

# CABLINE®-SS Connector

半田 Ground Bar タイプ  
Solder Ground Bar Type

Part No. Plug: 20380 Receptacle: 20374

## Test Report

Product Specification no. PRS-1239

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# CABLINE®-SS Connector Test Report

## 1. Purpose

CABLINE-SS コネクタの性能を PRS-1239 に基づいて評価する。

To evaluate the performance of CABLINE-SS Connector in accordance with PRS-1239.

## 2. Specimen

(1) CABLINE-SS PLUG ASS'Y (Part No. 20380-\*\*\*T-\*\*)

(2) CABLINE-SS RECEPTACLE ASS'Y (Part No.20374-\*\*\*E-\*\* )

## 3. Test Sequence

全ての評価は表 1 の試験順序に従って行った。

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

## 4. Result

表 2-1～2-6、グラフ 1～23 参照。試験条件の詳細は PRS-1239 参照。n 数は測定データを意味する。

See Table 2-1 to 2-6, Graph 1 to 23. For the details of the testing conditions and requirements, see PRS-1239.

The "n" in the tables show the number of measurement points.

## 5. Conclusion

全ての資料が製品規格（PRS-1239）の必要条件を満足した。

All the specimens met the requirements of PRS-1239.

Table 1 試験順序と試料数 / Test Sequence and Sample Quantity

試験項目 Test Item	グループ / Group												
	A	B	C	D	E	F	G	H	J	K	L	M	N
接触抵抗 Contact Resistance	2,6		1,3,5	1,3	1,3	1,5	1,5,7	1,3	1,3	1,3			
絶縁抵抗 Insulation Resistance						2,6	2,8						
耐電圧 D. W. Voltage						3,7	3,9						
温度上昇 Temperature Life													1
挿入力 Mating Force	1,5												
抜去力 Un-mating Force	3,7												
耐久性 Durability	4						4 (10cycles)						
端子保持力 Contact Retention Force		1,3											
ケーブル保持力 Cable Retention Force	8												
耐振動性 Vibration			2										
耐衝撃性 Shock			4										
熱衝撃 Thermal Shock				2									
高温寿命 High Temperature Life		2			2								
湿度 (定常状態) Humidity (Steady State)						4							
湿度 (サイクリング) Humidity (Cycling)							6						
塩水噴霧 Salt Water Spray								2					
ガス (H <sub>2</sub> S) Gas (H <sub>2</sub> S)									2				
低温寿命 Cold Temperature Life										2			
半田付け性 Solder ability											1		
半田耐熱性 Soldering Heat Resistance												1	
試料数 Sample QTY.	5 pcs.	20 pos.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	5 pcs.	10 pcs.	10 pcs.	5 pcs.

※グループ表中の番号は、試験順序を示す。 / Numbers indicate sequence in which tests are performed.

表 2-1. 試験結果(Table.2-1 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	N	データ Data					判定 Judgment		
						AVE.	MAX.	MIN.	s	X±3s			
A Group 耐久性 ↓ ケーブル保持力 Cable Retention Force  Sn Type	AWG#34 Discrete cable	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#34 180mΩMAX	5	250	128.495	136.85	120.55	3.51	138.999	Pass	
			30回挿抜後 After Testing	AWG#34 ΔR=40mΩMAX.			R	128.974	137.78	117.20	3.82	140.443	Pass
							ΔR	0.478	8.69	-8.32	3.55	11.127	
	AWG#36	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#36 230mΩMAX	5	250	171.335	174.21	168.04	1.541	175.957	Pass	
			30回挿抜後 After Testing	AWG#36 ΔR=40mΩMAX.			R	171.546	173.94	169.86	175.002	175.00	Pass
							ΔR	0.211	2.25	-3.24	3.985	3.98	
		Ground抵抗 Ground Resistance(mΩ)	初期 Initial	50mΩMAX.	5	-	16.656	17.00	16.32	0.239	17.372	Pass	
			30回挿抜後 After Testing	ΔR=40mΩMAX.			R	17.225	18.07	16.30	0.482	18.670	Pass
							ΔR	0.569	1.17	-0.57	0.530	2.158	
	AWG#40	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#40 530mΩMAX	5	250	502.171	508.953	497.367	2.532	509.769	Pass	
			30回挿抜後 After Testing	AWG#40 ΔR=40mΩMAX.			R	501.257	506.200	496.875	2.011	507.291	Pass
							ΔR	-0.915	4.659	-6.524	2.017	-6.964	
		Ground抵抗 Ground Resistance(mΩ)	初期 Initial	50mΩMAX.	5	-	13.147	13.815	12.378	0.609	14.974	Pass	
			30回挿抜後 After Testing	ΔR=40mΩMAX.			R	13.089	13.682	12.492	0.549	14.735	Pass
							ΔR	-0.058	1.304	-1.316	1.098	-3.235	
	AWG#42	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#42 700mΩMAX	5	250	618.595	639.39	589.70	12.116	654.943	Pass	
			30回挿抜後 After Testing	AWG#42 ΔR=40mΩMAX.			R	618.105	639.76	590.62	12.129	654.492	Pass
							ΔR	-0.442	2.87	-3.22	1.395	3.743	Pass
		Ground抵抗 Ground Resistance(mΩ)	初期 Initial	50mΩMAX.	5	-	18.508	20.42	17.50	1.205	22.123	Pass	
			30回挿抜後 After Testing	ΔR=40mΩMAX.			R	21.191	23.64	18.66	2.109	27.518	Pass
							ΔR	2.683	5.98	0.45	2.357	9.754	Pass
	10P	挿入力 Mating Force (N)	初期 Initial	29.0N MAX.	5	-	14.687	14.81	14.50	-	-	Pass	
			30回挿抜後 After Testing	29.0N MAX.				8.870	10.13	7.63	-	-	Pass
		抜去力 Un-mating Force(N)	初期 Initial	4.00N MIN.	5	-	17.993	19.74	16.08	-	-	Pass	
30回挿抜後 After Testing			2.87N MIN.				6.380	6.92	6.10	-	-	Pass	
ケーブル保持力(N) Cable Retention Force			4.90N MIN.	5	-	40.410	43.37	37.45	-	-	Pass		
14P		挿入力 Mating Force (N)	初期 Initial	29.8N MAX.	5	-	20.087	24.86	17.58	-	-	Pass	
	30回挿抜後 After Testing		29.8N MAX.				9.200	10.24	8.03	-	-	Pass	
	抜去力 Un-mating Force(N)	初期 Initial	4.40N MIN.	5	-	21.963	24.82	19.30	-	-	Pass		
		30回挿抜後 After Testing	3.23N MIN.				10.170	11.15	9.12	-	-	Pass	
	ケーブル保持力(N) Cable Retention Force			6.86N MIN.	5	-	52.070	53.10	51.50	-	-	Pass	
	20P	挿入力 Mating Force (N)	初期 Initial	31.0N MAX.	5	-	24.377	25.00	23.52	-	-	Pass	
30回挿抜後 After Testing			31.0N MAX.				12.775	13.82	10.77	-	-	Pass	
抜去力 Un-mating Force(N)		初期 Initial	5.00N MIN.	5	-	15.940	16.73	14.47	-	-	Pass		
		30回挿抜後 After Testing	3.76N MIN.				9.070	9.55	8.51	-	-	Pass	
ケーブル保持力(N) Cable Retention Force			9.8N MIN.	5	-	48.525	54.50	42.50	-	-	Pass		
30P		挿入力 Mating Force (N)	初期 Initial	33.0N MAX.	5	-	27.930	28.52	27.15	-	-	Pass	
	30回挿抜後 After Testing		33.0N MAX.				18.032	19.01	17.05	-	-	Pass	
	抜去力 Un-mating Force(N)	初期 Initial	6.00N MIN.	5	-	16.987	18.42	16.27	-	-	Pass		
		30回挿抜後 After Testing	4.65N MIN.				10.780	11.96	10.00	-	-	Pass	
	ケーブル保持力(N) Cable Retention Force			14.7N MIN.	5	-	57.758	62.72	50.91	-	-	Pass	

