VOLVO CONSTRUCTION EQUIPMENT

MATRIS REPORT

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

Company name	Dealer	Report Issuer
Hoffman		
Contact name	**Technician**	**Primary Application**
	Edwin Cabrera	Civil engineering/Heavy construction
Site	**Workorder**	**Ground Condition**

MATRIS Reading, Summary / Recommendation

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

Main equipment	Type	Equipment
	Track chain	
	Hydraulic Fluid	
	X1 Piping	
	X3 piping	
	Main Attachment	
	Attachment Interface	
	Hose Rupture Valve on Boom	
	Hose Rupture Valve on Arm	
	X1 return filter	

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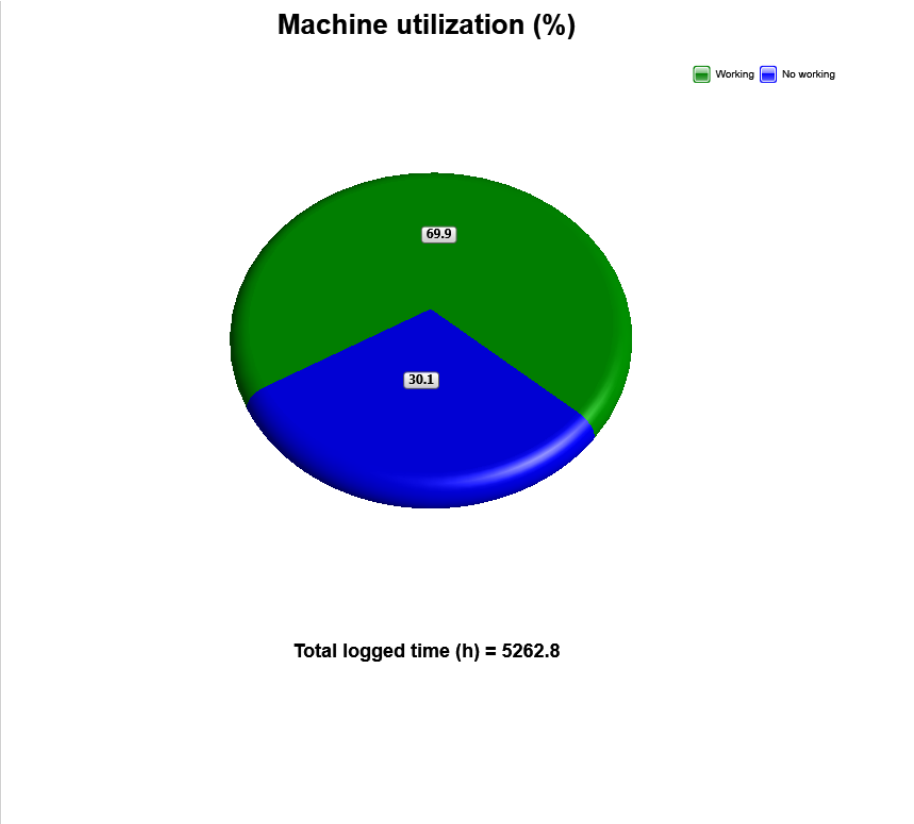

Definition:

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 is running, but attachments and tracks are not moved

or operated .

Green sector = Machine in work with the move of attachments and tracks

Machine model	SerialNo	Operating Hours	Reading Date
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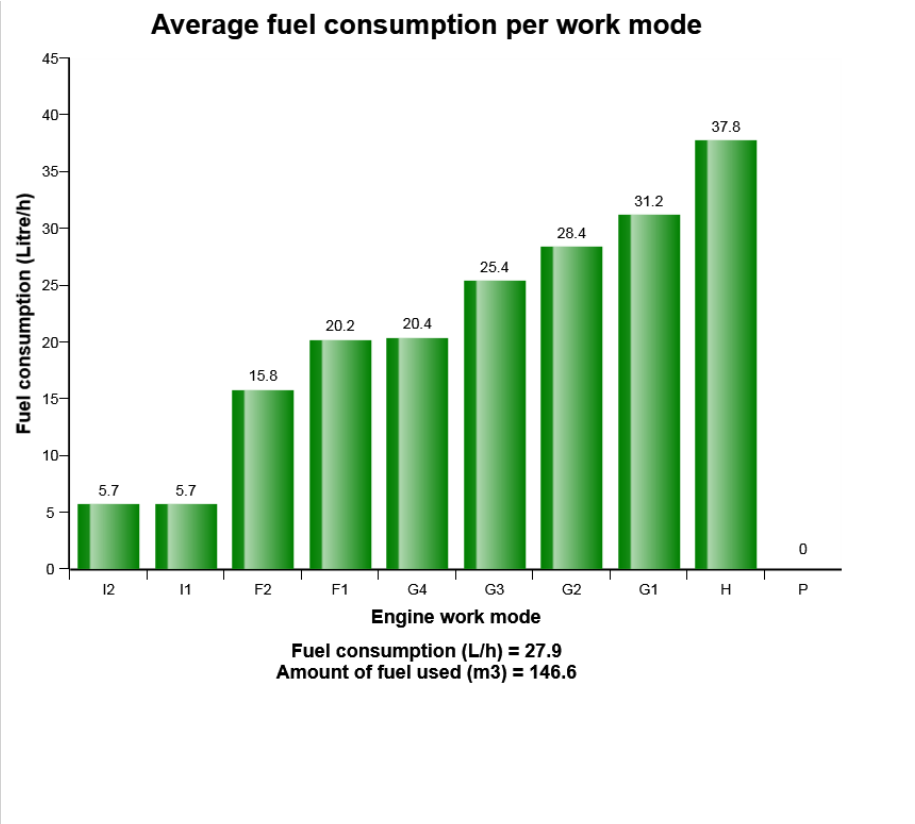


Definition:

This diagram shows the fuel consumption distribution rate on each work mode.

Distribution of each work mode is shown on top of its column in rate

Explanation:

Y-axis: The rate of the fuel consumption on each work mode.

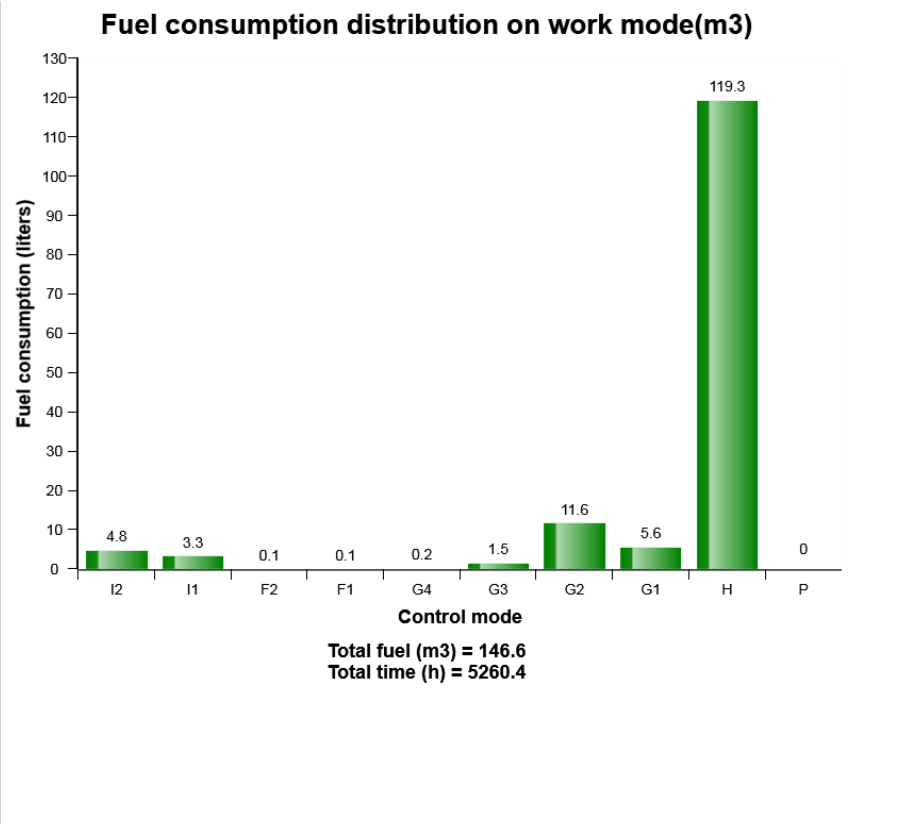
X-axis: The work mode (10 steps in total)

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

Distribution of each work mode is shown on top of its column in rate

Average fuel consumption per hour is listed below the diagram

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The diagram describes the amount of fuel consumed per engine speed mode distribution.

Total amount of fuel consumed (m3) in above means that the sum of the fuel while it consumed for engine ON. The values above distribution were calculated from theoretical calculation with logged data in V-ECU so it can be some different from actual performance in field.

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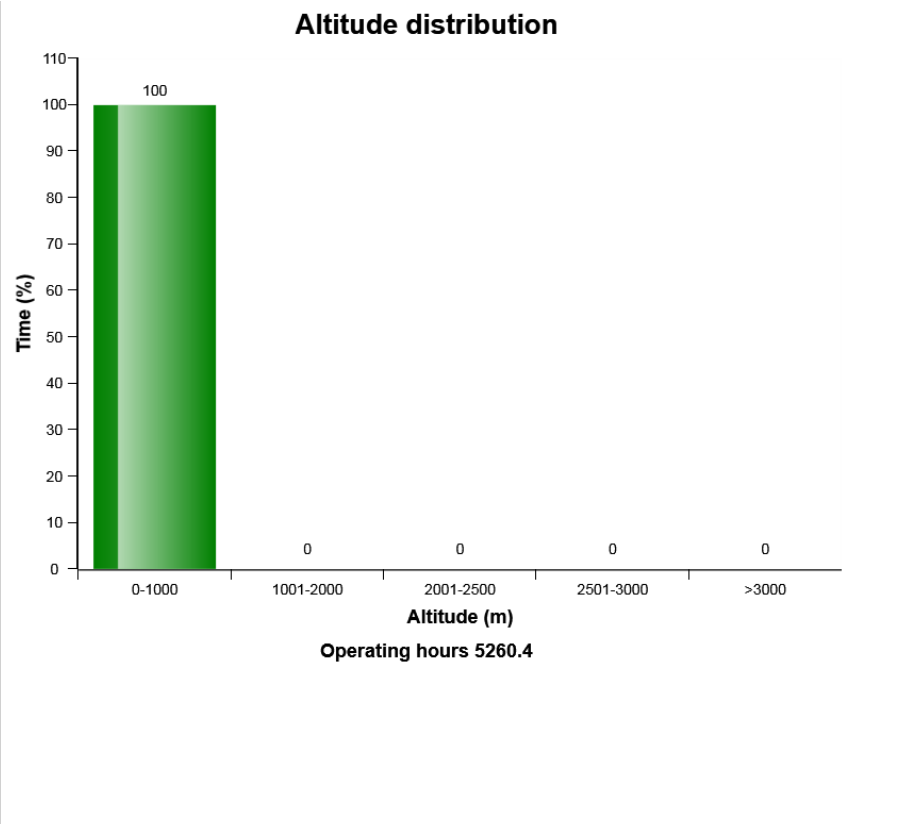
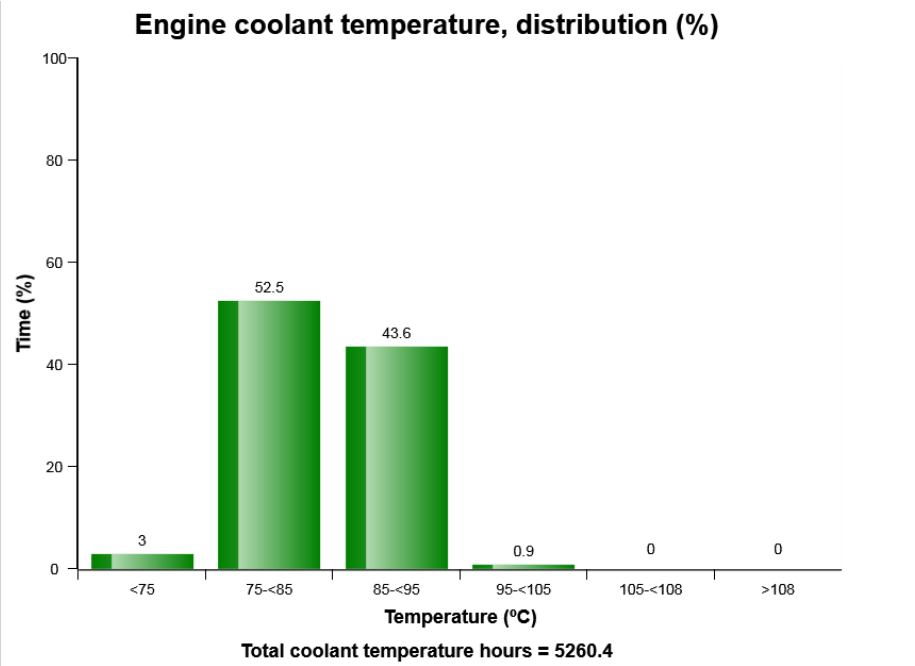


