MINIFLEX® 3-BFNH

Part No. 20613-0**E-02

Test Report

Product Specification no. PRS-1846

Rev.	ECN	Date	Prepared by	Checked by	Approved by
6	T22001	January 5, 2022	M.Muro	-	H.Ikari
5	T19120	October 1, 2019	S.Shigekoshi	M.Muro	H.Ikari
4	T16132	August 22, 2016	H.Aoki	-	Y.Shimada
3	T15146	October 1, 2015	H.Aoki	-	Y.Shimada

1. Purpose
   To evaluate the performance of MINIFLEX 3-BFNHConnector in accordance with PRS-1846.

2. Specimen
   (1) Connector : MINIFLEX 3-BFNH Conn. (P/N 20613-0**E-02)
   (2) FPC : Made by Taiyo Industrial Co., Ltd.
   Thickness Lead : t=0.20±0.03 (Actual measurement : 0.19～0.20mm)

3. Test Sequence
   All the evaluations were performed in accordance with Table 1. Test Sequence.

4. Result
   See Table 2-1 to 2-7, Graph 1 to 17. For the details of the testing conditions and requirements, see PRS-1846.
   The “n” in the tables show the number of measurement points.

5. Conclusion
   All the specimens met the requirements of PRS-1846.

Table 1 Test Sequence

Test Items	Group															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
C/T Resistance	2,7			1,3, 5	1,3	1,3	1,3	1,5	1,5	1,3	1,3	1,3	1,3			
D.W.Voltage								2,6	2,6							
Insulation Resistance								3,7	3,7							
Temp. rising																1
Act Locking Force	1,5															
Act Un-locking Force	3,6															
FPC Retention Force		1,3														
Durability	4	2														
C/T Retention Force			1													
Vibration				2												
Shock				4												
Fretting corrosion					2											
Thermal Shock						2										
High Temp. Life							2									
High Temp & High Hum energizing								4								
High Temp & High Hum Life									4							
Cold Temp. Life										2						
Gas (H_2S)											2					
Gas (SO_2)												2				
Salt Water Spray													2			
Solderability														1		
Soldering Heat Resist.															1	

※The number of group is test sequence.

Table 2-1 Test Result

Test Item	Measurement			Spec.	Set	n	Data					Judge
							AVE.(X)	MAX.	MIN.	s	X±3s	
A Group Durability	Contact Resistance (mΩ)	※U	Initial	60mΩ MAX.	5	135	26.918	35.65	17.41	4.717	41.069	○
			After 20th	ΔR=40mΩ MAX.			-0.443	6.03	-6.96	3.137	8.968	○
		※L	Initial	60mΩ MAX.	5	135	21.740	32.74	11.82	6.439	41.057	○
			After 20th	ΔR=40mΩ MAX.			-0.066	6.64	5.98	3.144	9.366	○
	Act Locking Force (N)	7P	Initial	2.45N MAX. (0.35N/Pos. ×7P)	5	5	1.110 (0.159)	1.18 (0.17)	1.04 (0.15)	0.053 (0.008)	1.269 (0.181)	○
			20th cycles				1.000 (0.143)	1.07 (0.15)	0.93 (0.13)	0.050 (0.007)	1.150 (0.164)	○
		9P	Initial	3.15N MAX. (0.35N/Pos. ×9P)	5	5	1.362 (0.151)	1.55 (0.17)	1.10 (0.12)	0.190 (0.021)	1.932 (0.215)	○
			20th cycles				1.224 (0.136)	1.34 (0.15)	1.14 (0.13)	0.074 (0.008)	1.446 (0.161)	○
		11P	Initial	3.85N MAX. (0.35N/Pos. ×11P)	5	5	1.686 (0.153)	1.80 (0.16)	1.57 (0.14)	0.097 (0.009)	1.977 (0.180)	○
			20th cycles				1.528 (0.139)	1.60 (0.15)	1.43 (0.13)	0.068 (0.006)	1.732 (0.157)	○
		21P	Initial	7.35N MAX. (0.35N/Pos. ×21P)	5	5	3.168 (0.151)	3.34 (0.16)	3.02 (0.14)	0.132 (0.006)	3.564 (0.170)	○
			20th cycles				2.854 (0.136)	2.93 (0.14)	2.74 (0.13)	0.084 (0.004)	3.106 (0.148)	○
		23P	Initial	8.05N MAX. (0.35N/Pos. ×23P)	5	5	3.504 (0.152)	3.64 (0.16)	3.35 (0.15)	0.122 (0.005)	3.870 (0.168)	○
			20th cycles				3.148 (0.137)	3.40 (0.15)	2.98 (0.13)	0.174 (0.008)	3.670 (0.160)	○
		25P	Initial	8.75N MAX. (0.35N/Pos. ×25P)	5	5	3.846 (0.154)	4.01 (0.16)	3.73 (0.15)	0.104 (0.004)	4.158 (0.166)	○
			20th cycles				3.462 (0.138)	3.66 (0.15)	3.19 (0.13)	0.203 (0.008)	4.071 (0.163)	○
		27P	Initial	9.45N MAX. (0.35N/Pos. ×27P)	5	5	3.608 (0.134)	3.79 (0.14)	3.43 (0.13)	0.128 (0.005)	3.992 (0.148)	○
			20th cycles				3.264 (0.121)	3.57 (0.13)	2.99 (0.11)	0.213 (0.008)	3.903 (0.145)	○
		31P	Initial	10.85N MAX. (0.35N/Pos. ×31P)	5	5	4.110 (0.133)	4.26 (0.14)	3.99 (0.13)	0.106 (0.003)	4.428 (0.143)	○
			20th cycles				3.728 (0.120)	3.84 (0.12)	3.58 (0.12)	0.095 (0.003)	4.013 (0.129)	○
		33P	Initial	11.55N MAX. (0.35N/Pos. ×33P)	5	5	4.424 (0.134)	4.55 (0.14)	4.16 (0.13)	0.155 (0.005)	4.889 (0.148)	○
			20th cycles				3.972 (0.120)	4.12 (0.12)	3.82 (0.12)	0.119 (0.004)	4.329 (0.131)	○
		35P	Initial	12.25N MAX. (0.35N/Pos. ×35P)	5	5	4.744 (0.136)	4.89 (0.14)	4.66 (0.13)	0.096 (0.003)	5.032 (0.144)	○
			20th cycles				4.302 (0.123)	4.44 (0.13)	4.22 (0.12)	0.094 (0.003)	4.584 (0.131)	○
		39P	Initial	13.65N MAX. (0.35N/Pos. ×39P)	5	5	5.176 (0.133)	5.53 (0.14)	4.83 (0.12)	0.299 (0.008)	6.073 (0.156)	○
			20th cycles				4.656 (0.119)	4.90 (0.13)	4.36 (0.11)	0.207 (0.005)	5.277 (0.135)	○
		41P	Initial	14.35N MAX. (0.35N/Pos. ×41P)	5	5	5.464 (0.133)	5.60 (0.14)	5.33 (0.13)	0.102 (0.002)	5.770 (0.141)	○
			20th cycles				4.932 (0.120)	5.06 (0.12)	4.73 (0.12)	0.123 (0.003)	5.301 (0.129)	○

