

NZMPTA Milking Machine Test Summary

Farmers Name: ANTHONY LOPES - TOGGENBURG TRUST (JEA GAMPERLE)

Test Date: 24 MAY 2024

Tester Name/Company: Naudé Maree - Pro Farm Services

Tester: PC Number 1511

Tester Contact Details: 07 827 3591

1. Key Performance Measurements

a) Reserve 800 lpm ☒

b) Vacuum@ Receiver 45 kPa ☒

c) Regulation ☒

d) Pulsation ☒

Ratio 56 - 63 %

Rate 59 - 63 %

D Phase 26 - 34%

2. Safety

a) Moving Parts ☒

b) Stationery Parts ☒

c) Other (electrical, oil) ☒

3. Condition of Components

a) Vacuum Pump(s) and Releaser(s) ☒

b) Vacuum & Milk System ☒

c) Ancillary Equipment ☒

d) Clusters ☒

e) Regulator(s) ☒

f) Farm Gauge ☒

g) Pulsators ☐

4. Improvements

Rating

3. d) Cluster Air Admission (260 lpm) > Allowed Standard (204 lpm)
Some drilled air admission holes too big.

MINOR

3. f) Recommend replacing faulty vacuum gauge.

MINOR

Rating	Reason			
Critical	Negatively affects milk quality	Negatively affects animal health/welfare	Serious risk to milker health and safety	
Major	Affects animal comfort	May cause a breakdown	Affects ability to harvest milk efficiently	Compromises milker safety
Minor	Potential to impact on milk quality	Potential to impact on animal health/welfare	Potential to impact on milker safety in the future	

Signed: _____

NZMPTA Milking Machine Test Record

Test No:	452	Date:	24 May 2024
Tester (name):	Naudé Maree	Reg No:	1511
		Expiry Date:	20/07/2025
		Phone:	(07) 827 3591
Calibration Dates:	Air Flow Meters:	3/02/2025	Pulsator Testers:
		21/02/2025	Vacuum Gauges:
		21/02/2025	
Farm Owner:	TOGGENBURG TRUST - GAMPERLE		
Occupier:	ANTHONY LOPES		
Farm Location:	4511 SH29		
Postal Address:	MAD4OUTDOORS@GMAIL.COM		
Type&No of Pulsator:	9 x AHI (4X1)	Vac Pump:	MASPORT MASTER
Regulator Type:	M4000	Releaser:	FLYNN DIAPH 4HD
Milkline Size:	100 mm	ACR'S	NO
Claw:	FLOTEK MK2	Shell:	S/S MONOKURA
		Motor Size:	4.5 kW
		VSD:	NO
		Motor Size:	kW
		Flushing Pulsation:	NO
		No of Clusters:	17
		Liner:	SUREPULSE T-A1N
		Telephone:	07 888 1943
		Telephone:	022 176 5174
		Supply No:	77340

1 Vacuum Levels

Wash Vacuum	45	kPa
1a Working Vacuum (Receiver)	45	kPa ☒
1b Nominal Working Vacuum	45	kPa
1c Vacuum Regulation Deviation (1a - 1b)	2 kPa 0.0	kPa ☒
1d Working Vacuum (Regulator)	45	kPa
1e Working Vacuum (Vacuum Pump)	45	kPa
1f Working Vacuum @ minimum VP speed	45	kPa ☒

2 Reserve Characteristics

2a Effective Reserve	800	l/min ☒
2b Air Flow 2 kPa below 1d	800	l/min
2c Manual Reserve	800	l/min
2d Regulation Loss (2c - 2a)	80 0	l/min ☒
2e Air Flow 2 kPa below 1d	800	l/min
2f Regulator Leakage (2e - 2b)	40 0	l/min ☒
2g Required Standard Effective Reserve	570	l/min
2h Required Cleaning Reserve	---	l/min

