Flex Reversy 2

Reversy Klin - Overview

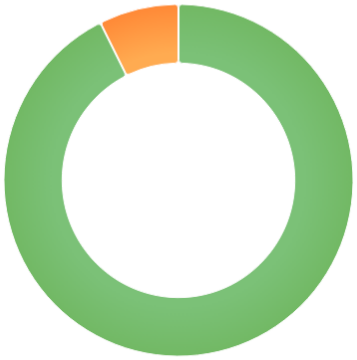
1. Info

Endpoint Address	Machine Name	From	Total Cycles	First ID
127.0.0.1	Flex Reversy 2	2025-01-18 16:08:54	625	9792
Endpoint ID	**Endpoint Protocol**	**To**		**Last ID**
19	S7	2025-01-25 16:08:59		10416

2. Times

Cycle Disabled Time

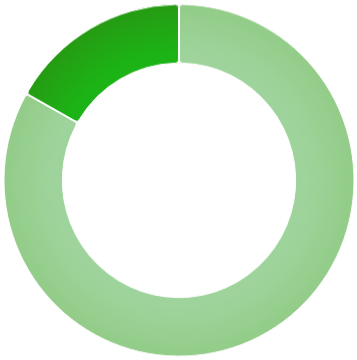
12.3 hours



	Value	Percent
Cycle Time	6.49 days	93%
Cycle Disabled Time	12.3 hours	7%

Cycle Time

6.49 days



	Value	Percent
Combustion Time	5.40 days	83%
Inversion Time	1.09 days	17%

Time Range

1 week

Combustion Time

5.40 days

Fuel Supply Time

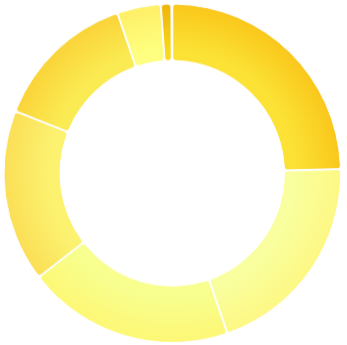
4.31 days

Inversion Time

1.09 days

Waiting Time

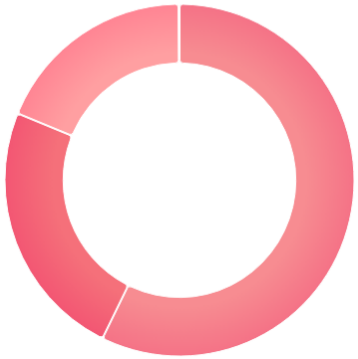
9.65 hours



	Value	Percent
Other Maintenance	3.37 hours	-
Blower Maintenance	1.92 hours	25%
Skip Maintenance	1.56 hours	20%
Hydraulic Oil Plant Maintenance	1.54 hours	20%
Drawer Sampling	1.28 hours	16%
Hydraulic Oil Unit Maintenance	1.07 hours	14%
Valves Maintenance	19.2 mins	4%