※U：Upper Contact, L：Lower Contact

Table 2-2 Test Result

Test Item	Measurement			Spec.	Set	n	Data					Judge
							AVE.(X)	MAX.	MIN.	s	X±3s	
A Group Durability	Act Locking Force (N)	45P	Initial	15.75N MAX. (0.35N/Pos. ×45P)	5	5	6.014 (0.134)	6.19 (0.14)	5.95 (0.13)	0.100 (0.002)	6.314 (0.140)	○
			20th cycles				5.416 (0.120)	5.53 (0.12)	5.35 (0.12)	0.080 (0.002)	5.656 (0.126)	○
	Act Un-locking Force (N)	7P	Initial	0.14N MIN. (0.02N/Pos. ×7P)	5	5	0.566 (0.081)	0.60 (0.09)	0.53 (0.08)	0.034 (0.005)	0.464 (0.066)	○
			20th cycles				0.532 (0.076)	0.57 (0.08)	0.49 (0.07)	0.035 (0.005)	0.427 (0.061)	○
		9P	Initial	0.18N MIN. (0.02N/Pos. ×9P)	5	5	0.702 (0.078)	0.79 (0.09)	0.57 (0.06)	0.097 (0.011)	0.411 (0.046)	○
			20th cycles				0.658 (0.073)	0.76 (0.08)	0.56 (0.06)	0.079 (0.009)	0.421 (0.047)	○
		11P	Initial	0.22N MIN. (0.02N/Pos. ×11P)	5	5	0.914 (0.083)	1.06 (0.10)	0.83 (0.08)	0.087 (0.008)	0.653 (0.059)	○
			20th cycles				0.844 (0.077)	0.93 (0.08)	0.77 (0.07)	0.079 (0.007)	0.607 (0.055)	○
		21P	Initial	0.42N MIN. (0.02N/Pos. ×21P)	5	5	1.704 (0.081)	1.86 (0.09)	1.53 (0.07)	0.121 (0.006)	1.341 (0.064)	○
			20th cycles				1.578 (0.075)	1.70 (0.08)	1.49 (0.07)	0.081 (0.004)	1.335 (0.064)	○
		23P	Initial	0.46N MIN. (0.02N/Pos. ×23P)	5	5	1.766 (0.077)	1.94 (0.08)	1.58 (0.07)	0.166 (0.007)	1.268 (0.055)	○
			20th cycles				1.656 (0.072)	1.84 (0.08)	1.52 (0.07)	0.121 (0.005)	1.293 (0.056)	○
		25P	Initial	0.50N MIN. (0.02N/Pos. ×25P)	5	5	1.896 (0.076)	2.06 (0.08)	1.73 (0.07)	0.148 (0.006)	1.452 (0.058)	○
			20th cycles				1.810 (0.072)	1.92 (0.08)	1.71 (0.07)	0.099 (0.004)	1.513 (0.061)	○
		27P	Initial	0.54N MIN. (0.02N/Pos. ×27P)	5	5	1.802 (0.067)	1.89 (0.07)	1.72 (0.06)	0.083 (0.003)	1.553 (0.058)	○
			20th cycles				1.692 (0.063)	1.79 (0.07)	1.64 (0.06)	0.063 (0.002)	1.503 (0.056)	○
		31P	Initial	0.62N MIN. (0.02N/Pos. ×31P)	5	5	2.144 (0.069)	2.28 (0.07)	1.97 (0.06)	0.118 (0.004)	1.790 (0.058)	○
			20th cycles				2.002 (0.065)	2.09 (0.07)	1.91 (0.06)	0.077 (0.002)	1.771 (0.057)	○
		33P	Initial	0.66N MIN. (0.02N/Pos. ×33P)	5	5	2.290 (0.069)	2.35 (0.07)	2.21 (0.07)	0.065 (0.002)	2.095 (0.063)	○
			20th cycles				2.108 (0.064)	2.20 (0.07)	1.99 (0.06)	0.080 (0.002)	1.868 (0.057)	○
		35P	Initial	0.70N MIN. (0.02N/Pos. ×35P)	5	5	2.448 (0.070)	2.57 (0.07)	2.39 (0.07)	0.074 (0.002)	2.226 (0.064)	○
			20th cycles				2.274 (0.065)	2.39 (0.07)	2.19 (0.06)	0.098 (0.003)	1.980 (0.057)	○
		39P	Initial	0.78N MIN. (0.02N/Pos. ×39P)	5	5	2.686 (0.069)	2.84 (0.07)	2.52 (0.06)	0.127 (0.003)	2.305 (0.059)	○
			20th cycles				2.526 (0.065)	2.72 (0.07)	2.41 (0.06)	0.125 (0.003)	2.151 (0.055)	○
		41P	Initial	0.82N MIN. (0.02N/Pos. ×41P)	5	5	2.806 (0.068)	2.84 (0.07)	2.72 (0.07)	0.050 (0.001)	2.656 (0.065)	○
			20th cycles				2.642 (0.064)	2.74 (0.07)	2.57 (0.06)	0.073 (0.002)	2.423 (0.059)	○
		45P	Initial	0.90N MIN. (0.02N/Pos. ×45P)	5	5	3.140 (0.070)	3.22 (0.07)	3.08 (0.07)	0.053 (0.001)	2.981 (0.066)	○
			20th cycles				2.932 (0.065)	3.01 (0.07)	2.85 (0.06)	0.078 (0.002)	2.698 (0.060)	○