An error has occurred while processing HtmlTextBox 'htmlTextBox1':
'WordSection1' is an unexpected token. The expected token is "" or "'. Line 1, position 18.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



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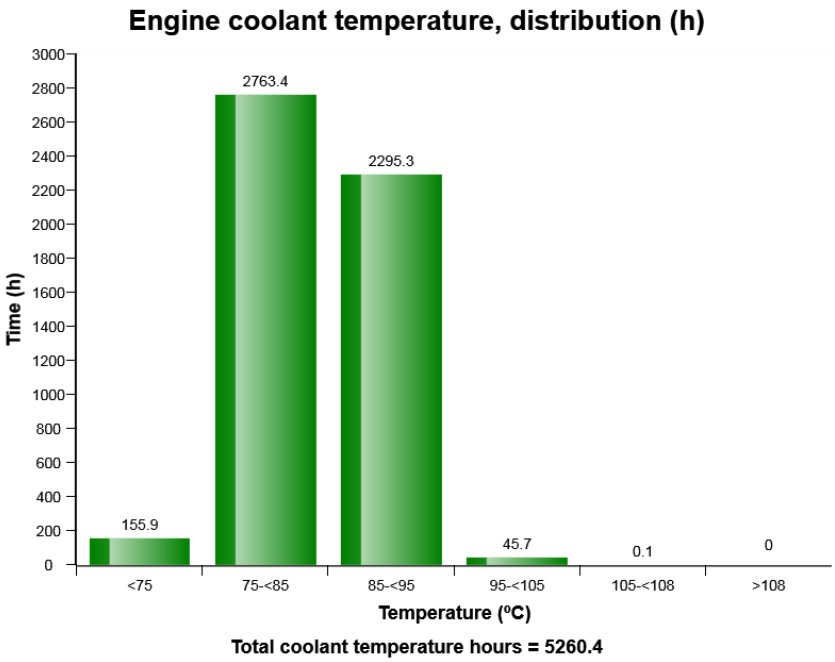

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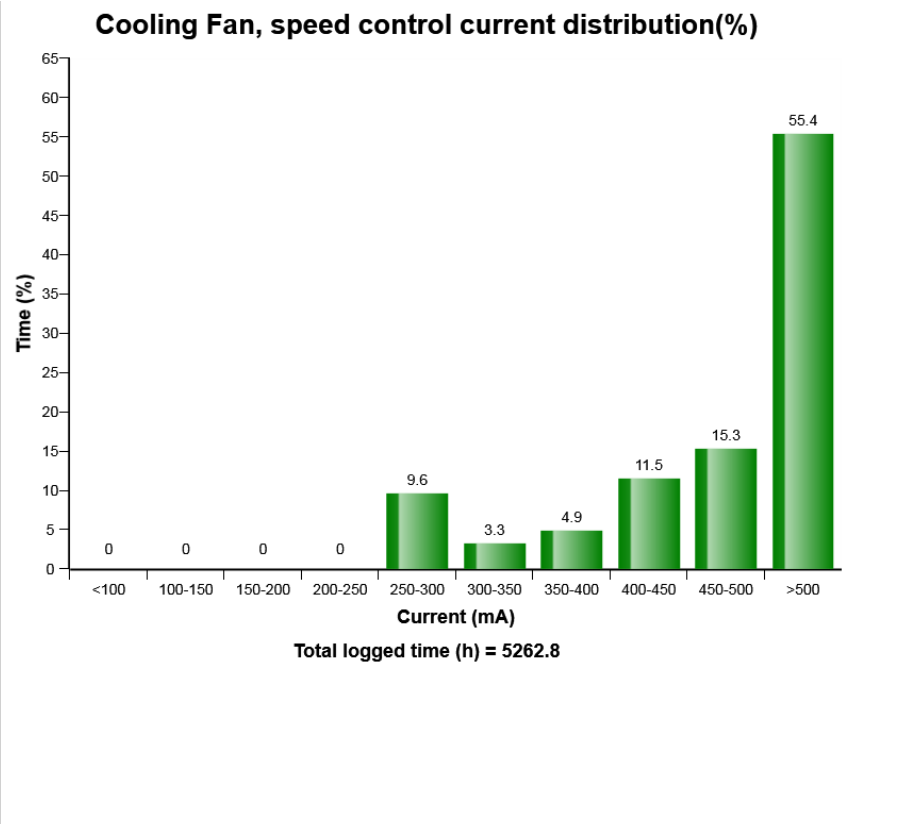
EC380E	310340	5262.1	10/10/2019

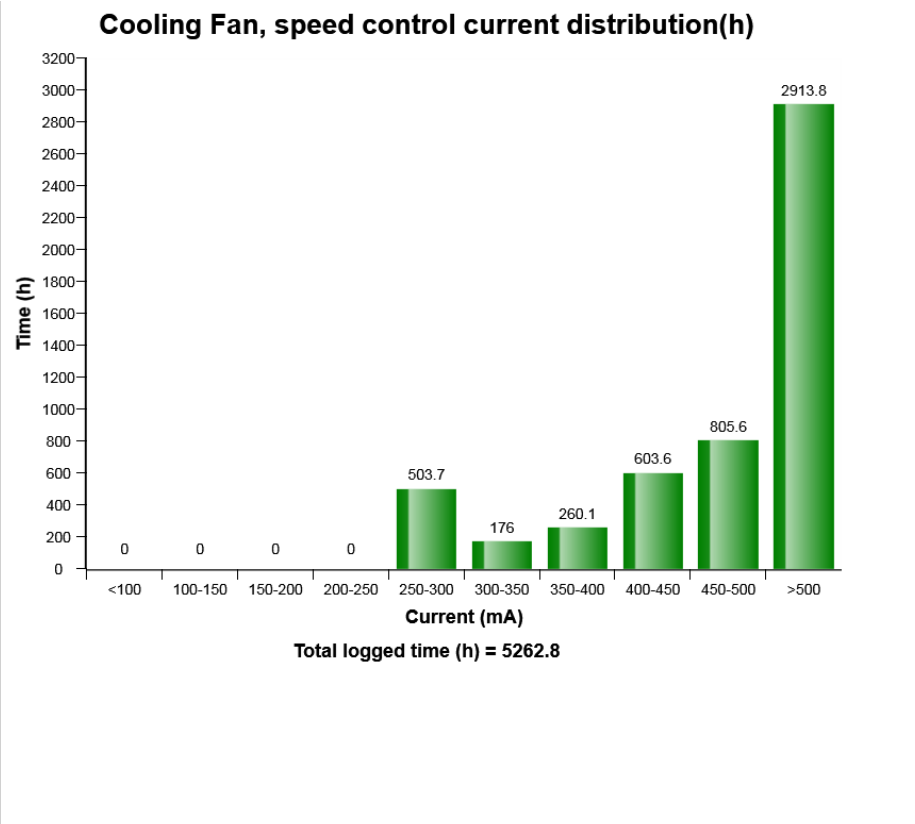


Definition:

The diagram describes Hydraulic Cooling fan speed control, Current (mA) distribution, on fan speed Control..

Total time (hours) in above means the sum of the time for Hydraulic Cooling fan operation.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



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Total time (hours) in above means the sum of the time for Hydraulic Cooling fan operation.

Machine model	SerialNo	Operating Hours	Reading Date
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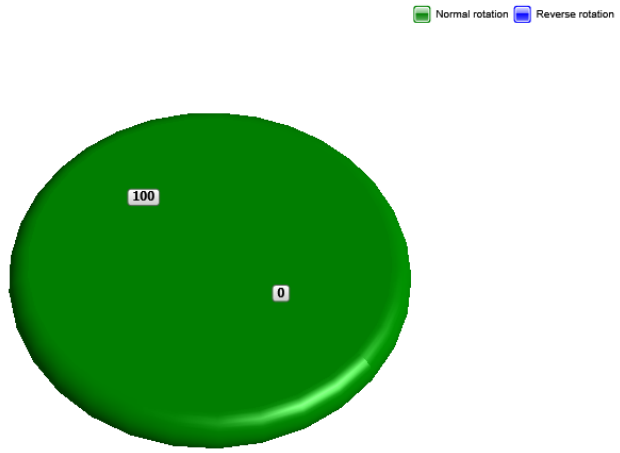
Cooling fan, Normal-Reverse rotation distribution (%)



Total operating time (h) = 5262.8

An error has occurred while processing HtmlTextBox 'htmlTextBox1':
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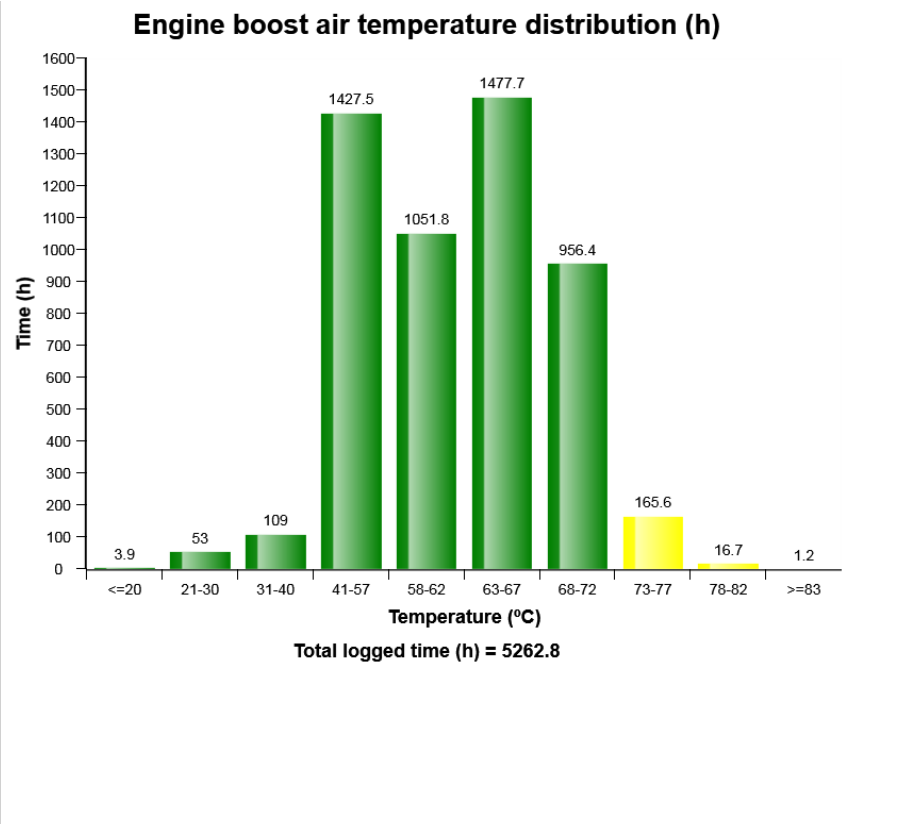
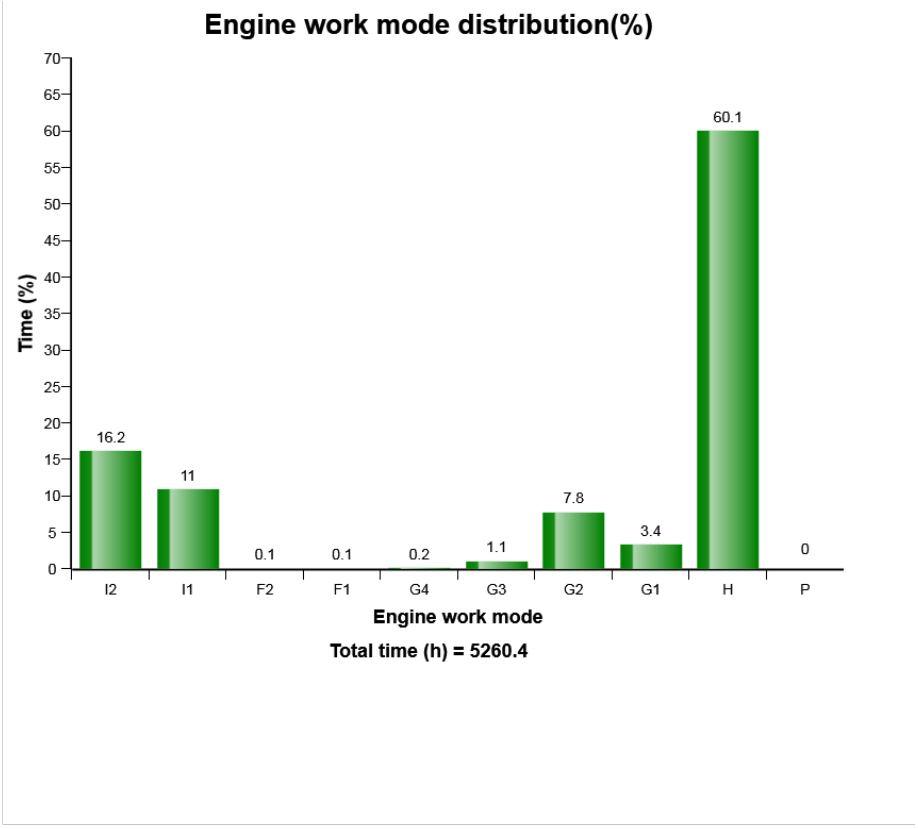
EC380E	310340	5262.1	10/10/2019



Definition:

The diagram describes Engine boost air temperature distribution of the machine when the engine is on.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

This diagram shows the distribution of the engine work mode in time percent.

