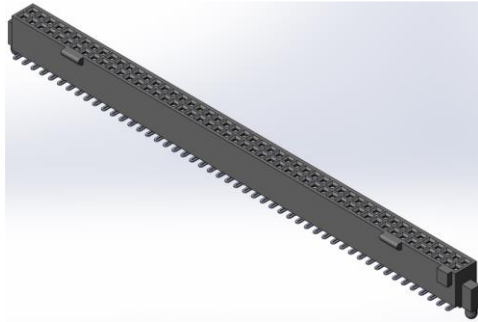
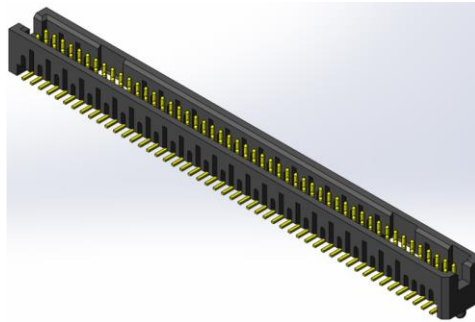




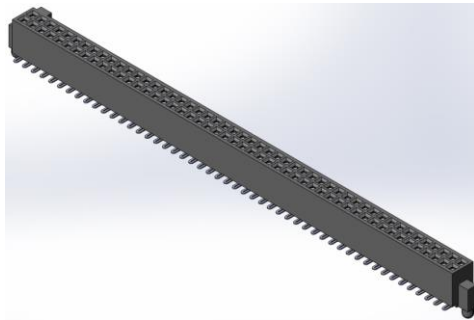
Project Number: Design Qualification Test Report	Tracking Code: CR-872002_Report_Rev_1
Requested by: Mark Shireman	Date: 4/21/2023
Part #: SFML-150-02-L-D-A/TFML-150-02-L-D-A vs SFM-150-02-L-D-A/TFM-150-02-L-D-A	
Part description: SFML/TFML vs SFM/TFM	Tech: Daniel Haydon
Test Start: 3/1/2023	Test Completed: 4/17/2023



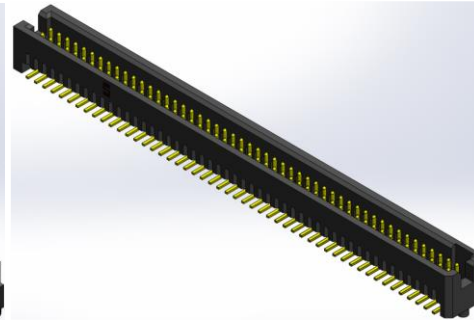
SFML



TFML



SFM



TFM

DESIGN QUALIFICATION TEST REPORT

SFML/TFML

SFM/TFM

SFML-150-02-L-D-A/TFML-150-02-L-D-A

SFM-150-02-L-D-A/TFM-150-02-L-D-A

Tracking Code: CR-872002_Report_Rev_1	Part #: SFML-150-02-L-D-A/TFML-150-02-L-D-A SFM-150-02-L-D-A/TFM-150-02-L-D-A
Part description: SFML/TFML vs SFM/TFM	

REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
4/21/2023	1	Initial Issue	KH

Tracking Code: CR-872002_Report_Rev_1	Part #: SFML-150-02-L-D-A/TFML-150-02-L-D-A SFM-150-02-L-D-A/TFM-150-02-L-D-A
Part description: SFML/TFML vs SFM/TFM	

CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to ISO 10012-1 and ANSI/NCSL 2540-1, as applicable.

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SCOPE

To perform the following tests: Design Qualification test. Please see test plan.