3 Regulation Characteristics

3a Average Receiver Vacuum	45	kPa
3b Minimum Vacuum during Air Inlet	43.4	kPa
3c Average Vacuum during Air Inlet	43.4	kPa
3d Maximum Vacuum Increase	47	kPa
3e Average Vacuum after Stop of Air Inlet	45.1	kPa
3f Fall off Vacuum Drop (3a - 3c)	2 kPa 1.6	kPa ☒
3g Regulation Undershoot (3c - 3b)	2 kPa 0	kPa ☒
3h Regulation Overshoot (3d - 3e)	2 kPa 1.9	kPa ☒

4 Airline Vacuum Drop

4a Vacuum at Receiver	(43 kPa) 43	kPa
4b Vacuum at Regulator	43.5	kPa
4c Vacuum Drop Regulator/Receiver (4b - 4a)	1 kPa 0.5	kPa ☒
4d Vacuum near Vacuum Pump(s)	43.5	kPa
4e Vacuum Drop Vacuum Pump/Receiver (4d - 4a)	3 kPa 0.5	kPa ☒

5 Regulation Sensitivity

5a Working Vacuum in Milking System	45.3	kPa
5b Regulation Sensitivity (5a - 1a)	1 kPa 0.3	kPa ☒

6 Reserve (Vacuum off Cluster)

6a Vacuum at Interceptor (Vacuum off Cluster)		kPa
6b Effective Reserve (Vacuum off Cluster)		l/min

7 Vacuum Gauge Accuracy

Adjust AFM to 5 kPa below vacuum 4a (38 kPa)		
7a Farm Gauge Vacuum	0	kPa
7b Test Gauge Vacuum	38	kPa
7c Gauge Error at -5 kPa (7a - 7b)	1 kPa -38	kPa ☒
Adjust AFM to Vacuum 4a (43 kPa)		
7d Farm Gauge Vacuum	0	kPa
7e Test Gauge Vacuum	43	kPa
7f Gauge Error at Vacuum 4a (7d - 7e)	1 kPa -43	kPa ☒
Adjust AFM to Vacuum 4a plus 5 kPa (48 kPa)		
7g Farm Gauge Vacuum	0	kPa
7h Test Gauge Vacuum	48	kPa
7i Gauge Error at 5 kPa (7g - 7h)	1 kPa -48	kPa ☒

8 Vacuum Pump Capacity and Speed

8a Pump Capacity 50 kPa	8b Speed
Pump 1 1200 l/min ☒	741 rpm
Pump 2 l/min ☐	rpm
Pump 3 l/min ☐	rpm
Pump 4 l/min ☐	rpm

9 Vacuum Pump Exhaust Pressure

Vacuum Pump(s) is not specification	
Otherwise go to Air Flow Start	
9a Vacuum Pump Exhaust Pressure	kPa

Air Flow Start

Adjust AFM Vacuum 1e	
Pump Capacity at Working Vacuum	1370 l/min

10 Airline and Milk System Leakage

10a Air Flow with Vacuum System Connected	1350	l/min
10b Vacuum System Leakage	69 20	l/min ☒
(Air Flow Start minus 10a)		
10c Connect Milk System		
(ancillary equipment disconnected)	1350	l/min
10d Milking System Leakage (10a - 10c)	44 0	l/min ☒

11 Automatic Cluster Removers

11a Air Flow ACR's Connected		l/min
11b ACR Consumption (10c - 11a)	---	l/min ☐

12 Cluster Air Admission

12a Connect Cluster Air Admission	1090	l/min
12b Cluster Air Admission (10c - 12a)	68 / 204 260	l/min ☒

13 Individual Cluster Air (see additional tests)

14 Pulsators and Ancillary Equipment

14a Air Flow with Milk System Ancillary Equipment Attached	1090	l/min
14b Milk System Ancillary Equipment Leakage (12a - 14a)	---	l/min ☐
14c Airflow with Pulsators Connected	670	l/min
14d Pulsator Consumption (14a - 14c)	595 420	l/min ☒
14e Airflow with Vacuum System Ancillary Equipment Connected		l/min
14f Vacuum System Ancillary Equipment Leakage (14c - 14e)	---	l/min ☐

