VOLVO CONSTRUCTION EQUIPMENT

MATRIS REPORT

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

Company name	Dealer	Report Issuer
Flagler Tampa FL		
Contact name	**Technician**	**Primary Application**
	rhilton	Civil engineering/Heavy construction
Site	**Workorder**	**Ground Condition**

MATRIS Reading, Summary / Recommendation

Machine model	SerialNo	Operating Hours	Reading Date
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Main equipment	Type	Equipment
	Track chain	
	X3 piping	
	Attachment Interface	
	Hydraulic Fluid	
	X1 Piping	
	Main Attachment	
	Hose Rupture Valve on Boom	
	Hose Rupture Valve on Arm	
	X1 return filter	

Machine model	SerialNo	Operating Hours	Reading Date
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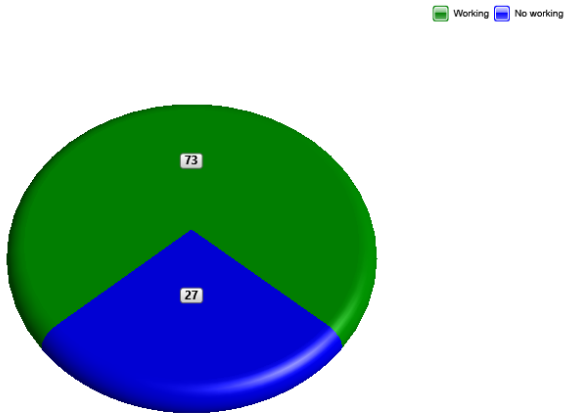
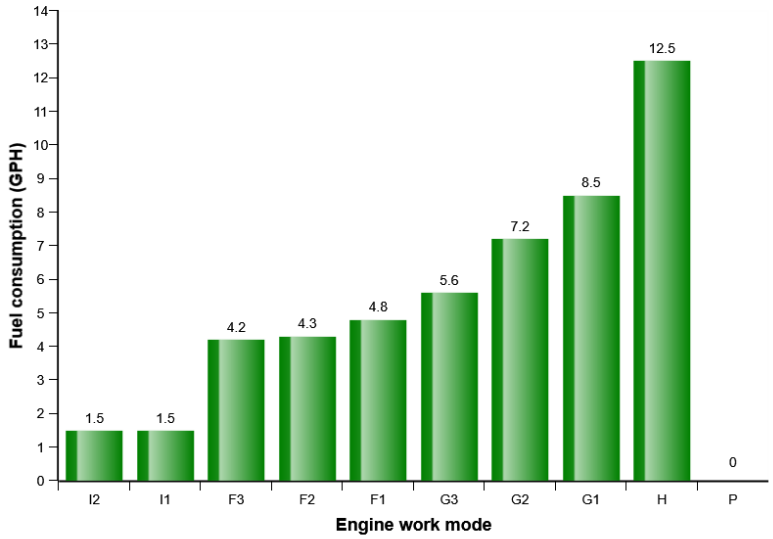
Machine utilization (%)



Total logged time (h) = 4435.3

Fuel consumption distribution on work mode



Fuel consumption (GPH) = 9.8
Fuel used (US-Gallons) = 43246.1

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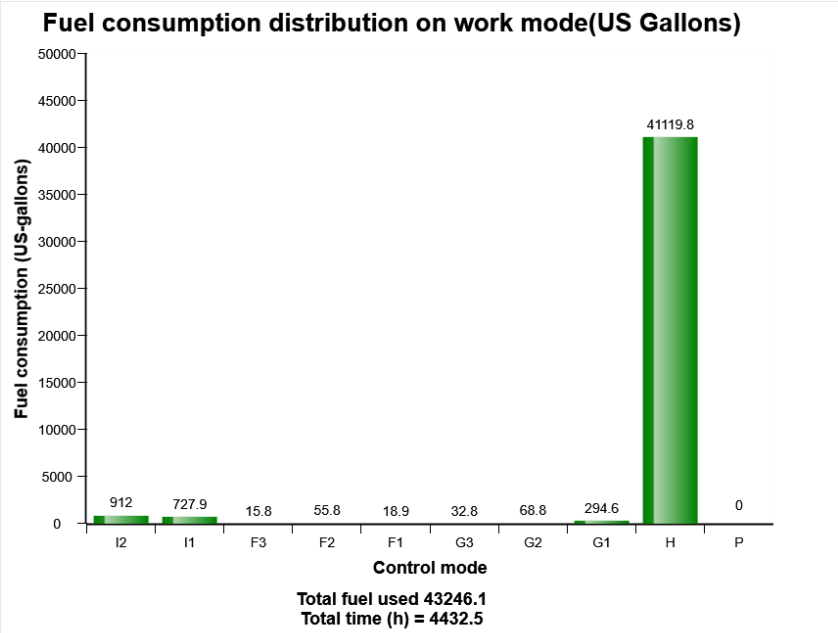
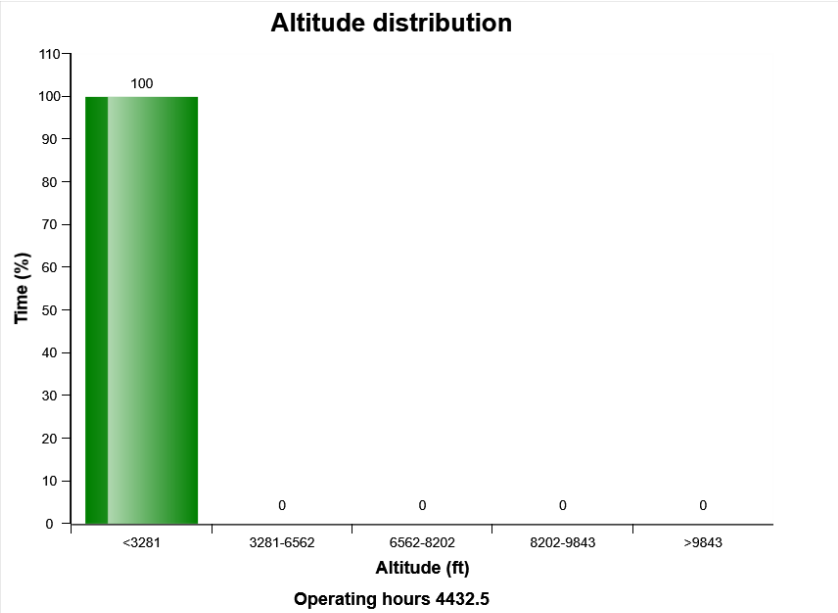
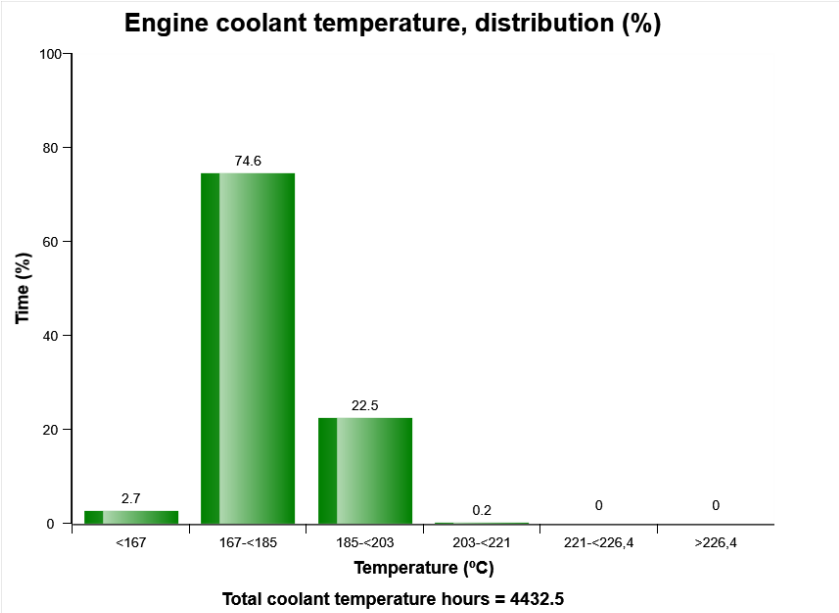
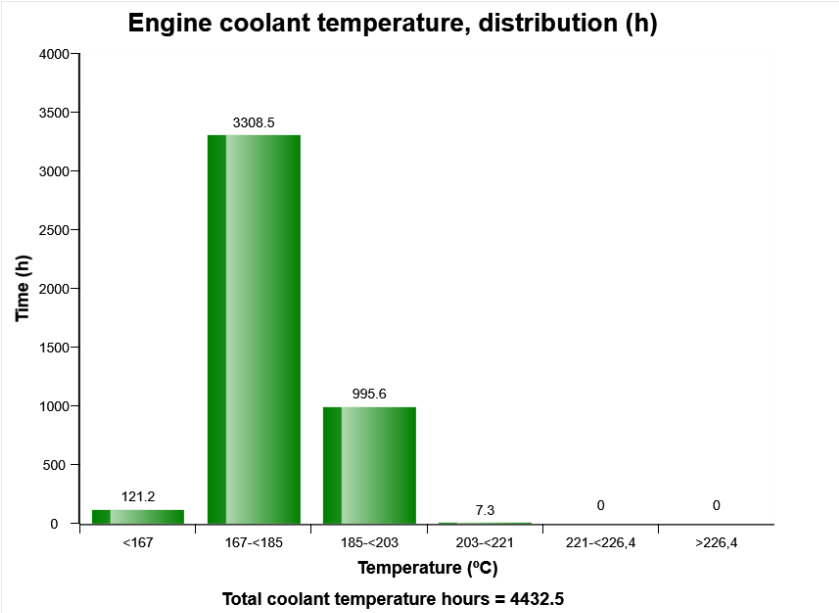