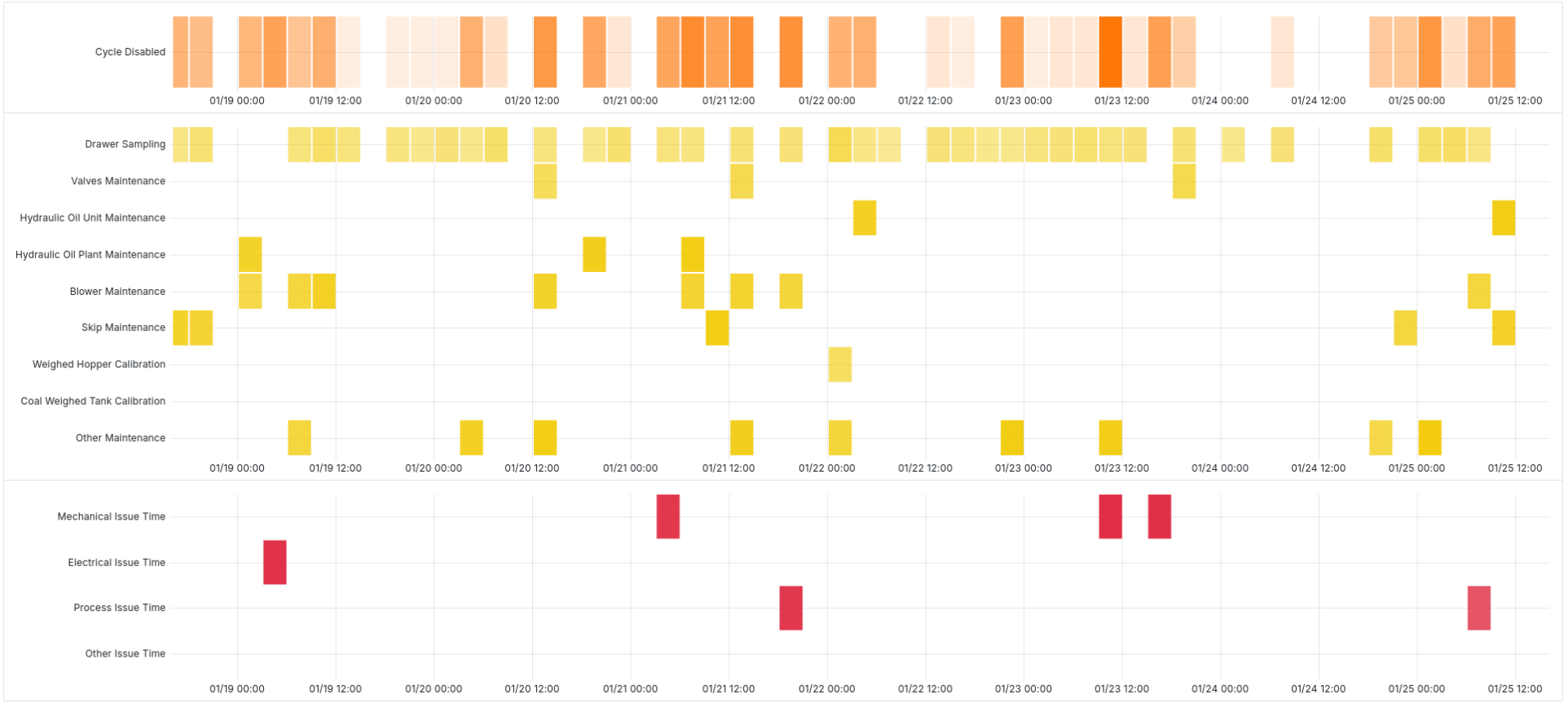
Unavailability Time

2.64 hours



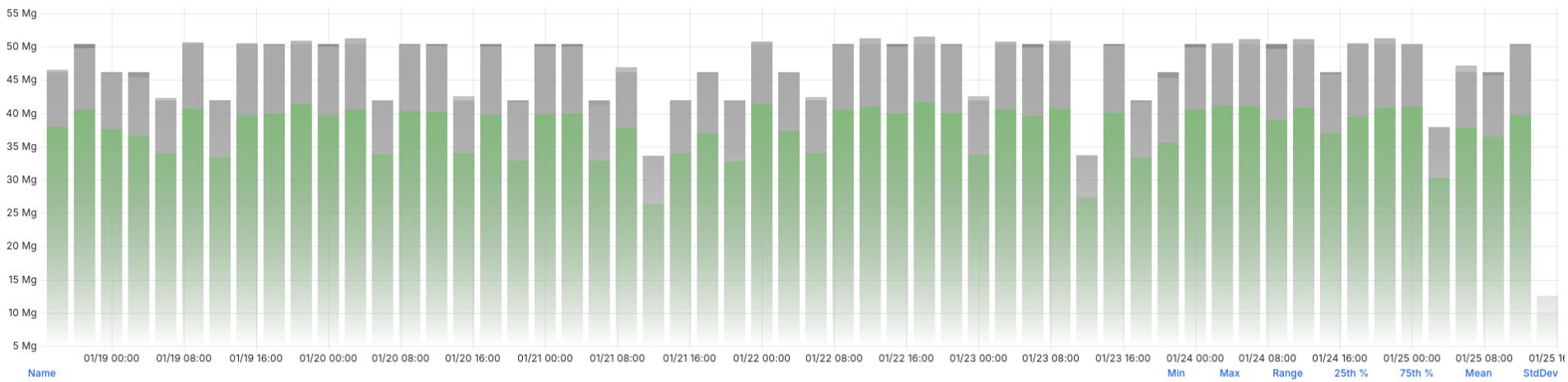
	Value	Percent
Mechanical Issue Time	1.51 hours	57%
Process Issue Time	37.9 mins	24%
Electrical Issue Time	29.6 mins	19%
Other Issue Time	0 s	0%

3. Times Heatmap



4. Production

Limestone / Lime



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Limestone Setpoint	12.6 Mg	50.4 Mg	37.8 Mg	42 Mg	50.4 Mg	46.1 Mg	7.12 Mg
Limestone	12.4 Mg	51.5 Mg	39.1 Mg	42.5 Mg	50.5 Mg	46.1 Mg	7.18 Mg
Lime	9.85 Mg	41.7 Mg	31.9 Mg	34.0 Mg	40.5 Mg	36.9 Mg	5.76 Mg

Total - Limestone

2.6 Gg ↓ -1.15%

Mean Rate - Limestone

15.62 Mg/h

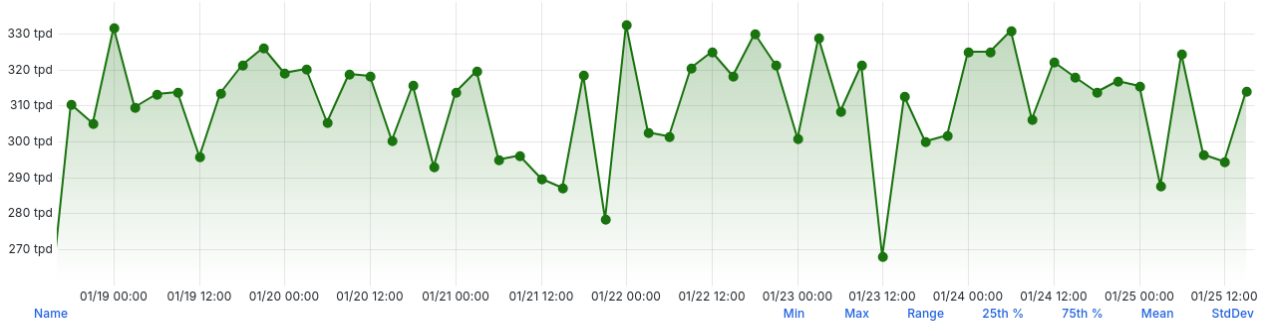
Mean Rate - Lime

12.50 Mg/h

Total - Lime

2.1 Gg ↓ -1.04%

Nominal Production



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Nominal Production	254 tpd	332 tpd	78.2 tpd	301 tpd	320 tpd	310 tpd	15.7 tpd