APPLICABLE DOCUMENTS

Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

- 1) All materials were manufactured in accordance with the applicable product specification.
- 2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
- 3) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used.
- 4) The automated procedure is used with aqueous compatible soldering materials.
- 5) Any additional preparation will be noted in the individual test sequences.
- 6) Solder Information: Lead Free
- 7) Samtec Test PCBs used: PCB-112644-TST/ PCB-112645-TST

FLOWCHARTS**Mating/Unmating/Durability***Note: Remove LLCR, gaps, and humidity stress**Note: Please note any damage to the housing (cracks) on the Latch version (SFML)*

Group 1 SFML-105-02-L-D-A TFML-105-02-L-D-A 8 Assemblies		Group 2 SFML-125-02-L-D-A TFML-125-02-L-D-A 8 Assemblies		Group 3 SFML-150-02-L-D-A TFML-150-02-L-D-A 8 Assemblies		Group 4 SFM-105-02-L-D-A TFM-105-02-L-D-A 8 Assemblies	
Step	Description	Step	Description	Step	Description	Step	Description
1.	Mating/Unmating Force ⁽¹⁾	1.	Mating/Unmating Force ⁽¹⁾	1.	Mating/Unmating Force ⁽¹⁾	1.	Mating/Unmating Force ⁽¹⁾
2.	Cycles Quantity = 25 Cycles	2.	Cycles Quantity = 25 Cycles	2.	Cycles Quantity = 25 Cycles	2.	Cycles Quantity = 25 Cycles
3.	Mating/Unmating Force ⁽¹⁾	3.	Mating/Unmating Force ⁽¹⁾	3.	Mating/Unmating Force ⁽¹⁾	3.	Mating/Unmating Force ⁽¹⁾
4.	Cycles Quantity = 25 Cycles	4.	Cycles Quantity = 25 Cycles	4.	Cycles Quantity = 25 Cycles	4.	Cycles Quantity = 25 Cycles
5.	Mating/Unmating Force ⁽¹⁾	5.	Mating/Unmating Force ⁽¹⁾	5.	Mating/Unmating Force ⁽¹⁾	5.	Mating/Unmating Force ⁽¹⁾
6.	Cycles Quantity = 25 Cycles	6.	Cycles Quantity = 25 Cycles	6.	Cycles Quantity = 25 Cycles	6.	Cycles Quantity = 25 Cycles
7.	Mating/Unmating Force ⁽¹⁾	7.	Mating/Unmating Force ⁽¹⁾	7.	Mating/Unmating Force ⁽¹⁾	7.	Mating/Unmating Force ⁽¹⁾
8.	Cycles Quantity = 25 Cycles	8.	Cycles Quantity = 25 Cycles	8.	Cycles Quantity = 25 Cycles	8.	Cycles Quantity = 25 Cycles
9.	Mating/Unmating Force ⁽¹⁾	9.	Mating/Unmating Force ⁽¹⁾	9.	Mating/Unmating Force ⁽¹⁾	9.	Mating/Unmating Force ⁽¹⁾
10.	Thermal Shock ⁽²⁾	10.	Thermal Shock ⁽²⁾	10.	Thermal Shock ⁽²⁾	10.	Thermal Shock ⁽²⁾
11.	Mating/Unmating Force ⁽¹⁾	11.	Mating/Unmating Force ⁽¹⁾	11.	Mating/Unmating Force ⁽¹⁾	11.	Mating/Unmating Force ⁽¹⁾
12.	Visual Inspection	12.	Visual Inspection	12.	Visual Inspection	12.	Visual Inspection
Group 5 SFM-125-02-L-D-A TFM-125-02-L-D-A 8 Assemblies		Group 6 SFM-150-02-L-D-A TFM-150-02-L-D-A 8 Assemblies					
Step	Description	Step	Description				
1.	Mating/Unmating Force ⁽¹⁾	1.	Mating/Unmating Force ⁽¹⁾				
2.	Cycles Quantity = 25 Cycles	2.	Cycles Quantity = 25 Cycles				
3.	Mating/Unmating Force ⁽¹⁾	3.	Mating/Unmating Force ⁽¹⁾				
4.	Cycles Quantity = 25 Cycles	4.	Cycles Quantity = 25 Cycles				
5.	Mating/Unmating Force ⁽¹⁾	5.	Mating/Unmating Force ⁽¹⁾				
6.	Cycles Quantity = 25 Cycles	6.	Cycles Quantity = 25 Cycles				
7.	Mating/Unmating Force ⁽¹⁾	7.	Mating/Unmating Force ⁽¹⁾				
8.	Cycles Quantity = 25 Cycles	8.	Cycles Quantity = 25 Cycles				
9.	Mating/Unmating Force ⁽¹⁾	9.	Mating/Unmating Force ⁽¹⁾				
10.	Thermal Shock ⁽²⁾	10.	Thermal Shock ⁽²⁾				
11.	Mating/Unmating Force ⁽¹⁾	11.	Mating/Unmating Force ⁽¹⁾				
12.	Visual Inspection	12.	Visual Inspection				