Distribution of each work mode is shown on top of the column in percentage.

Explanation:

Y-axis: The percentage of the operating hours on each work mode.

X-axis: The engine work mode (10 step in total)

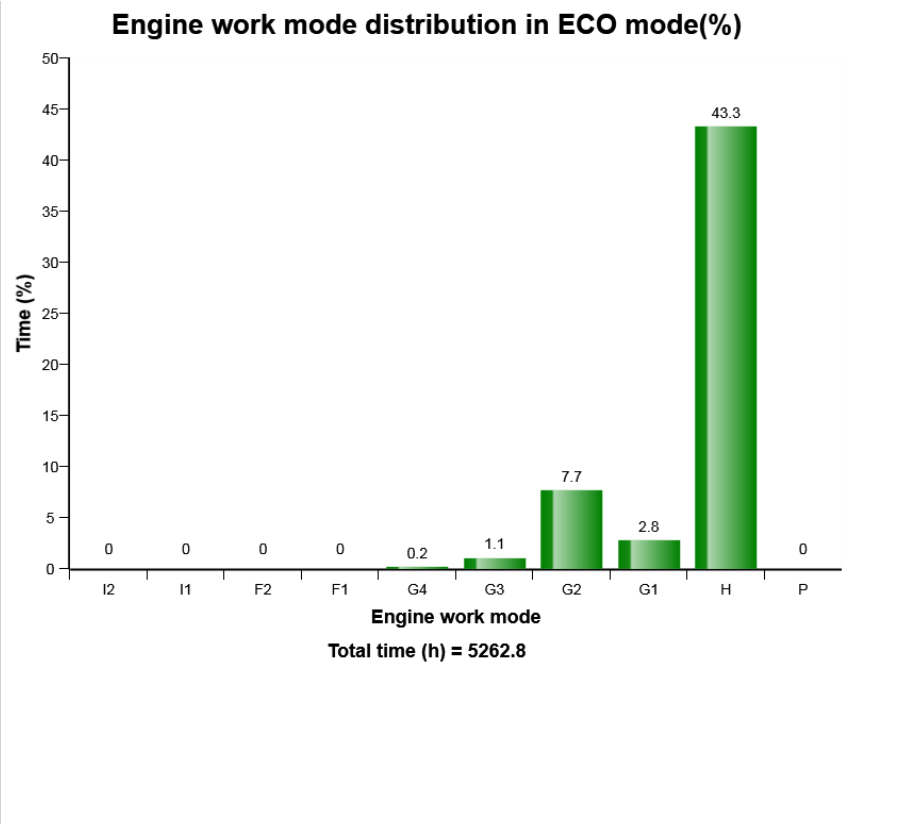
Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

Distribution of each work mode is shown on top of the column in percentage.

The sum of time distribution in percentage is 100

Total time (h) is listed below the diagram

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

This diagram shows the distribution of the engine work mode in percentage of time when ECO mode is engaged.

Explanation:

Y-axis: The percentage of the operating hours on each work mode when ECO mode is engaged.

X-axis: The engine work mode (10 step in total)

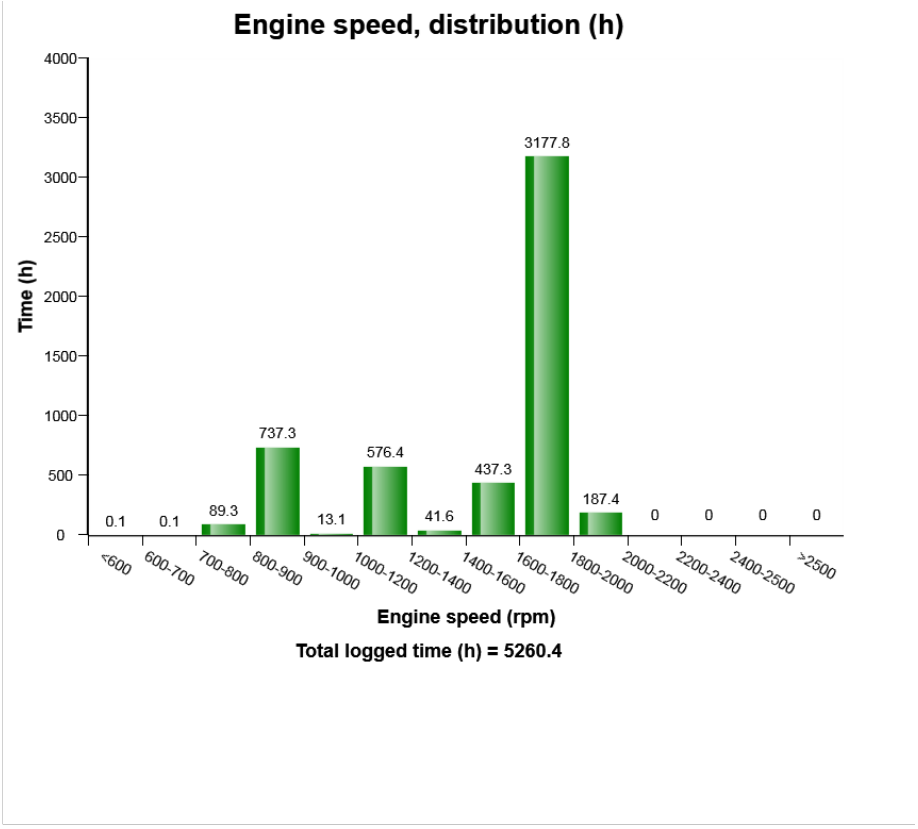
Distribution of each work mode is shown on top of the column in percentage.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

The sum of time distribution in percentage is 100%

Total time (h) is listed below the diagram.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The graph describes the engine speed distribution, in hours.

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

Explanation:

Y-axis: Engine running time in hours.

X-axis: Engine speed in rpm.

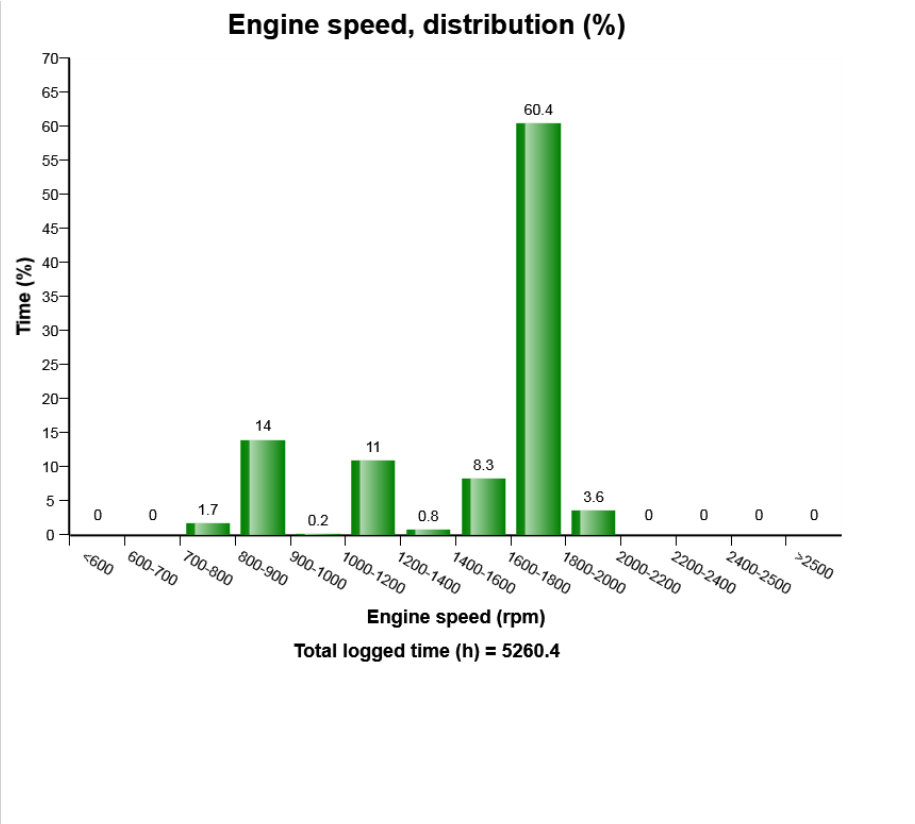
Green bars = Normal engine speed range.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

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

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

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The graph describes the engine speed distribution in percent of time.

The sum of all bars=100% of engine running time.

Explanation:

Y-axis: Engine running time in percent.

X-axis: Engine speed in rpm.

Green bars = Normal engine speed range

Blue bar = Idling interval.

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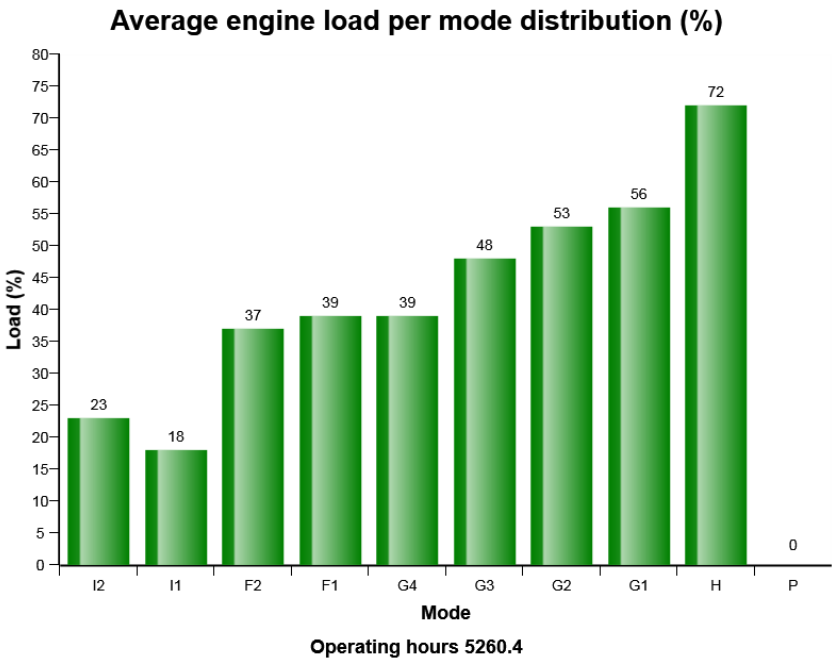

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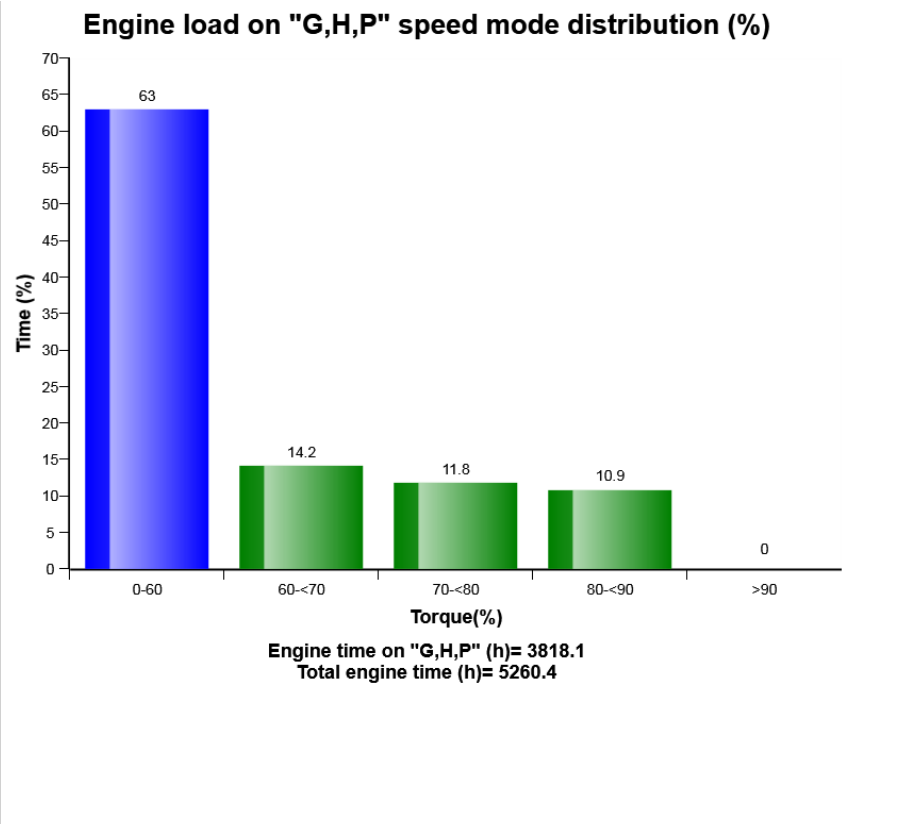


This graph shows the distribution of the engine load.

