




Working direction				1/ 4																																				
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Optical System Division Engineering Department			SG:技術部 石塚部長、平野部長、																																					
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Issue	<input checked="" type="checkbox"/> New	T-connector cost reduction trial and evaluation for plastics parts change																																						
	<input type="checkbox"/> Revised	プラスチック部品の供給メーカー変更による外被把持コネクタの試作と評価																																						
<div>1. Introduction</div> <p>This working direction instructs T-connector cost reduction trial and evaluation for plastics parts change . 本作業指示書において、外被把持コネクタのコストダウンのため、プラスチック部品を使用した試作品製造と評価項目を指示する。</p> <div>2. Scope</div> <p>This wroking direction is applied into below products as S-GAISHI-71-2186-3</p> <p>KY-Termination connector S-LG KY-Termination connector S-LM-R</p> <div>3. Material and Parts</div> <p>Plastics is changed following below item . As regards other material and components , basically this trial follows material &amp; parts should follow components list of S-GAISHI-71-2186-3. Howeve as regards C-sleeve, trial use 2 suppliers , Sumitech, Hirota.</p> <table><thead><tr><th>ITEM_NAME</th><th>Compund Supplier</th><th>Euro Plas No.</th></tr></thead><tbody><tr><td>CONNECTOR CAP VN*2*O*Blue</td><td>MARUHA CHEMICAL VIETNAM CO., LTD</td><td>ECP PP R7009</td></tr><tr><td>LEVER VER2(SG)AR</td><td>SHOJI FRANK VIETNAM COMPANY LIMITED</td><td>ECP PBT R530GF</td></tr><tr><td>CLAMP-M VER3 ALL (1.6-2.0)*5*Nofold</td><td>MARUHA CHEMICAL VIETNAM CO., LTD</td><td>ECP POM R9002</td></tr><tr><td>Slider M ver2 (AR)*6</td><td>MARUHA CHEMICAL VIETNAM CO., LTD</td><td>ECP POM R9002</td></tr><tr><td>HOLDER(GT3)</td><td>KISCO (VIETNAM) LTD</td><td>ECP POM R9002</td></tr><tr><td>COUPLING (GT) <i>without</i> key(PBT)AR*Blue</td><td>SHOJI FRANK VIETNAM COMPANY LIMITED</td><td>ECP PBT R530GF</td></tr><tr><td>WEDGE FA IN (VN)</td><td>MARUHA CHEMICAL VIETNAM CO., LTD</td><td>ECP PC R9013</td></tr><tr><td>PS for SC-GT (VN) <i>*Caution!</i></td><td>SHOJI FRANK VIETNAM COMPANY LIMITED</td><td>ECP PBT R530GF</td></tr><tr><td>SLIDER-M VER2 (AR)</td><td>MARUHA CHEMICAL VIETNAM CO., LTD</td><td>ECP POM R9002</td></tr><tr><td colspan="2"></td><td></td></tr><tr><td colspan="3"><i>*Under deisign change; Detail will be informed later.</i></td></tr></tbody></table>					ITEM_NAME	Compund Supplier	Euro Plas No.	CONNECTOR CAP VN*2*O*Blue	MARUHA CHEMICAL VIETNAM CO., LTD	ECP PP R7009	LEVER VER2(SG)AR	SHOJI FRANK VIETNAM COMPANY LIMITED	ECP PBT R530GF	CLAMP-M VER3 ALL (1.6-2.0)*5*Nofold	MARUHA CHEMICAL VIETNAM CO., LTD	ECP POM R9002	Slider M ver2 (AR)*6	MARUHA CHEMICAL VIETNAM CO., LTD	ECP POM R9002	HOLDER(GT3)	KISCO (VIETNAM) LTD	ECP POM R9002	COUPLING (GT) <i>without</i> key(PBT)AR*Blue	SHOJI FRANK VIETNAM COMPANY LIMITED	ECP PBT R530GF	WEDGE FA IN (VN)	MARUHA CHEMICAL VIETNAM CO., LTD	ECP PC R9013	PS for SC-GT (VN) <i>*Caution!</i>	SHOJI FRANK VIETNAM COMPANY LIMITED	ECP PBT R530GF	SLIDER-M VER2 (AR)	MARUHA CHEMICAL VIETNAM CO., LTD	ECP POM R9002				<i>*Under deisign change; Detail will be informed later.</i>		
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4.Evaluation

(1)Optical characteristics

As regards C-sleeve, trial products use only SUMITEC and HIROTA as below following table. Current JPN C-sleeve is not used.