表 2-2. 試験結果(Table.2-2 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	N	データ Data					判定 Judgment	
						AVE.	MAX.	MIN.	s	X±3s		
A Group 耐久性 Durability ↓ ケーブル保持力 Cable Retention Force  Sn Type	32P	挿入力 Mating Force (N)	初期 Initial	33.4N MAX.	5	-	28.152	28.98	27.36	-	-	Pass
			30回挿抜後 After Testing	33.4N MAX.			18.058	18.55	17.58	-	-	Pass
		抜去力 Un-mating Force(N)	初期 Initial	6.20N MIN.	5	-	17.923	18.58	17.17	-	-	Pass
	30回挿抜後 After Testing		4.84N MIN.	11.200			11.81	10.54	-	-	Pass	
	ケーブル保持力(N) Cable Retention Force		15.68N MIN.	5	-	60.350	67.20	52.60	-	-	Pass	
	35P	挿入力 Mating Force (N)	初期 Initial	34.0N MAX.	5	-	29.913	30.56	29.43	-	-	Pass
			30回挿抜後 After Testing	34.0N MAX.			20.113	21.06	18.92	-	-	Pass
		抜去力 Un-mating Force(N)	初期 Initial	6.5N MIN.	5	-	19.840	20.31	19.00	-	-	Pass
	30回挿抜後 After Testing		5.07N MIN.	8.906			9.25	8.39	-	-	Pass	
	ケーブル保持力(N) Cable Retention Force		17.15N MIN.	5	-	55.930	57.65	54.38	-	-	Pass	
	40P	挿入力 Mating Force (N)	初期 Initial	35.0N MAX.	5	-	33.560	34.30	32.93	-	-	Pass
			30回挿抜後 After Testing	35.0N MAX.			19.840	21.07	18.62	-	-	Pass
		抜去力 Un-mating Force(N)	初期 Initial	7.00N MIN.	5	-	17.326	19.99	14.01	-	-	Pass
	30回挿抜後 After Testing		5.50N MIN.	11.446			12.05	10.88	-	-	Pass	
	ケーブル保持力(N) Cable Retention Force		19.6N MIN.	5	-	54.468	56.94	49.20	-	-	Pass	
50P	挿入力 Mating Force (N)	初期 Initial	38.0N MAX.	5	-	34.050	36.46	32.34	-	-	Pass	
		30回挿抜後 After Testing	38.0N MAX.			20.870	22.15	19.60	-	-	Pass	
	抜去力 Un-mating Force(N)	初期 Initial	8.00N MIN.	5	-	18.032	18.82	17.44	-	-	Pass	
30回挿抜後 After Testing		6.41N MIN.	11.642			13.03	10.39	-	-	Pass		
ケーブル保持力(N) Cable Retention Force		24.5N MIN.	5	-	98.440	102.2	95.5	-	-	Pass		

表 2-3. 試験結果(Table.2-3 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	N	データ Data					判定 Judgment		
						AVE.	MAX.	MIN.	s	X±3s			
A Group 耐久性 Durability ↓ ケーブル保持力 Cable Retention Force  Au Type	AWG#42	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#42 700mΩMAX.	5	250	644.259	669.76	630.32	6.763	664.548	Pass	
			30回挿抜後 After Testing	AWG#42 ΔR=40mΩMAX.			R	643.357	667.83	630.08	6.591	662.13	Pass
							ΔR	-0.903	1.75	-7.09	1.709	4.224	Pass
		Ground抵抗 Ground Resistance(mΩ)	初期 Initial	50mΩMAX.	5	-	15.902	17.16	14.17	—	—	Pass	
			30回挿抜後 After Testing	ΔR=40mΩMAX.			R	16.786	18.82	14.89	—	—	Pass
							ΔR	0.884	1.72	-1.04	—	—	Pass
	35P	挿入力 Mating Force (N)	初期 Initial	40.8N MAX.	5	-	31.460	31.95	30.77	—	—	Pass	
			30回挿抜後 After Testing	34.0N MAX.			18.760	19.70	18.23	—	—	Pass	
		抜去力 Un-mating Force(N)	初期 Initial	5.26N MIN.	5	-	16.405	17.15	15.19	—	—	Pass	
			30回挿抜後 After Testing	3.07N MIN.			12.466	13.72	11.27	—	—	Pass	
		ケーブル保持力(N) Cable Retention Force		17.15N MIN.	5	-	59.240	65.70	53.60	—	—	Pass	
	40P	挿入力 Mating Force (N)	初期 Initial	42.0N MAX.	5	-	31.630	33.71	29.01	—	—	Pass	
			30回挿抜後 After Testing	35.0N MAX.			18.420	20.19	17.05	—	—	Pass	
		抜去力 Un-mating Force(N)	初期 Initial	6.0N MIN.	5	-	19.800	22.05	16.46	—	—	Pass	
30回挿抜後 After Testing			3.5N MIN.	11.450			12.84	10.58	—	—	Pass		
ケーブル保持力(N) Cable Retention Force		19.6N MIN.	5	-	54.468	56.94	49.20	—	—	Pass			
B Group 端子保持力 Contact Retention Force	PLUG端子保持力(N) Plug Contact Retention Force		0.6N以上	-	20	1.8Nの力を加えても、端子の抜け無し It does not pull out,even if it applies the power of 1.8N to a terminal.					Pass		
	RECE.端子保持力(N) Rece Contact Retention Force		0.2N以上	-	20	1.019	1.27	0.78	0.121	0.656	Pass		