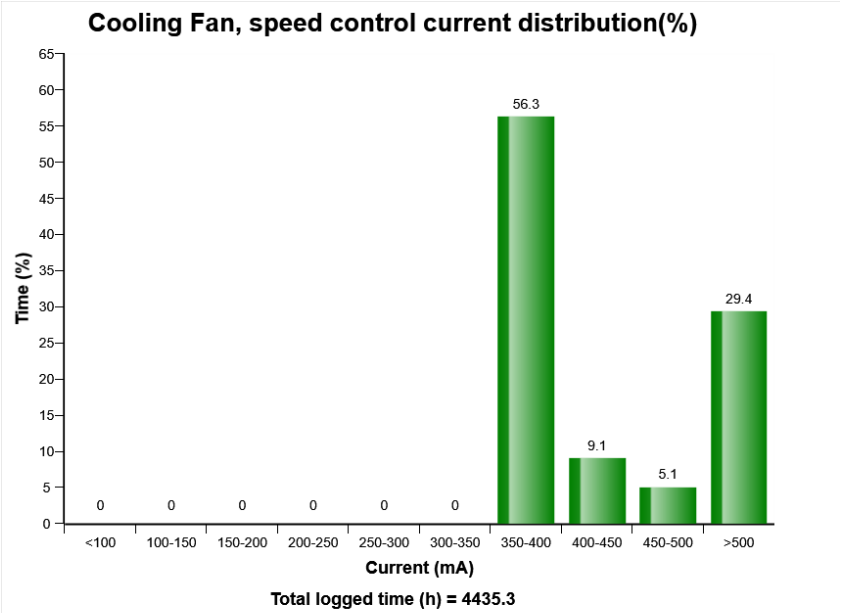


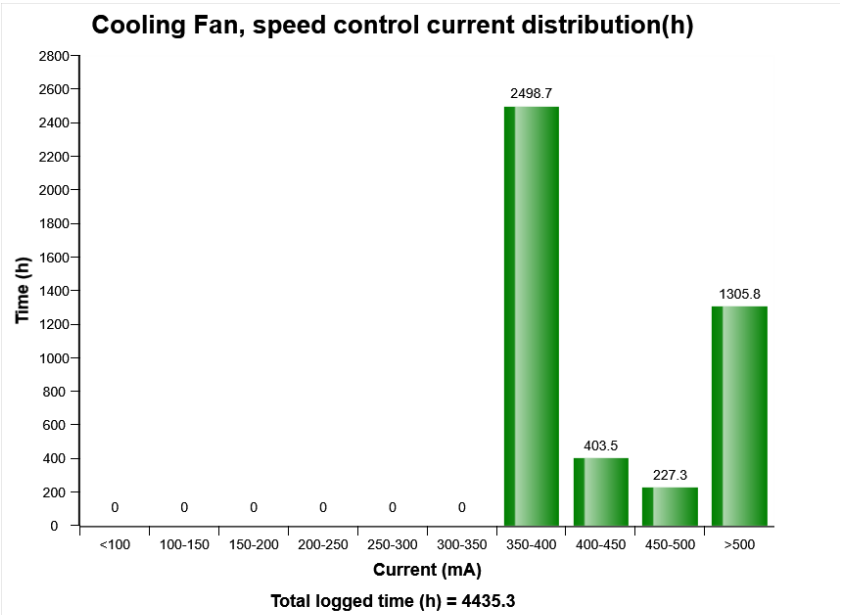


Total coolant temperature hours = 4432.5

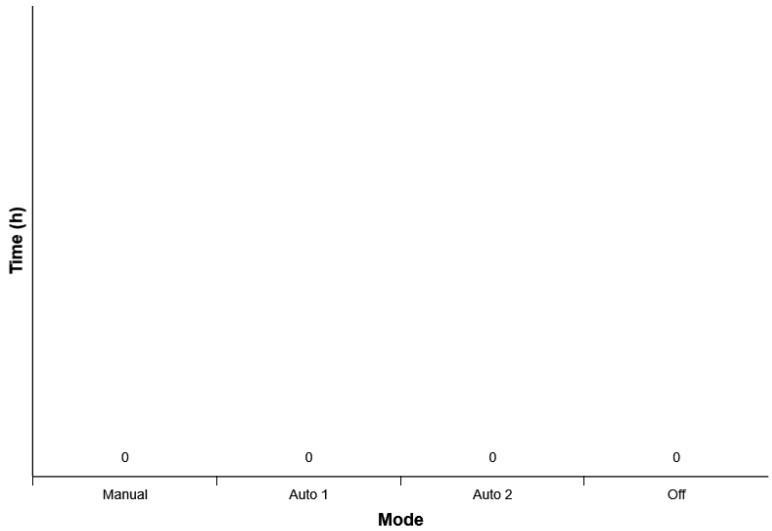


Total coolant temperature hours = 4432.5


Cooling Fan, speed control current distribution(%)
Time (%)
65
60
55
50
45
40
35
30
25
20
15
10
5
0
0
0
0
0
0
0
56.3
9.1
5.1
29.4
<100
100-150
150-200
200-250
250-300
300-350
350-400
400-450
450-500
>500
Current (mA)
Total logged time (h) = 4435.3

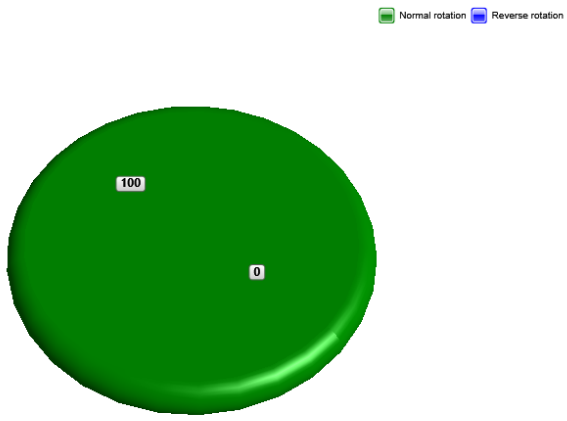

Cooling Fan, speed control current distribution(h)
Time (h)
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0
0
0
0
0
0
2498.7
403.5
227.3
1305.8
<100
100-150
150-200
200-250
250-300
300-350
350-400
400-450
450-500
>500
Current (mA)
Total logged time (h) = 4435.3

Cooling fan, Mode distribution (h)



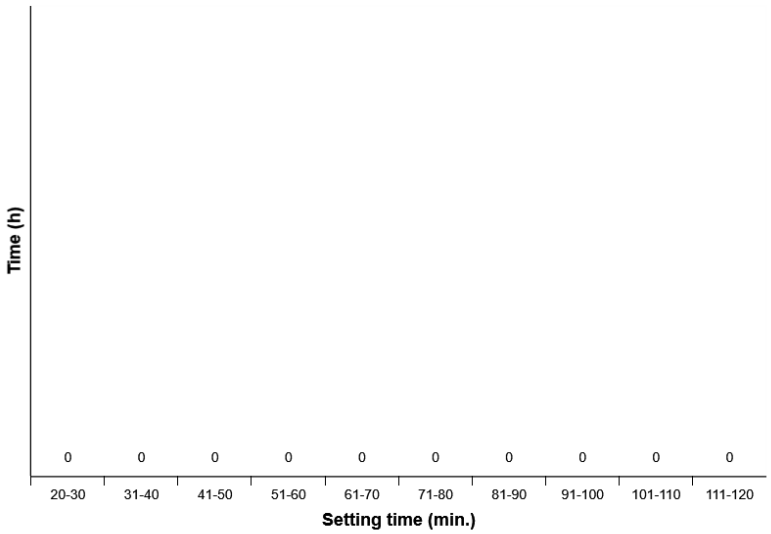
Operating hours 3711.7

Cooling fan, Normal-Reverse rotation distribution (%)



