

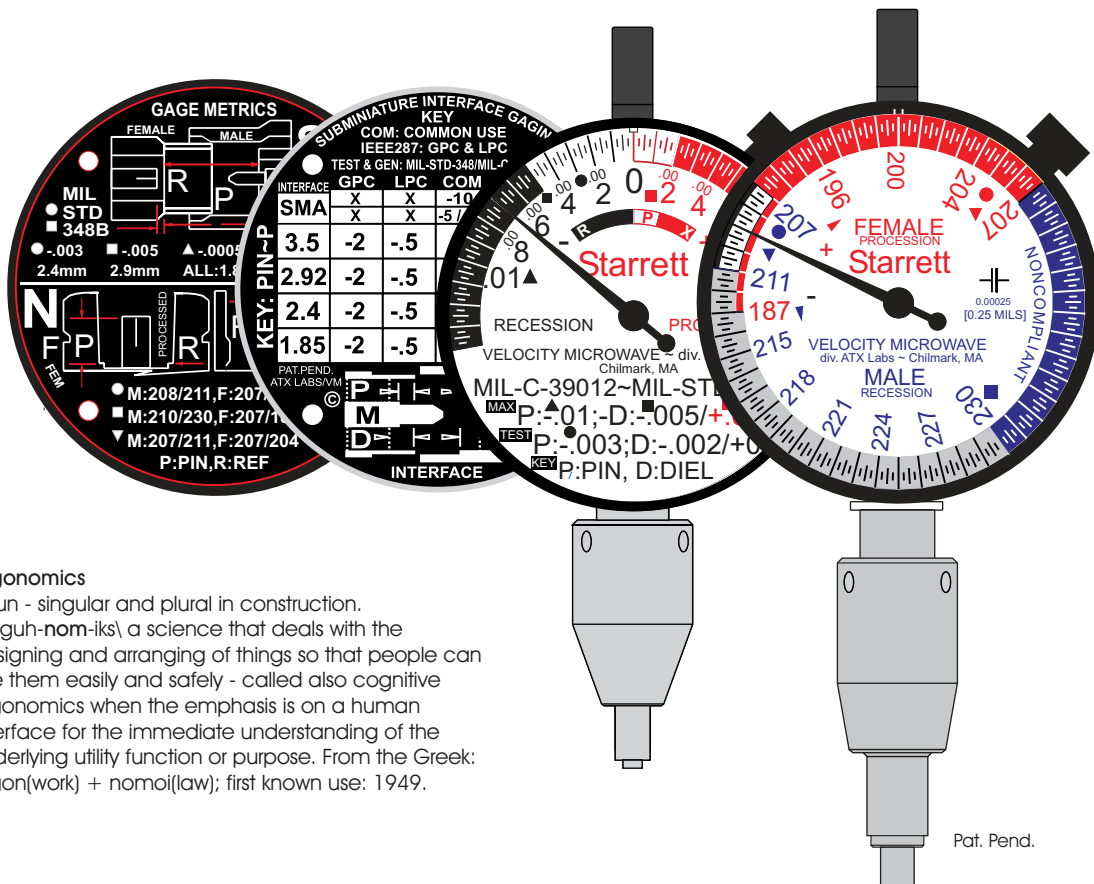
# INTRODUCING ERGON

## A MICROWAVE GAGE WITH ENHANCED HUMAN INTERFACE

The Ergon series of microwave connector gages is built on a best of breed, rock solid Starrett dial indicator featuring massive bridge for bearing support, hardened stainless steel gears and pinions for long trouble free life, hardened stainless steel stem, non-glare satin case finish, and positive grip bezel with unbreakable crystal and white non-reflecting eggshell finish.