(1) Mating/Unmating Force = EIA-364-13

(2) Thermal Shock = EIA-364-32

Exposure Time at Temperature Extremes = 1/2 Hour
Method A, Test Condition = I (-55°C to +85°C)
Test Duration = A-3 (100 Cycles)

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

MATING/UNMATING:

- 1) Reference document: EIA-364-13, *Mating and Unmating Forces Test Procedure for Electrical Connectors*.
- 2) The full insertion position was to within 0.003” to 0.004” of the plug bottoming out in the receptacle to prevent damage to the system under test.
- 3) One of the mating parts is secured to a floating X-Y table to prevent damage during cycling.

THERMAL SHOCK:

- 1) EIA-364-32, *Thermal Shock (Temperature Cycling) Test Procedure for Electrical Connectors*.
- 2) Test Condition: -55°C to +85°C.
- 3) Test Time: ½ hour dwell at each temperature extreme
- 4) Number of Cycles: 100
- 5) All test samples are pre-conditioned at ambient.
- 6) All test samples are exposed to environmental stressing in the mated condition.

RESULTS

Mating – Unmating Forces

Group 1 SFML-105-02-L-D-A/TFML-105-02-L-D-A

- **Initial**
 - **Mating**
 - **Min** ----- 5.78 lbs
 - **Max** ----- 7.76 lbs
 - **Unmating**
 - **Min** ----- 6.58 lbs
 - **Max** ----- 8.40 lbs
- **After 25 Cycle**
 - **Mating**
 - **Min** ----- 3.64 lbs
 - **Max** ----- 4.90 lbs
 - **Unmating**
 - **Min** ----- 2.30 lbs
 - **Max** ----- 3.46 lbs
- **After 50 Cycles**
 - **Mating**
 - **Min** ----- 3.84 lbs
 - **Max** ----- 4.58 lbs
 - **Unmating**
 - **Min** ----- 2.39 lbs
 - **Max** ----- 3.44 lbs
- **After 75 Cycles**
 - **Mating**
 - **Min** ----- 3.90 lbs
 - **Max** ----- 4.60 lbs
 - **Unmating**
 - **Min** ----- 2.41 lbs
 - **Max** ----- 3.56 lbs
- **After 100 Cycles**
 - **Mating**
 - **Min** ----- 3.92 lbs
 - **Max** ----- 4.59 lbs
 - **Unmating**
 - **Min** ----- 2.39 lbs
 - **Max** ----- 3.67 lbs
- **After Thermal Shock**
 - **Mating**
 - **Min** ----- 2.23 lbs
 - **Max** ----- 3.30 lbs
 - **Unmating**
 - **Min** ----- 2.37 lbs
 - **Max** ----- 3.88 lbs