Blue bar: Low load

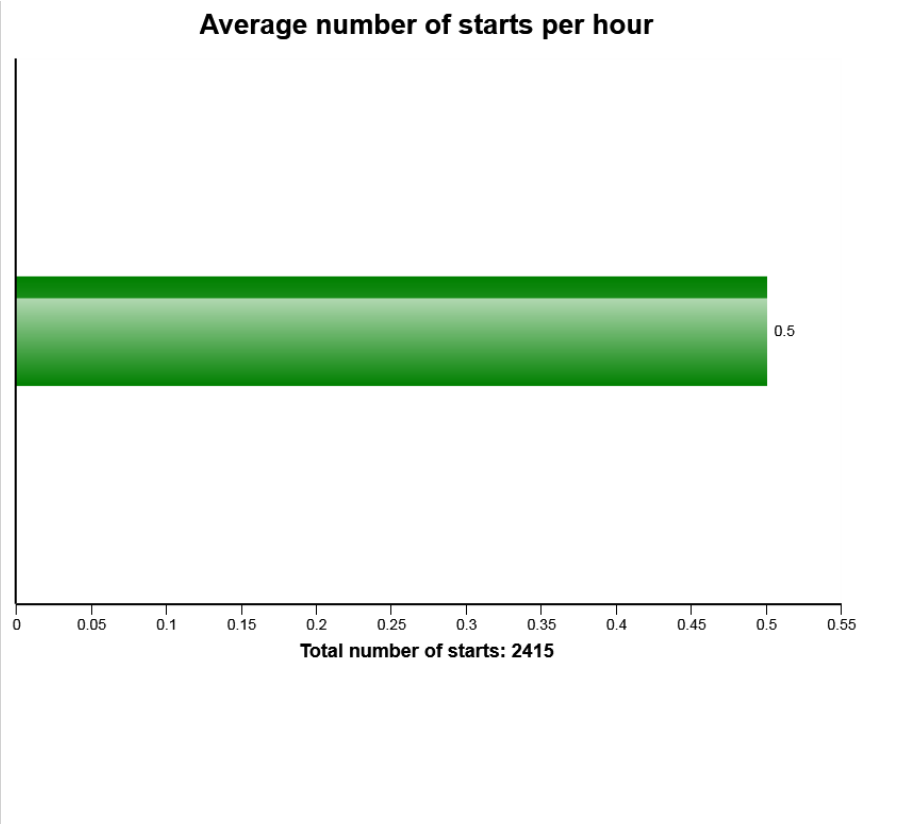
Green bar: Normal load

Yellow ba r: Excessive load

Load distribution for each bar is shown on top of its column in percentage.

The sum of bars is 100%.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



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.

Machine model	SerialNo	Operating Hours	Reading Date
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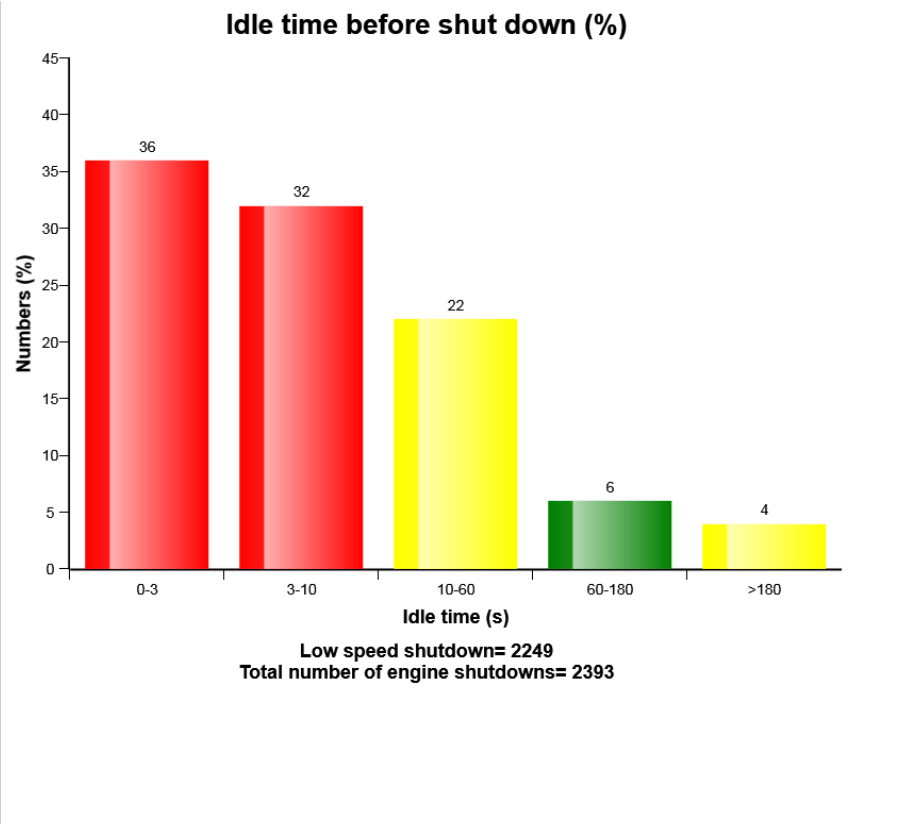
To see at which different temperatures engine is started see" Start at different engine temperatures."

Green bar = Number of average starts per hour

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



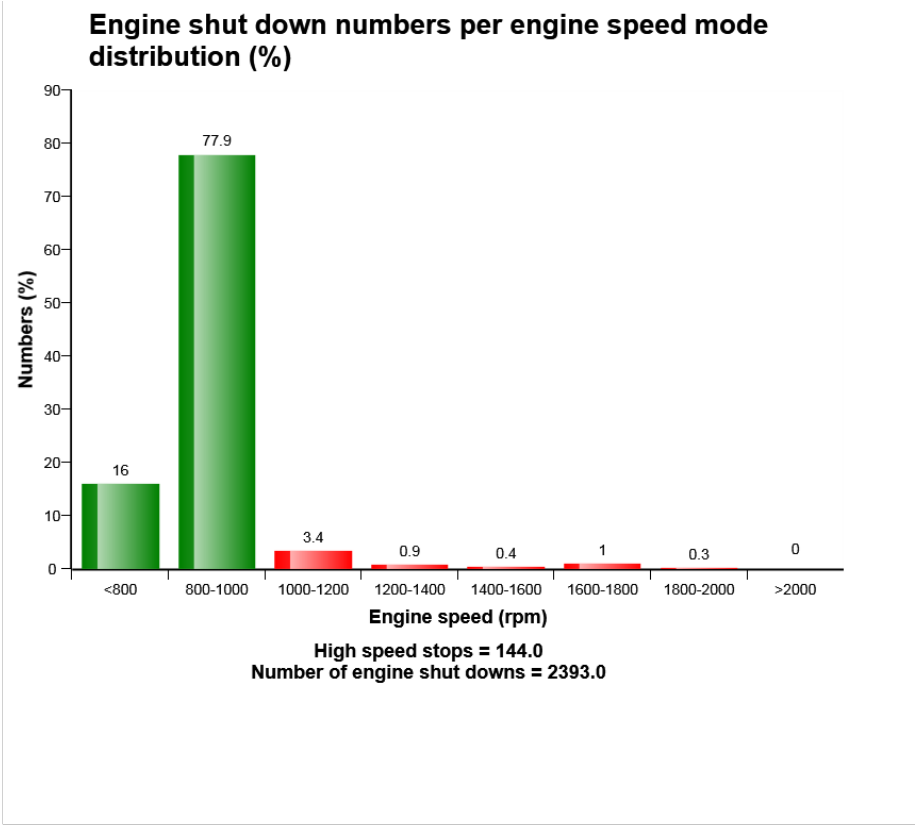
Definition:

This graph shows the distribution of delayed time at low idle speed until the engine is turned off.

The delayed time distribution for each bar is shown on top of its column in percentage.

The sum of bars is 100%.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The diagram shows the number of stops at high idle (I1 ~ P mode).

Green bars = Normal engine stop

Red bars = Abnormal engine stop

Engine stops at a high idle can cause server damage to the turbo charger due to shortage of the oil lubrication. The engine should be stopped at low idle(I2 mode).

Explanation:

Y-axle: Number of engine stop at each work mode.

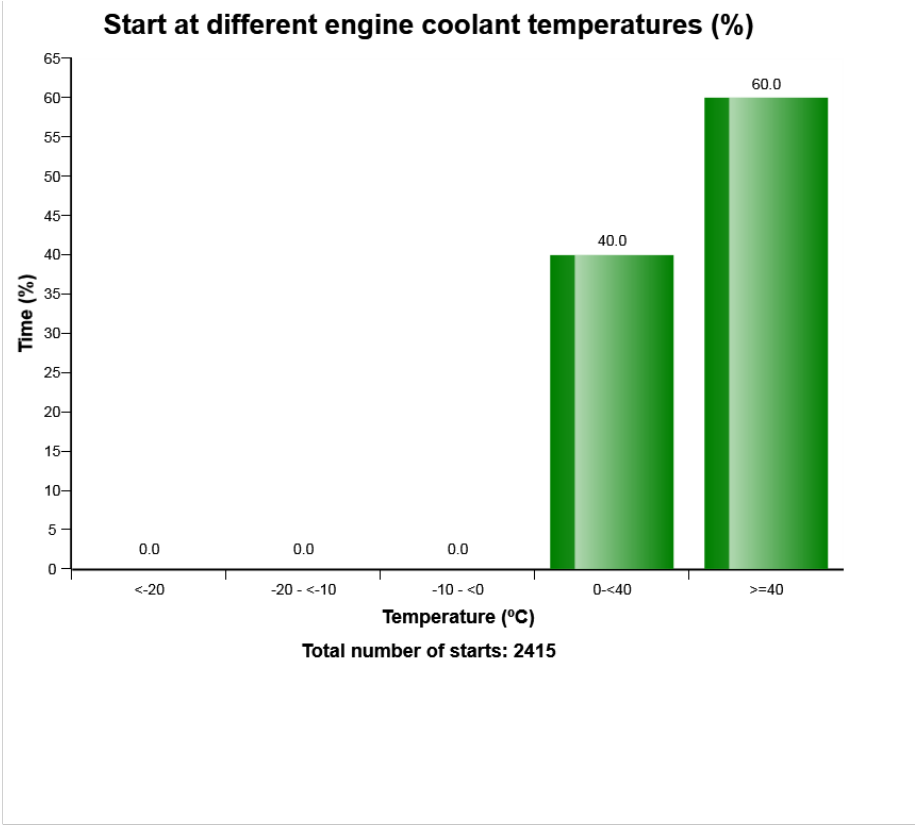
Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

X-axle: Work mode.

Distribution of each work mode is shown on top of its column in number.