Mean - Nominal Production

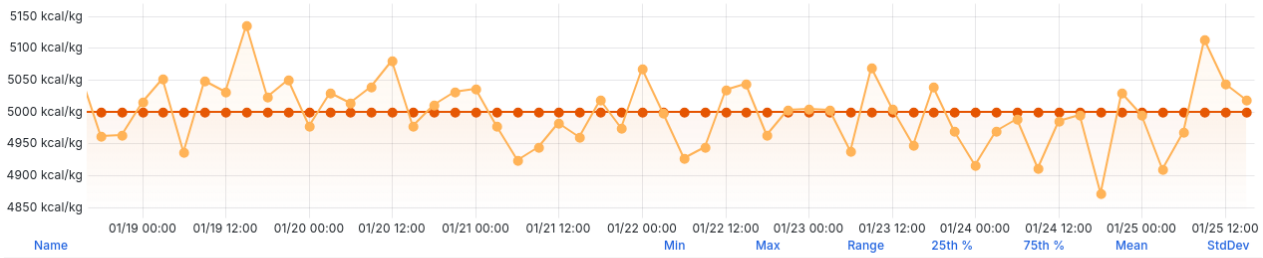
311.4 tpd ↓ -0.531%

Boundary Cycles - Nominal Production

Type	Date	Time	Cycle	Value
Min	2025-01-21	11:46:59	10044	105 tpd
Max	2025-01-19	08:31:08	9850	403 tpd

5. Fuel

Heat Consumption



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Heat Consumption Setpoint	5000 kcal/kg	5000 kcal/kg	0 kcal/kg	5000 kcal/kg	5000 kcal/kg	5000 kcal/kg	0 kcal/kg
Heat Consumption	4872 kcal/kg	5135 kcal/kg	263 kcal/kg	4964 kcal/kg	5034 kcal/kg	4999 kcal/kg	51.6 kcal/kg

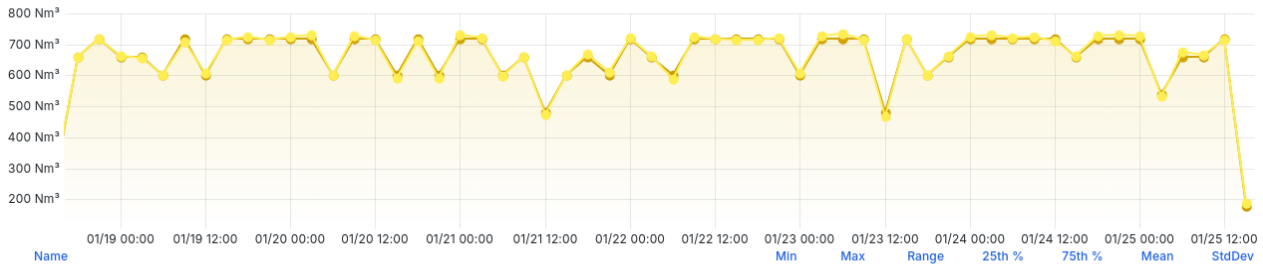
Mean - Heat Consumtion

4999 kcal/kg ↓ -0.177%

Boundary Cycles - Heat Consumption

Type	Date	Time	Cycle	Value
Min	2025-01-24	08:51:41	10299	4588 kcal/kg
Max	2025-01-21	05:58:16	10023	5500 kcal/kg

Fuel



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Fuel for Cycle Setpoint	180 Nm³	720 Nm³	540 Nm³	600 Nm³	720 Nm³	658 Nm³	102 Nm³
Fuel for Cycle	188 Nm³	735 Nm³	548 Nm³	608 Nm³	723 Nm³	660 Nm³	102 Nm³

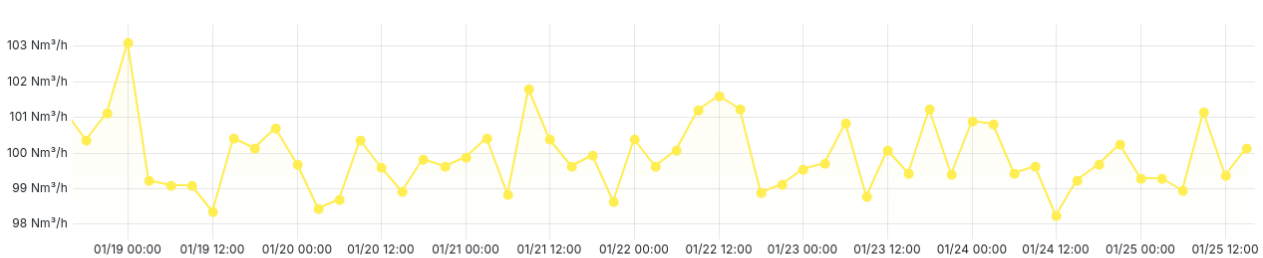
Total - Fuel

37602 Nm³ ↓ -1.03%

Boundary Cycles - Fuel

Type	Date	Time	Cycle	Value
Min	2025-01-19	15:48:58	9877	54 Nm³
Max	2025-01-25	01:09:38	10363	65.9 Nm³