Table 2-3 Test Result

Test Item	Measurement		Spec.	Set	n	Data AVE.(X)	Data MAX.	Data MIN.	Data s	Data X±3s	Judge
B Group FPC Retention Force (N)	7P	Initial	0.91N MIN. (0.13N /Pos.×7P)	5	5	3.152 (0.450)	3.27 (0.47)	2.83 (0.40)	0.183 (0.026)	2.603 (0.372)	○
		After 20th	0.70N MIN. (0.10N /Pos.×7P)			2.920 (0.417)	3.20 (0.46)	2.59 (0.37)	0.271 (0.039)	2.107 (0.301)	○
	9P	Initial	1.17N MIN. (0.13N /Pos.×9P)	5	5	4.084 (0.454)	4.23 (0.47)	3.67 (0.41)	0.238 (0.026)	3.370 (0.376)	○
		After 20th	0.90N MIN. (0.10N /Pos.×9P)			3.792 (0.421)	4.11 (0.46)	3.22 (0.36)	0.355 (0.039)	2.727 (0.304)	○
	11P	Initial	1.43N MIN. (0.13N /Pos.×11P)			4.946 (0.450)	5.18 (0.47)	4.67 (0.42)	0.193 (0.018)	4.367 (0.396)	
		After 20th	1.10N MIN. (0.10N /Pos.×11P)			4.556 (0.414)	5.03 (0.46)	4.26 (0.39)	0.308 (0.028)	3.632 (0.330)	
	21P	Initial	2.73N MIN. (0.13N /Pos.×21P)	5	5	9.444 (0.450)	9.90 (0.47)	9.08 (0.43)	0.297 (0.014)	8.553 (0.408)	○
		After 20th	2.10N MIN. (0.10N /Pos.×21P)			8.774 (0.418)	9.06 (0.43)	8.49 (0.40)	0.265 (0.013)	7.979 (0.379)	○
	23P	Initial	2.99N MIN. (0.13N /Pos.×23P)	5	5	10.302 (0.448)	10.77 (0.47)	9.69 (0.42)	0.539 (0.023)	8.685 (0.379)	○
		After 20th	2.30N MIN. (0.10N /Pos.×23P)			9.430 (0.410)	9.88 (0.43)	8.68 (0.38)	0.582 (0.025)	7.684 (0.335)	○
	25P	Initial	3.25N MIN. (0.13N /Pos.×25P)	5	5	11.320 (0.453)	11.81 (0.47)	10.68 (0.43)	0.425 (0.017)	10.045 (0.402)	○
		After 20th	2.50N MIN. (0.10N /Pos.×25P)			10.308 (0.412)	11.15 (0.45)	9.73 (0.39)	0.518 (0.021)	8.754 (0.349)	○
	27P	Initial	3.51N MIN. (0.13N /Pos.×27P)	5	5	11.034 (0.409)	11.35 (0.42)	10.66 (0.39)	0.294 (0.011)	10.152 (0.376)	○
		After 20th	2.70N MIN. (0.10N /Pos.×27P)			10.036 (0.372)	10.33 (0.38)	9.52 (0.35)	0.329 (0.012)	9.049 (0.336)	○
	31P	Initial	4.03N MIN. (0.13N /Pos.×31P)	5	5	12.580 (0.406)	12.99 (0.42)	12.15 (0.39)	0.343 (0.011)	11.551 (0.373)	○
		After 20th	3.10N MIN. (0.10N /Pos.×31P)			11.444 (0.369)	11.79 (0.38)	11.06 (0.36)	0.298 (0.010)	10.550 (0.339)	○
	33P	Initial	4.29N MIN. (0.13N /Pos.×33P)	5	5	13.522 (0.410)	14.00 (0.42)	13.23 (0.40)	0.300 (0.009)	12.622 (0.383)	○
		After 20th	3.30N MIN. (0.10N /Pos.×33P)			12.349 (0.374)	13.01 (0.39)	12.00 (0.36)	0.399 (0.012)	11.152 (0.338)	○
	35P	Initial	4.55N MIN. (0.13N /Pos.×35P)	5	5	14.494 (0.414)	14.72 (0.42)	14.21 (0.41)	0.209 (0.006)	13.867 (0.396)	○
		After 20th	3.50N MIN. (0.10N /Pos.×35P)			13.360 (0.382)	13.93 (0.40)	12.64 (0.36)	0.523 (0.015)	11.791 (0.337)	○
	39P	Initial	5.07N MIN. (0.13N /Pos.×39P)	5	5	16.058 (0.412)	16.73 (0.43)	15.49 (0.40)	0.484 (0.012)	14.606 (0.376)	○
		After 20th	3.90N MIN. (0.10N /Pos.×39P)			14.944 (0.383)	15.22 (0.39)	14.71 (0.38)	0.205 (0.005)	14.329 (0.368)	○
	41P	Initial	5.33N MIN. (0.13N /Pos.×41P)	5	5	16.736 (0.408)	17.38 (0.42)	16.34 (0.40)	0.386 (0.009)	15.578 (0.381)	○
		After 20th	4.10N MIN. (0.10N /Pos.×41P)			15.442 (0.377)	16.20 (0.40)	14.66 (0.36)	0.551 (0.013)	13.789 (0.338)	○
	45P	Initial	5.85N MIN. (0.13N /Pos.×45P)	5	5	18.346 (0.408)	18.65 (0.41)	17.94 (0.40)	0.283 (0.006)	17.497 (0.390)	○
		After 20th	4.50N MIN. (0.10N /Pos.×45P)			16.840 (0.374)	17.30 (0.38)	16.42 (0.36)	0.367 (0.008)	15.739 (0.350)	○
C Group Retention Force (N)	Contact		0.3N MIN.	5	30	0.690	0.87	0.53	0.091	0.417	○