RESULTS Continued**Group 2 SFML-125-02-L-D-A\TFML-125-02-L-D-A**

- **Initial**
 - **Mating**
 - **Min** -----18.88 lbs
 - **Max** -----20.16 lbs
 - **Unmating**
 - **Min** -----14.93 lbs
 - **Max** -----16.89 lbs
- **After 25 Cycle**
 - **Mating**
 - **Min** -----17.26 lbs
 - **Max** -----18.40 lbs
 - **Unmating**
 - **Min** -----11.76 lbs
 - **Max** -----12.90 lbs
- **After 50 Cycles**
 - **Mating**
 - **Min** -----17.75 lbs
 - **Max** -----18.72 lbs
 - **Unmating**
 - **Min** -----11.99 lbs
 - **Max** -----13.16 lbs
- **After 75 Cycles**
 - **Mating**
 - **Min** -----18.36 lbs
 - **Max** -----19.26 lbs
 - **Unmating**
 - **Min** -----13.02 lbs
 - **Max** -----14.25 lbs
- **After 100 Cycles**
 - **Mating**
 - **Min** -----18.91 lbs
 - **Max** -----20.02 lbs
 - **Unmating**
 - **Min** -----13.61 lbs
 - **Max** -----15.18 lbs
- **After Thermal Shock**
 - **Mating**
 - **Min** -----11.60 lbs
 - **Max** -----12.81 lbs
 - **Unmating**
 - **Min** -----8.24 lbs
 - **Max** -----9.76 lbs

RESULTS Continued**Group 3 SFML-150-02-L-D-A\TFML-150-02-L-D-A**

- **Initial**
 - **Mating**
 - **Min** -----33.62 lbs
 - **Max** -----37.37 lbs
 - **Unmating**
 - **Min** -----23.96 lbs
 - **Max** -----27.47 lbs
- **After 25 Cycle**
 - **Mating**
 - **Min** -----32.84 lbs
 - **Max** -----35.85 lbs
 - **Unmating**
 - **Min** -----23.60 lbs
 - **Max** -----26.81 lbs
- **After 50 Cycles**
 - **Mating**
 - **Min** -----34.31 lbs
 - **Max** -----38.10 lbs
 - **Unmating**
 - **Min** -----24.54 lbs
 - **Max** -----28.66 lbs
- **After 75 Cycles**
 - **Mating**
 - **Min** -----35.44 lbs
 - **Max** -----39.38 lbs
 - **Unmating**
 - **Min** -----25.38 lbs
 - **Max** -----30.89 lbs
- **After 100 Cycles**
 - **Mating**
 - **Min** -----36.50 lbs
 - **Max** -----40.78 lbs
 - **Unmating**
 - **Min** -----25.82 lbs
 - **Max** -----32.78 lbs
- **After Thermal Shock**
 - **Mating**
 - **Min** -----25.02 lbs
 - **Max** -----29.04 lbs
 - **Unmating**
 - **Min** -----16.86 lbs
 - **Max** -----19.61 lbs

RESULTS Continued**Group 4 SFM-105-02-L-D-A/TFM-105-02-L-D-A**

- **Initial**
 - **Mating**
 - **Min** ----- 2.96 lbs
 - **Max** ----- 3.69 lbs
 - **Unmating**
 - **Min** ----- 2.50 lbs
 - **Max** ----- 3.27 lbs
- **After 25 Cycle**
 - **Mating**
 - **Min** ----- 2.46 lbs
 - **Max** ----- 2.92 lbs
 - **Unmating**
 - **Min** ----- 2.53 lbs
 - **Max** ----- 3.09 lbs
- **After 50 Cycles**
 - **Mating**
 - **Min** ----- 2.60 lbs
 - **Max** ----- 2.84 lbs
 - **Unmating**
 - **Min** ----- 2.59 lbs
 - **Max** ----- 3.14 lbs
- **After 75 Cycles**
 - **Mating**
 - **Min** ----- 2.69 lbs
 - **Max** ----- 2.91 lbs
 - **Unmating**
 - **Min** ----- 2.70 lbs
 - **Max** ----- 3.21 lbs
- **After 100 Cycles**
 - **Mating**
 - **Min** ----- 2.73 lbs
 - **Max** ----- 3.00 lbs
 - **Unmating**
 - **Min** ----- 2.83 lbs
 - **Max** ----- 3.40 lbs
- **After Thermal Shock**
 - **Mating**
 - **Min** ----- 1.44 lbs
 - **Max** ----- 1.71 lbs
 - **Unmating**
 - **Min** ----- 1.46 lbs
 - **Max** ----- 1.74 lbs