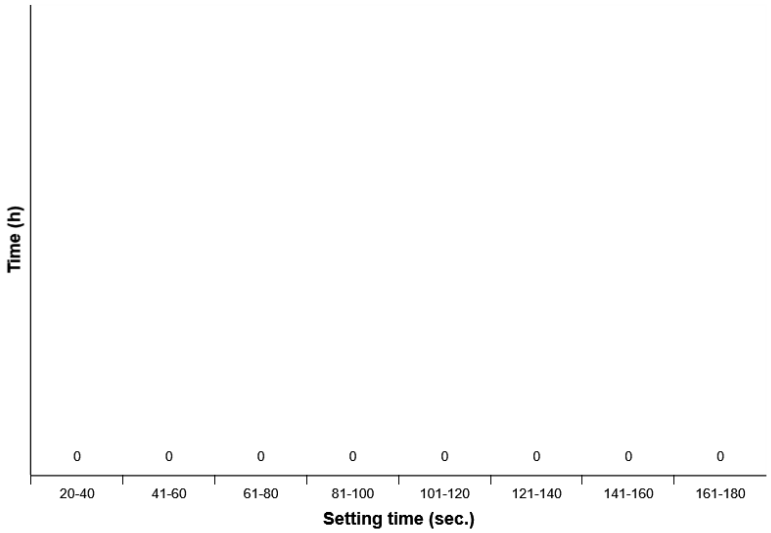
Total operating time (h) = 3711.7

Reverisble fan, Time setting distribution (h) at Auto 1 mode



Total operating time at Auto 1 mode (h) = 3711.7

Reversible fan, Time setting distribution (h) at Manual mode



Operating hours 3711.7

Machine model	SerialNo	Operating Hours	Reading Date
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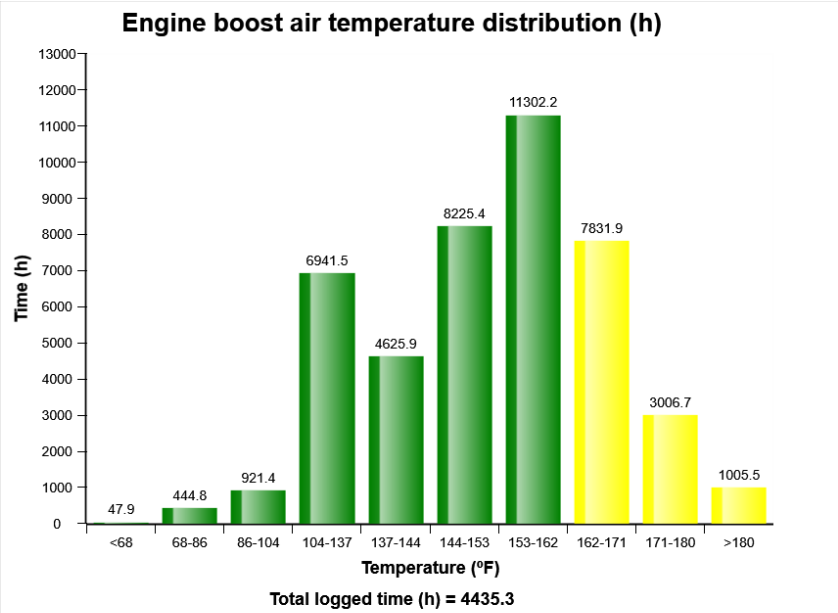
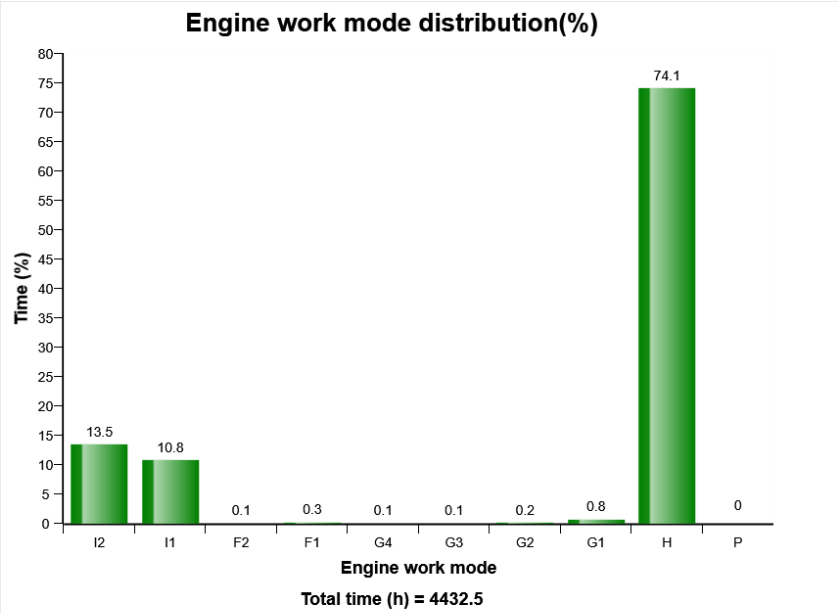
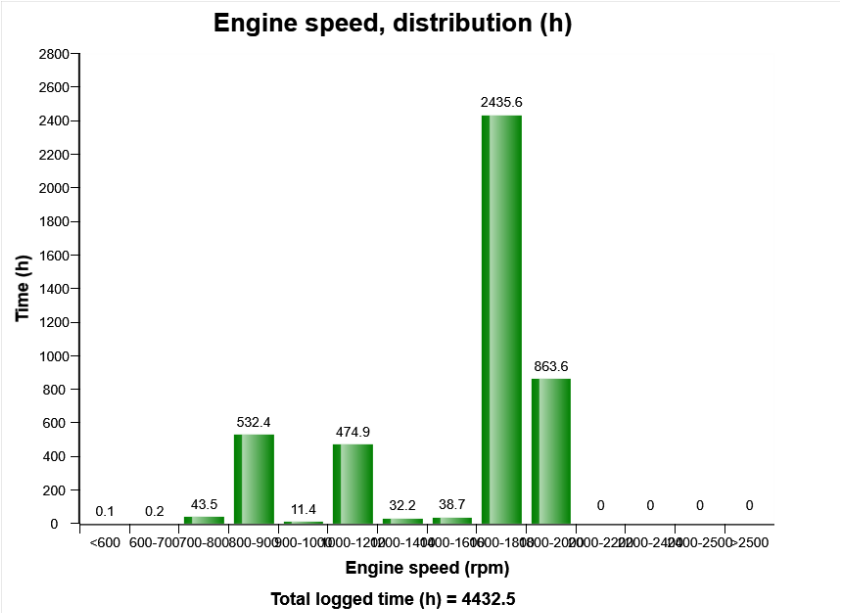
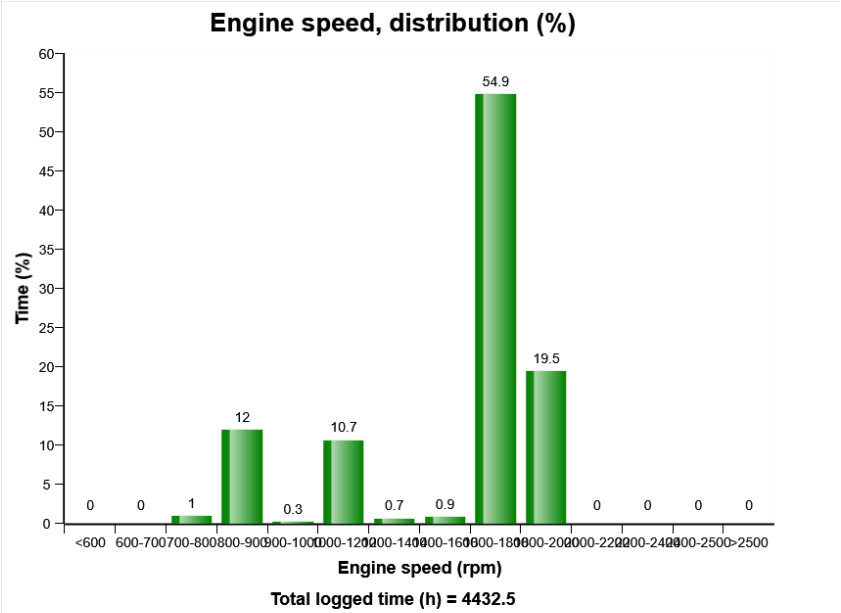
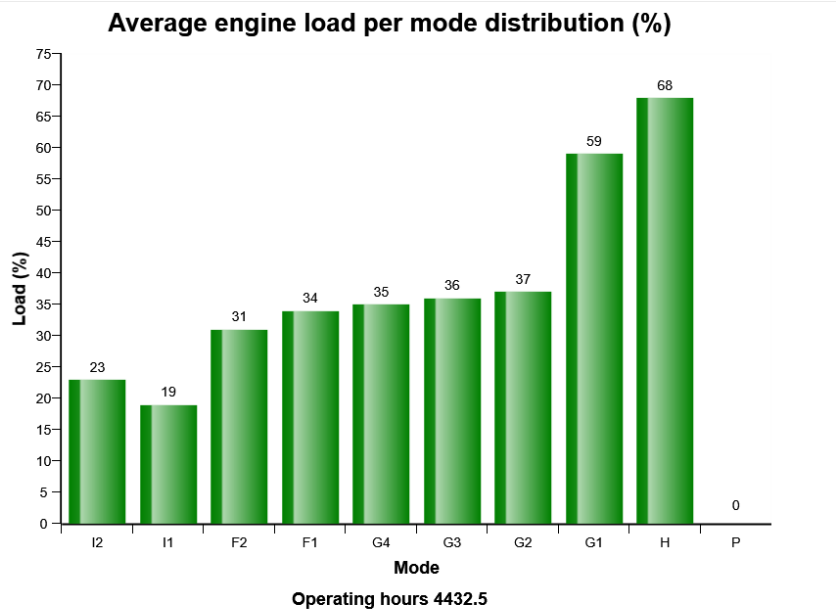


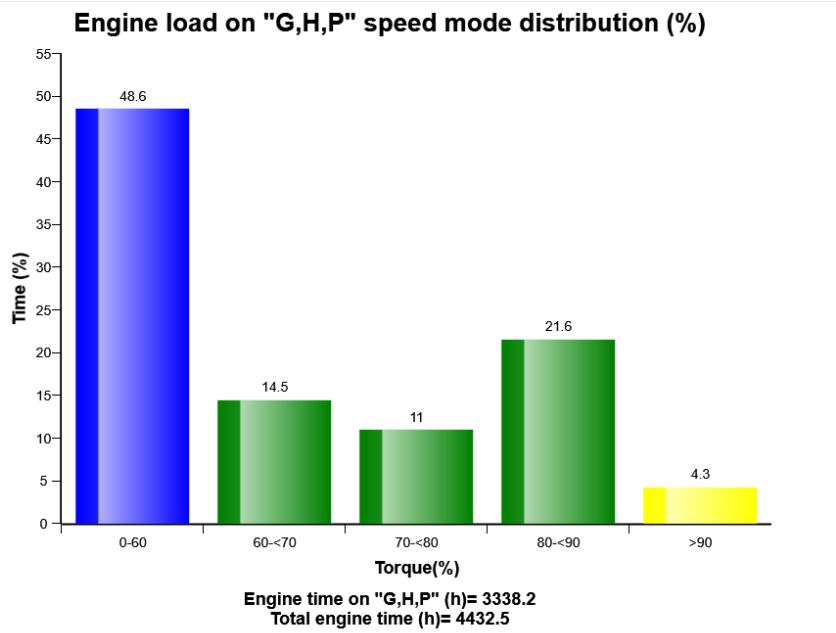


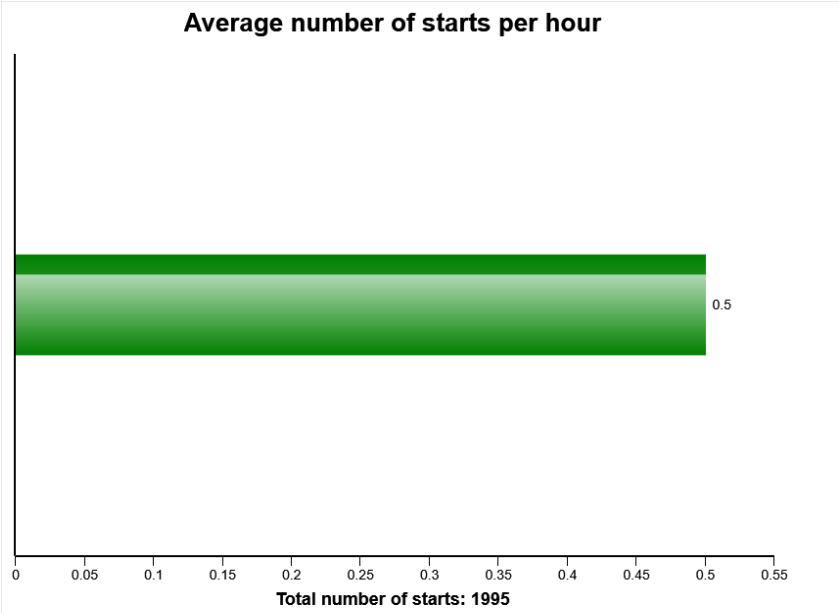

Engine speed, distribution (h)
Time (h)
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0.1
0.2
43.5
532.4
11.4
474.9
32.2
38.7
2435.6
863.6
0
0
0
0
<600
600-700
700-800
800-900
900-1000
1000-1200
1200-1400
1400-1600
1600-1800
1800-2000
2000-2200
2200-2400
2400-2500
>2500
Engine speed (rpm)
Total logged time (h) = 4432.5