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表 2-4. 試験結果(Table.2-4 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	N	データ Data					判定 Judgment	
						AVE.	MAX.	MIN.	s	X±3s		
C Group 耐振動性 Vibration ↓ 耐衝撃性 Shock	接触抵抗 Contact Resistance (mΩ)	初期 Initial	AWG#42 700mΩMAX.	5	250	619.130 639.97 589.92 13.022 658.196					Pass	
		振動後 After Vibration	AWG#42 ΔR=40mΩMAX.			R	619.499	639.85	589.89	13.032	658.595	Pass
		衝撃後 After Shock	AWG#42 ΔR=40mΩMAX.			ΔR	0.369	3.35	-3.01	0.831	3.862	Pass
						R	618.706	639.21	588.80	13.007	657.727	
						ΔR	-0.424	2.69	-3.10	0.778	1.910	
	Ground抵抗 Ground Resistance (mΩ)	初期 Initial	AWG#42 50mΩMAX.	5	-	16.533 17.98 15.75 0.887 19.194					Pass	
		振動後 After Vibration	ΔR=40mΩMAX.			R	17.278	18.25	16.40	0.761	19.561	Pass
		衝撃後 After Shock	ΔR=40mΩMAX.			ΔR	0.744	2.04	-0.30	0.872	3.36	Pass
						R	17.451	18.54	16.73	0.74	19.671	
						ΔR	0.918	1.61	0.10	0.603	2.727	
電気の瞬断 Electrical discontinuity	振動試験中 During Vibration	1μsec. MAX.	5	-	瞬断無し No Electrical discontinuity					Pass		
	衝撃試験中 During Shock				瞬断無し No Electrical discontinuity					Pass		
外観 Appearance	振動後 After Vibration	異常無き事 Abnormality shall not occur.	5	-	瞬断無し No Electrical discontinuity					Pass		
	衝撃後 After Shock				瞬断無し No Electrical discontinuity					Pass		
D Group 熱衝撃 Thermal Shock	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#42 700mΩMAX	5	250	619.564 638.29 592.72 12.040 655.684					Pass	
		試験後 After Testing	AWG#42 ΔR=40mΩMAX.			R	618.777	637.35	589.99	12.125	655.152	Pass
						ΔR	-0.787	3.83	-3.92	1.586	3.971	Pass
	Ground抵抗 Ground Resistance(mΩ)	初期 Initial	50mΩMAX.	5	-	16.657 17.16 16.07 0.417 17.91					Pass	
		試験後 After Testing	ΔR=40mΩMAX.			R	21.285	22.73	20.06	1.156	24.753	Pass
						ΔR	4.626	5.90	3.72	0.848	7.17	Pass
E Group 高温寿命 HighTemp Life	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#42 700mΩMAX	5	250	619.542 639.01 586.76 11.469 653.939					Pass	
		試験後 After Testing	AWG#42 ΔR=40mΩMAX.			R	618.847	638.47	587.56	11.343	652.876	Pass
						ΔR	-0.683	2.94	-3.47	1.268	3.121	Pass
	Ground抵抗 Ground Resistance(mΩ)	初期 Initial	50mΩMAX.	5	-	20.436 20.86 20.04 — —					Pass	
		試験後 After Testing	ΔR=40mΩMAX.			R	24.683	25.53	23.44	—	—	Pass
						ΔR	4.247	5.12	2.58	—	—	Pass
F Group 湿度(定常) Humidity (Steady State)	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#42 700mΩMAX	5	250	620.149 641.68 584.67 14.365 663.244					Pass	
		試験後 After Testing	AWG#42 ΔR=40mΩ			R	618.914	639.15	582.73	14.383	662.063	Pass
						ΔR	-1.235	3.22	-2.91	1.168	2.269	Pass
	Ground抵抗 Ground Resistance(mΩ)	初期 Initial	50mΩMAX.	5	-	17.102 17.69 16.42 — —					Pass	
		試験後 After Testing	ΔR=40mΩMAX.			R	17.872	19.61	17.33	—	—	Pass
						ΔR	0.770	3.19	-0.29	—	—	Pass
	絶縁抵抗 Insulation Resistance (MΩ)	初期 Initial	1,000MΩMIN.	5	100	30,000MΩMIN.					Pass	
		試験後 After Testing	500MΩMIN.			5,000MΩMIN.						
	耐電圧 D. W. Voltage	初期 Initial	異常無き事 Abnormality shall not occur.	5	100	異常なし No Abnormality					Pass	
試験後 After Testing		異常なし No Abnormality										

## CABLIN®-SS Connector Test Report

表 2-5. 試験結果(Table.2-5 Test result)

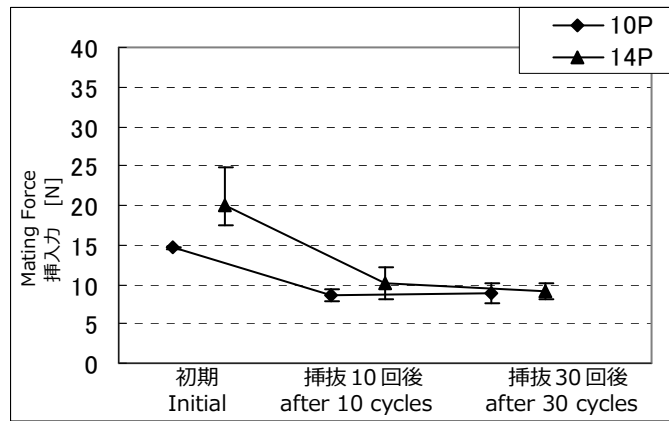
試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	N	データ Data					判定 Judgment		
						AVE.	MAX.	MIN.	s	X±3s			
G Group 湿度(サイクル) Humidity (Cycling)	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#42 700mΩMAX	5	250	619.861	641.46	585.25	13.736	661.069	Pass		
		挿抜10回後 After 10 cycles	AWG#42 ΔR=40mΩMAX			R	619.021	642.42	585.10	13.769	660.322	Pass	
						ΔR	-0.840	1.88	-2.95	1.1.03	2.469		
						R	617.986	639.28	583.48	13.680	659.026	Pass	
		試験後 After Testing	AWG#42 ΔR=40mΩ			ΔR	-1.876	4.17	-3.98	1.632	3.020		
						初期 Initial	50mΩMAX.	5	-	17.066	18.93	15.60	—
	挿抜10回後 After 10 cycles			AWG#42 ΔR=40mΩMAX	R	17.112	17.76			16.13	—	—	Pass
		ΔR	0.046		0.81	-1.52	—			—	Pass		
		R	21.384		23.90	19.34	—			—	Pass		
	試験後 After Testing	ΔR=40mΩMAX.	ΔR	4.318	6.92	1.39	—			—	Pass		
			絶縁抵抗 Insulation Resistance (MΩ)	初期 Initial	1,000MΩMIN.	5	100			50,000MΩMIN.			
				試験後 After Testing	500MΩMIN.			3,000MΩMIN.					
耐電圧 D. W. Voltage	初期 Initial	異常無き事 Abnormality shall not occur.	5	100	異常なし No Abnormality					Pass			
	試験後 After Testing				異常なし No Abnormality								
H Group 塩水噴霧 Salt Water Spray	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#42 700mΩMAX	5	250	618.606	641.20	584.58	13.003	657.615	Pass		
		試験後 After Testing	AWG#42 ΔR=40mΩMAX.			R	619.723	645.17	586.25	13.643	663.613	Pass	
						ΔR	1.843	6.44	-2.54	2.174	3.322	Pass	
	Ground抵抗 Ground Resistance(mΩ)	初期 Initial	50mΩMAX.	5	-	19.620	20.90	17.59	—	—	Pass		
		試験後 After Testing	ΔR=40mΩMAX.			R	26.101	29.10	23.97	—	—	Pass	
						ΔR	6.481	8.21	4.86	—	—	Pass	
J Group ガス(H2S) Gas(H2S)	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#42 700mΩMAX	5	250	620.341	635.30	587.14	11.783	655.690	Pass		
		試験後 After Testing	AWG#42 ΔR=40mΩMAX.			R	619.680	634.70	586.62	12.032	655.776	Pass	
						ΔR	-0.660	3.47	-3.69	1.351	3.593	Pass	
	Ground抵抗 Ground Resistance(mΩ)	初期 Initial	50mΩMAX.	5	-	17.820	18.56	17.04	—	—	Pass		
		試験後 After Testing	ΔR=40mΩMAX.			R	21.887	23.28	20.16	—	—	Pass	
						ΔR	4.067	5.19	2.30	—	—	Pass	
K Group 低温寿命 Low Temp. Life	接触抵抗 Contact Resistance(mΩ)	初期 Initial	AWG#42 700mΩMAX	5	250	642.659	661.25	630.85	7.595	665.444	Pass		
		試験後 After Testing	AWG#42 ΔR=40mΩMAX.			R	624.594	661.79	630.33	7.302	664.500	Pass	
						ΔR	-0.064	3.48	-2.25	1.314	3.878	Pass	
	Ground抵抗 Ground Resistance(mΩ)	初期 Initial	50mΩMAX.	5	-	14.981	15.71	13.86	—	—	Pass		
		試験後 After Testing	ΔR=40mΩMAX.			R	16.403	17.27	14.84	—	—	Pass	
						ΔR	1.422	1.74	0.97	—	—	Pass	