Total number of shut down is listed below the diagram.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

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

Explanation:

Y-axis: Number of engine starts

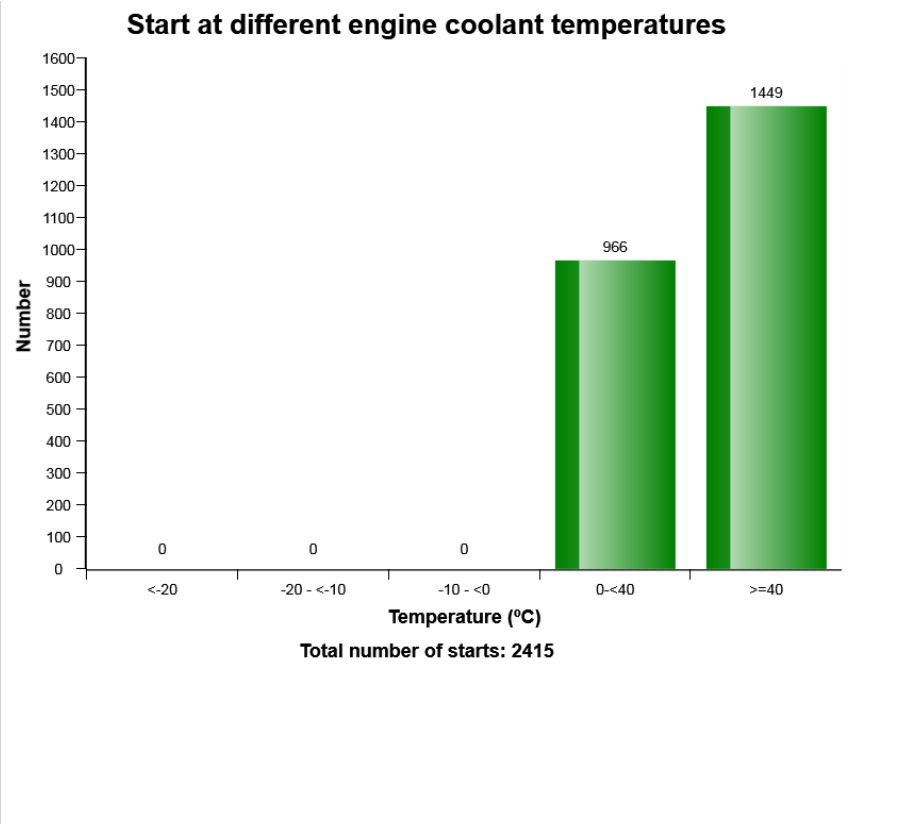
X-axis: Engine coolant temperature.

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
EC380E	310340	5262.1	10/10/2019



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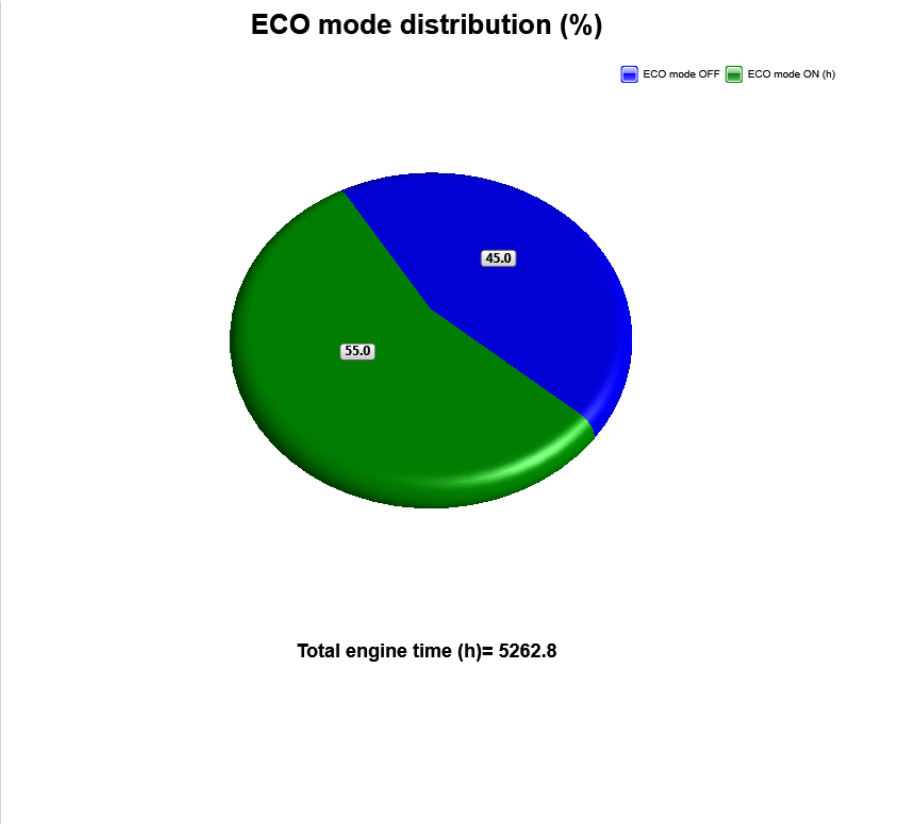


An error has occurred while processing HtmlTextBox 'htmlTextBox1':
The 'font' start tag on line 1 position 114 does not match the end tag of 'BR'. Line 1, position 145.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

Low coolant level
Total number of occurences = 1024

	Op hours	Year	Month	Day	Hour	Minute	Duration (minutes)
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	522	2015	3	1	17	125	1
*	4128	2001	27	10	17	132	0
*	7716	2008	30	5	16	23	0
*	14378	2014	3	1	17	125	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

Criteria：

In order for an occurrence of low engine coolant level to be recorded in a data point, the count to increment by 1 the engine coolant level state must change from “normal” to “low.”

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

Low Air filter pressure
Total number of occurences = 1280

Op hours	Year	Month	Day	Hour	Minute	Duration (seconds)
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
548	2012	9	5	17	149	4275
7690	2014	10	5	17	157	11
11302	2011	10	5	17	155	1208
13847	2014	10	5	17	157	10
14356	2006	10	5	17	150	1

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.

Criteria :

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

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

Regeneration aborted
Total number of occurences = 256

	Op hours	Year	Month	Day	Hour	Minute	Reason
*	1027	2009	16	10	16	67	2
*	1281	2007	10	8	15	69	1
*	1302	2009	16	10	16	67	2
*	2601	2019	10	8	15	81	2
*	3894	2011	23	5	17	240	2
*	8483	2007	30	12	15	213	2
*	8986	2009	10	11	16	231	2
*	9006	2013	10	8	15	76	2
*	10001	2017	11	8	15	92	1
*	10001	2008	16	10	16	66	2
*	10018	2013	10	8	15	76	1
*	10253	2013	16	11	16	13	2
*	11053	2015	3	9	15	177	2
*	11818	2015	30	11	16	61	2
*	11831	2008	16	10	16	66	2
*	12347	2008	16	10	16	66	2
*	13883	2018	9	8	15	69	1
*	14089	2016	10	8	15	79	2
*	14138	2011	23	5	17	241	2
*	14886	2007	16	10	16	66	2

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
EC380E	310340	5262.1	10/10/2019

Regeneration ignored
Total number of occurences = 4096

	Op hours	Year	Month	Day	Hour	Minute	Duration (min)
*	1293	2010	5	6	17	55	68
*	2072	2010	5	12	16	83	393
*	3092	2016	1	12	16	70	37
*	3366	2013	27	11	16	33	187
*	3851	2009	28	11	16	37	450
*	4151	2009	9	12	16	95	55
*	6715	2008	28	11	16	37	6
*	6963	2007	5	12	16	80	159
*	8493	2014	15	6	17	129	110
*	9480	2014	2	1	19	94	37
*	10289	2007	30	11	16	53	542
*	10768	2007	29	11	16	44	540
*	11541	2008	18	4	18	68	67
*	12289	2007	6	12	16	89	308
*	12318	2012	27	11	16	33	14
*	13359	2007	27	11	16	29	268
*	13577	2007	1	12	16	62	441
*	13602	2016	27	11	16	36	20
*	14107	2006	4	12	16	70	596
*	15159	2007	23	5	17	237	272

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.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

Regeneration duration
Total number of occurences = 2816

	Op hours	Year	Month	Day	Hour	Minute	Duration (min)
*	2307	2008	2	12	15	147	51
*	3859	2011	23	5	17	240	76
*	4374	2009	9	12	16	95	54
*	5154	2010	5	6	17	55	53
*	5385	2007	10	11	15	52	51
*	6187	2016	14	1	16	79	50
*	7713	2013	6	2	16	208	52
*	7955	2009	10	11	16	231	4
*	7965	2015	15	6	17	130	53
*	7977	2007	30	12	15	213	53
*	9528	2013	16	11	16	13	44
*	10023	2014	2	1	19	94	35
*	10797	2005	13	10	15	189	52
*	11320	2007	30	6	16	131	51
*	11790	2015	30	11	16	61	0
*	12588	2012	24	1	16	138	51
*	13073	2009	1	10	15	100	50
*	14874	2011	6	1	16	16	51
*	14876	2007	16	10	16	66	67
*	15142	2008	18	4	18	68	53

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.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

High engine coolant temperature
Total number of occurences = 256

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
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
1562	2010	19	7	16	221	119	107

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.

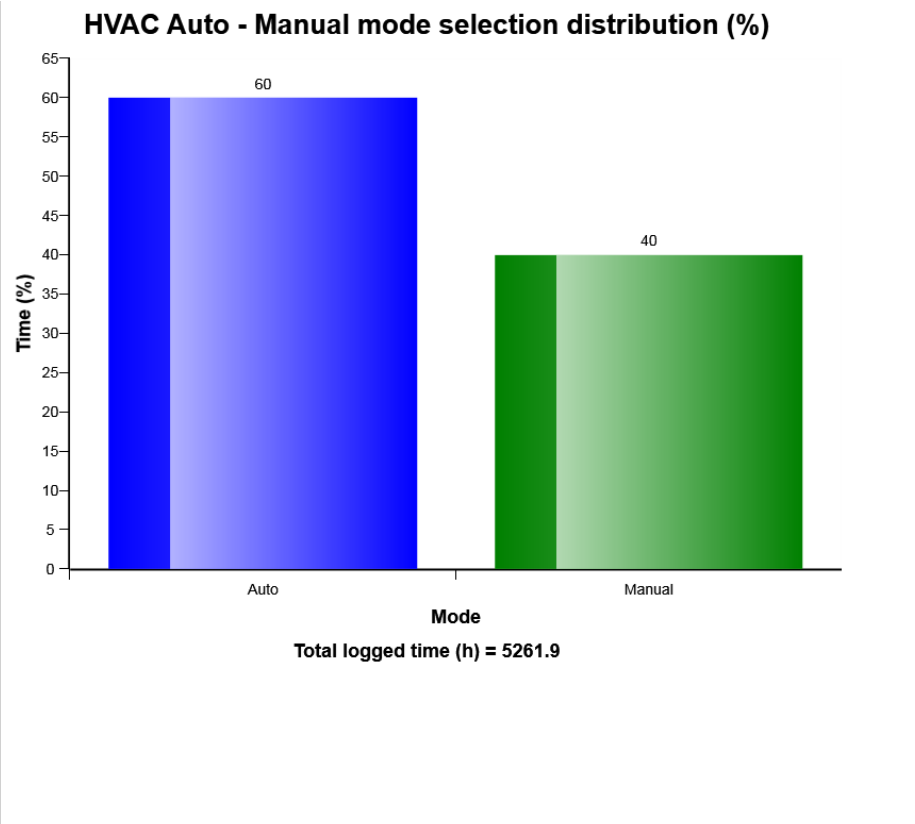
Extreme value :

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.