15 Test Pulsation - Go to Pulsation Recording Sheet

15a Maximum Pulsation Chamber Vacuum	44.7	kPa
15b Reading 1a minus 15a	0.3	kPa ☒

16 Final Check Tests

16a Working Vacuum at Receiver	45	kPa ☒
(Compare to reading 1a)		
16b Effective Reserve	800	l/min ☒
(Compare to reading 2a)		

Milking Machine Test Report Results

Activity	Standard Reference	Calculated Standard	Reading	✓ X						
Working Vacuum (Receiver)	≤ 50 kPa	≤ 50 kPa	45 kPa	✓						
Vacuum Regulation Deviation (1a - 1b)	+/-2 kPa	+/-2 kPa	0.0 kPa	✓						
Effective Reserve (n= number of units) OR Cleaning Reserve	<u>Compare reading to greater of</u> 500 + 10(n-10) + 200 l (if no shut offs) OR ($\pi \times d^2/4$) x v x (Pa-Pw/Pa) x (6/100)	Effective Reserve 570 Cleaning Reserve ---	800 lpm	✓						
Regulation Loss (2c - 2a)	≤ 35 l/min or 10% of manual reserve	0 lpm	0 lpm	✓						
Regulator Leakage (2e - 2b)	≤35 l/min or 5% of manual reserve	40 lpm	0 lpm	✓						
Vacuum Drop Between Regulator and Receiver (4b - 4a)	≤ 1 kPa	≤ 1 kPa	0.5 kPa	✓						
Vacuum Drop Between Pump(s) and Receiver (4d - 4a)	≤ 3 kPa	≤ 3 kPa	0.5 kPa	✓						
Regulation Sensitivity (5a - 1a)	≤ 1 kPa	≤ 1 kPa	0.3 kPa	✓						
Plant Gauge Accuracy (differences between Farm Gauge & Test Gauge)	≤ 1 kPa Record largest deviation	≤ 1 kPa	-48.0 kPa	X						
Vacuum System Leakage (Airflow start -10a)	≤5% of Vacuum Pump Capacity	69	20 lpm	✓						
Milking System Leakage (10a - 10c)	≤10 lpm + 2 lpm per cluster	44	0 lpm	✓						
Automatic Cluster Remover (10c – 11a)	See Standards Manual	---	---							
Cluster Air admission (10c - 12a)	≥4 l/min and ≤ 12 l/min	68 / 204	260 lpm	X						
Milk System Ancillary Equipment Leaks (12a - 14a)	See Standards Manual		---							
Pulsator Consumption (14a - 14c)	35 l/cluster	595	420 lpm	✓						
Vacuum System Ancillary Equipment Leaks (14c - 14e)	See Standards Manual		---							
Pulsation chamber vacuum	≤2 kPa	≤2 kPa	0.3 kPa	✓						
Other Readings:										
Vacuum Pump Exhaust Pressure (9a)	See Standards Manual		kPa							
Effective Reserve (Vacuum off Cluster) (6b)	Guideline Only		lpm							
		Fall Off Vacuum Drop (3a – 3c)	Undershoot (3c - 3b)	Overshoot (3d - 3e)						
Regulation Characteristics	≤ 2kPa	1.6 kPa	✓	0.0 kPa	✓	1.9 kPa	✓			
Vacuum Pump(s)										
	Capacity at 50kPa	Standard Min Capacity	✓ X	RPM Minimum	RPM Maximum	✓ X	kW	✓ X	Oil/Water Flow Rate	✓ X
Pump 1	1200	1200	✓	741	741	✓	4.5	✓	GOOD	✓
Pump 2										
Pump 3										
Pump 4										