※U：Upper Contact, L：Lower Contact

Table 2-4 Test Result

Test Item	Measurement			Spec.	Set	n	Data AVE.(X)	Data MAX.	Data MIN.	Data s	Data X±3s	Judge
D Group Vibration Shock	Contact Resistance (mΩ)	※U	Initial	60mΩ MAX.	5	135	26.916	36.62	17.64	4.674	40.938	○
			After Vibration	ΔR=40mΩ MAX.			-0.025	5.73	-5.89	2.838	8.489	○
			After Shock				-0.180	6.39	-6.48	3.357	9.891	○
		※L	Initial	60mΩ MAX.	5	135	21.708	32.73	11.62	6.355	40.773	○
			After Vibration	ΔR=40mΩ MAX.			-0.065	6.44	-6.80	3.189	9.502	○
			After Shock				0.067	6.41	-5.94	3.167	9.568	○
	Discontinuity		In Vibration	1μsec. MAX.	10	10	No Discontinuity					○
			In Shock				No Discontinuity					○
	Appearance		After Vibration	No abnormality adversely affecting the performance shall occur.	10	10	No Abnormality					○
			After Shock				No Abnormality					○
E Group Fretting corrosion	Contact Resistance (mΩ)	U	Initial	60mΩ MAX.	5	135	27.185	36.33	17.68	4.578	40.919	○
			After Test	ΔR=40mΩ MAX.			-0.822	6.10	-6.29	3.313	9.117	○
		L	Initial	60mΩ MAX.	5	135	21.729	32.26	11.98	5.890	39.399	○
			After Test	ΔR=40mΩ MAX.			-0.054	6.73	-6.27	3.109	9.273	○
	Discontinuity		In Test	1μsec. MAX.	10	10	No Discontinuity					○
	Appearance		After Test	No abnormality adversely affecting the performance shall occur.	10	10	No Abnormality					○
F Group Thermal Shock	Contact Resistance (mΩ)	U	Initial	60mΩ MAX.	5	135	26.682	35.11	17.59	4.479	40.119	○
			After Test	ΔR=40mΩ MAX.			0.174	5.73	-5.95	3.284	10.026	○
		L	Initial	60mΩ MAX.	5	135	21.832	32.26	11.62	6.455	41.197	○
			After Test	ΔR=40mΩ MAX.			-0.371	6.94	-6.86	2.992	8.605	○
	Appearance		After Test	No abnormality adversely affecting the performance shall occur.	10	10	No Abnormality					○

※U：Upper Contact, L：Lower Contact

Table 2-5 Test Result

Test Item	Measurement			Spec.	Set	n	Data AVE.(X)	Data MAX.	Data MIN.	Data s	Data X±3s	Judge
G Group High Temp. Life	Contact Resistance (mΩ)	※U	Initial	60mΩ MAX.	5	135	27.061	35.88	17.86	4.537	40.672	○
			After Test	ΔR=40mΩ MAX.			0.469	6.16	-5.17	3.130	9.859	○
		※L	Initial	60mΩ MAX.	5	135	21.886	32.37	11.83	6.374	41.008	○
			After Test	ΔR=40mΩ MAX.			0.458	5.69	-5.37	3.126	9.836	○
	Appearance		After 96h	No abnormality adversely affecting the performance shall occur.	10	10	No Abnormality					○
H Group High Temp. & High Hum. energizing	Contact Resistance (mΩ)	U	Initial	60mΩ MAX.	5	135	27.209	36.30	18.00	4.646	41.147	○
			After Test	ΔR=40mΩ MAX.			-0.282	5.40	-6.11	3.137	9.129	○
		L	Initial	60mΩ MAX.	5	135	21.749	32.44	11.43	6.666	41.747	○
			After Test	ΔR=40mΩ MAX.			-0.364	5.46	-5.83	3.161	9.119	○
	D.W.Voltage	U	Initial	No abnormalities such as creeping discharge, flashover, insulator breakdown occur.	5	130	No Abnormality					○
			After Test				No Abnormality					○
		L	Initial		5	130	No Abnormality					○
			After Test				No Abnormality					○
	Insulation Resistance (MΩ)	U	Initial	100MΩ MIN	5	130	MIN. 5.0×10^5MΩ					○
			After Test				MIN. 2.0×10^4MΩ					○
		L	Initial		5	130	MIN. 5.0×10^5MΩ					○
			After Test				MIN. 1.0×10^4MΩ					○
	Appearance		After Test	No abnormality adversely affecting the performance shall occur.	10	10	No Abnormality					○