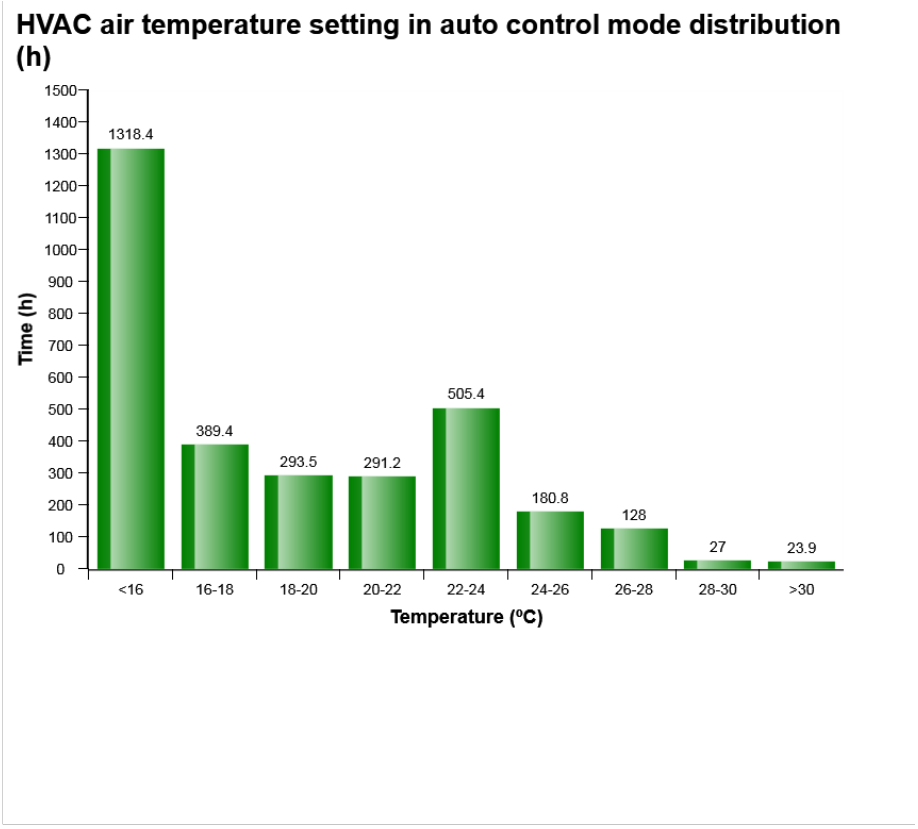
Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



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.

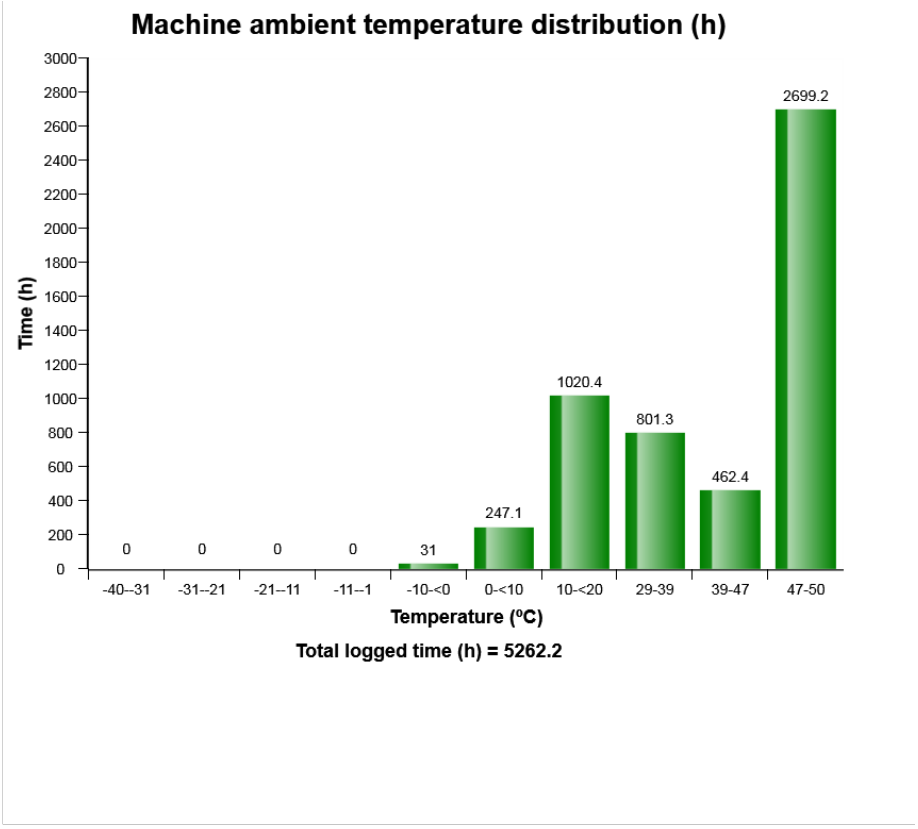
Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

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

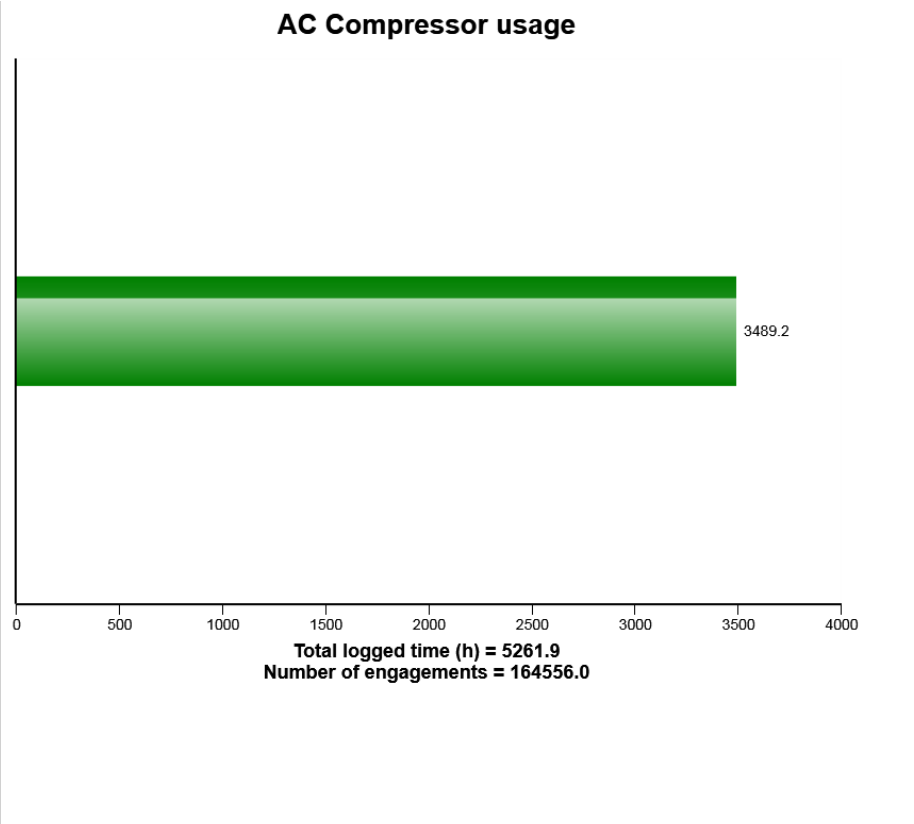
Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

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

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The graph shows the total time of AC compressor engagement.

Explanation:

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

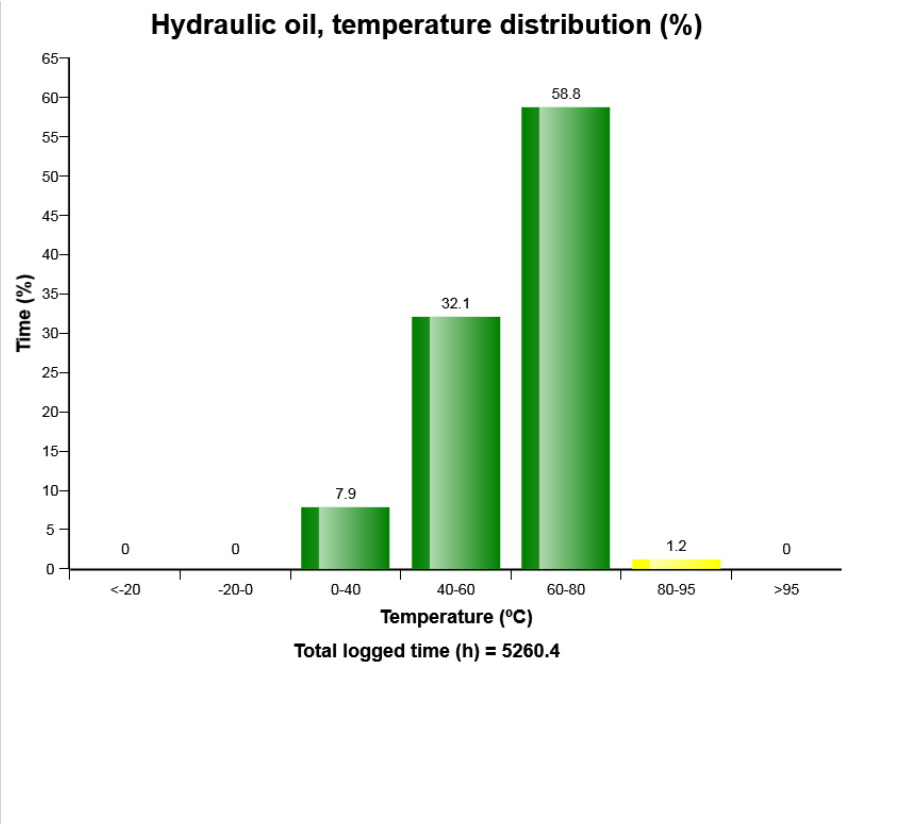
Under the graph the total engine running time (in hours) is displayed.

Total number of AC compressor activations is also displayed.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

-

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



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.

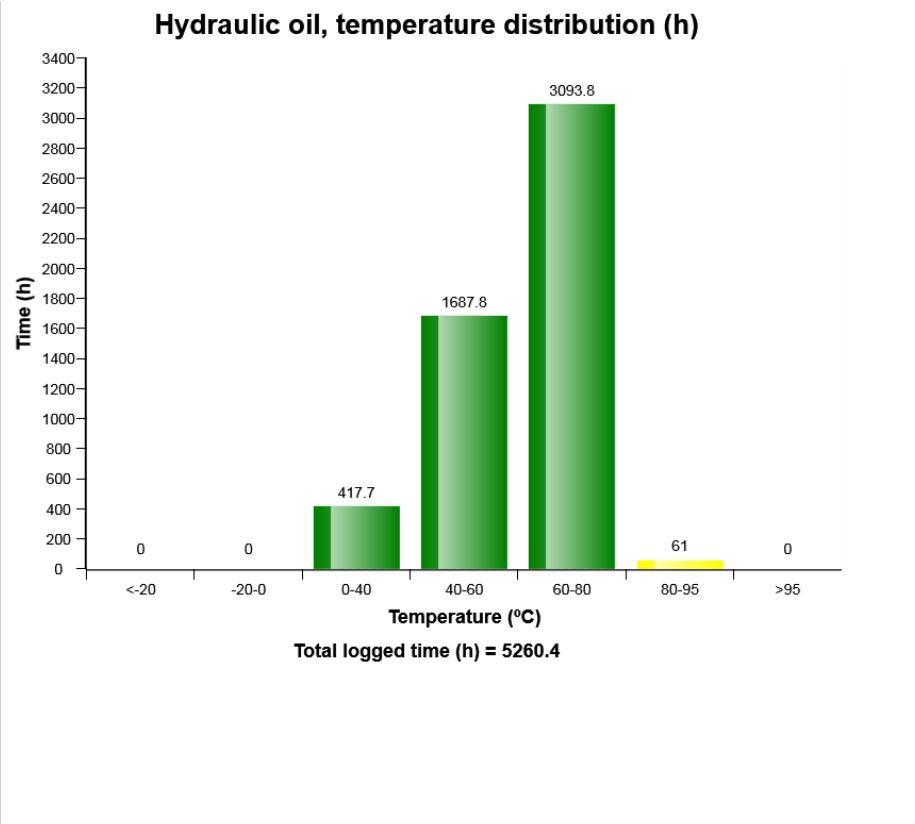
Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

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
EC380E	310340	5262.1	10/10/2019



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
EC380E	310340	5262.1	10/10/2019

It is normal to have registrations in this region.