Fuel Flow



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Fuel Flow Setpoint	100 Nm³/h	100 Nm³/h	0 Nm³/h	100 Nm³/h	100 Nm³/h	100 Nm³/h	0 Nm³/h
Fuel Flow	98.2 Nm³/h	103 Nm³/h	4.86 Nm³/h	99.2 Nm³/h	100 Nm³/h	99.9 Nm³/h	0.961 Nm³/h

Mean - Fuel Flow

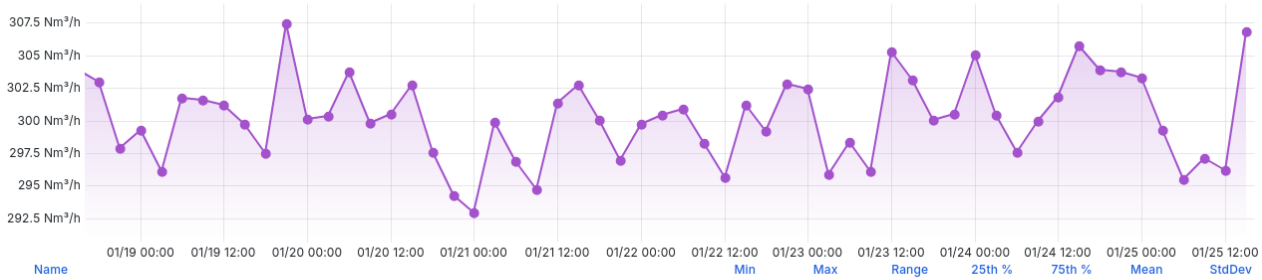
99.9 Nm³/h ↓ -0.0589%

Boundary Cycles - Fuel Flow

Type	Date	Time	Cycle	Value
Min	2025-01-19	00:29:24	9820	90.2 Nm³/h
Max	2025-01-21	10:47:29	10040	109 Nm³/h

6. Combustion Air

Combustion Air Flow



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Combustion Air Flow	293 Nm³/h	307 Nm³/h	14.5 Nm³/h	298 Nm³/h	303 Nm³/h	300 Nm³/h	3.22 Nm³/h

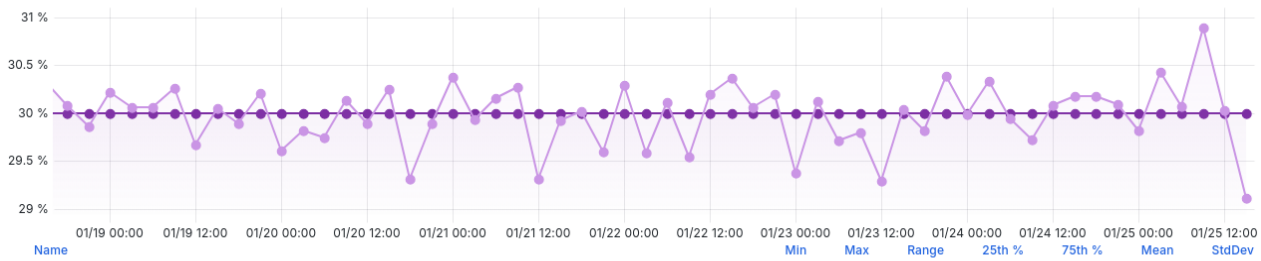
Mean - Combustion Air Flow

300 Nm³/h ↑ 0.353%

Boundary Cycles - Fuel Flow

Type	Date	Time	Cycle	Value
Min	2025-01-23	10:55:15	10218	270 Nm³/h
Max	2025-01-22	22:23:15	10170	330 Nm³/h

Combustion Air Index



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Combustion Air Index Setpoint	30 %	30 %	0 %	30 %	30 %	30 %	0 %
Combustion Air Index	29.1 %	30.9 %	1.78 %	29.8 %	30.2 %	30.0 %	0.327 %

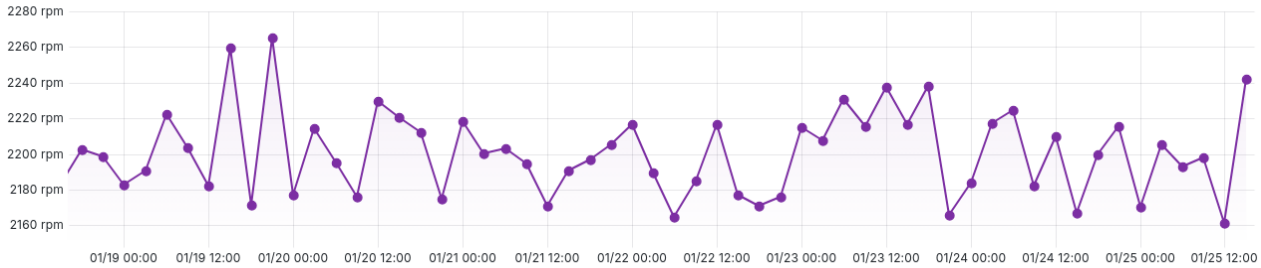
Mean - Combustion Air Index

30.0 % ↓ -0.188%

Boundary Cycles - Combustion Air Index

Type	Date	Time	Cycle	Value
Min	2025-01-22	05:31:44	10105	27 %
Max	2025-01-20	15:37:03	9970	33 %