Milking Machine Additional Testing

(Optional Tests)

Activity	Reading		Standard	✓ X
Gate cylinder consumption:		lpm		
Milk Meter:		lpm		
Teat Spray:		lpm		
Other:		lpm		
Other:		lpm		
Other		lpm		
Other		lpm		
Atmospheric Pressure	99.8	kPa		
Leakage in Releaser:	No			✓
Bubbles in discharge line:				
Water drawn back:				
Bubbles in Receiver:				
Diaphragm Pump:				
Speed:	36	spm		✓
Head One:	85	kPa		✓
Head Two:	85	kPa		✓
Head Three:	85	kPa		✓
Head Four:	85	kPa		✓
Head Five:		kPa		
Head Six:		kPa		
All Heads	85	kPa		✓
Cluster Fall-off air inlet:		lpm		
Peak Regulator Load/ Safety Valve Test		kPa		
Standard Pump Capacity	2192	lpm	No standard but calculate when recommending a new Vacuum Pump. Refer to module and Reserve Flowchart in standards book.	
Effective Reserve or Cleaning Reserve	570	lpm	Add all these standard figures together. This becomes the standard pump capacity.	
Vacuum System Leakage	69	lpm		
Milking system leakage	44	lpm		
Cluster Air Admission	204	lpm		
Milk System Ancillary Leakage	0	lpm		
Pulsator Consumption	595	lpm		
Vacuum System Ancillary Leakage	670	lpm		
Regulation Leakage	40	lpm		
ACR Consumption	---	lpm		

**PART ONE: To be completed before the
milking machine is started**
Vacuum Pumps (remove guard):

		COMMENTS
☒	Oil/Water Condition	
☒	Height of Oil/Water in Reservoir	
☒	Oil/Water Supply Protected	
☒	Wick Condition	
☒	Belt Condition	
☒	Belt Tension/Size	2 x A71
☐	End Play	
☒	Guards on Shaft or Belts	
☒	Interceptor Connection	
☒	Exhaust System Restrictions	
☐	Direct Coupling Condition	

Releaser Milk Pumps (belt driven):

☒	Belt Condition	
☒	Belt Tension/Size	A38
☒	Guards on Shafts and Belts	

Releasers:

☐	RMP Controls	N/A
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Releaser: DIAPHRAGM

☒	Releaser Milk Pump Intake Line	
☒	Non Return Valve	
☐	Rotation	
☐	Backplate	

**PART TWO: To be completed largely with
machine running - (replace guard)**
Bail Area:

		COMMENTS
☒	Milk Line Height	
☒	Cluster Alignment	
☒	Herringbone Centres	900 mm
☒	Cluster Position	
☒	First Inlet	

Rotaries:

☐	Rotation	
☐	Clusters Left/Right	

Milkline and Airlines:

☒	Milkline Diameter	100 mm
☒	Mounting	
☒	Movement	
☒	Seals and Joiners	
☒	Dead End Lengths	
☒	Diameter	
☒	Slope Degree	
☒	Slope Direction	
☐	Airline Only to Drain Points	

Inlets:

☒	Diameter	16 mm
☒	Position	
☒	Alignment	
☒	Moulded Bends Condition	BENDS REQUIRE REPLACEMENT
☒	Moulded Bends Diameter	12.7 mm

Clusters:

☒	Air Admission	Drilled air admission holes too big
☒	Air Admission Diameter < 0.8	
☒	Pulse Tube Manifold Condition	

Claw:

☒	Claw Condition	
☒	Shut Off Valves	
	Claw Inlet Diameter (External)	10 mm
	Claw Outlet Diameter (External)	20 mm

Liner:

- | | |
|-------------------------------------|---------------------|
| ☒ | Shell Compatibility |
| ☒ | Liner Tension |
| ☒ | Liner Alignment |
| ☒ | Liner Lip Condition |
| ☒ | Condition |