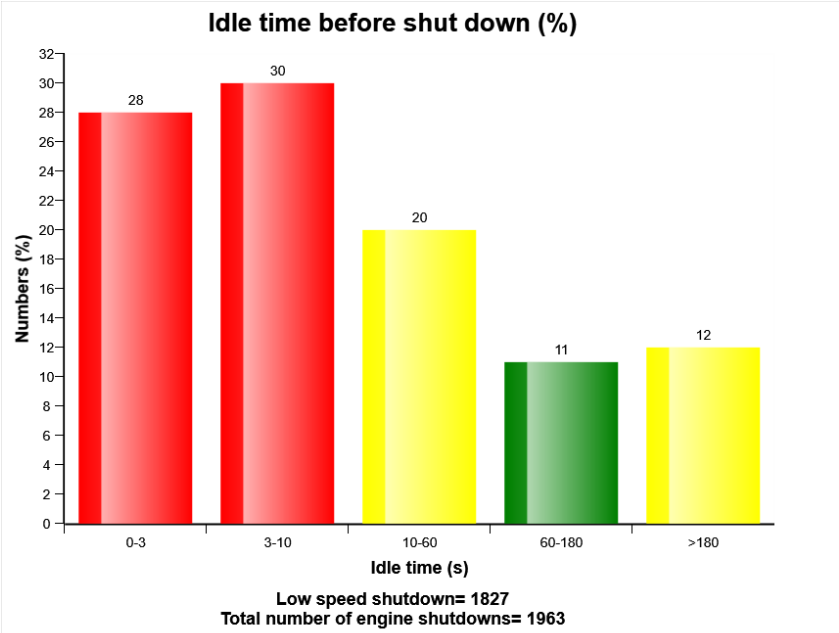

Engine speed, distribution (%)
Time (%)
60
55
50
45
40
35
30
25
20
15
10
5
0
0
0
1
12
0.3
10.7
0.7
0.9
54.9
19.5
0
0
0
0
<600
600-700
700-800
800-900
900-1000
1000-1200
1200-1400
1400-1600
1600-1800
1800-2000
2000-2200
2200-2400
2400-2500
>2500
Engine speed (rpm)
Total logged time (h) = 4432.5

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

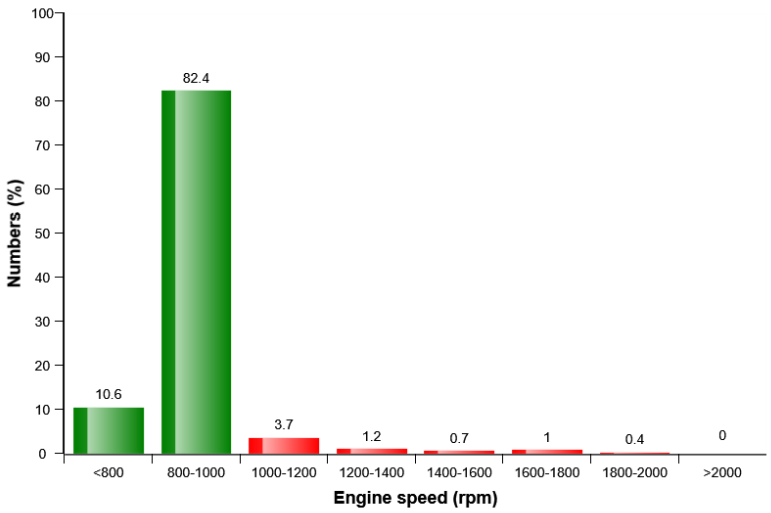





Average number of starts per hour
0.5
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
Total number of starts: 1995

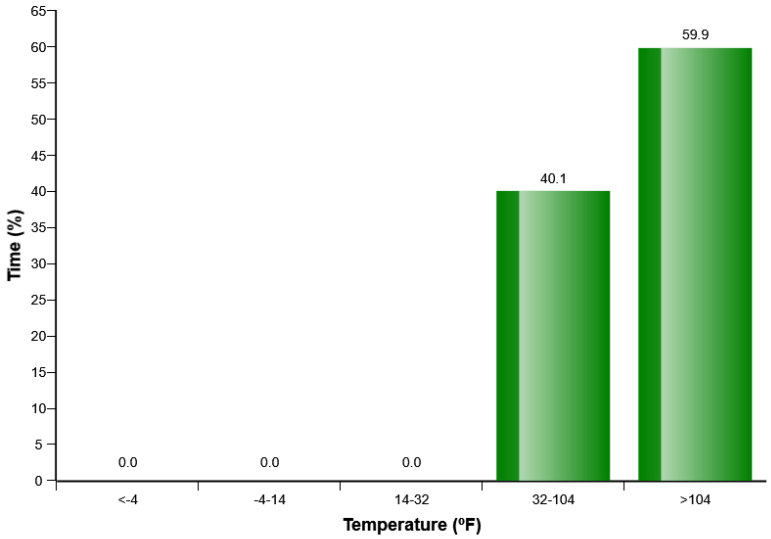

Idle time before shut down (%)
Numbers (%)
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
28
30
20
11
12
0-3
3-10
10-60
60-180
>180
Idle time (s)
Low speed shutdown= 1827
Total number of engine shutdowns= 1963

Engine shut down numbers per engine speed mode distribution (%)



High speed stops = 136.0
Number of engine shut downs = 1963.0

Start at different engine coolant temperatures (%)



Total number of starts: 1995

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

Low coolant level
Total number of occurences = 3

	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
*	583	2016	4	13	14	3	0
*	642	2016	4	21	13	13	0
*	1563	2017	1	20	14	40	0

Machine model	SerialNo	Operating Hours	Reading Date
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Low engine oil level at start
Total number of occurences = 0

	Op hours	Year	Month	Day	Hour	Minute
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0
*	0	2000	0	0	0	0

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

Low Engine Oil Pressure
Total number of occurences = 0

	Op hours	Year	Month	Day	Hour	Minute	Duration (seconds)	Extreme (psi)
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	0	2000	0	0	0	0	0	0
*	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

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

Fuel Filter Clogging
Total number Fuel filter clogging = 9

	Op hours	Year	Month	Day	Hour	Minute	Duration (minutes)
*	1564	2017	1	23	6	13	1
*	1564	2017	1	23	6	14	1
*	1574	2017	1	24	6	14	2
*	1574	2017	1	24	6	17	1
*	1575	2017	1	24	6	21	0
*	1575	2017	1	24	6	22	1
*	1575	2017	1	24	6	24	2
*	1575	2017	1	24	6	44	0
*	1889	2017	4	24	8	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

Low Air filter pressure
Total number of occurences = 0

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
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0

Machine model	SerialNo	Operating Hours	Reading Date
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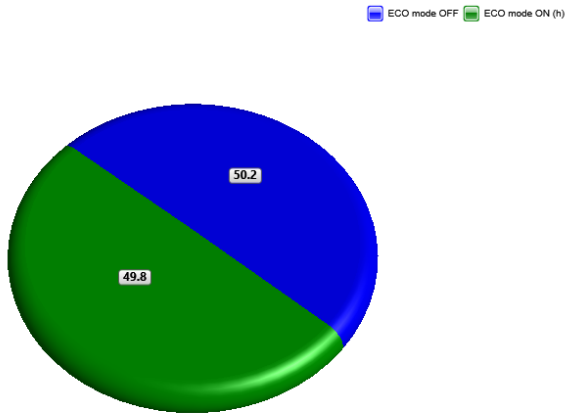
High Charge air temperature
Total number of occurences = 0

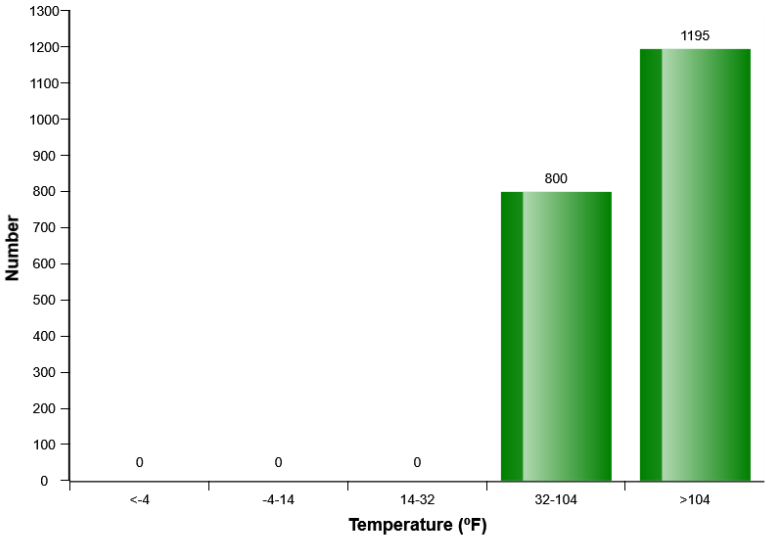
Op hours	Year	Month	Day	Hour	Minute	Duration (seconds)	Extreme (° F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	321
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	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

ECO mode distribution (%)



Total engine time (h)= 4435.3

Start at different engine coolant temperatures



Total number of starts: 1995

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

Regeneration aborted
Total number of occurences = 65

	Op hours	Year	Month	Day	Hour	Minute	Reason
*	2807	2017	10	20	16	3	2
*	2807	2017	10	20	16	0	2
*	2807	2017	10	20	15	59	2
*	2807	2017	10	20	15	58	2
*	2807	2017	10	20	15	57	2
*	2807	2017	10	20	15	56	2
*	2807	2017	10	20	15	55	2
*	2807	2017	10	20	15	54	2
*	2807	2017	10	20	15	53	2
*	2807	2017	10	20	15	52	2
*	2807	2017	10	20	15	51	2
*	2807	2017	10	20	15	50	2
*	2807	2017	10	20	15	49	2
*	2807	2017	10	20	15	48	2
*	2807	2017	10	20	16	1	2
*	2807	2017	10	20	16	2	2
*	3188	2018	1	5	11	39	2
*	4424	2019	2	4	10	31	2
*	4426	2019	2	4	12	36	2
*	4426	2019	2	4	11	45	2