Combustion Air Blower Speed



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Combustion Air Blower 1 - Speed	1762 rpm	1836 rpm	74.0 rpm	1788 rpm	1815 rpm	1802 rpm	18.4 rpm
Combustion Air Blower 2 - Speed	1968 rpm	2040 rpm	72.8 rpm	1989 rpm	2018 rpm	2001 rpm	18.3 rpm
Combustion Air Blower 3 - Speed	2162 rpm	2265 rpm	104 rpm	2182 rpm	2217 rpm	2201 rpm	23.7 rpm

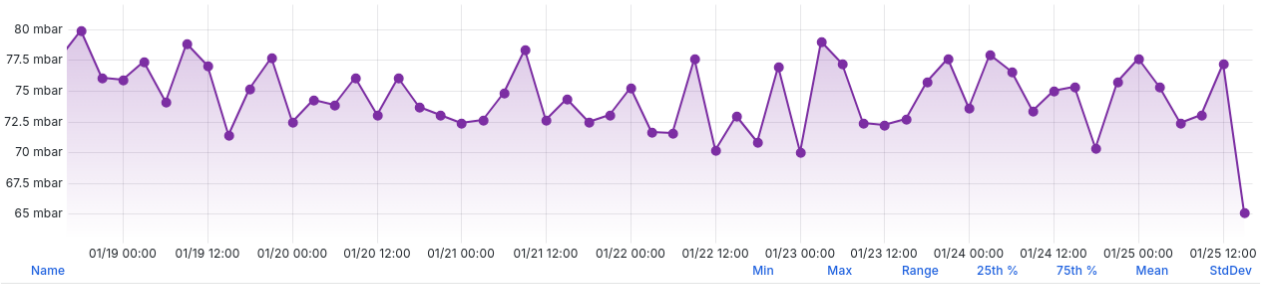
Boundary Cycles - Combustion Air Blower Speed

Type	Date	Time	Cycle	Value
Blower 1 - Min	2025-01-18	20:42:10	9806	1625 rpm
Blower 1 - Max	2025-01-25	06:27:21	10381	1963 rpm
Blower 2 - Min	2025-01-22	12:02:28	10129	1809 rpm
Blower 2 - Max	2025-01-22	09:30:50	10119	2200 rpm
Blower 3 - Min	2025-01-23	23:20:18	10261	1980 rpm
Blower 3 - Max	2025-01-20	04:09:30	9926	2418 rpm

Flex Reversy 2

Reversy Klin - Overview

Combustion Air Pressure



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Combustion Air Pressure	65.2 mbar	79.9 mbar	14.7 mbar	72.6 mbar	77.0 mbar	74.5 mbar	2.76 mbar

Mean - Combustion Air Pressure

74.6 mbar ↓ -0.567%

Boundary Cycles - Combustion Air Pressure

Type	Date	Time	Cycle	Value
Min	2025-01-25	15:50:49	10415	50 mbar
Max	2025-01-25	03:51:25	10373	97.4 mbar

7. Cool Air

Lime Cooling Air Flow

Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Lime Cooling Air Flow	393 Nm³/h	412 Nm³/h	18.7 Nm³/h	397 Nm³/h	403 Nm³/h	401 Nm³/h	4.25 Nm³/h

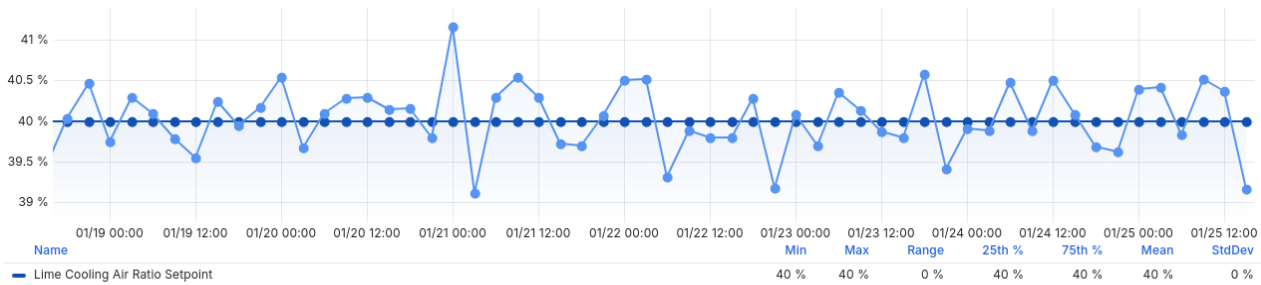
Mean - Lime Cooling Air Flow

400 Nm³/h ↑ 0.0267%

Boundary Cycles - Lime Cooling Air Flow

Type	Date	Time	Cycle	Value
Min	2025-01-21	23:32:29	10082	360 Nm³/h
Max	2025-01-22	18:36:18	10155	440 Nm³/h

Lime Cooling Air Ratio



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Lime Cooling Air Ratio Setpoint	40 %	40 %	0 %	40 %	40 %	40 %	0 %
Lime Cooling Air Ratio	39.1 %	41.2 %	2.06 %	39.8 %	40.3 %	40.0 %	0.409 %