Shell:

- | | |
|-------------------------------------|----------------|
| ☒ | Condition |
| ☒ | Port Condition |

Short Pulse Tubes:

- | | | | |
|-------------------------------------|-----------|----------|--------|
| ☒ | Condition | Length | 165 mm |
| | | Diameter | 7.6 mm |

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Long Pulse Tubes:

- | | | | |
|-------------------------------------|---------------|----------|---------|
| ☒ | Condition | Length | 1200 mm |
| ☒ | Compatability | Diameter | 7.6 mm |

Long Milk Tubes:

- | | | | |
|-------------------------------------|-----------|----------|---------|
| ☒ | Condition | Length | 1200 mm |
| | | Diameter | 14 mm |

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Platform:

- | | |
|--------------------------|-------------------|
| ☐ | Mounting (Rotary) |
| ☐ | Slope (Rotary) |

Milk Flow Indicators:

- | | |
|--------------------------|--------------|
| ☐ | Condition |
| ☐ | Installation |

A.C.R'S:

- | | |
|--------------------------|-------------------|
| ☐ | Air Ram Condition |
| ☐ | Tubing Condition |
| ☐ | Float Condition |

Milk Meters:

- | | |
|--------------------------|------------------|
| ☐ | Tubing condition |
| ☐ | Condition |

Pulsators:

- | | |
|-------------------------------------|----------------------------------|
| ☒ | Filters |
| ☒ | Port(long pulse tube connection) |
| ☐ | Filtered air |
| ☒ | Condition |

Vacuum Gauge:

- | | |
|-------------------------------------|-----------|
| ☒ | Present |
| ☒ | Position |
| ☒ | Condition |

VACUUM GAUGE FAULTY

Milk Room:**Vacuum Regulators:**

- | | |
|-------------------------------------|---|
| ☒ | Filters |
| ☒ | Position |
| ☒ | Fitted to Manufacturer's Specifications
(VACUUM STABILITY) |

Receiver:

- | | |
|--------------------------|-------------------|
| ☐ | Perspex Condition |
| ☐ | Seal Placement |
| ☐ | Size |
| ☐ | Restrictions |

Vacuum Pumps: OIL

- | | |
|-------------------------------------|----------------------------------|
| ☒ | Interceptor Movement |
| ☒ | Noise |
| ☐ | Water Flow Rate |
| ☐ | Water Temperature at End of Test |

Cleaning System:

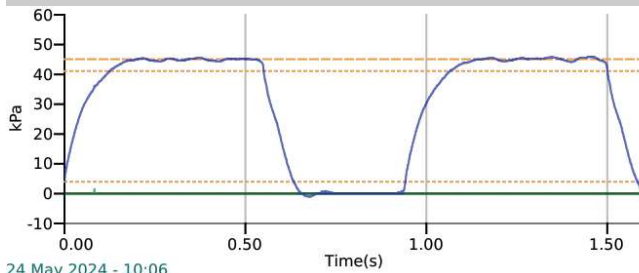
- | | |
|-------------------------------------|------------------|
| ☒ | Jetter Type |
| ☒ | Jetter Condition |

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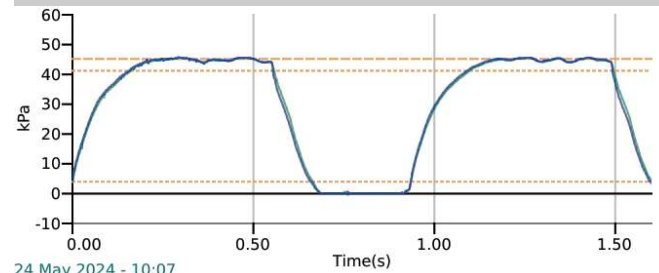
Appendix