RESULTS Continued**Group 5 SFM-125-02-L-D-A\TFM-125-02-L-D-A**

- **Initial**
 - **Mating**
 - **Min** -----16.26 lbs
 - **Max** -----19.21 lbs
 - **Unmating**
 - **Min** -----15.16 lbs
 - **Max** -----18.46 lbs
- **After 25 Cycle**
 - **Mating**
 - **Min** -----15.52 lbs
 - **Max** -----18.43 lbs
 - **Unmating**
 - **Min** -----14.02 lbs
 - **Max** -----20.66 lbs
- **After 50 Cycles**
 - **Mating**
 - **Min** -----16.73 lbs
 - **Max** -----18.65 lbs
 - **Unmating**
 - **Min** -----15.70 lbs
 - **Max** -----21.19 lbs
- **After 75 Cycles**
 - **Mating**
 - **Min** -----17.66 lbs
 - **Max** -----19.24 lbs
 - **Unmating**
 - **Min** -----17.16 lbs
 - **Max** -----21.51 lbs
- **After 100 Cycles**
 - **Mating**
 - **Min** -----17.83 lbs
 - **Max** -----19.32 lbs
 - **Unmating**
 - **Min** -----17.78 lbs
 - **Max** -----21.79 lbs
- **After Thermal Shock**
 - **Mating**
 - **Min** ----- 8.99 lbs
 - **Max** -----10.84 lbs
 - **Unmating**
 - **Min** ----- 8.72 lbs
 - **Max** -----11.14 lbs

RESULTS Continued**Group 6 SFM-150-02-L-D-A/TFM-150-02-L-D-A**

- **Initial**
 - **Mating**
 - **Min** -----22.55 lbs
 - **Max** -----26.12 lbs
 - **Unmating**
 - **Min** -----19.91 lbs
 - **Max** -----24.17 lbs
- **After 25 Cycle**
 - **Mating**
 - **Min** -----20.05 lbs
 - **Max** -----23.85 lbs
 - **Unmating**
 - **Min** -----17.87 lbs
 - **Max** -----21.30 lbs
- **After 50 Cycles**
 - **Mating**
 - **Min** -----21.55 lbs
 - **Max** -----24.30 lbs
 - **Unmating**
 - **Min** -----19.18 lbs
 - **Max** -----22.80 lbs
- **After 75 Cycles**
 - **Mating**
 - **Min** -----22.89 lbs
 - **Max** -----25.80 lbs
 - **Unmating**
 - **Min** -----20.96 lbs
 - **Max** -----24.74 lbs
- **After 100 Cycles**
 - **Mating**
 - **Min** -----23.65 lbs
 - **Max** -----27.07 lbs
 - **Unmating**
 - **Min** -----22.24 lbs
 - **Max** -----26.00 lbs
- **After Thermal Shock**
 - **Mating**
 - **Min** -----13.66 lbs
 - **Max** -----16.65 lbs
 - **Unmating**
 - **Min** -----12.61 lbs
 - **Max** -----15.48 lbs