※U：Upper Contact, L：Lower Contact

Table 2-6 Test Result

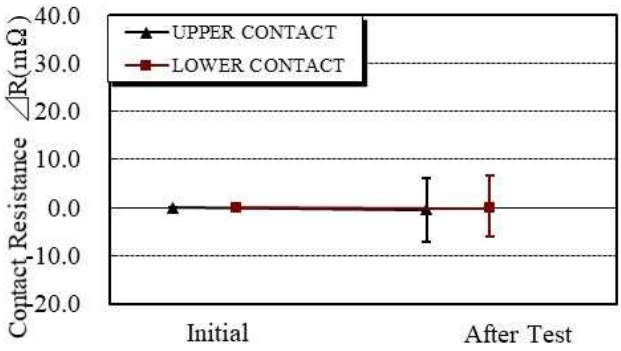
Test Item	Measurement			Spec.	Set	n	Data					Judge
							AVE.(X)	MAX.	MIN.	s	X±3s	
J Group High Temp. & High Hum. Life	Contact Resistance (mΩ)	※U	Initial	60mΩ MAX.	5	135	27.045	36.92	18.61	4.252	39.801	○
			After Test	ΔR=40mΩ MAX.			-0.302	5.40	-5.74	3.200	9.298	○
		※L	Initial	60mΩ MAX.	5	135	21.796	32.65	11.54	6.514	41.338	○
			After Test	ΔR=40mΩ MAX.			-0.381	5.14	-5.95	3.030	8.709	○
	D.W.Voltage	U	Initial	No abnormalities such as creeping discharge, flashover, insulator breakdown occur.	5	130	No Abnormality					○
			After Test				No Abnormality					○
		L	Initial		5	130	No Abnormality					○
			After Test				No Abnormality					○
	Insulation Resistance (MΩ)	U	Initial	100MΩ MIN	5	130	MIN. 5.0×10^{5}MΩ					○
			After Test				MIN. 5.0×10^{4}MΩ					○
		L	Initial		5	130	MIN. 5.0×10^{5}MΩ					○
			After Test				MIN. 3.0×10^{4}MΩ					○
	Appearance		After Test	No abnormality adversely affecting the performance shall occur.	10	10	No Abnormality					○
K Group Cold Temp. Life	Contact Resistance (mΩ)	U	Initial	60mΩ MAX.	5	135	26.680	35.13	17.79	4.495	40.165	○
			After Test	ΔR=40mΩ MAX.			0.474	6.16	-5.22	3.136	9.882	○
		L	Initial	60mΩ MAX.	5	135	21.711	31.96	11.68	6.381	40.854	○
			After Test	ΔR=40mΩ MAX.			0.412	5.82	-5.37	3.152	9.868	○
	Appearance		After Test	No abnormality adversely affecting the performance shall occur.	5	5	No Abnormality					○
L Group Gas (H_2S)	Contact Resistance (mΩ)	U	Initial	60mΩ MAX.	5	135	27.350	36.62	17.93	4.844	41.882	○
			After Test	ΔR=40mΩ MAX.			0.059	7.87	-5.71	3.271	9.872	○
		L	Initial	60mΩ MAX.	5	135	21.497	32.50	11.32	6.368	40.601	○
			After Test	ΔR=40mΩ MAX.			0.100	7.16	-6.50	3.149	9.547	○
	Appearance		After Test	No abnormality adversely affecting the performance shall occur.	10	10	No Abnormality					○