Pulsation Tests

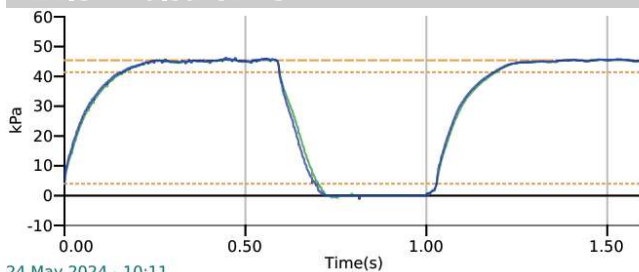
Stall, Port	A-Phase (%)	B-Phase (%)	C-Phase (%)	D-Phase (%)	Ratio A+B (%)	Max. Vac. (kPa)	Dsec (ms)	Rate (cpm)	B-phase Drop (kPa)	Limping (%)	Balance (%)
1,P1	13.1	46.0	8.6	32.3	59.1	45.1	313	61.7	0.6	0.0	0.0
1,P2	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0		
2,P1	16.4	43.4	10.8	29.4	59.8	45.2	280	62.7	0.8	0.3	0.2
2,P2	16.9	43.2	10.9	29.0	60.1	45.1	277	62.7	0.8		
3,P1	15.3	42.5	9.5	32.7	57.8	45.4	330	59.3	0.5	0.1	0.0
3,P2	15.4	42.5	10.3	31.8	57.9	45.3	321	59.3	0.6		
4,P1	14.7	44.8	9.9	30.6	59.5	45.0	291	63.0	0.4	0.0	0.1
4,P2	14.8	44.7	9.9	30.6	59.5	44.9	291	63.0	0.4		
5,P1	15.1	42.7	9.7	32.5	57.8	45.1	315	61.7	1.1	0.1	0.0
5,P2	15.2	42.7	9.8	32.3	57.9	45.0	314	61.6	0.7		
6,P1	16.4	47.3	10.3	26.0	63.7	45.2	251	62.2	0.5	0.4	0.2
6,P2	15.8	47.5	9.7	27.0	63.3	45.1	260	62.3	0.6		
7,P1	14.4	44.9	10.1	30.6	59.3	45.2	298	61.3	0.7	0.1	0.0
7,P2	14.5	44.9	9.8	30.8	59.4	45.0	301	61.3	0.6		
8,P1	14.3	45.6	9.6	30.5	59.9	45.1	306	59.7	0.4	0.0	0.2
8,P2	14.5	45.4	9.4	30.7	59.9	45.0	308	59.7	0.4		
9,P1	14.5	41.5	9.8	34.2	56.0	44.7	339	60.4	0.0	0.1	1.0
9,P2	15.6	40.5	10.8	33.1	56.1	44.7	328	60.4	0.0		

14.1 - Pulsator : 1


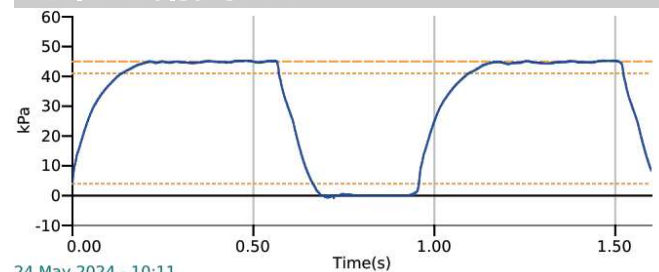
Port 1				Port 2			
A%	13.1	A+B%	59.1	A%	0.0	A+B%	0.0
B%	46.0	MaxV _{kPa}	45.1	B%	0.0	MaxV _{kPa}	0.0
C%	8.6	Rate _{CPM}	61.7	C%	0.0	Rate _{CPM}	0.0
D%	32.3	DSec _{MS}	313	D%	0.0	DSec _{MS}	0
B, DRP _{kPa}	0.6	LIMP(%)	0.0	B1-B2(%)	0.0	B, DRP _{kPa}	0.0