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

Regeneration ignored
Total number of occurences = 43

	Op hours	Year	Month	Day	Hour	Minute	Duration (min)
*	4424	2019	2	4	10	31	0
*	4426	2019	2	4	11	45	0
*	4426	2019	2	4	12	36	2
*	4427	2019	2	5	11	13	4
*	4427	2019	2	5	10	6	10
*	4427	2019	2	5	10	33	8
*	4427	2019	2	5	11	11	1
*	4427	2019	2	5	11	41	1
*	4428	2019	2	6	10	37	1
*	4428	2019	2	6	9	52	18
*	4428	2019	2	6	9	30	3
*	4428	2019	2	6	9	23	4
*	4428	2019	2	6	9	18	0
*	4428	2019	2	7	8	3	8
*	4428	2019	2	5	12	0	4
*	4428	2019	2	6	12	17	5
*	4428	2019	2	6	9	13	2
*	4428	2019	2	6	12	26	2
*	4429	2019	2	7	8	42	6
*	4429	2019	2	7	8	12	4

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

Regeneration duration
Total number of occurences = 22

	Op hours	Year	Month	Day	Hour	Minute	Duration (min)
*	753	2016	5	31	9	0	35
*	810	2016	6	19	10	2	33
*	1509	2017	1	11	12	48	51
*	2323	2017	7	17	7	0	5
*	2323	2017	7	17	7	7	50
*	2478	2017	8	16	15	7	50
*	2807	2017	10	23	6	59	54
*	2807	2017	10	20	15	34	29
*	3187	2018	1	5	11	9	30
*	3188	2018	1	8	10	56	54
*	3410	2018	2	13	10	22	49
*	3540	2018	3	7	9	36	50
*	4241	2018	7	31	10	28	49
*	4310	2018	9	5	9	26	52
*	4364	2018	9	17	11	4	51
*	4422	2019	2	4	7	58	278
*	4427	2019	2	5	11	42	18
*	4427	2019	2	5	10	16	17
*	4428	2019	2	6	9	34	19
*	4429	2019	2	7	8	15	27

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

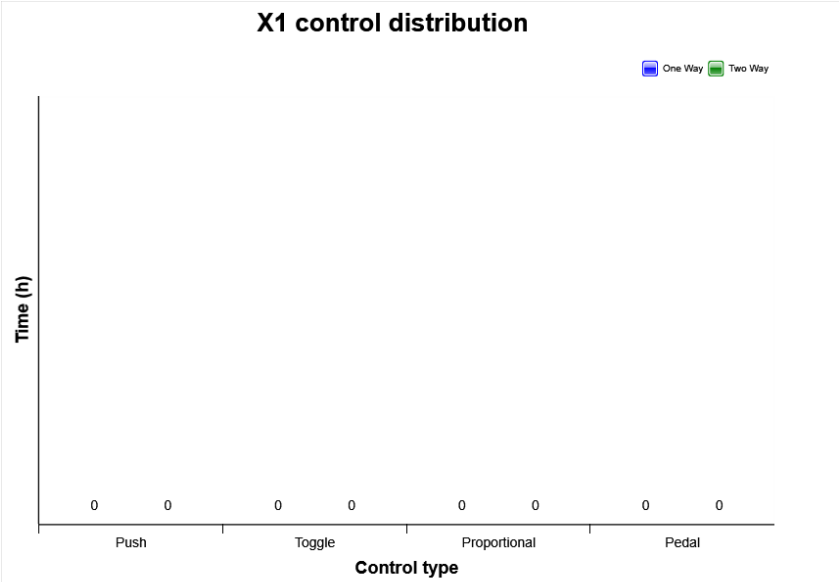
High engine coolant temperature
Total number of occurences = 0

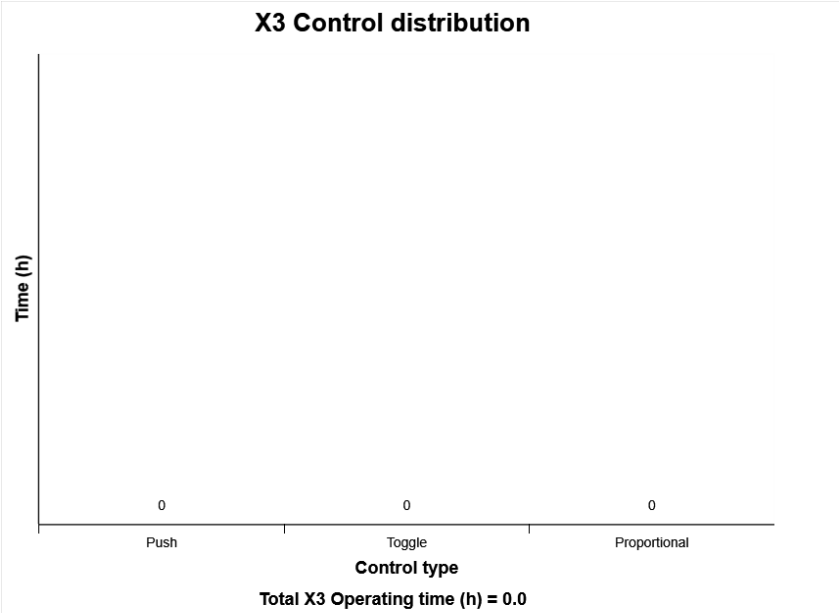
Op hours	Year	Month	Day	Hour	Minute	Duration (seconds)	Extreme (° F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0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

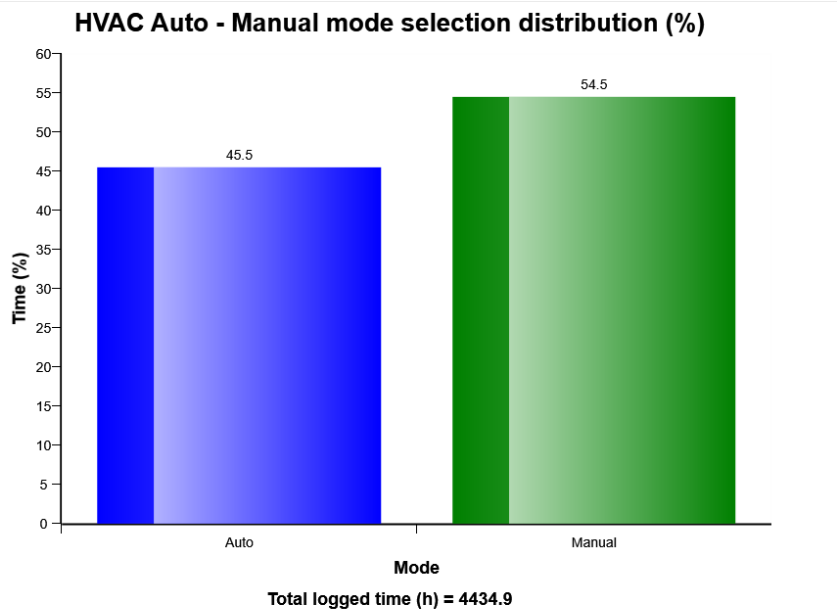
Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

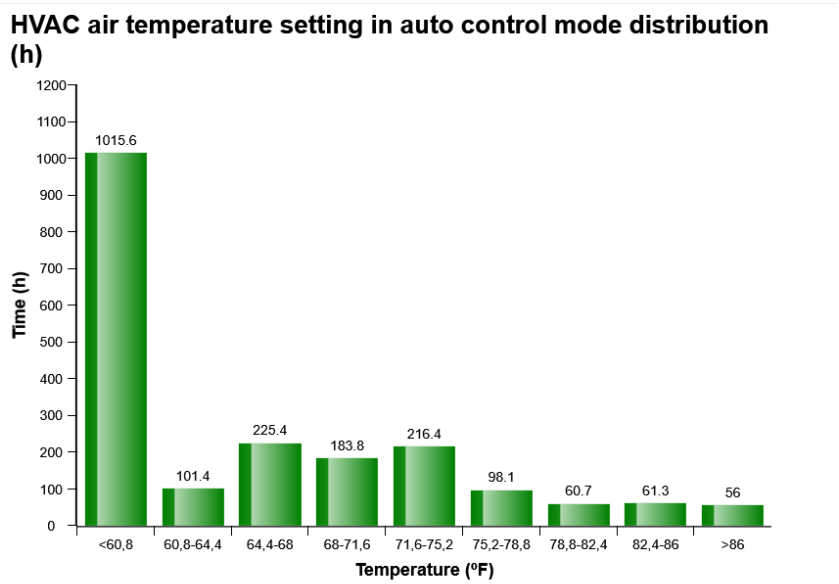
Water level warning in water separator
Total number of occurences = 0

	Op hours	Year	Month	Day	Hour	Minute	Duration (min)
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0

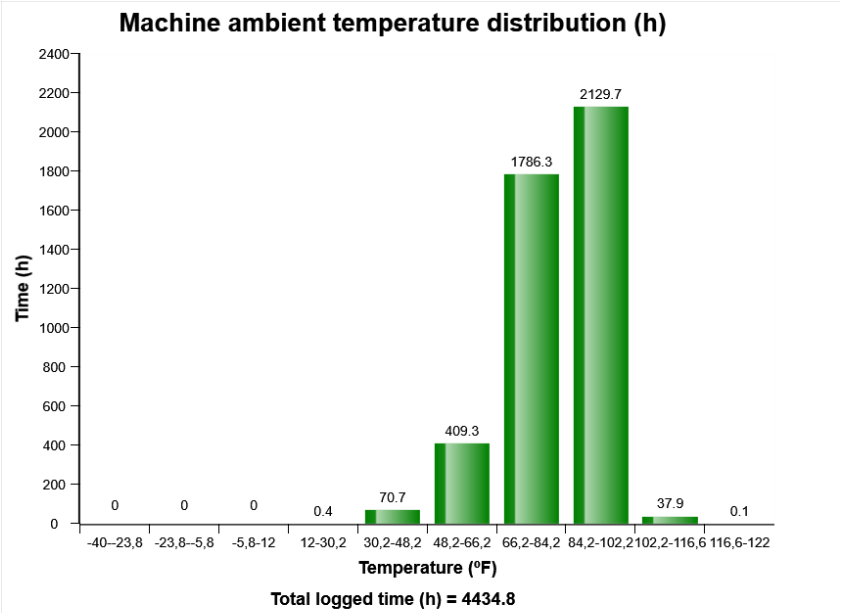

X1 control distribution
One Way
Two Way
Time (h)
0
0
0
0
0
0
0
0
Push
Toggle
Proportional
Pedal
Control type
Total One way flow operating time (h) = 0.0
Total Two way flow operating time (h) = 0.0