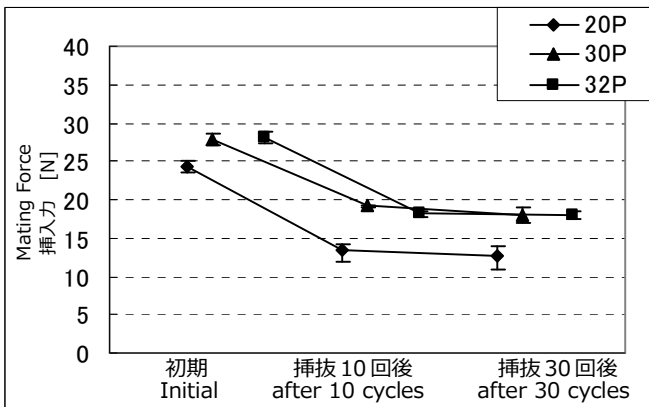
表 2-6. 試験結果 (Table.2-6 Test result)

試験項目 Test Item	測定内容 Contents of Measurement		規格 Specifications	Set	N	データ Data					判定 Judgment
						AVE.	MAX.	MIN.	s	X±3s	
L Group 半田付け性 Solderability	外観 Appearance		95%以上濡れること More than 95% of the dipped surface shall be evenly wet.	10	-	95%以上濡れる 95% MIN.					Pass
M Group 半田耐熱性 Soldering Heat Resistance	リフロー Reflow	外観 Appearance	異常無き事 Abnormality shall not occur.	10	-	異常なし No Abnormality					Pass
	手半田 Soldering iron										
N Group 温度上昇 Temperature Rising	AWG #42		ΔT=30°C MAX.	5	-	ΔT=23.0°C					Pass
	AWG #40					ΔT=28.5°C					
	AWG #36					ΔT=28.9°C					
	AWG #34					ΔT=29.5°C					

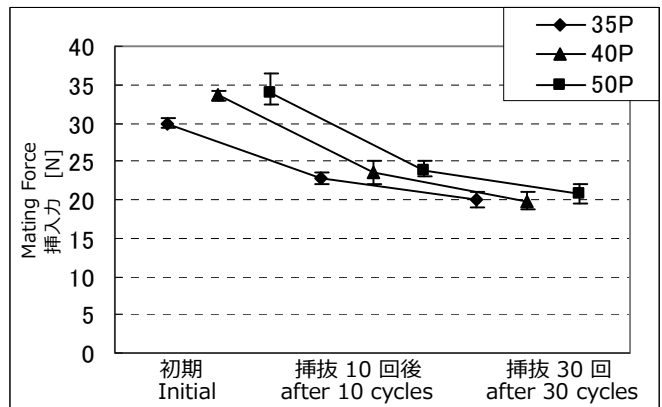
Sn Type



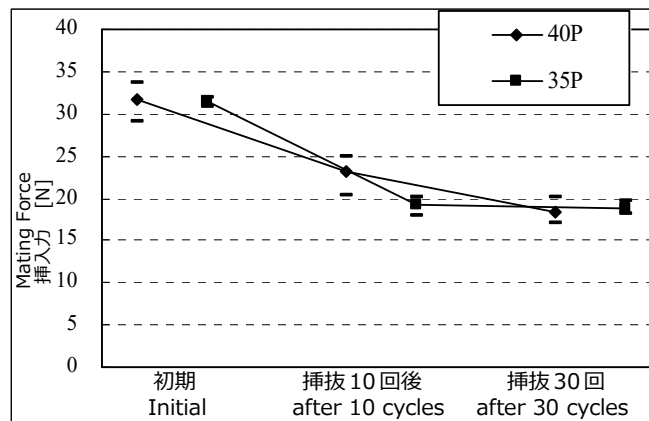
Sn Type



Sn Type

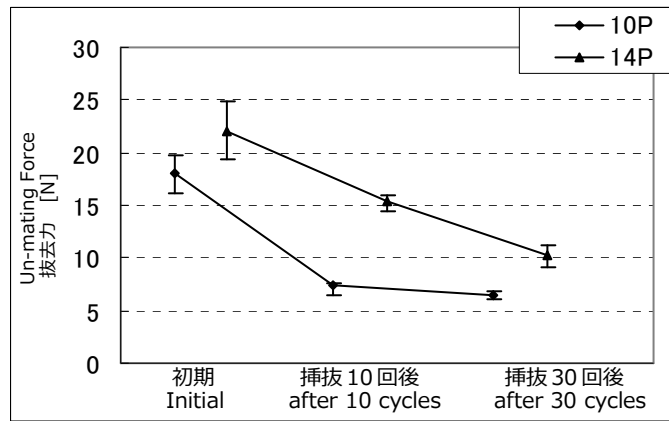


Au Type

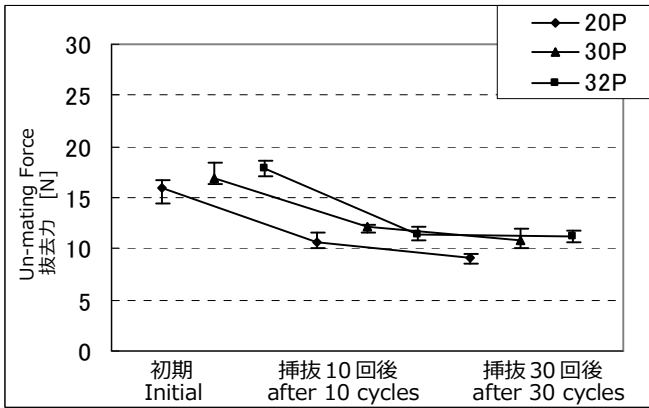


Graph1. 挿入力の変化 (A Group : 耐久性)  
A change of mating force (A Group: Durability)