The Ergon series features a single bushing patent pending design for the measurement of both genders - and in the case of Type N connectors for the measurement of all Standards - without any change in instrument or master gage. Also featured is a novel, ergonomically rich human interface embedded permanently into the dial face for the immediate interpretation of compliance. On the rear of the instrument, for reference, is a custom metal plate with permanently inscribed compliance data related to IEEE287LPC and GPC, MIL-C-39012, and MIL-STD-348B as a further aid in compliance evaluation.

All Ergon gages are housed in a crush, water and dust proof NK-7 resin case featuring all stainless hardware, an automatic pressure release valve, a Powerclaw latching system with soft grip handle, and a die cut interior with accessories including USB pen drive. The case is carry-on compliant.

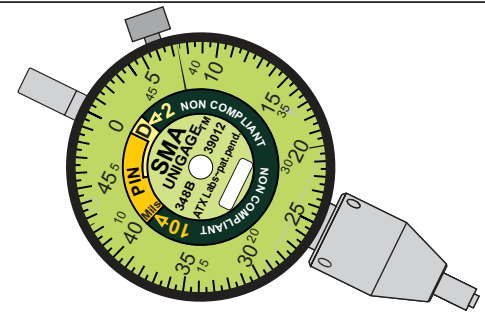
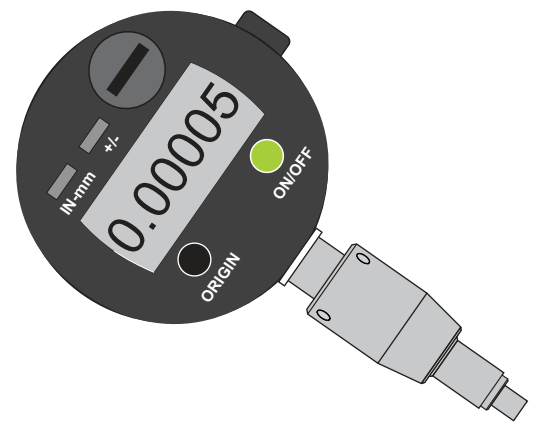
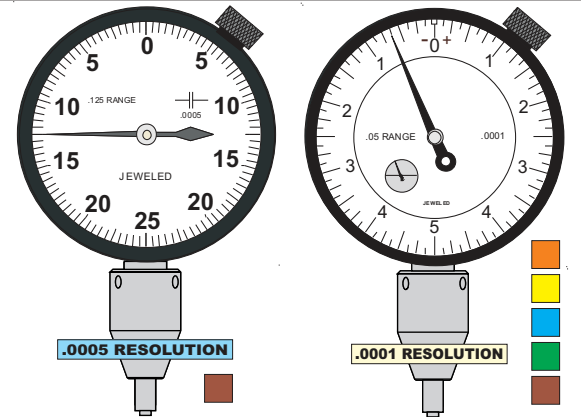
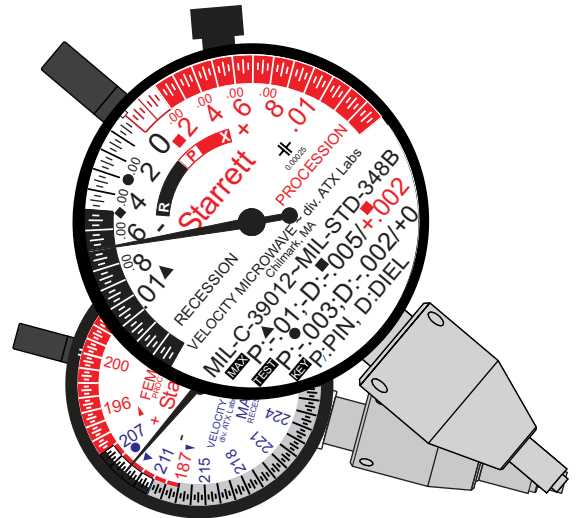


**ergonomics**  
 noun - singular and plural in construction.  
 \Ur-guh-nom-iks\ a science that deals with the designing and arranging of things so that people can use them easily and safely - called also cognitive ergonomics when the emphasis is on a human interface for the immediate understanding of the underlying utility function or purpose. From the Greek: ergon(work) + nomoi(law); first known use: 1949.

