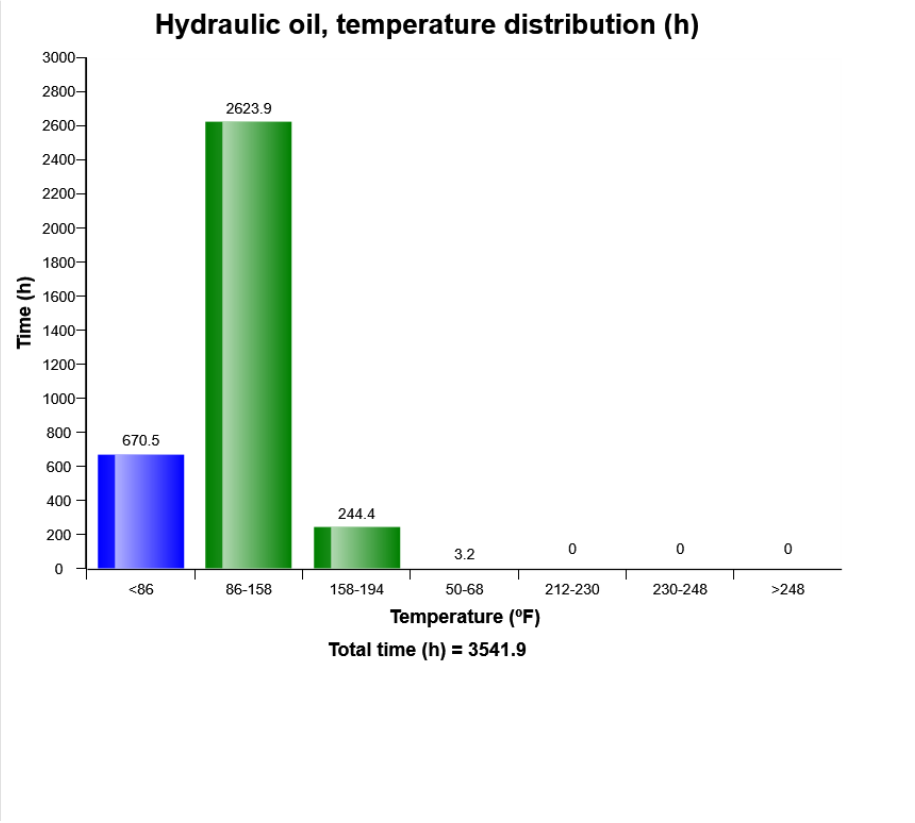
Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

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

Red bar = Alarm.

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019



Definition:

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

Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

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

It is normal to have registrations in this region.

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

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

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

Red bar = Alarm.

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

Machine model	SerialNo	Operating Hours	Reading Date
L110H	631064	3274	04/12/2019

High hydraulic oil temperature
Total number of occurences = 0

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

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 hydraulic oil temperature , is active.