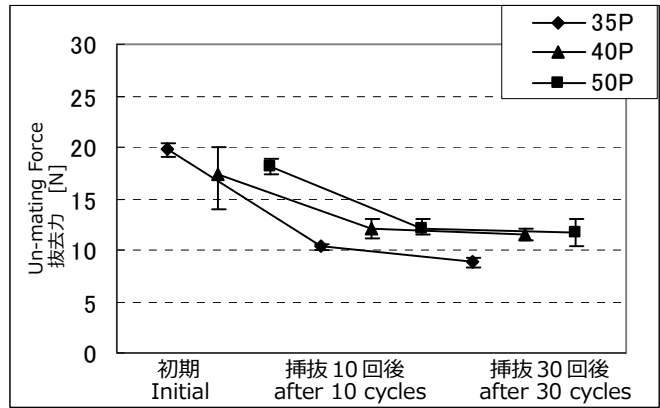
Sn Type



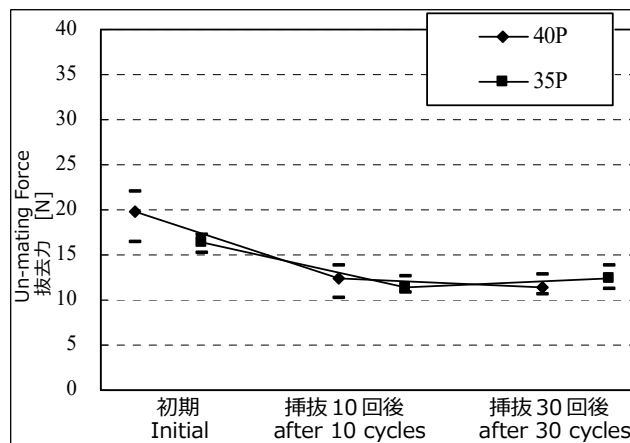
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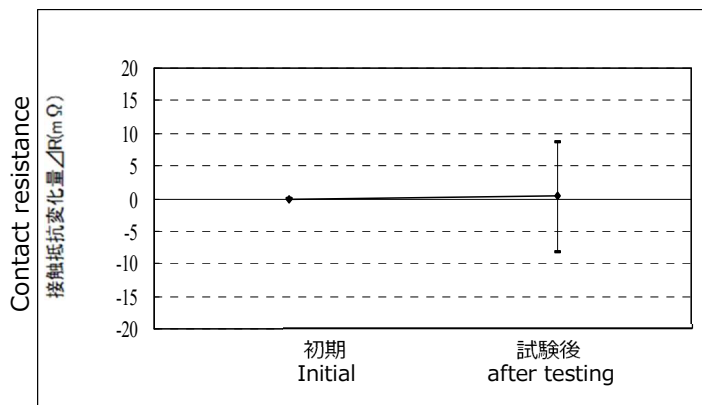
Sn type



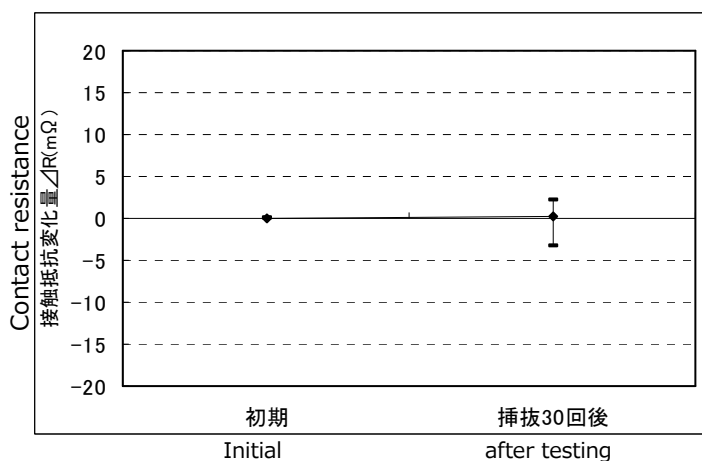
Au Type



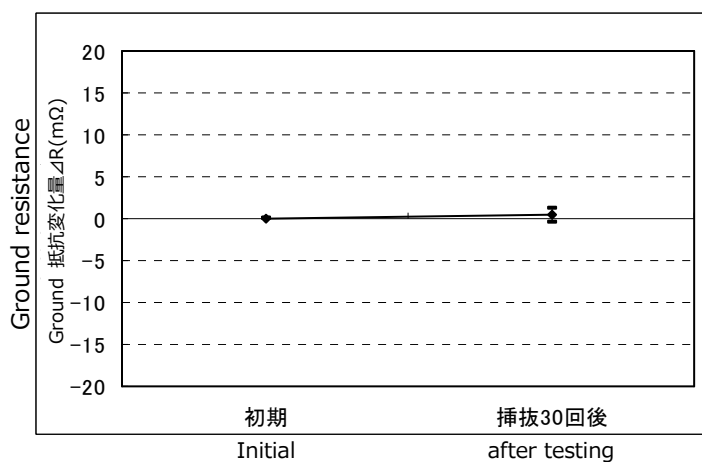
Graph 2. 抜去力の変化 (A Group : 耐久性)  
A change of un-mating force (A Group: Durability)



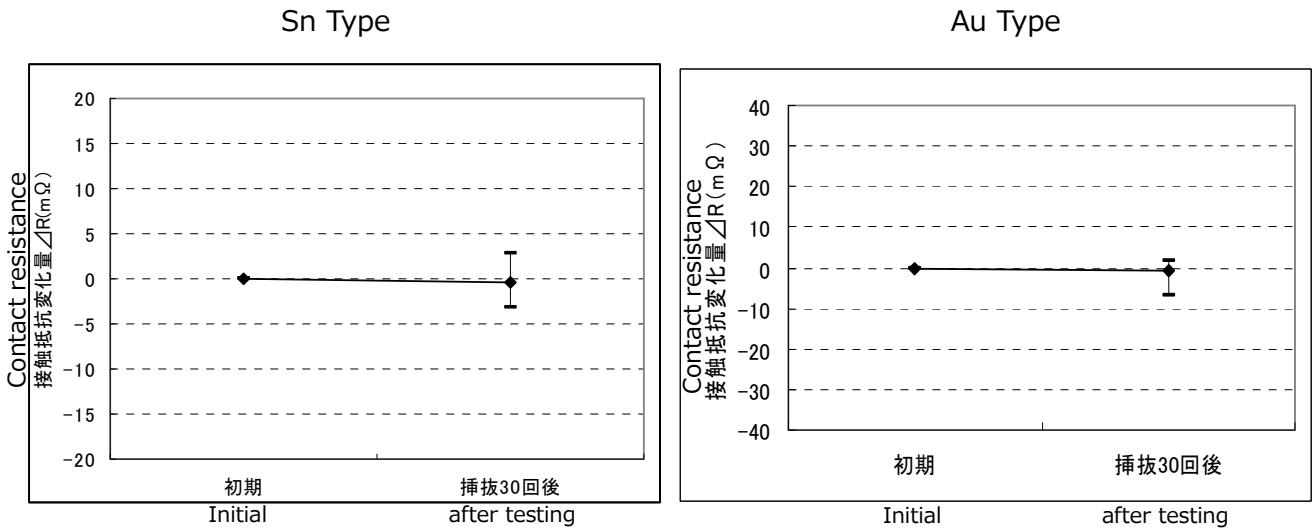
Graph3. 接触抵抗値の変化 AWG # 34 (A Group : 耐久性)  
 A change of contact resistance AWG # 34 (A Group: Durability)