14.2 - Pulsator : 2


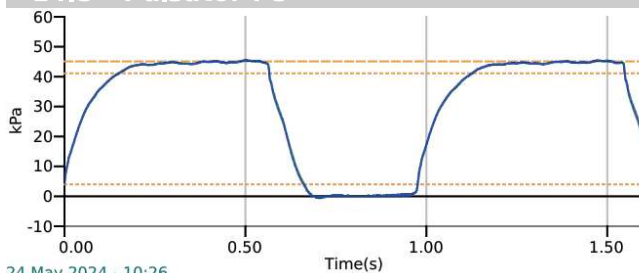
Port 1				Port 2			
A%	16.4	A+B%	59.8	A%	16.9	A+B%	60.1
B%	43.4	MaxV _{kPa}	45.2	B%	43.2	MaxV _{kPa}	45.1
C%	10.8	Rate _{CPM}	62.7	C%	10.9	Rate _{CPM}	62.7
D%	29.4	DSec _{MS}	280	D%	29.0	DSec _{MS}	277
B, DRP _{kPa}	0.8	LIMP(%)	0.3	B1-B2(%)	0.2	B, DRP _{kPa}	0.8

14.3 - Pulsator : 3


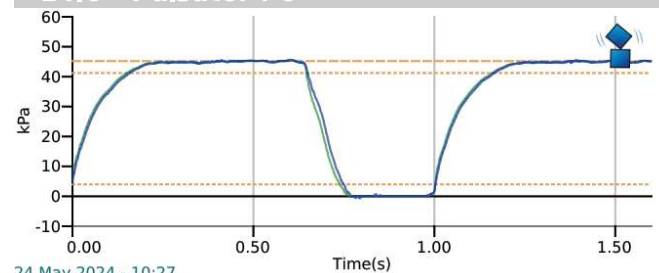
Port 1				Port 2			
A%	15.3	A+B%	57.8	A%	15.4	A+B%	57.9
B%	42.5	MaxV _{kPa}	45.4	B%	42.5	MaxV _{kPa}	45.3
C%	9.5	Rate _{CPM}	59.3	C%	10.3	Rate _{CPM}	59.3
D%	32.7	DSec _{MS}	330	D%	31.8	DSec _{MS}	321
B, DRP _{kPa}	0.5	LIMP(%)	0.1	B1-B2(%)	0.0	B, DRP _{kPa}	0.6

14.4 - Pulsator : 4


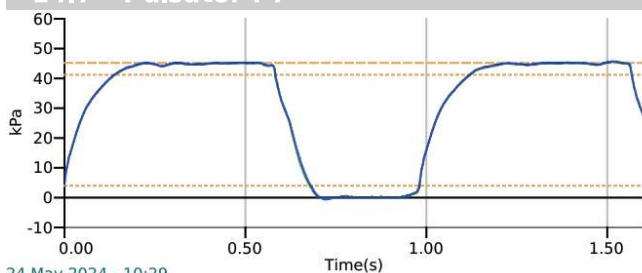
Port 1				Port 2			
A%	14.7	A+B%	59.5	A%	14.8	A+B%	59.5
B%	44.8	MaxV _{kPa}	45.0	B%	44.7	MaxV _{kPa}	44.9
C%	9.9	Rate _{CPM}	63.0	C%	9.9	Rate _{CPM}	63.0
D%	30.6	DSec _{MS}	291	D%	30.6	DSec _{MS}	291
B, DRP _{kPa}	0.4	LIMP(%)	0.0	B1-B2(%)	0.1	B, DRP _{kPa}	0.4