			LG		LM-R
Item	Specification	total Q'ty	SUMITEC	HIROTA	SUMITEC
Insertion Loss	Refer to table 4 in S-GAISHI-71-2186-3	600	200	200	200
Return Loss	Refer to table 4 in S-GAISHI-71-2186-3	600	200	200	200

## (1) Function Evaluation ( Test spec : refer to IEC 60874-1 or JISC 5961)

				LG		LM-R
Item	Optical characteristics	Wavelength	total Q'ty	SUMITEC	HIROTA	SUMITEC
Pull test	When the connection of KY-Termination connector S 「SC」 - 「」 - 「」 is tested with a pulling force of 10.0 N, the value of insertion loss variation before and after the test shall be 0.2 dB or less. Furthermore, there should be no harmful damage to the test sample after the test.	The measurement wavelength shall be any one point at $1.31\pm0.02\mu\text{m}$ and any one point at $1.55\pm0.02\mu\text{m}$ .	24	8	8	8
Bending test	When the connection part of KY-Termination connector S 「SC」 - 「」 - 「」 is bent 10 times with a tensile force of 4.9 N, the value of insertion loss variation before and after the test shall be 0.2 dB or less. Furthermore, there should be no harmful damage to the test sample after the test.	The measurement wavelength shall be any one point at $1.31\pm0.02\mu\text{m}$ and any one point at $1.55\pm0.02\mu\text{m}$ .	24	8	8	8
Connecting and disconnecting force	The Connecting and disconnecting forces of KY-Termination connector S 「SC」 - 「」 - 「」 and the SC connector plug in accordance with JISC 5973 shall satisfy 19.6 N or less.	—	24	8	8	8
Durability	When KY-Termination connector S 「SC」 - 「」 - 「」 and the SC connector plug conforming to JISC 5973 are repeatedly tested 500 times while cleaning the ferrule end face every 10 times, the increase in light loss during and after the test shall be 0.2 dB or less compared to the value before the test. Furthermore, there should be no harmful damage to the test sample after the test.	The measurement wavelength shall be any one point at $1.31\pm0.02\mu\text{m}$ and any one point at $1.55\pm0.02\mu\text{m}$ .	24	8	8	8
Thermal Cycle Test	When KY-Termination connector S 「SC」 - 「」 - 「」 and the SC connector plug conforming to JISC 5973 is subjected to 10 cycles of heat cycling (6 hours/cycle) at $-25$ to $+70^{\circ}\text{C}$ , the increase in light loss during and after the test shall be 0.3 dB or less compared to the value before the test. The increase in optical loss during and after the test shall be 0.3 dB or less compared to the value before the test. Furthermore, there should be no harmful damage to the test sample after the test.	The measurement wavelength shall be any one point at $1.31\pm0.02\mu\text{m}$ and any one point at $1.55\pm0.02\mu\text{m}$ .	24	8	8	8
Thermal Humidity Cycling Test	When KY-Termination connector S 「SC」 - 「」 - 「」 and the SC connector plug conforming to JISC 5973 is subjected to 10 cycles of temperature and humidity cycling (24 hours/cycle) from $-10$ to $+25$ to $+65^{\circ}\text{C}$ (93% RH at $65^{\circ}\text{C}$ ), the increase in optical loss during and after the test compared to the value before the test shall be 0.3 dB or less. Furthermore, there should be no harmful damage to the test sample after the test.	The measurement wavelength shall be any one point at $1.31\pm0.02\mu\text{m}$ and any one point at $1.55\pm0.02\mu\text{m}$ .	24	8	8	8

Thermal Age Test with high temperature	When the connection between KY-Termination connector S 「SC」 - 「」 - 「」 and the SC connector plug conforming to JISC 5973 is placed in an environment of +70°C for 240 hours, the increase in light loss during and after the test shall be 0.2 dB or less in comparison with the value before the test. Furthermore, there should be no harmful damage to the test sample after the test.	The measurement wavelength shall be any one point at 1.31±0.02μm and any one point at 1.55±0.02μm.	24	8	8	8
Thermal Age Test with low temperature	When the connection between KY-Termination connector S 「SC」 - 「」 - 「」 and the SC connector plug conforming to JISC 5973 is placed in an environment of -25°C for 240 hours, the increase in light loss during and after the test shall be 0.3 dB or less compared to the value before the test. Furthermore, there should be no harmful damage to the test sample after the test.	The measurement wavelength shall be any one point at 1.31±0.02μm and any one point at 1.55±0.02μm.	24	8	8	8

## (2) Submission of report

Evaluation result should be reported to M.Matsunaga (mitsunori.matsunaga@jp.fujikura.com)

## 5. Trial sample production

Trial sample production should start after all material function test is completed.

FOV start to prepare necessary resin with supplier.

FOV submit BOM for this trial to SG before starting production for approval.