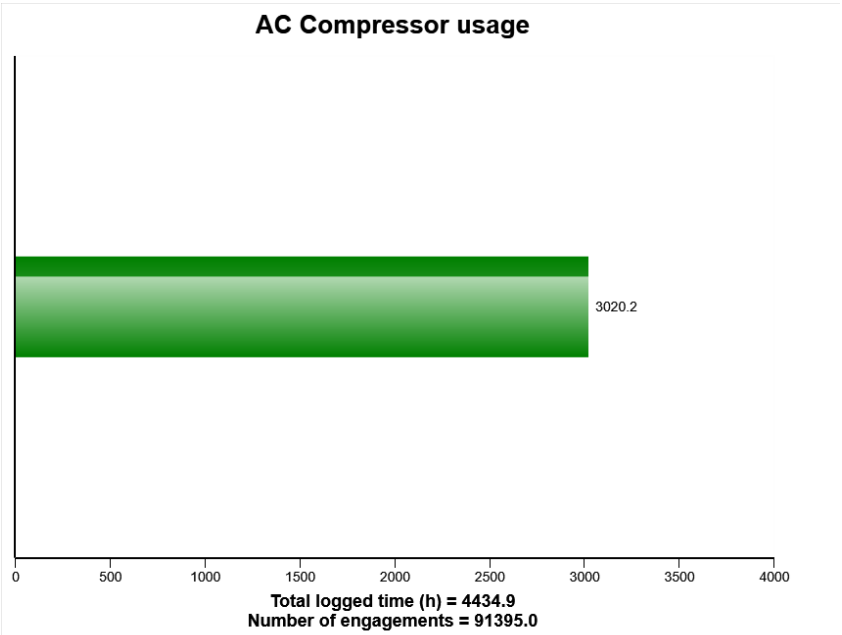

X3 Control distribution
Time (h)
0
0
0
Push
Toggle
Proportional
Control type
Total X3 Operating time (h) = 0.0


HVAC Auto - Manual mode selection distribution (%)
Time (%)
60
55
50
45
40
35
30
25
20
15
10
5
0
45.5
54.5
Auto
Manual
Mode
Total logged time (h) = 4434.9

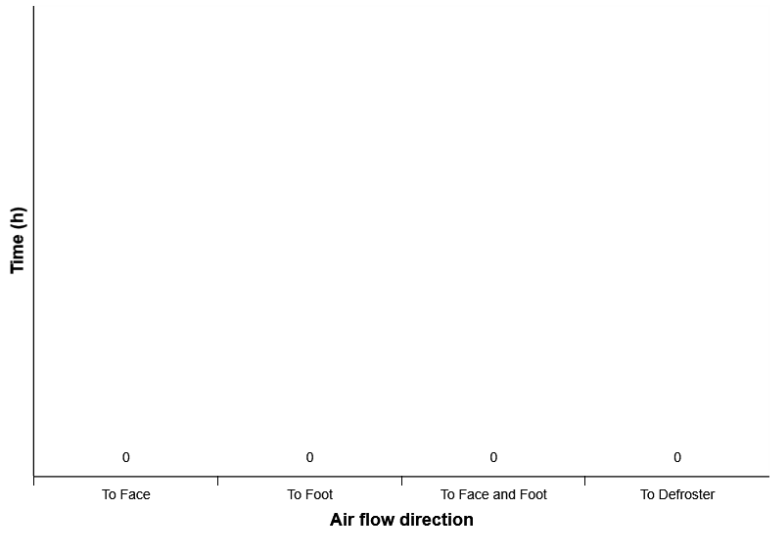

HVAC air temperature setting in auto control mode distribution (h)
Time (h)
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
1015.6
101.4
225.4
183.8
216.4
98.1
60.7
61.3
56
<60,8
60,8-64,4
64,4-68
68-71,6
71,6-75,2
75,2-78,8
78,8-82,4
82,4-86
>86
Temperature (ºF)

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

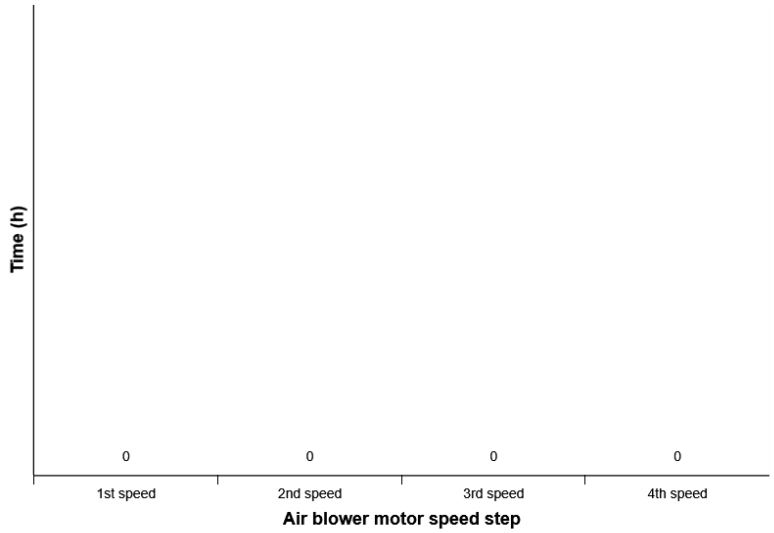




HVAC air flow direction in manual mode distribution (h)



HVAC air blower motor speed in manual mode distribution (h)



Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

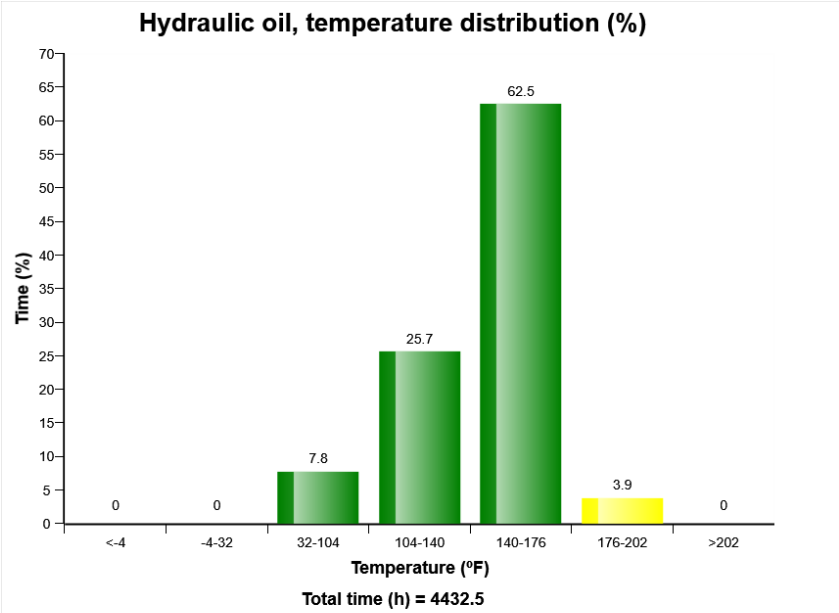
AC High Pressure
Total number of occurences = 0

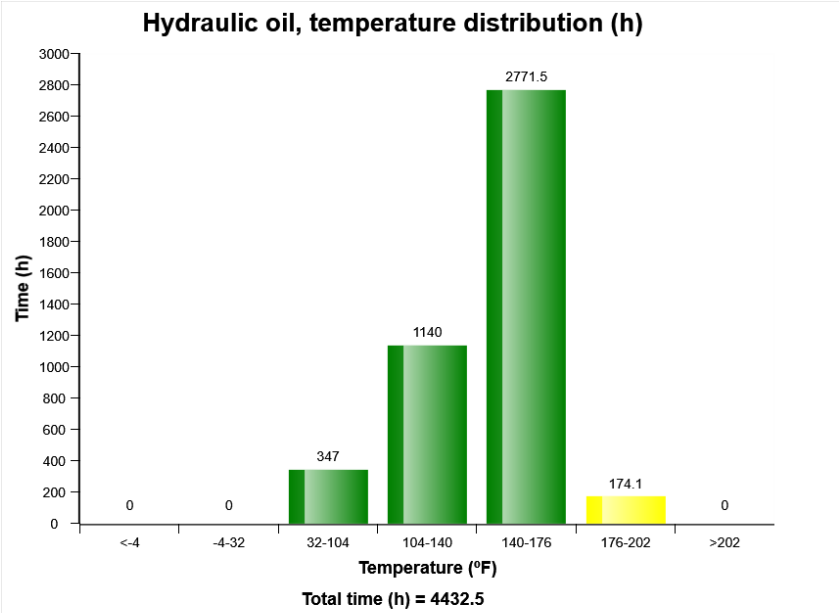
Op hours	Year	Month	Day	Hour	Minute	Duration (seconds)	Ambient temperature (°F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0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

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

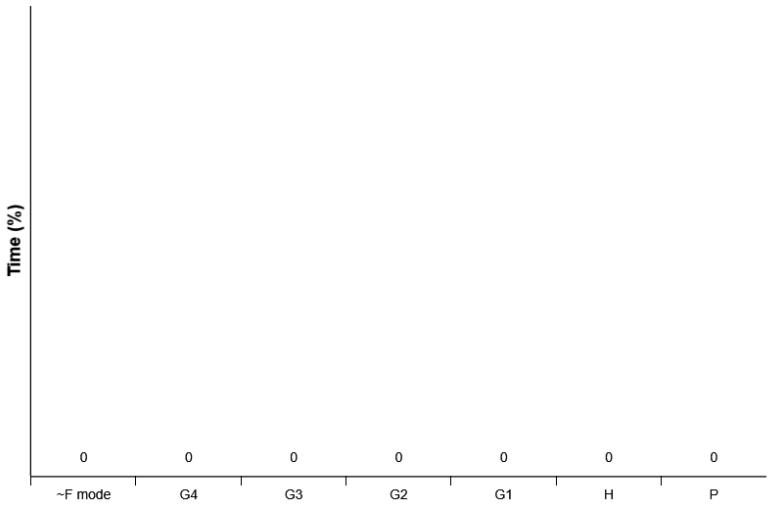
AC System Cut Out Pressure
Total number of occurences = 0