14.5 - Pulsator : 5


Port 1				Port 2			
A%	15.1	A+B%	57.8	A%	15.2	A+B%	57.9
B%	42.7	MaxV _{kPa}	45.1	B%	42.7	MaxV _{kPa}	45.0
C%	9.7	Rate _{CPM}	61.7	C%	9.8	Rate _{CPM}	61.6
D%	32.5	DSec _{MS}	315	D%	32.3	DSec _{MS}	314
B, DRP _{kPa}	1.1	LIMP(%)	0.1	B1-B2(%)	0.0	B, DRP _{kPa}	0.7

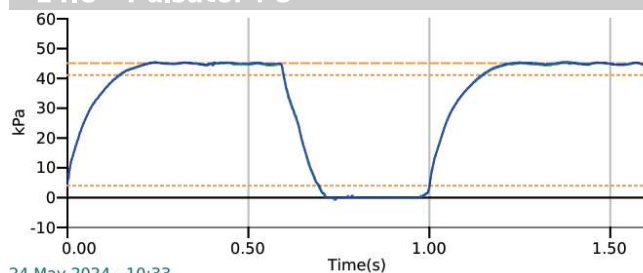
14.6 - Pulsator : 6


Port 1				Port 2			
A%	16.4	A+B%	63.7	A%	15.8	A+B%	63.3
B%	47.3	MaxV _{kPa}	45.2	B%	47.5	MaxV _{kPa}	45.1
C%	10.3	Rate _{CPM}	62.2	C%	9.7	Rate _{CPM}	62.3
D%	26.0	DSec _{MS}	251	D%	27.0	DSec _{MS}	260
B, DRP _{kPa}	0.5	LIMP(%)	0.4	B1-B2(%)	0.2	B, DRP _{kPa}	0.6

14.7 - Pulsator : 7


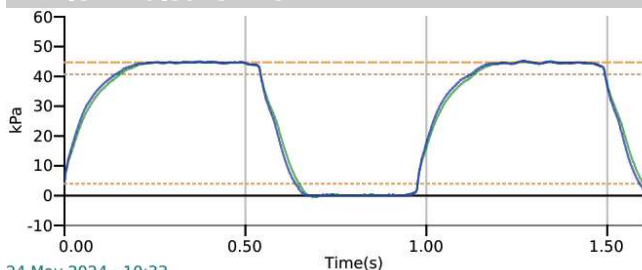
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Port 1				Port 2			
A%	14.4	A+B%	59.3	A%	14.5	A+B%	59.4
B%	44.9	MaxV _{kPa}	45.2	B%	44.9	MaxV _{kPa}	45.0
C%	10.1	Rate _{CPM}	61.3	C%	9.8	Rate _{CPM}	61.3
D%	30.6	DSec _{MS}	298	D%	30.8	DSec _{MS}	301
B, DRP _{kPa}	0.7	LIMP (%)	0.1	B1-B2 (%)	0.0	B, DRP _{kPa}	0.6

14.8 - Pulsator : 8


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Port 1				Port 2			
A%	14.3	A+B%	59.9	A%	14.5	A+B%	59.9
B%	45.6	MaxV _{kPa}	45.1	B%	45.4	MaxV _{kPa}	45.0
C%	9.6	Rate _{CPM}	59.7	C%	9.4	Rate _{CPM}	59.7
D%	30.5	DSec _{MS}	306	D%	30.7	DSec _{MS}	308
B, DRP _{kPa}	0.4	LIMP (%)	0.0	B1-B2 (%)	0.2	B, DRP _{kPa}	0.4

14.9 - Pulsator : 9


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Port 1				Port 2			
A%	14.5	A+B%	56.0	A%	15.6	A+B%	56.1
B%	41.5	MaxV _{kPa}	44.7	B%	40.5	MaxV _{kPa}	44.7
C%	9.8	Rate _{CPM}	60.4	C%	10.8	Rate _{CPM}	60.4
D%	34.2	DSec _{MS}	339	D%	33.1	DSec _{MS}	328
B, DRP _{kPa}	0.0	LIMP (%)	0.1	B1-B2 (%)	1.0	B, DRP _{kPa}	0.0