※U：Upper Contact, L：Lower Contact

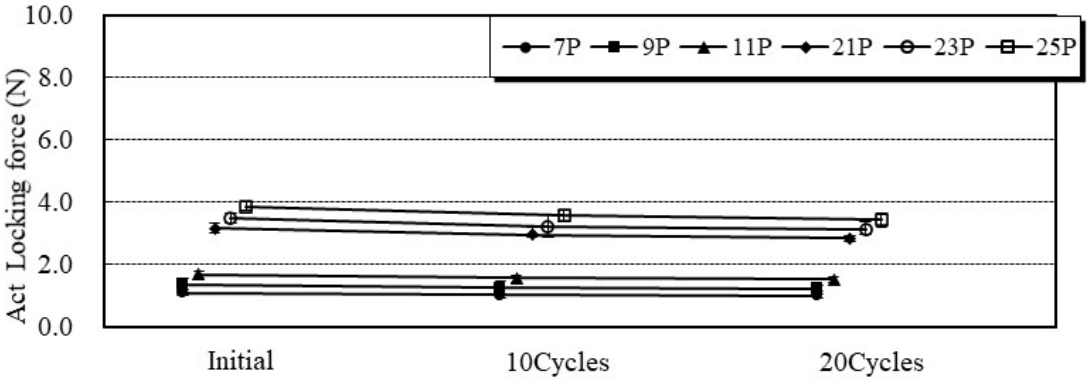
Table 2-7 Test Result

Test Item	Measurement			Spec.	Set	n	Data AVE.(X)	Data MAX.	Data MIN.	Data s	Data X±3s	Judge
M Group Gas (SO_2)	Contact Resistance (mΩ)	※U	Initial	60mΩ MAX.	5	135	27.181	36.02	17.85	4.768	41.485	○
			After Test	ΔR=40mΩ MAX.			0.037	7.75	-7.80	3.333	10.036	○
		※L	Initial	60mΩ MAX.	5	135	21.575	32.42	11.43	6.358	40.649	○
			After Test	ΔR=40mΩ MAX.			0.041	7.52	-6.60	3.177	9.572	○
	Appearance		After Test	No abnormality adversely affecting the performance shall occur.	10	10	No Abnormality					○
N Group Salt Water Spray	Contact Resistance (mΩ)	U	Initial	60mΩ MAX.	5	135	27.050	35.49	17.69	4.678	41.084	○
			After Test	ΔR=40mΩ MAX.			0.060	7.74	-7.12	3.301	9.963	○
		L	Initial	60mΩ MAX.	5	135	21.563	32.72	12.19	6.340	40.583	○
			After Test	ΔR=40mΩ MAX.			0.198	7.84	-6.97	2.954	9.060	○
	Appearance		After Test	No abnormality adversely affecting the performance shall occur.	10	10	No Abnormality					○
P Group Solderability	Zerox Time (sec.)		Contact	3sec. MAX	5	5	MAX. 0.1sec.					○
	Appearance		Contact	Wetness: 95% MIN.	5	5	95%MIN.was wet.					○
Q Group Soldering Heat Resistance	Reflow twice			No abnormality adversely affecting the performance shall occur.	5	5	No Abnormality					○
	Soldering iron											
R Group Temp. rising	0.3A/Contact			ΔT=30K MAX.	5	5	MAX.ΔT=16.4K No Problem					○

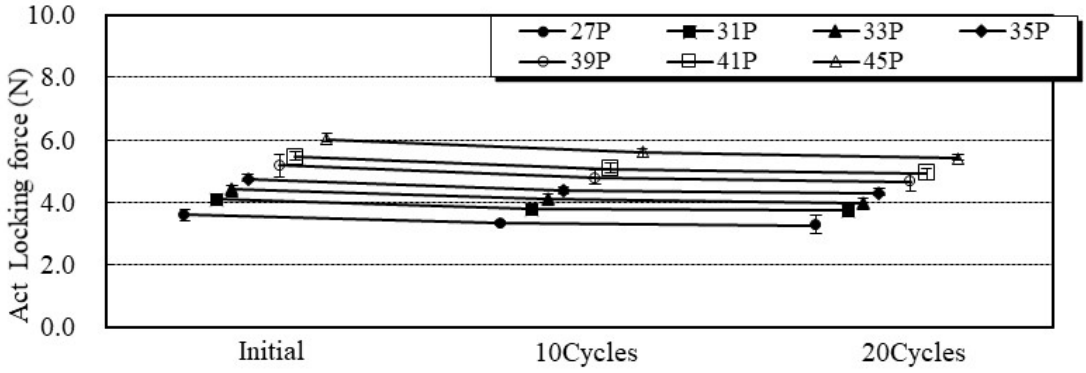
※U：Upper Contact, L：Lower Contact



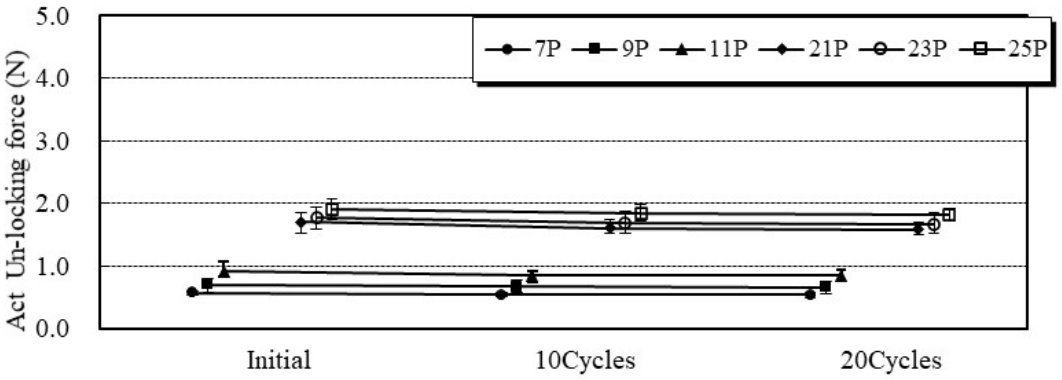
Graph.1 A change of contact resistance
A group : Durability



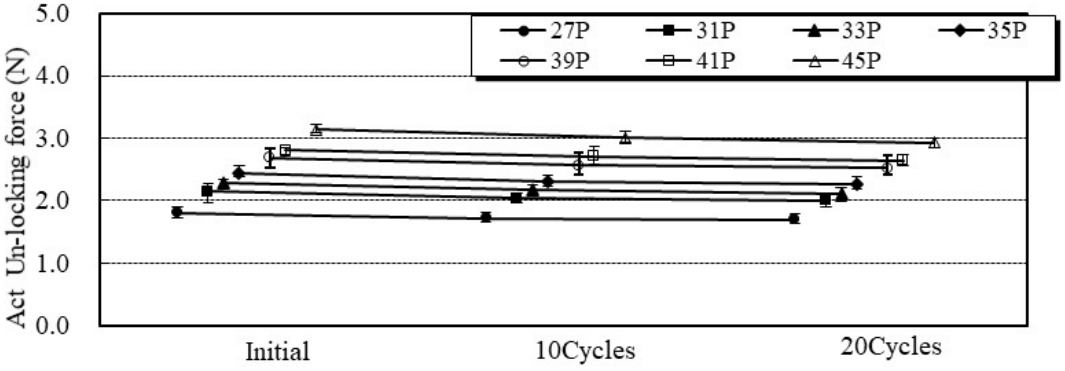
Graph.2 A change of Locking force(7P～25P)
A group : Durability