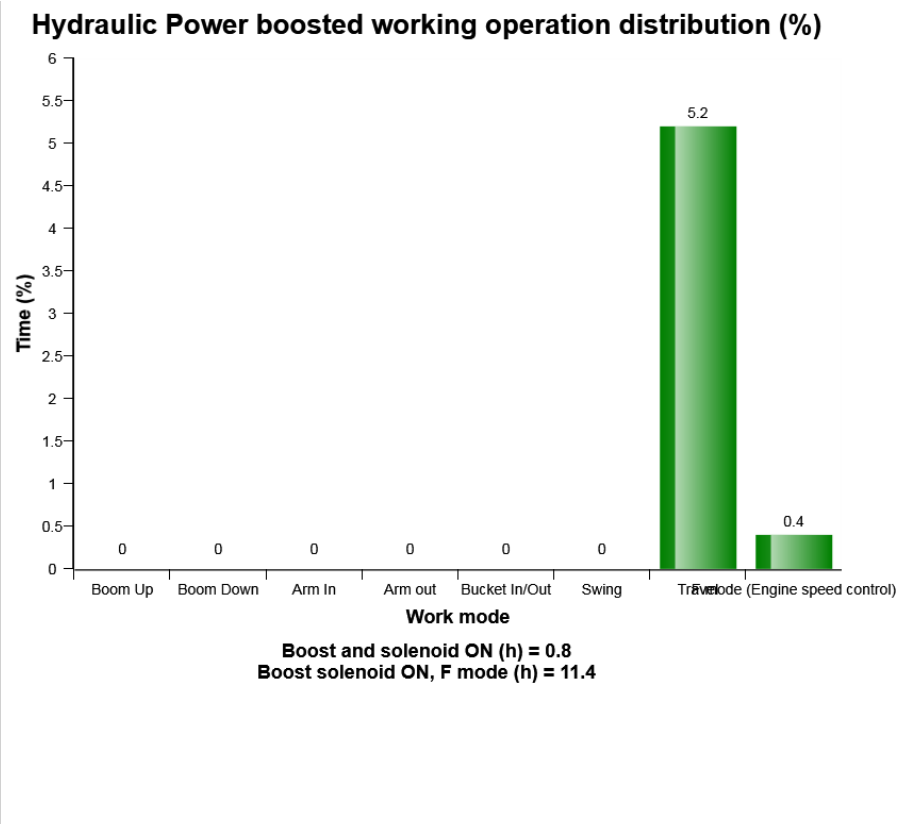
Green bar = Normal working temperature. The Major part of the registrations shall be in this region.

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
EC380E	310340	5262.1	10/10/2019



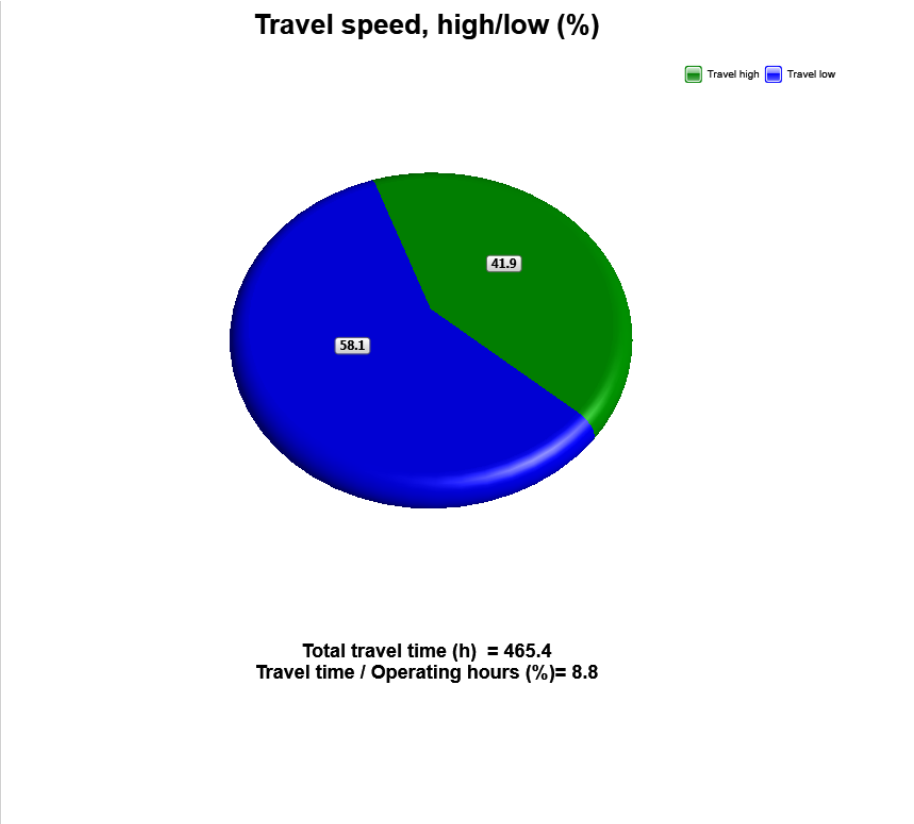
Definition:

T he diagram describes Power boosted operating time distribution, when main relief pressure increases on working operation modes. In this diagram, the sum of time (%) of each working operation mode can exceed 100%. It means that customer has been operated several working operations at the same time.

Total operating time with power boosted (hours) in above means sum of the time for Hydraulic Power boosted operation. The base for the percentage calculation is Total operating time with power boost. Time(%) on each working operation mode except travel and F mode above is the time, after the operator press power boost button on the joystick and until main relief pressure is recovered to default pressure.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

This graph shows operating hour distributions on each travel speed for total travel time.

Blue sector: Travel switch in low position

Green sector: Travel switch in high position

Explanation:

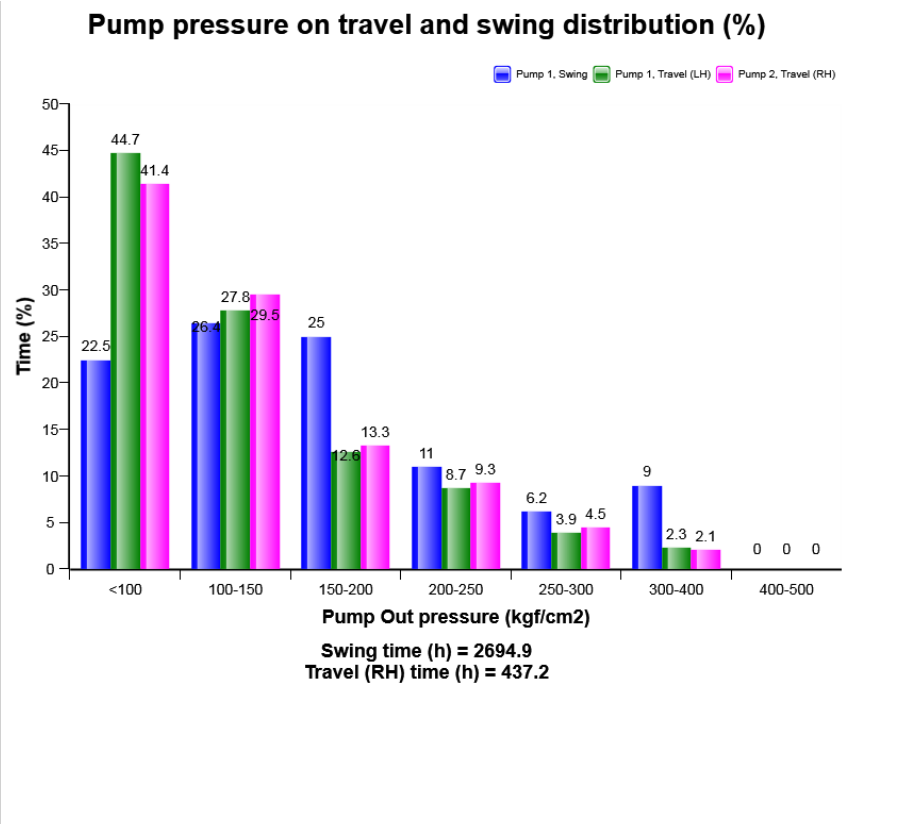
Distribution of each travel time is shown on right of its sector in percentage

The sum of travel time in percentage is 100

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

Total travel time is listed below the diagram

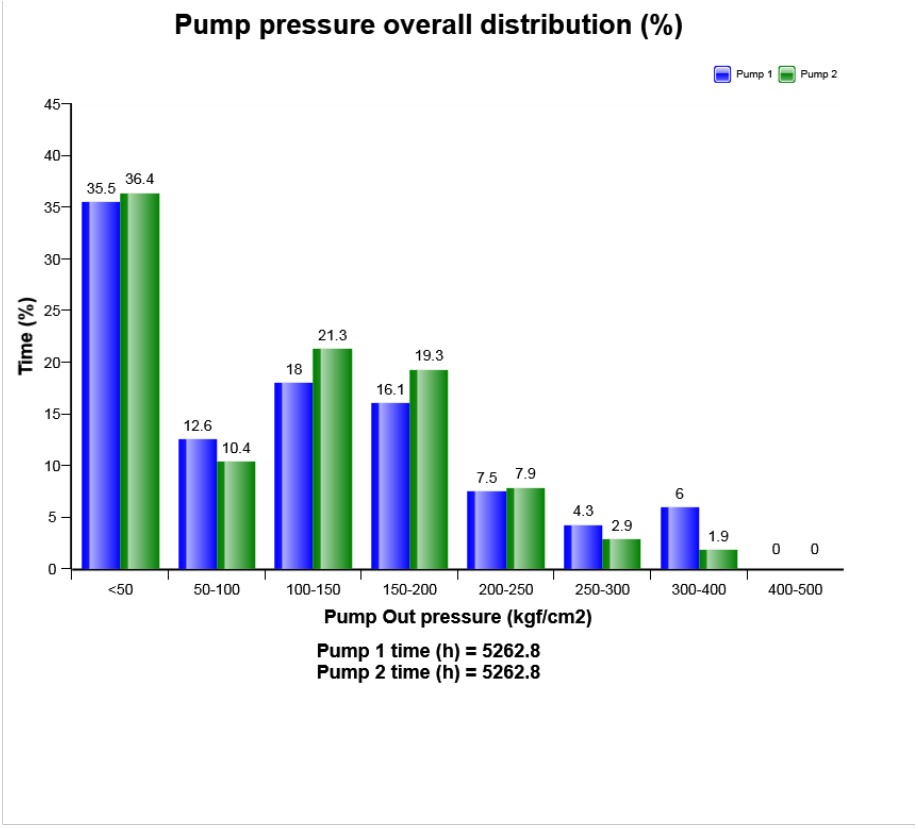
Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The diagram describes Pump outlet pressure of 2 Pumps for travel and swing operation distribution. In case operator use several operations at the same time, this pressure distribution for travel and swing operation can be different from actual operating pressure distribution for travel and swing operation in field.

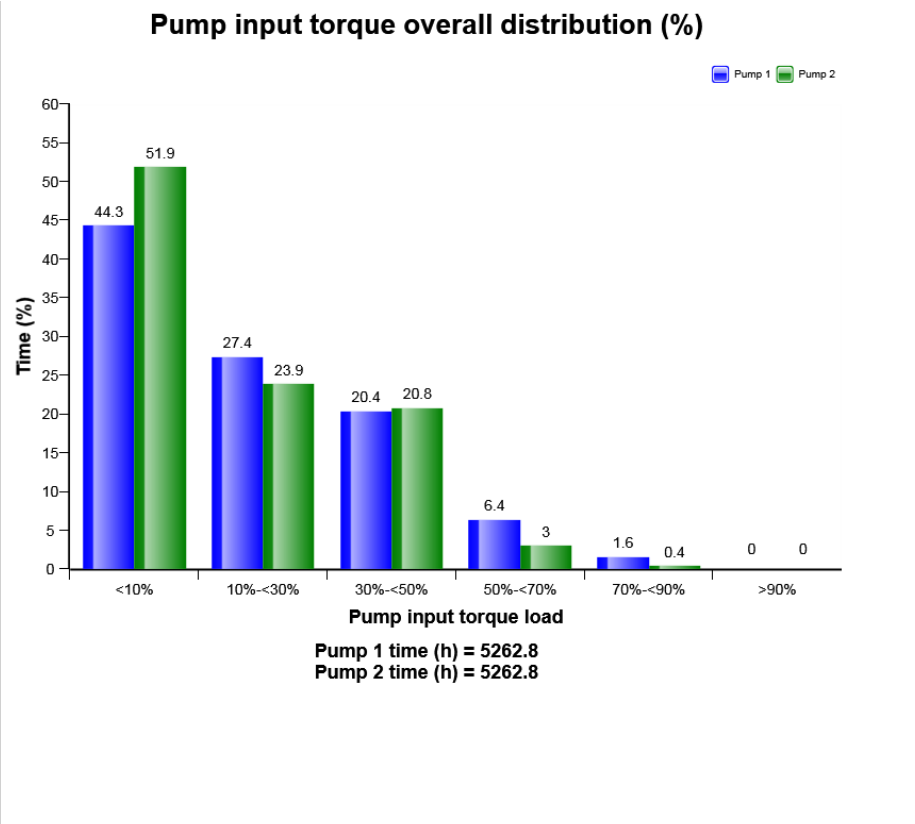
Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The diagram describes Pump outlet pressure of 2 Pumps distribution.