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


Hydraulic oil, temperature distribution (%)
Time (%)
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
62.5
25.7
7.8
3.9
0
0
0
<-4
-4-32
32-104
104-140
140-176
176-202
>202
Temperature (ºF)
Total time (h) = 4432.5

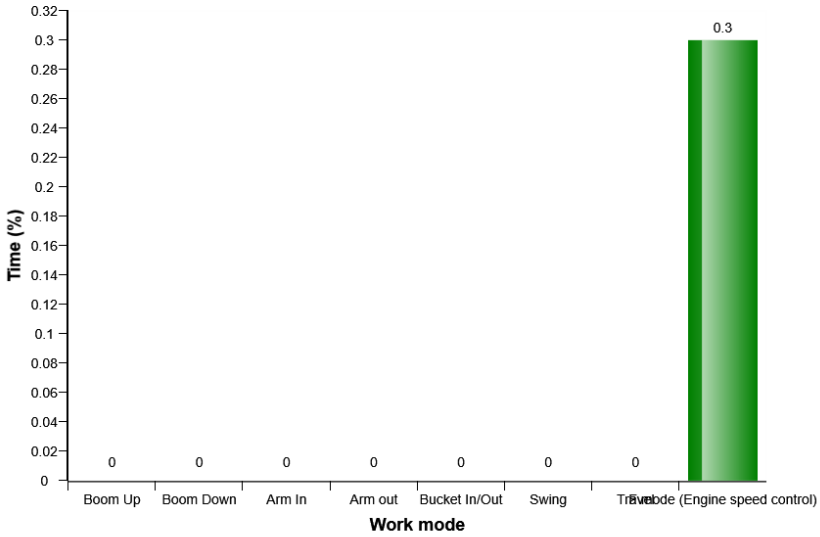

Hydraulic oil, temperature distribution (h)
Time (h)
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
2771.5
1140
347
174.1
0
0
0
<-4
-4-32
32-104
104-140
140-176
176-202
>202
Temperature (ºF)
Total time (h) = 4432.5

Hydraulic hammer/shear, operating distribution on mode(%)



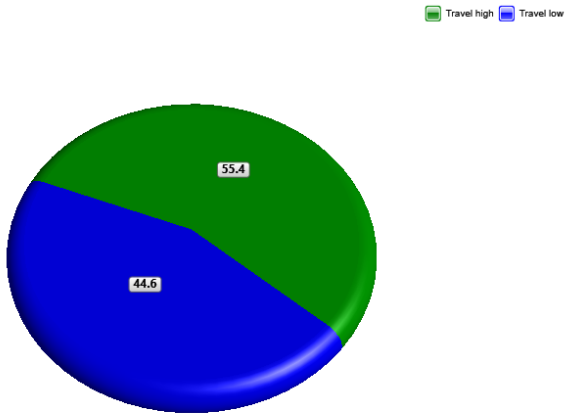
Hydraulic hammer/shear (h) = 0.0
Total logged time (h) = 3711.7

Hydraulic Power boosted working operation distribution (%)



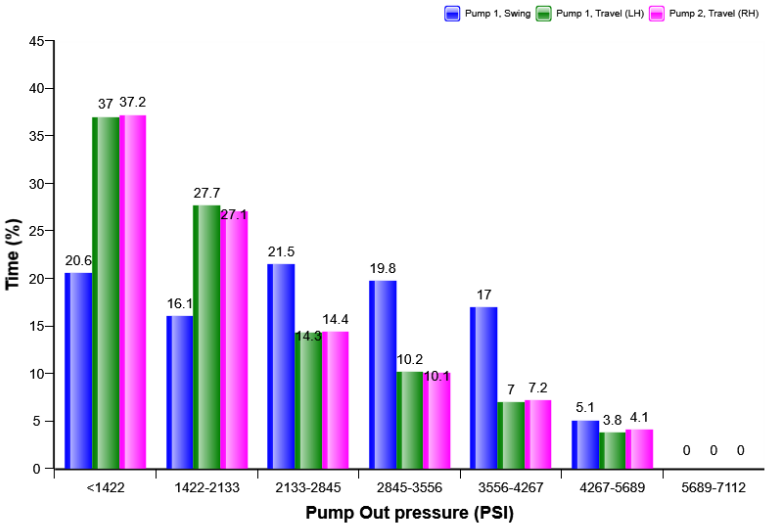
Boost and solenoid ON (h) = 2.5
Boost solenoid ON, F mode (h) = 16.9

Travel speed, high/low (%)

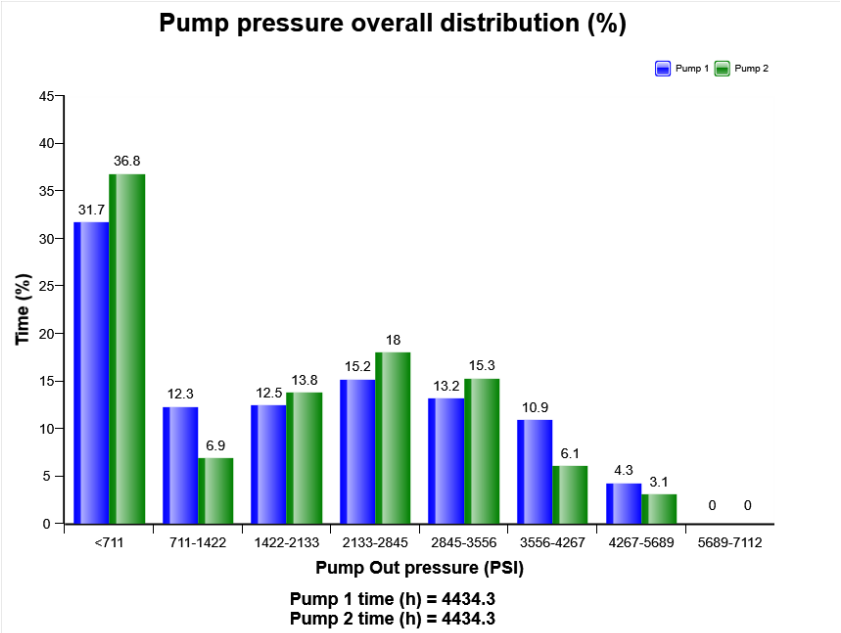


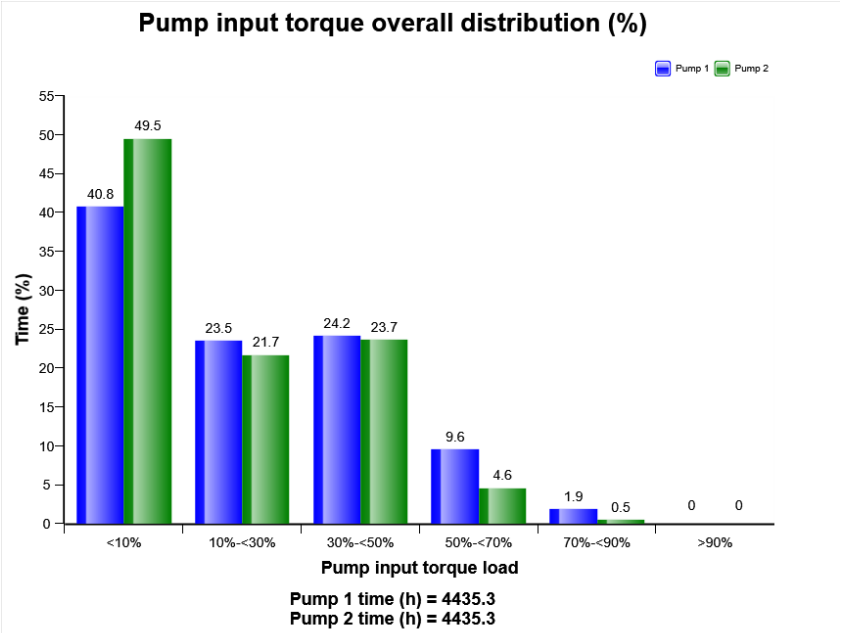
Total travel time (h) = 355.0
Travel time / Operating hours (%)= 8.0

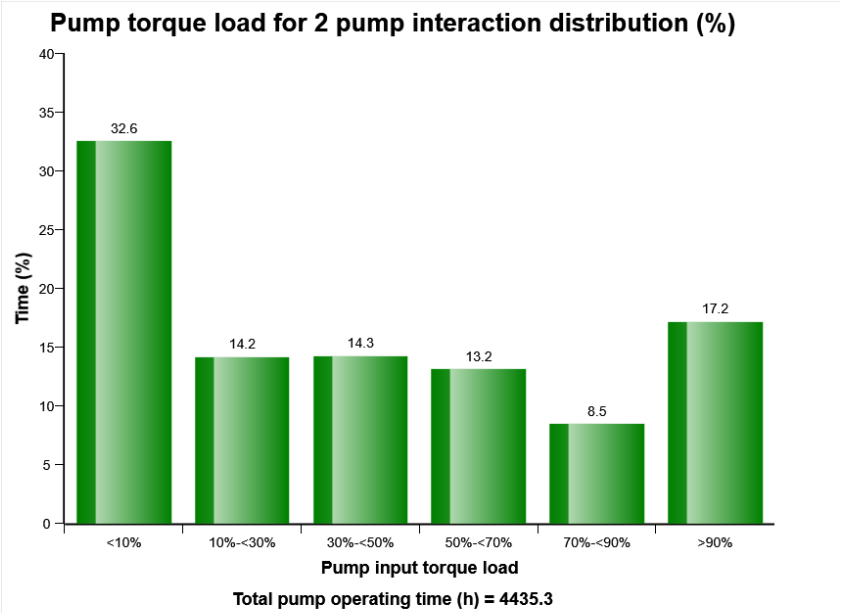
Pump pressure on travel and swing distribution (%)