Mean - Lime Cooling Air Ratio

40.0 % ↑ 0.157%

Boundary Cycles - Lime Cooling Air Ratio

Type	Date	Time	Cycle	Value
Min	2025-01-23	21:13:15	10253	36 %
Max	2025-01-25	13:05:35	10406	44 %

Lime Cooling Air Blower Speed

Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Lime Cooling Air Blower 1 - Speed	1947 rpm	2048 rpm	101 rpm	1987 rpm	2013 rpm	2000 rpm	20.4 rpm
Lime Cooling Air Blower 2 - Speed	2358 rpm	2473 rpm	115 rpm	2387 rpm	2421 rpm	2406 rpm	25.5 rpm

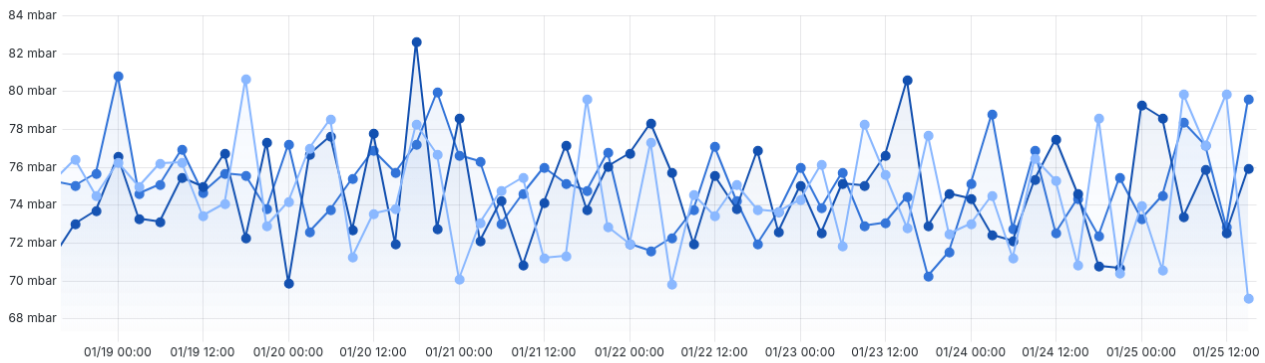
Boundary Cycles - Lime Cooling Air Blower Speed

Type	Date	Time	Cycle	Value
Blower 1 - Min	2025-01-19	19:36:38	9892	1831 rpm
Blower 1 - Max	2025-01-20	12:05:41	9956	2177 rpm
Blower 2 - Min	2025-01-24	05:07:03	10284	2160 rpm
Blower 2 - Max	2025-01-20	10:03:32	9948	2640 rpm

Flex Reversy 2

Reversy Klin - Overview

Lime Cooling Air Pressure



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Shaft 2 - Lances cooling / Final injection air pressure	69.9 mbar	82.6 mbar	12.7 mbar	72.7 mbar	76.7 mbar	74.8 mbar	2.62 mbar
Shaft 1 - Lances cooling / Final injection air pressure	70.2 mbar	80.8 mbar	10.6 mbar	73.3 mbar	76.3 mbar	75.0 mbar	2.19 mbar
Lime Cooling Air Pressure	69.1 mbar	80.7 mbar	11.6 mbar	72.8 mbar	76.4 mbar	74.6 mbar	2.77 mbar

Mean - Lime Cooling Air Pressure

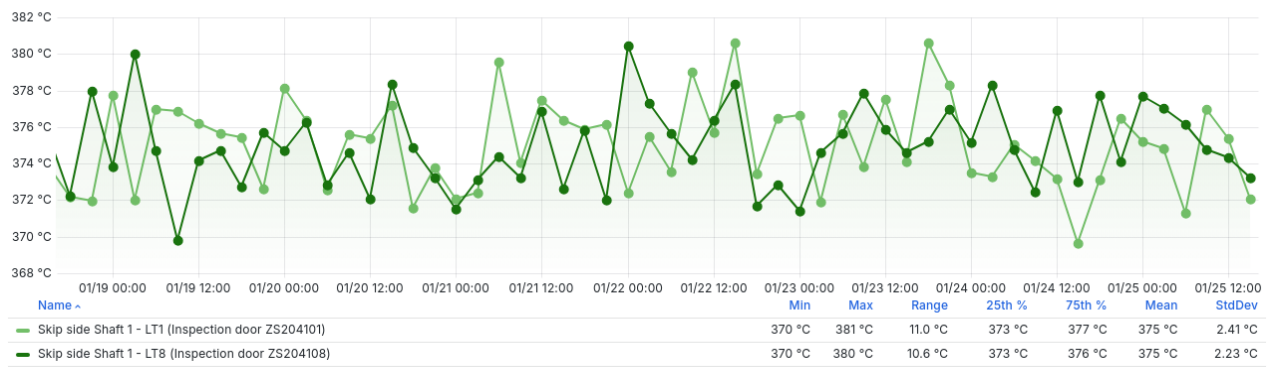
74.7 mbar ↓ -0.268%

Boundary Cycles - Lime Cooling Air Pressure

Type	Date	Time	Cycle	Value
Global - Min	2025-01-25	05:06:41	10377	50 mbar
Global - Max	2025-01-25	12:04:14	10402	100 mbar
Shaft 1 - Min	2025-01-24	15:43:52	10326	50 mbar
Shaft 1 - Max	2025-01-23	17:59:17	10242	100 mbar
Shaft 2 - Min	2025-01-21	09:02:05	10034	50.1 mbar
Shaft 2 - Max	2025-01-20	20:26:24	9987	100 mbar