Velocity Microwave ~ div. ATX Labs  
[www.veclotymicrowave.com](http://www.veclotymicrowave.com)

IEEE COLOR KEY: ■ N ■ SMA ■ 1.85 ■ 2.4 ■ 2.9 ■ 3.5

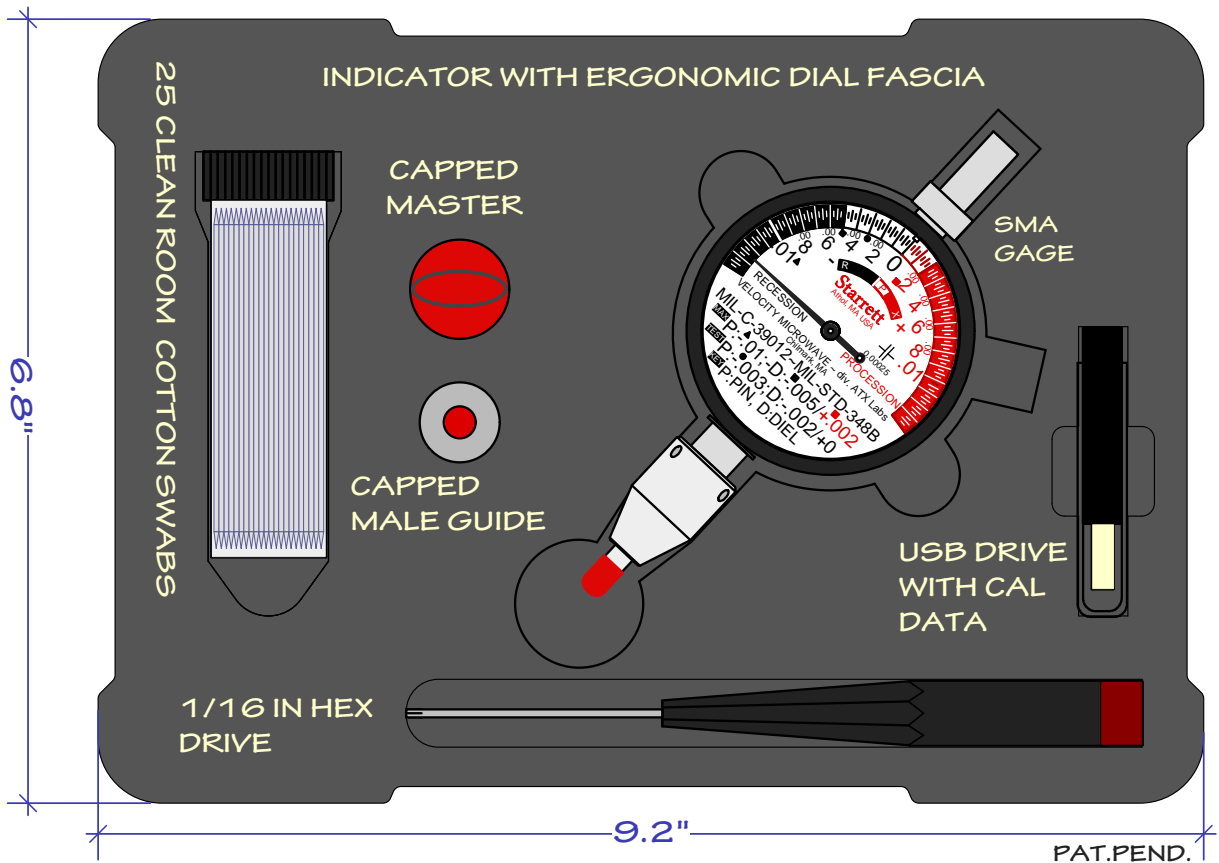
■ [1]	ERGON-SMA-P
■	ERGON-SMA-D
■	ERGON-TYPE N
■ ■	ERGON-2.92-3.5
■ ■	ERGON-1.85-2.4
■ [1]	LEGACY-SMA-P
■ .0005	LEGACY-SMA-D
■ ■ [1]	LEGACY-2.92-3.5
■ .0001 ■	LEGACY-SMA-D [or P]
■ ■	LEGACY-1.85/2.4
■ [1]	DATUM-SMA-P
■	DATUM-SMA-D
■ ■	DATUM-2.92-3.5
■ ■	DATUM-1.85-2.4
■	DATUM-TYPE N
■ [1]	ELEMENT-SMA-P
■	ELEMENT-SMA-D
■	ELEMENT-TYPE N