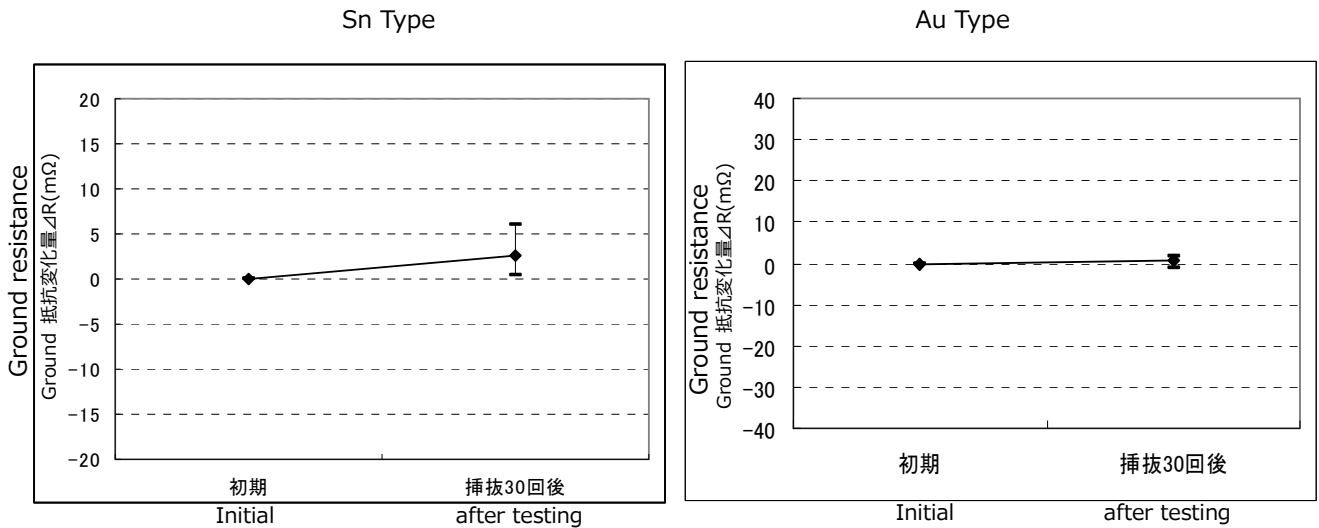
Graph4. 接触抵抗値の変化 AWG # 36 (A Group : 耐久性)  
 A change of contact resistance AWG # 36 (A Group: Durability)



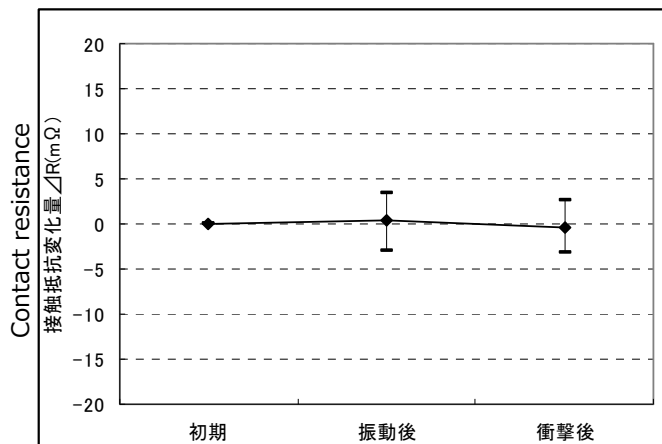
Graph5. Ground 抵抗値の変化 AWG # 36 (A Group : 耐久性)  
 A change of ground resistance AWG # 36 (A Group: Durability)



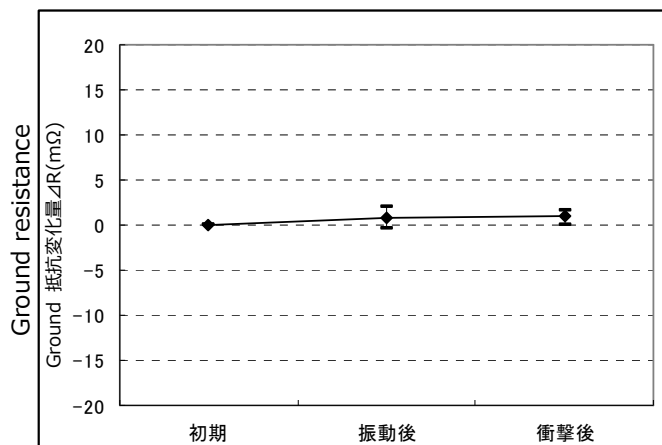
Graph6. 接触抵抗値の変化 AWG # 42 (A Group : 耐久性)  
 A change of contact resistance AWG # 42 (A Group: Durability)



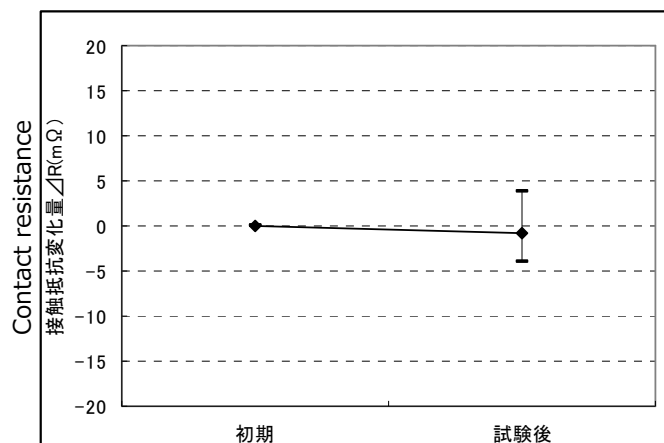
Graph 7. Ground 抵抗値の変化 AWG # 42 (A Group : 耐久性)  
 A change of ground resistance AWG # 42 (A Group: Durability)



Graph8. 接触抵抗値の変化 (C Group : 耐振動性・耐衝撃性)  
A change of contact resistance (C Group: Vibration/Shock)

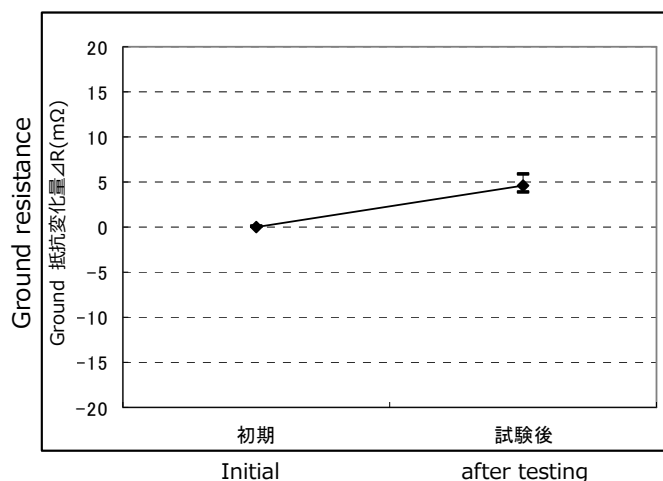


Graph9. Ground 抵抗値の変化 (C Group : 耐振動性・耐衝撃性)  
A change of ground resistance(C Group: Vibration/ Shock)