DATA SUMMARIES**MATING/UNMATING:****Group 1 SFML-105-02-L-D-A/TFML-105-02-L-D-A**

	Initial				25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	23.93	5.38	29.27	6.58	16.19	3.64	10.23	2.30
Maximum	34.52	7.76	37.36	8.40	21.80	4.90	15.39	3.46
Average	29.35	6.60	32.65	7.34	18.55	4.17	12.89	2.90
St Dev	3.23	0.73	2.77	0.62	2.02	0.46	1.98	0.45
Count	8	8	8	8	8	8	8	8
	50 Cycles				75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	17.08	3.84	10.63	2.39	17.35	3.90	10.72	2.41
Maximum	20.37	4.58	15.30	3.44	20.46	4.60	15.83	3.56
Average	18.60	4.18	13.01	2.93	18.65	4.19	13.38	3.01
St Dev	1.28	0.29	1.84	0.41	1.06	0.24	1.89	0.43
Count	8	8	8	8	8	8	8	8
	100 Cycles				After Thermal Shock			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	17.44	3.92	10.63	2.39	9.92	2.23	10.54	2.37
Maximum	20.42	4.59	16.32	3.67	14.68	3.30	17.26	3.88
Average	18.67	4.20	13.47	3.03	12.64	2.84	14.32	3.22
St Dev	1.02	0.23	1.87	0.42	1.39	0.31	2.06	0.46
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued**Group 2 SFML-125-02-L-D-A\TFML-125-02-L-D-A**

	Initial				25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	83.98	18.88	66.41	14.93	76.77	17.26	52.31	11.76
Maximum	89.67	20.16	75.13	16.89	81.84	18.40	57.38	12.90
Average	87.36	19.64	71.44	16.06	78.80	17.72	54.42	12.23
St Dev	2.24	0.50	3.16	0.71	1.83	0.41	2.09	0.47
Count	8	8	8	8	8	8	8	8
	50 Cycles				75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	78.95	17.75	53.33	11.99	81.67	18.36	57.91	13.02
Maximum	83.27	18.72	58.54	13.16	85.67	19.26	63.38	14.25
Average	81.11	18.24	55.93	12.57	83.72	18.82	60.14	13.52
St Dev	1.64	0.37	1.81	0.41	1.65	0.37	1.83	0.41
Count	8	8	8	8	8	8	8	8
	100 Cycles				After Thermal Shock			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	84.11	18.91	60.54	13.61	51.60	11.60	36.65	8.24
Maximum	89.05	20.02	67.52	15.18	56.98	12.81	43.41	9.76
Average	86.51	19.45	63.56	14.29	54.20	12.19	40.84	9.18
St Dev	1.98	0.45	2.77	0.62	1.77	0.40	2.20	0.49
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued**Group 3 SFML-150-02-L-D-A\TFML-150-02-L-D-A**

	Initial				25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	149.54	33.62	106.57	23.96	146.07	32.84	104.97	23.60
Maximum	166.22	37.37	122.19	27.47	159.46	35.85	119.25	26.81
Average	157.36	35.38	114.39	25.72	153.44	34.50	111.58	25.09
St Dev	6.67	1.50	5.08	1.14	5.60	1.26	5.46	1.23
Count	8	8	8	8	7	7	8	8
	50 Cycles				75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	152.61	34.31	109.15	24.54	157.64	35.44	112.89	25.38
Maximum	169.47	38.10	127.48	28.66	175.16	39.38	137.40	30.89
Average	162.28	36.48	117.22	26.35	167.77	37.72	121.16	27.24
St Dev	6.24	1.40	5.97	1.34	6.33	1.42	7.96	1.79
Count	8	8	8	8	8	8	8	8
	100 Cycles				After Thermal Shock			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	162.35	36.50	114.85	25.82	111.29	25.02	74.99	16.86
Maximum	181.39	40.78	145.81	32.78	129.17	29.04	87.23	19.61
Average	171.22	38.49	124.56	28.00	118.37	26.61	82.01	18.44
St Dev	7.03	1.58	10.05	2.26	5.98	1.34	4.29	0.97
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued**Group 4 SFM-105-02-L-D-A/TFM-105-02-L-D-A**