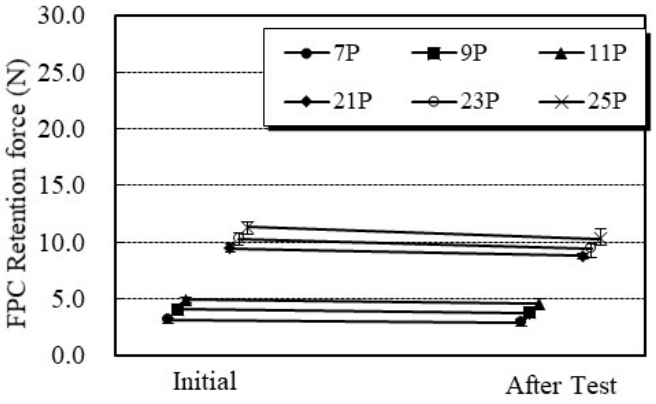
Graph.3 A change of Locking force(27P～45P)
A group : Durability



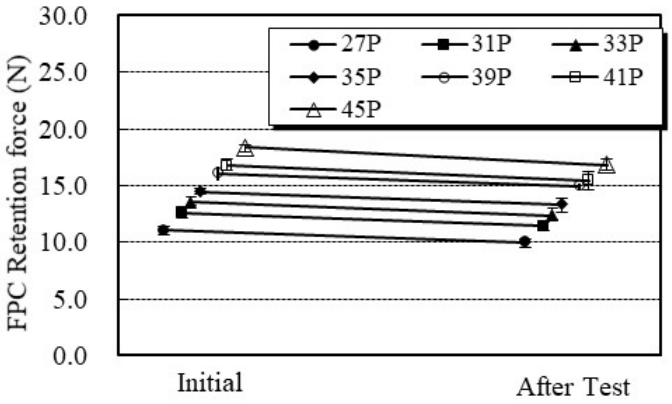
Graph.4 A change of Un-locking force (7P～25P)
A group : Durability



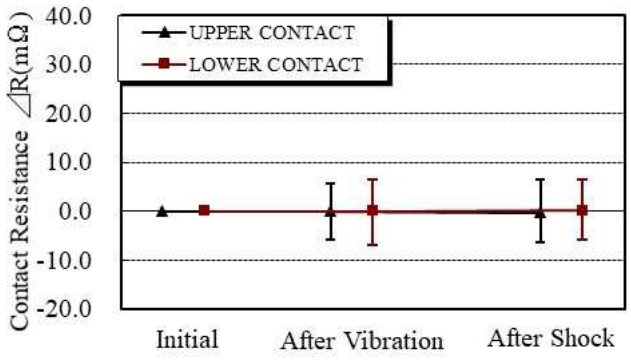
Graph.5 A change of Un-locking force (27P～45P)
A group : Durability



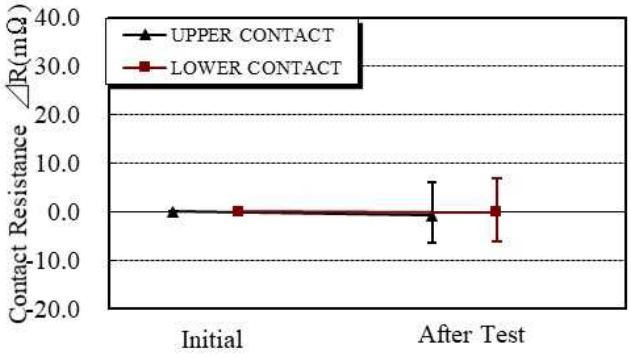
Graph.6 A change of FPC Retention force (7P～25P)
B group : FPC Retention force



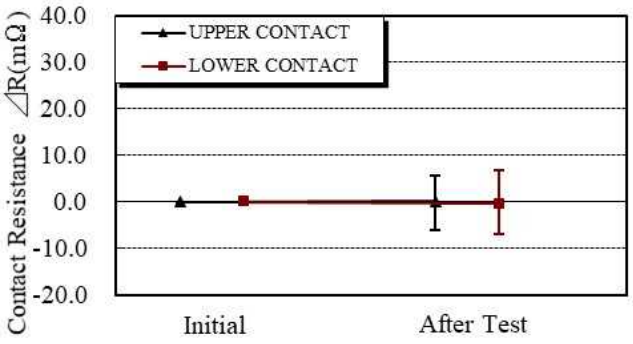
Graph.7 A change of FPC Retention force (27P～45P)
B group : FPC Retention force