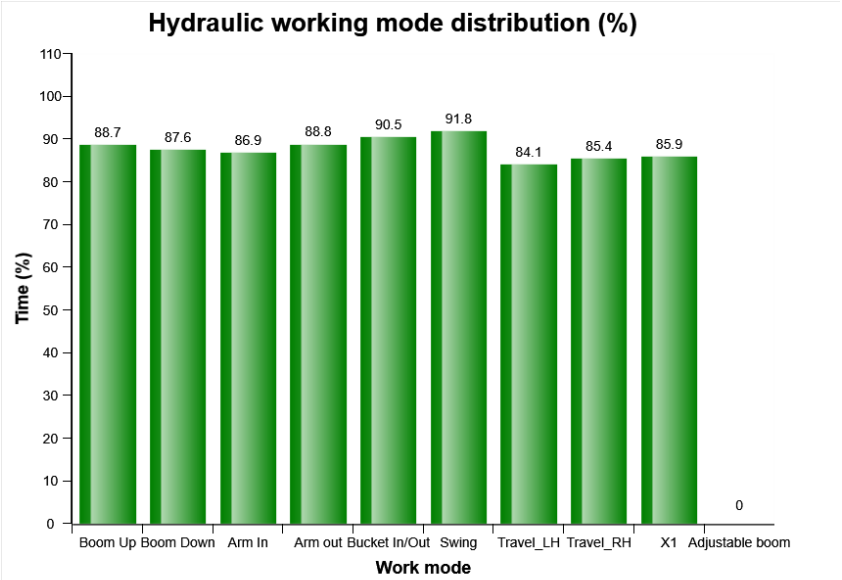
Swing time (h) = 2499.1
Travel (RH) time (h) = 336.2


Pump pressure overall distribution (%)
Pump 1
Pump 2
Time (%)
45
40
35
30
25
20
15
10
5
0
31.7
36.8
12.3
6.9
12.5
13.8
15.2
18
13.2
15.3
10.9
6.1
4.3
3.1
0
0
<711
711-1422
1422-2133
2133-2845
2845-3556
3556-4267
4267-5689
5689-7112
Pump Out pressure (PSI)
Pump 1 time (h) = 4434.3
Pump 2 time (h) = 4434.3


Pump input torque overall distribution (%)
Pump 1
Pump 2
Time (%)
55
50
45
40
35
30
25
20
15
10
5
0
40.8
49.5
23.5
21.7
24.2
23.7
9.6
4.6
1.9
0.5
0
0
<10%
10%-<30%
30%-<50%
50%-<70%
70%-<90%
>90%
Pump input torque load
Pump 1 time (h) = 4435.3
Pump 2 time (h) = 4435.3

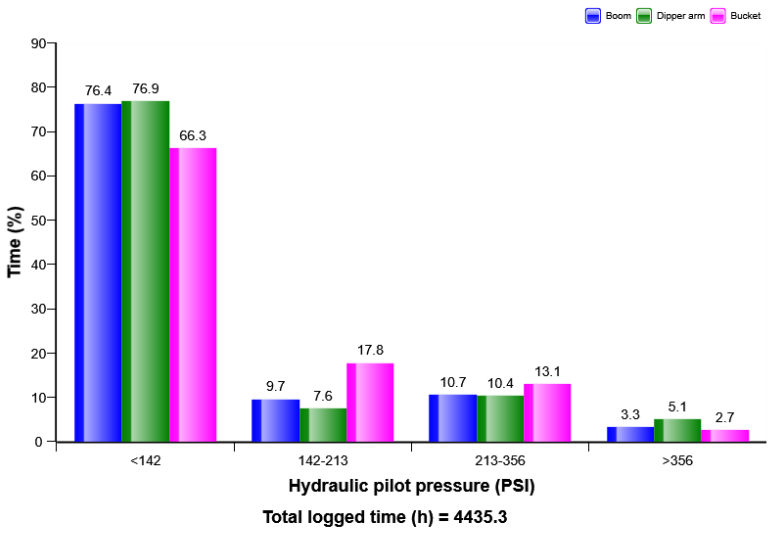


Total pump operating time (h) = 4435.3



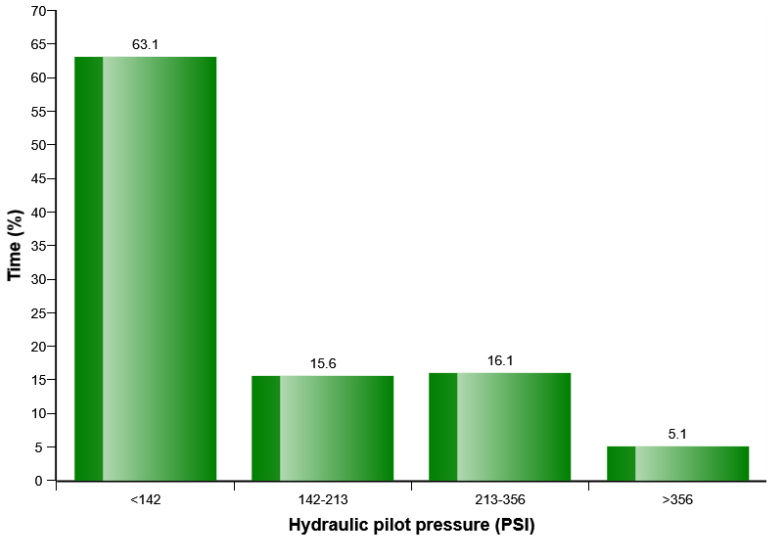
Total logged time (h) = 4435.3

Hydraulic pilot pressure on bucket, boom and arm operation distribution (%)



Total logged time (h) = 4435.3

Hydraulic pilot pressure on swing operation distribution (%)



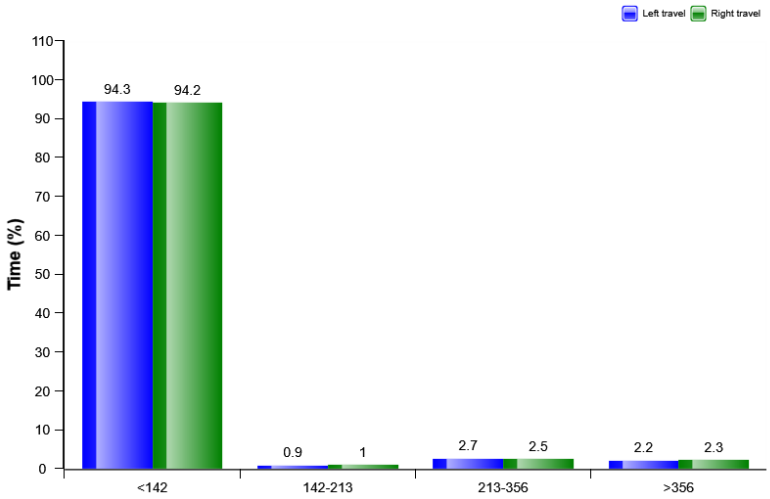
Total time (h) = 4073.6

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

High hydraulic oil temperature
Total number of occurences = 0

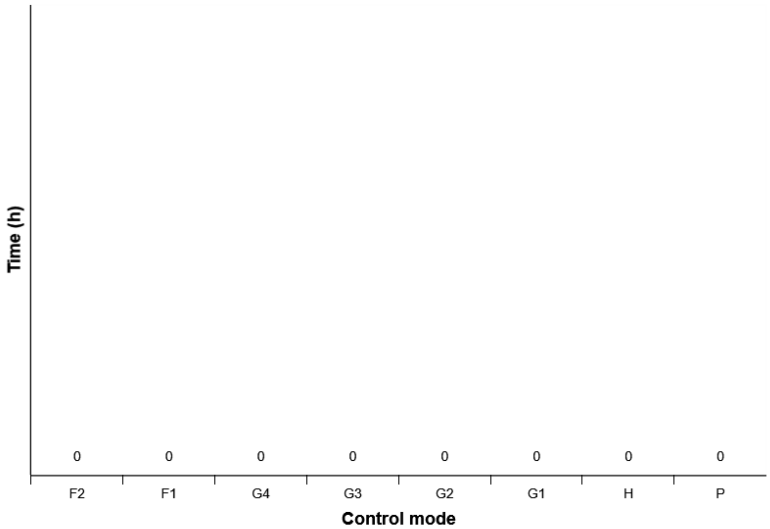
Op hours	Year	Month	Day	Hour	Minute	Duration (seconds)	Extreme (° F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0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

Hydraulic pilot pressure on travel operation distribution (%)



Total time (h) = 7519.0

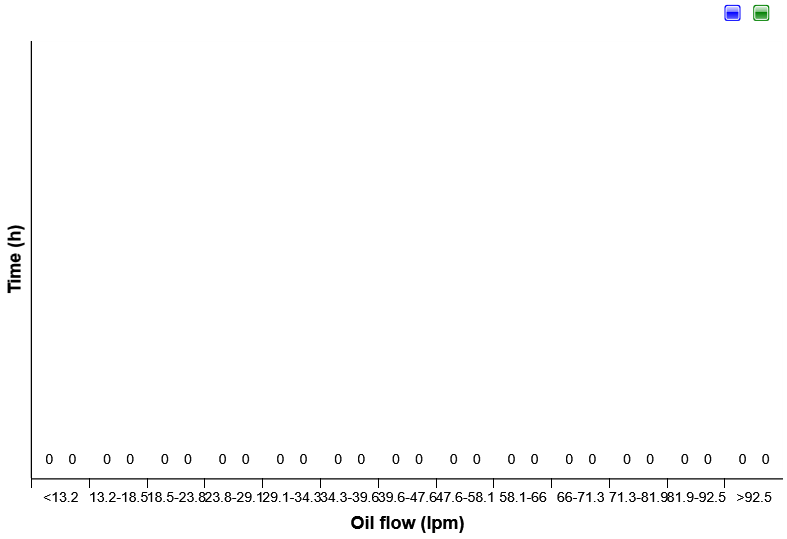
Rotator operation on engine speed mode distribution (h)



Rotator operating time (h) = 0.0
Total logged time (h) = 3711.7

Machine model	SerialNo	Operating Hours	Reading Date
EC480E	310271	4435.1	11/03/2019

X1 hydraulic oil flow control distribution



One way flow (h) = 0.0
Two way flow (h) = 0.0