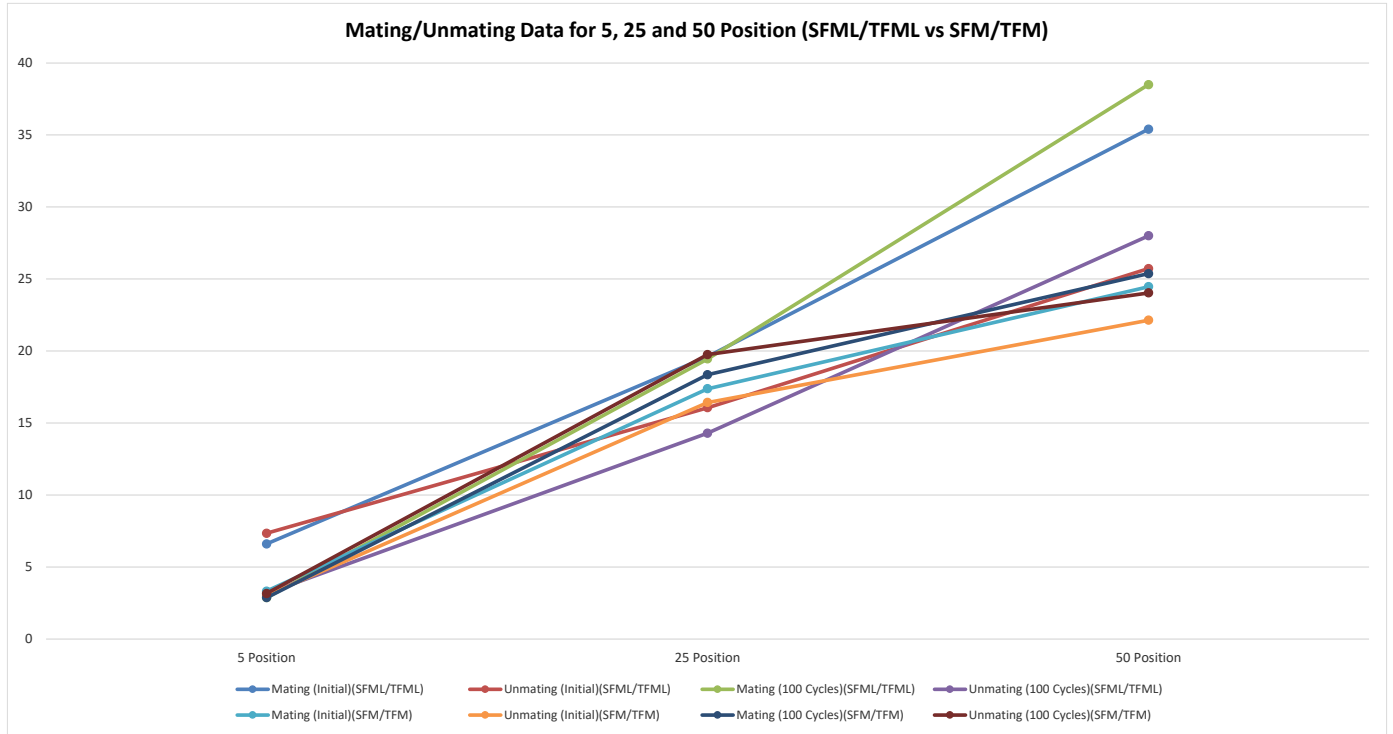
	Initial				25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	13.17	2.96	11.12	2.50	10.94	2.46	11.25	2.53
Maximum	16.41	3.69	14.54	3.27	12.99	2.92	13.74	3.09
Average	14.76	3.32	13.43	3.02	11.89	2.67	12.69	2.85
St Dev	1.10	0.25	1.16	0.26	0.63	0.14	0.98	0.22
Count	8	8	8	8	8	8	8	8
	50 Cycles				75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	11.56	2.60	11.52	2.59	11.97	2.69	12.01	2.70
Maximum	12.63	2.84	13.97	3.14	12.94	2.91	14.28	3.21
Average	12.18	2.74	13.00	2.92	12.53	2.82	13.43	3.02
St Dev	0.33	0.07	0.78	0.18	0.36	0.08	0.79	0.18
Count	8	8	8	8	8	8	8	8
	100 Cycles				After Thermal Shock			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	12.14	2.73	12.59	2.83	6.41	1.44	6.49	1.46
Maximum	13.34	3.00	15.12	3.40	7.61	1.71	7.74	1.74
Average	12.77	2.87	14.07	3.16	7.09	1.60	7.22	1.62
St Dev	0.43	0.10	0.85	0.19	0.46	0.10	0.44	0.10
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued**Group 5 SFM-125-02-L-D-A\TFM-125-02-L-D-A**