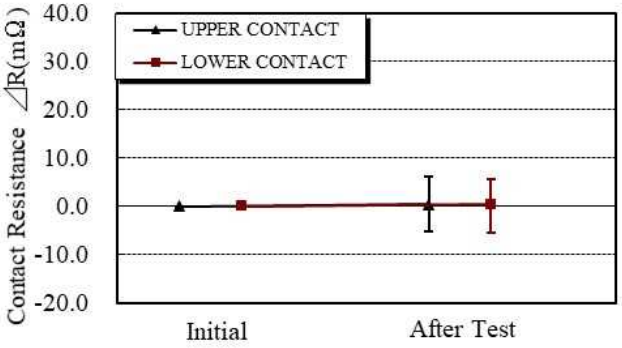
Graph.8 A change of contact resistance
D group : Vibration / Shock



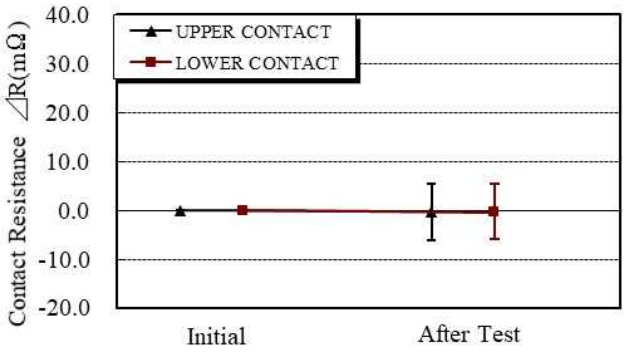
Graph.9 A change of contact resistance
E group : Fretting Corrosion



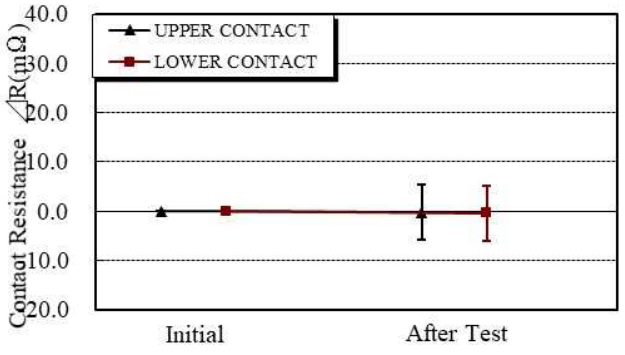
Graph.10 A change of contact resistance
F group : Thermal Shock



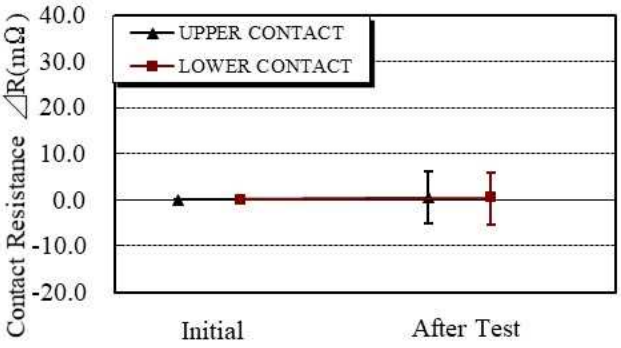
Graph.11 A change of contact resistance
G group : High Temp. Life



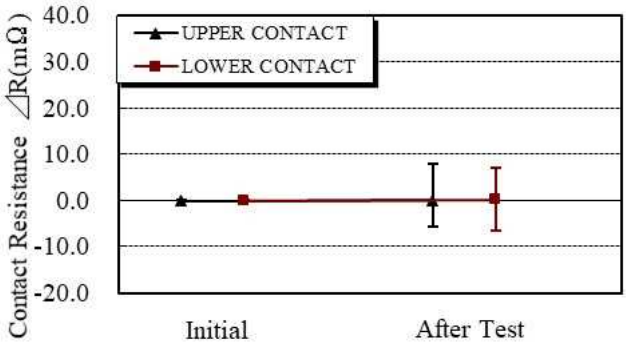
Graph.12 A change of contact resistance
H group : High Temp. & High Hum. energizing



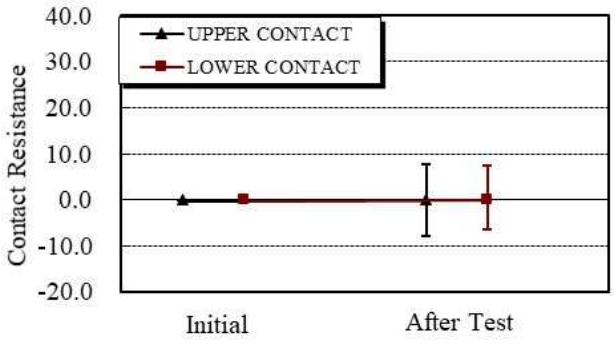
Graph.13 A change of contact resistance
J group : High Temp. & High Hum. Life



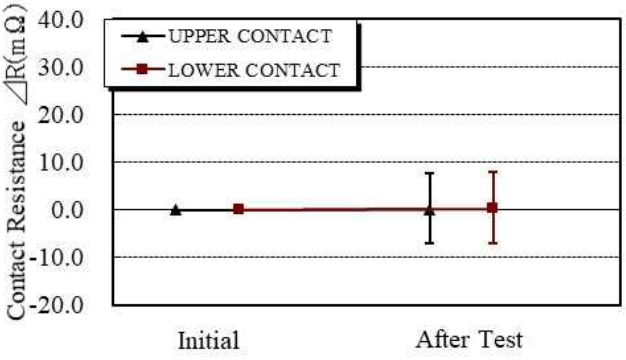
Graph.14 A change of contact resistance
K group : Cold Temp. Life



Graph.15 A change of contact resistance
L group : Gas(H_2S)



Graph.16 A change of contact resistance
M group : Gas(SO_2)



Graph.17 A change of contact resistance
N group : Salt Water Spray