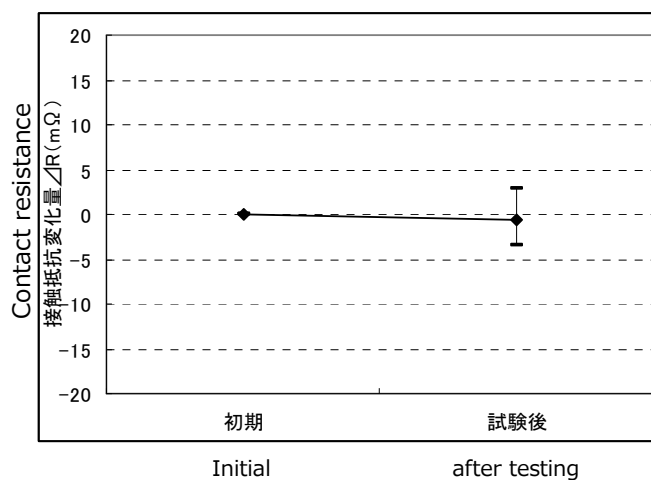
Graph10. 接触抵抗値の変化 (D Group : 熱衝撃)

A change of contact resistance (D Group: Thermal shock)



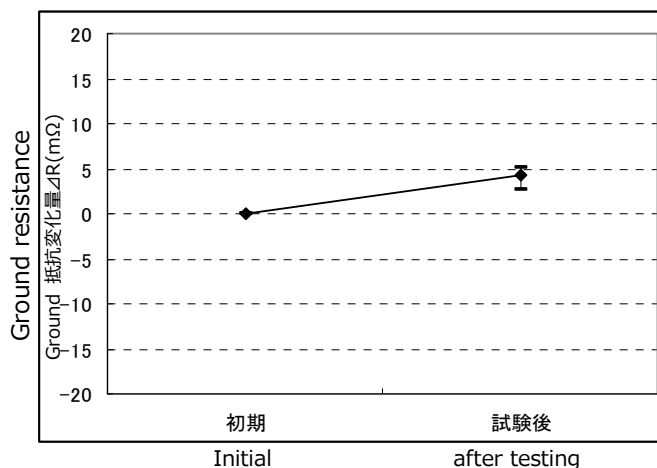
Graph11. Ground 抵抗値の変化 (D Group : 熱衝撃)

A change of ground resistance (D Group: Thermal shock)



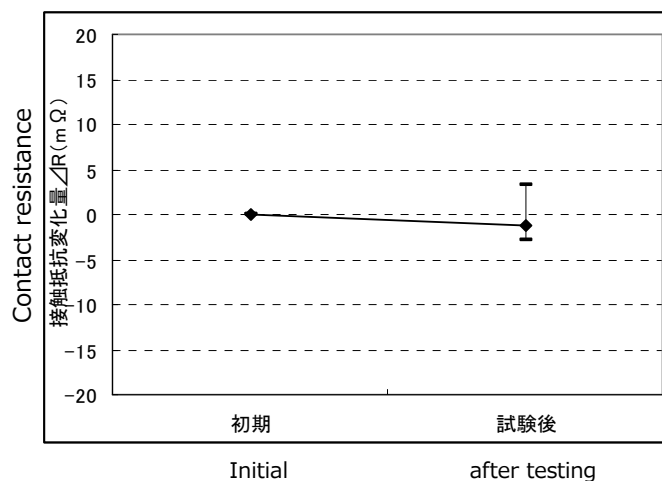
Graph12. 接触抵抗値の変化 (E Group : 高温寿命)

A change of contact resistance (E Group: High temperature life)



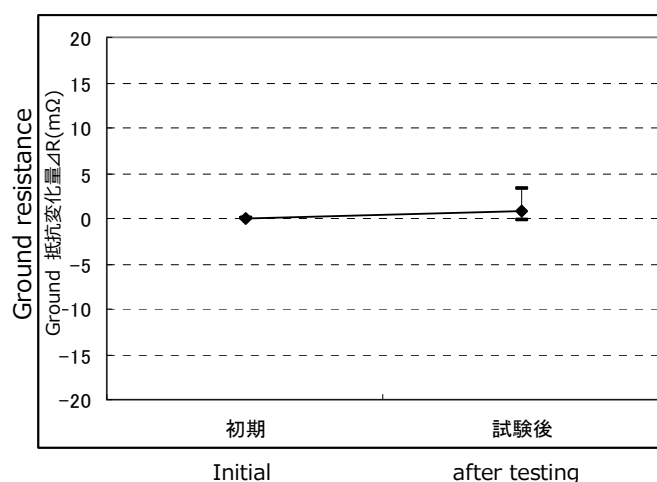
Graph13. Ground 抵抗値の変化 (E Group : 高温寿命)

A change of ground resistance (E Group: High temperature life)



Graph14. 接触抵抗値の変化 (F Group : 湿度(定常状態))

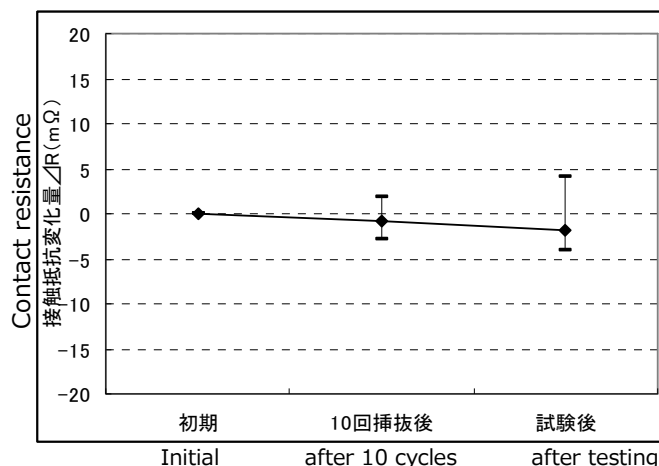
A change of contact resistance (F Group: Humidity (Steady state))



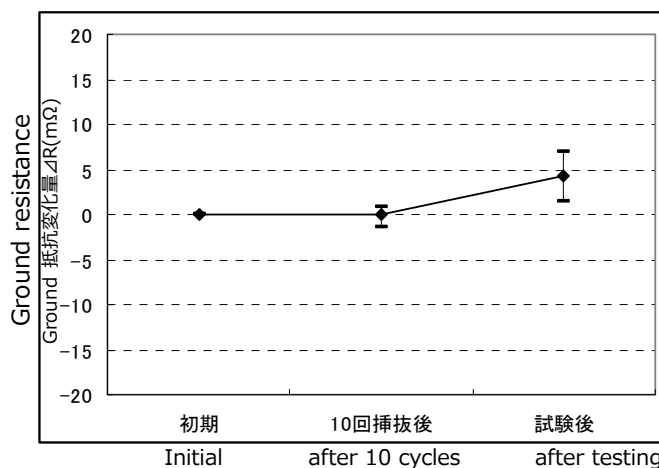
Graph15. Ground 抵抗値の変化 (F Group : 湿度(定常状態))