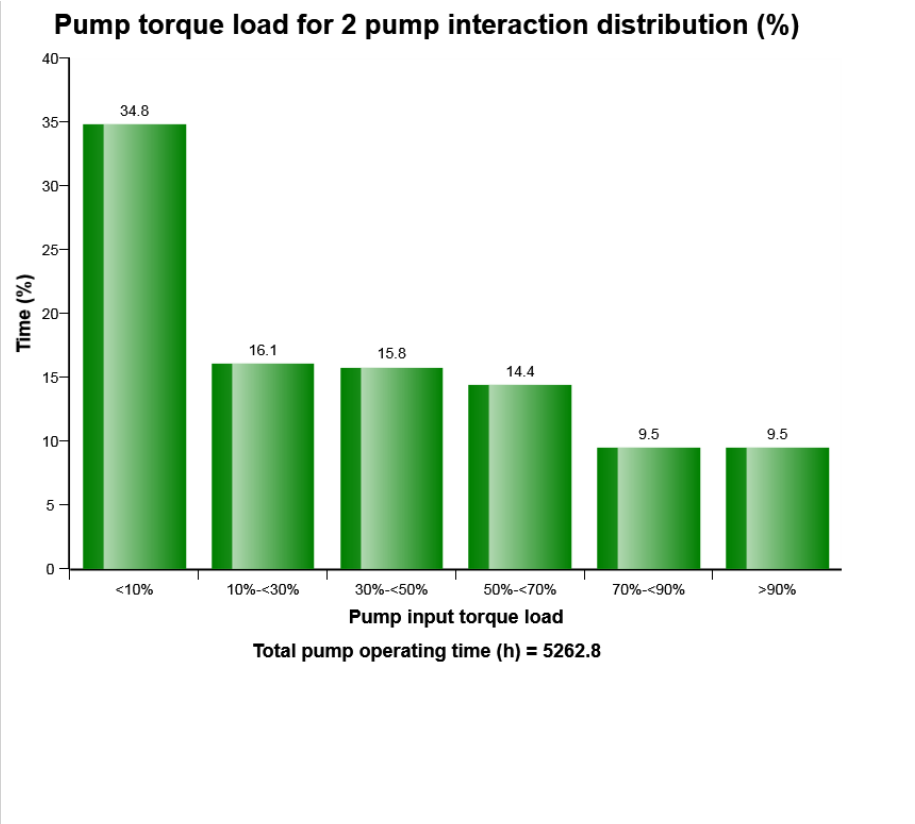
Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The diagram describes Pump torque load of 2 Pumps distribution.

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019

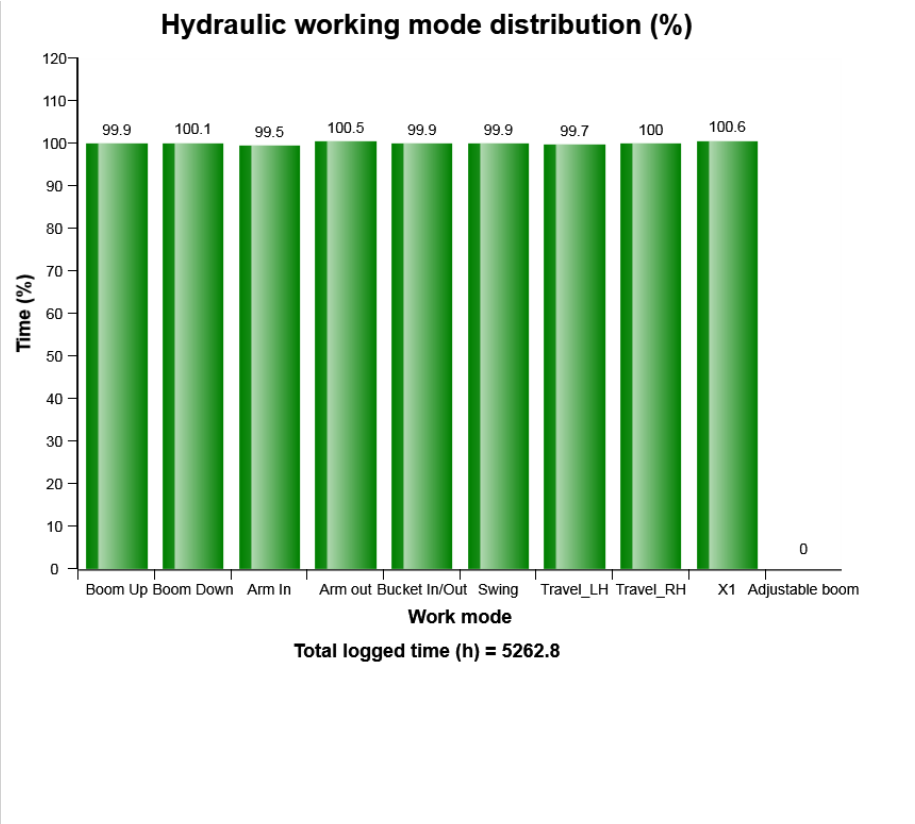


Definition:

This is to see total torque load distribution of 2 pumps when it operates 2 pumps at the same time.

The diagram describes total Pump torque load for 2 Pump's interaction distribution

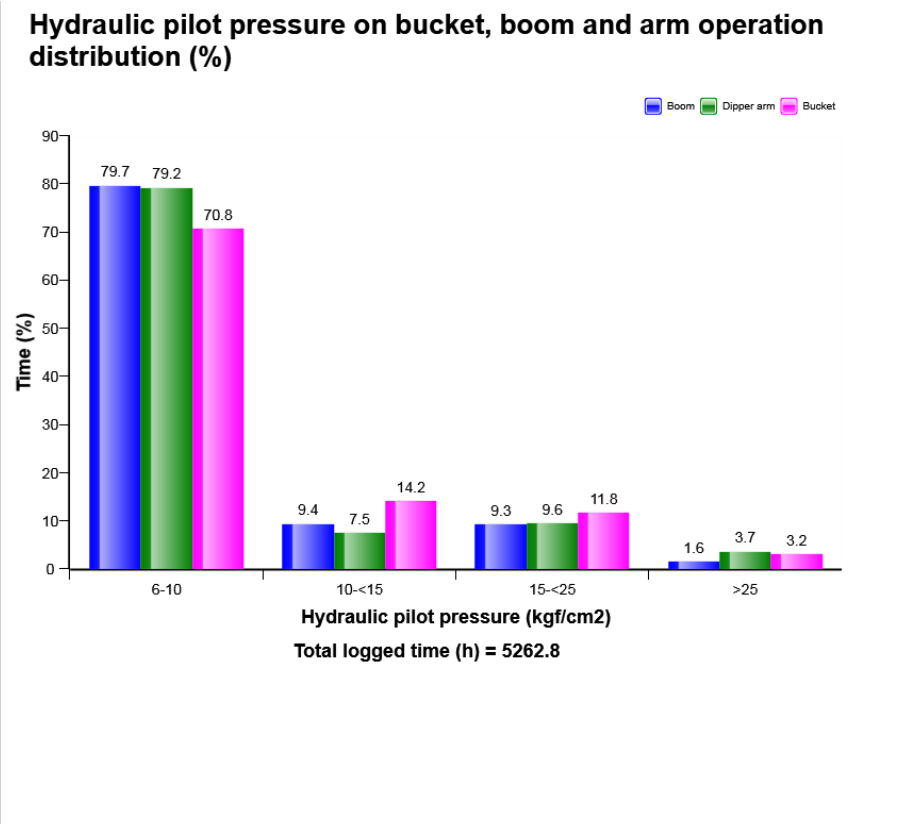
Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The diagram describes hydraulic working operation mode distribution.

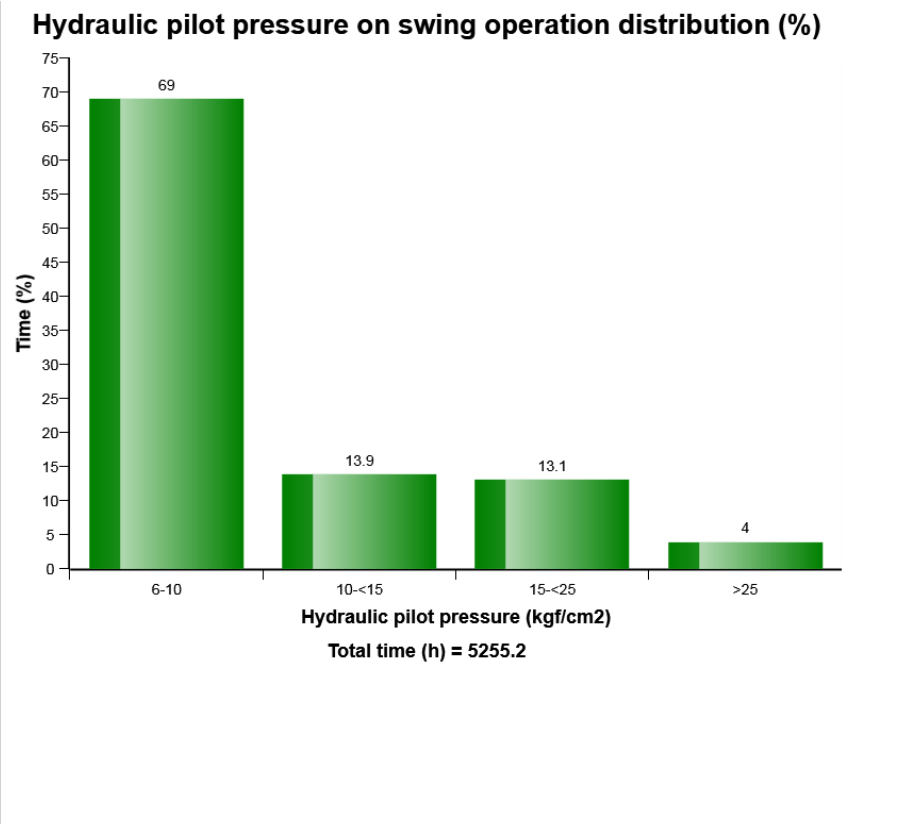
Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The diagram describes the distribution of hydraulic pilot pressure in specified operation

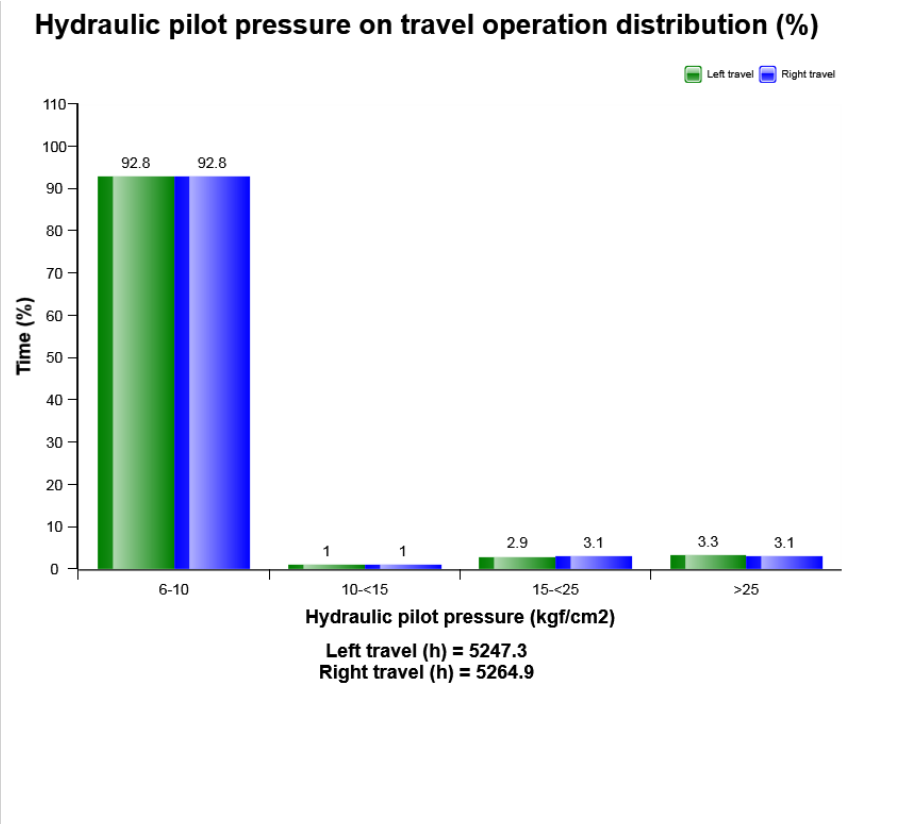
Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The diagram describes the distribution of hydraulic pilot pressure in specified operation

Machine model	SerialNo	Operating Hours	Reading Date
EC380E	310340	5262.1	10/10/2019



Definition:

The diagram describes the distribution of hydraulic pilot pressure in specified operation