8. Temperatures

Lime Temperature - Skip Side - Shaft 1



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Skip side Shaft 1 - LT1 (Inspection door ZS204101)	370 °C	381 °C	11.0 °C	373 °C	377 °C	375 °C	2.41 °C
Skip side Shaft 1 - LT8 (Inspection door ZS204108)	370 °C	380 °C	10.6 °C	373 °C	376 °C	375 °C	2.23 °C

Skip Side Shaft 1 - LT1

375 °C

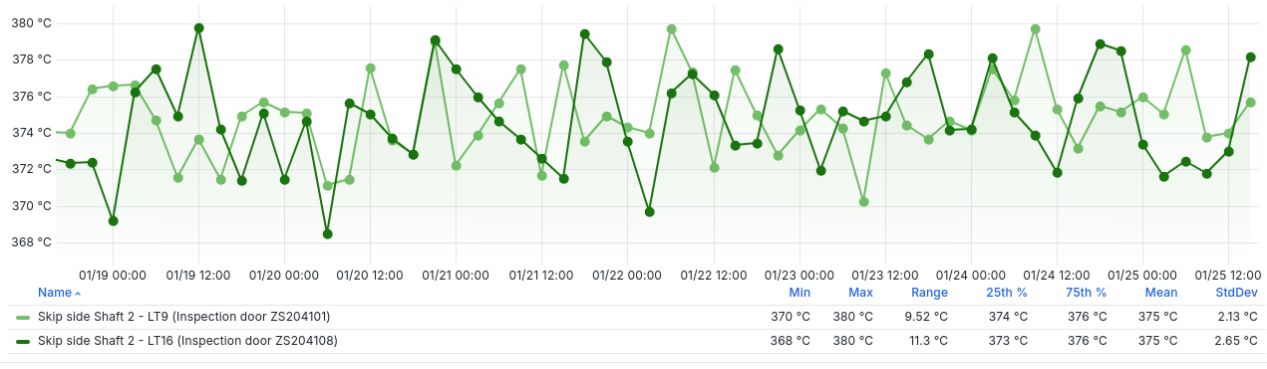
Skip Side Shaft 1 - LT8

375 °C

Boundary Cycles - Lime Temperature - Skip Side Shaft 1

Type	Date	Time	Cycle	Value
LT1 - Min	2025-01-20	07:43:01	9940	350 °C
LT1 - Max	2025-01-23	07:37:26	10205	400 °C
LT8 - Min	2025-01-22	11:32:25	10127	150 °C
LT8 - Max	2025-01-24	15:12:46	10324	250 °C

Lime Temperature - Skip Side - Shaft 2



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Skip side Shaft 2 - LT9 (Inspection door ZS204101)	370 °C	380 °C	9.52 °C	374 °C	376 °C	375 °C	2.13 °C
Skip side Shaft 2 - LT16 (Inspection door ZS204108)	368 °C	380 °C	11.3 °C	373 °C	376 °C	375 °C	2.65 °C

Skip Side Shaft 2 - LT9

375 °C

Skip Side Shaft 2 - LT16

375 °C

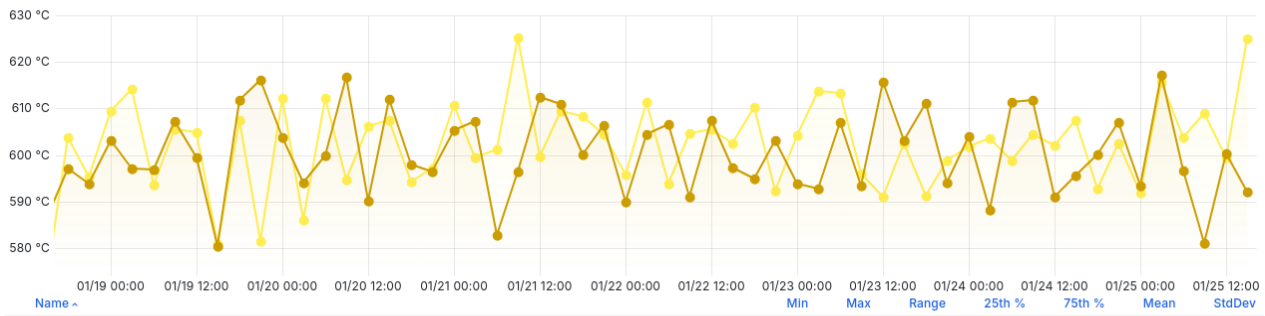
Boundary Cycles - Lime Temperature - Skip Side Shaft 2

Type	Date	Time	Cycle	Value
LT9 - Min	2025-01-19	17:20:02	9883	352 °C
LT9 - Max	2025-01-25	00:54:36	10362	400 °C
LT16 - Min	2025-01-19	01:59:22	9826	352 °C
LT16 - Max	2025-01-24	16:58:47	10331	399 °C

Flex Reversy 2

Reversy Klin - Overview

Lime Temperature - Pipe Side - Shaft 1



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Pipe side Shaft 1 - LT4 (Inspection door ZS204104)	572 °C	625 °C	53.2 °C	596 °C	608 °C	602 °C	9.78 °C
Pipe side Shaft 1 - LT5 (Inspection door ZS204105)	580 °C	617 °C	36.8 °C	594 °C	607 °C	600 °C	9.07 °C