A change of ground resistance (F Group: Humidity (Steady state))

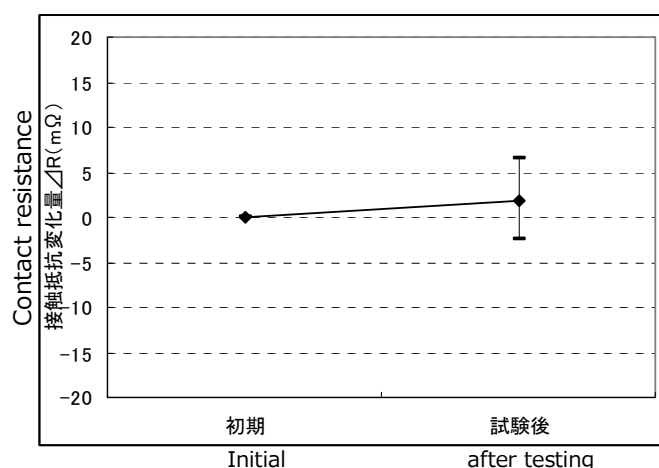




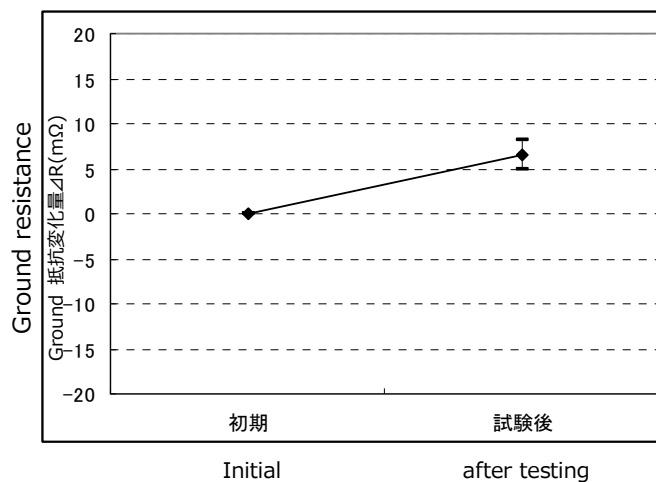
Graph 16. 接触抵抗値の変化 (G Group : 湿度(サイクリング))  
 A change of contact resistance (G Group: Humidity (Cycling))



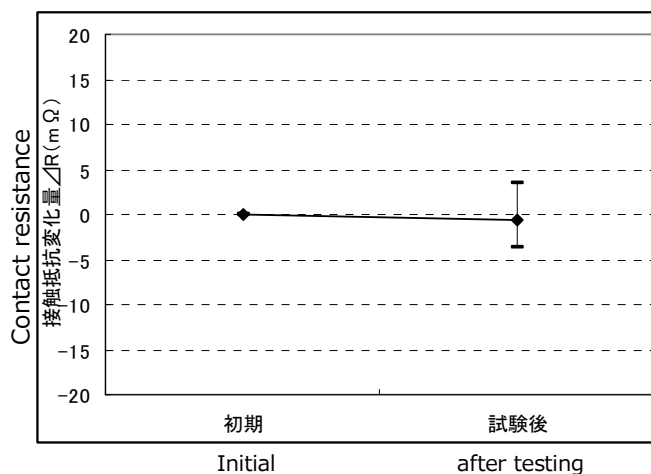
Graph 17. Ground 抵抗値の変化 (G Group : サイクリング)  
 A change of ground resistance (G Group: Humidity (Cycling))



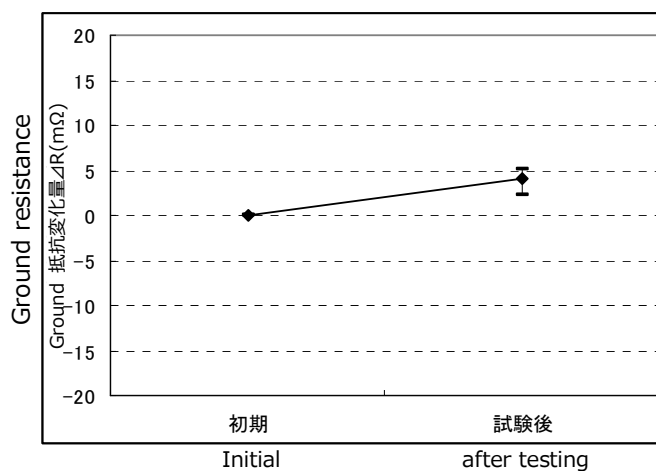
Graph 18. 接触抵抗値の変化 (H Group : 塩水噴霧)  
 A change of contact resistance (H Group: Salt water spray)



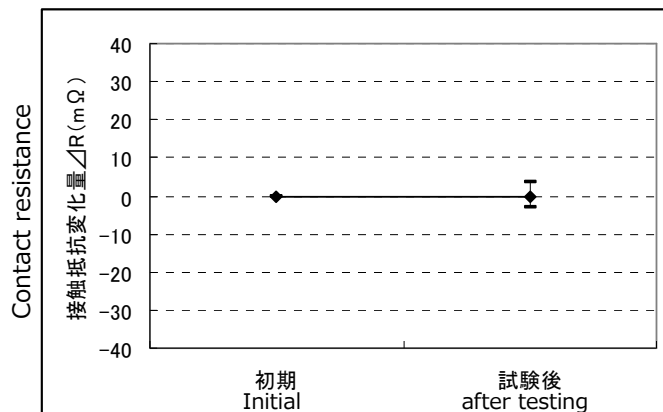
Graph19. Ground 抵抗値の変化 (H Group : 塩水噴霧)  
A change of ground resistance (H Group: Salt water spray)



Graph20. 接触抵抗値の変化 (J Group : ガス(H<sub>2</sub>S))  
A change of contact resistance (J Group: Gas (H<sub>2</sub>S))

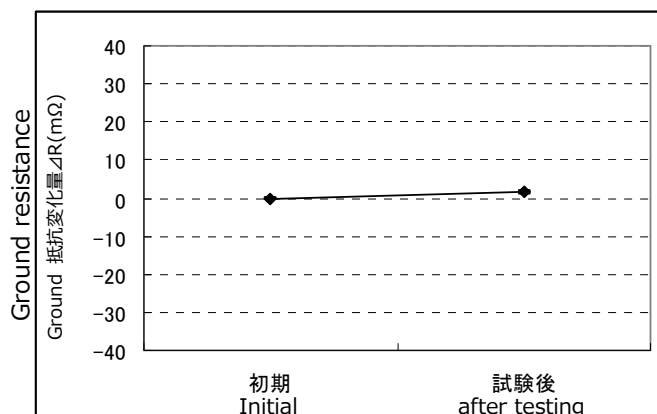


Graph21. Ground 抵抗値の変化 (J Group : ガス(H<sub>2</sub>S))  
A change of ground resistance (J Group: Gas (H<sub>2</sub>S))



Graph22. 接触抵抗値の変化 (K Group : 低温寿命)

A change of contact resistance (K Group: Cold Temperature Life)



Graph23. Ground 抵抗値の変化 (K Group : 低温寿命)

A change of ground resistance (K Group: Cold Temperature Life)