	Initial				25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	72.32	16.26	67.43	15.16	69.03	15.52	62.36	14.02
Maximum	85.45	19.21	82.11	18.46	81.98	18.43	91.90	20.66
Average	77.31	17.38	73.04	16.42	72.60	16.32	69.62	15.65
St Dev	4.11	0.92	5.87	1.32	4.44	1.00	9.94	2.23
Count	8	8	8	8	8	8	8	8
	50 Cycles				75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	74.42	16.73	69.83	15.70	78.55	17.66	76.33	17.16
Maximum	82.96	18.65	94.25	21.19	85.58	19.24	95.68	21.51
Average	78.03	17.54	76.41	17.18	80.99	18.21	83.34	18.74
St Dev	2.96	0.66	8.39	1.89	2.15	0.48	6.95	1.56
Count	8	8	8	8	8	8	8	8
	100 Cycles				After Thermal Shock			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	79.31	17.83	79.09	17.78	39.99	8.99	38.79	8.72
Maximum	85.94	19.32	96.92	21.79	48.22	10.84	49.55	11.14
Average	81.62	18.35	87.85	19.75	45.32	10.19	42.58	9.57
St Dev	2.00	0.45	6.81	1.53	2.58	0.58	3.61	0.81
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued**Group 6 SFM-150-02-L-D-A\TFM-150-02-L-D-A**

	Initial				25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	100.30	22.55	88.56	19.91	89.18	20.05	79.49	17.87
Maximum	116.18	26.12	107.51	24.17	106.08	23.85	94.74	21.30
Average	108.80	24.46	98.46	22.14	98.22	22.08	88.64	19.93
St Dev	5.23	1.18	6.66	1.50	6.21	1.40	5.40	1.21
Count	8	8	8	8	8	8	8	8
	50 Cycles				75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	95.85	21.55	85.31	19.18	101.81	22.89	93.23	20.96
Maximum	108.09	24.30	101.41	22.80	114.76	25.80	110.04	24.74
Average	103.94	23.37	94.86	21.33	109.41	24.60	101.65	22.85
St Dev	4.44	1.00	5.08	1.14	4.24	0.95	4.87	1.10
Count	8	8	8	8	8	8	8	8
	100 Cycles				After Thermal Shock			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	105.20	23.65	98.92	22.24	60.76	13.66	56.09	12.61
Maximum	120.41	27.07	115.65	26.00	74.06	16.65	68.86	15.48
Average	112.84	25.37	106.87	24.03	67.38	15.15	61.86	13.91
St Dev	4.61	1.04	4.74	1.07	4.91	1.10	4.16	0.93
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued**Mating-Unmating Comparison:**

Tracking Code: CR-872002_Report_Rev_1	Part #: SFML-150-02-L-D-A/TFML-150-02-L-D-A SFM-150-02-L-D-A/TFM-150-02-L-D-A
Part description: SFML/TFML vs SFM/TFM	

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: TCT-04

Description: Dillon Quantrol TC21 25-1000 mm/min series test stand

Manufacturer: Dillon Quantrol

Model: TC2 I series test stand

Serial #: 04-1041-04

Accuracy: Speed Accuracy: +/- 5% of indicated speed; Speed Accuracy: +/- 5% of indicated speed;

... Last Cal: 05/29/2022, Next Cal: 05/29/2023

Equipment #: TSC-01

Description: Vertical Thermal Shock Chamber

Manufacturer: Cincinnati Sub Zero

Model: VTS-3-6-6-SC/AC

Serial #: 10-VT14993

Accuracy: See Manual

... Last Cal: 06/30/2022, Next Cal: 06/30/2023