Pipe Side Shaft 1 - LT4

602 °C

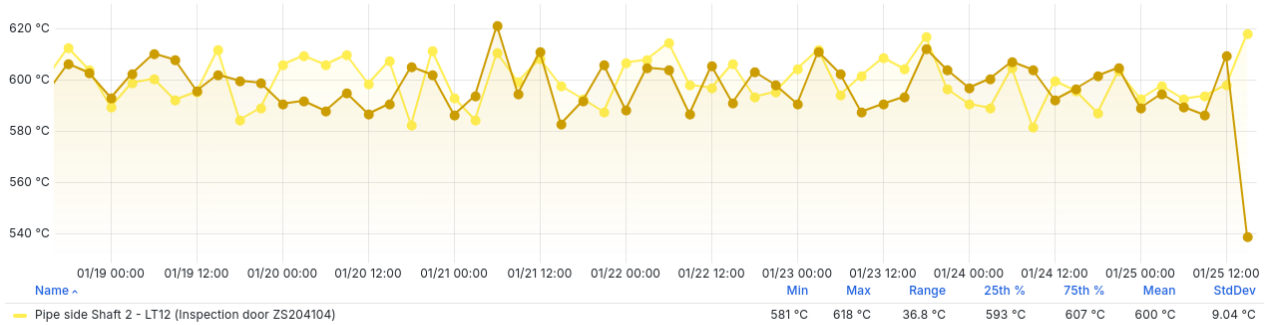
Pipe Side Shaft 1 - LT5

600 °C

Boundary Cycles - Lime Temperature - Pipe Side Shaft 1

Type	Date	Time	Cycle	Value
LT9 - Min	2025-01-19	17:20:02	9883	352 °C
LT9 - Max	2025-01-25	00:54:36	10362	400 °C
LT16 - Min	2025-01-19	01:59:22	9826	352 °C
LT16 - Max	2025-01-24	16:58:47	10331	399 °C

Lime Temperature - Pipe Side - Shaft 2



Name	Min	Max	Range	25th %	75th %	Mean	StdDev
Pipe side Shaft 2 - LT12 (Inspection door ZS204104)	581 °C	618 °C	36.8 °C	593 °C	607 °C	600 °C	9.04 °C
Pipe side Shaft 2 - LT13 (Inspection door ZS204105)	539 °C	621 °C	82.5 °C	591 °C	604 °C	597 °C	11.3 °C

Pipe Side Shaft 2 - LT12

599 °C

Pipe Side Shaft 2 - LT13

598 °C

Boundary Cycles - Lime Temperature - Pipe Side Shaft 2

Type	Date	Time	Cycle	Value
LT9 - Min	2025-01-19	17:20:02	9883	352 °C
LT9 - Max	2025-01-25	00:54:36	10362	400 °C
LT16 - Min	2025-01-19	01:59:22	9826	352 °C
LT16 - Max	2025-01-24	16:58:47	10331	399 °C

9. Table

created_at	endpoint	cy ↓	s	tcy	tco	ti	tstop	tfs	lscypv	lscysp	lcy	np	hcpv	hcsp	fcypv	fcysp	ffpv	ffs
2025-01-25 16:06:50	19	10416	1	885	728	157	0	565	4039	4200	3108	304	4785	5000	59.6	60	98.3	10
2025-01-25 15:50:49	19	10415	2	961	724	237	0	635	4368	4200	3636	327	5149	5000	63.7	60	103	10
2025-01-25 15:36:29	19	10414	1	860	796	64.0	0	590	4013	4200	3105	312	5120	5000	64.4	60	99.2	10
2025-01-25 14:51:59	19	10413	2	936	782	153	1735	611	4384	4200	3594	116	5095	5000	59.0	60	102	10
2025-01-25 14:37:02	19	10412	1	896	779	117	0	614	4322	4200	3308	319	4928	5000	59.2	60	99.5	10
2025-01-25 14:21:25	19	10411	2	937	769	168	0	597	4213	4200	3246	299	4837	5000	56.1	60	95.9	10
2025-01-25 14:05:50	19	10410	1	936	785	151	0	610	4075	4200	3124	288	5205	5000	58.4	60	99.5	10
2025-01-25 13:51:07	19	10409	2	883	711	172	0	614	4295	4200	3411	334	4967	5000	60.1	60	97.0	10
2025-01-25 13:36:17	19	10408	1	890	742	148	0	582	4060	4200	3347	325	5160	5000	58.4	60	97.3	10
2025-01-25 13:20:44	19	10407	2	932	702	230	0	595	4020	4200	3182	295	5152	5000	60.9	60	94.8	10
2025-01-25 13:05:35	19	10406	1	909	684	225	0	614	3960	4200	3125	297	5385	5000	58.0	60	101	10
2025-01-25 12:50:25	19	10405	2	910	695	216	0	614	4176	4200	3404	323	5076	5000	60.2	60	98.9	10
2025-01-25 12:34:34	19	10404	1	951	770	181	0	616	4074	4200	3279	298	4912	5000	62.4	60	99.7	10
2025-01-25 12:19:03	19	10403	2	931	772	158	0	597	4101	4200	3122	291	4804	5000	59.9	60	102	10