[1] NOTE: SMA KITS COME IN EITHER PIN OR DIELECTRIC. TO MEASURE BOTH TWO KITS MUST BE ORDERED.

<b>N</b>	
<b>SMA PIN</b>	<b>X</b>
<b>SMA DIELECTRIC</b>	
<b>3.5</b>	
<b>K</b>	
<b>2.4</b>	
<b>1.85</b>	

SMA ERGO GAGES:  
RESOLUTION  
0.00025  
ACCURACY  
+/-0.0005



## SUBMINIATURE GAGING KIT

**OVERVIEW:** PRECISION KIT FOR THE DIMENSIONAL GAGING OF MALE AND FEMALE MICROWAVE CONNECTORS. THE KIT EMPLOYS A SINGLE SPINDLE DESIGN TO SIMPLIFY GAGING OF BOTH GENDERS, THEREBY ELIMINATING THE TRADITIONAL REQUIREMENT FOR A SECOND GAGE AND/OR BUSHING IN ORDER TO GAGE THE OPPOSITE GENDER. ONE FLAT MASTER GAGE IS USED FOR ALL STANDARDS INCLUDING MIL-STD-348, MIL-C-39012 AND IEEE287, REDUCING COST AND ENHANCING EASE OF USE AND ACCURACY.

**BENEFITS:**

- ~ BUSHING GUIDE FIXTURE FOR MALE TO FEMALE BORE CONVERSION;
- ~ HIGH PERFORMANCE INDICATOR WITH AS MUCH AS 0.00025 INCH RESOLUTION;
- ~ CERTIFIED ACCURACY OF 0.0005;
- ~ SINGLE FLAT SURFACE MASTER GAGE FOR THE ELIMINATION OF FEATURE SIZE UNCERTAINTY;
- ~ EXPEDITED GAGING OF BOTH MALE AND FEMALE SMA CONNECTORS;
- ~ INCLUDED: ISO-17025 TRACEABLE CALIBRATION AND CERTIFICATION ;
- ~ INCLUDED: USB DRIVE WITH GAGE APPLICATION FOR DETERMINATION OF UNCERTAINTIES;
- ~ INCLUDED: 25 LOW LINTING, STATIC FREE SWABS;
- ~ INCLUDED: CRM72 TOOL STEEL HEX DRIVER FOR EASY MAINTENANCE;
- ~ INCLUDED: INSTRUMENT BACKS AND FASCIA WITH STANDARDS COMPLIANCE LIMITS;
- ~ INCLUDED: WATER PROOF, CRUSH PROOF NK-7 RESIN CASE WITH STAINLESS STEEL POWER CLAW LATCHING;
- ~ INCLUDED: VAPOR RELEASE VALVE AND PADLOCKABLE FEATURES.

NOTE: MANUFACTURER RESERVES RIGHT TO CHANGE PRESENTATION AND PACKAGING WITHOUT NOTICE

### GENERAL SPECIFICATION

- ~SURFACE FINISH OF Ra4 - Ra16 ON WORKING SLIDABLE SURFACES.
- ~MASTER GAGE FINISH OF Ra 8 OR BETTER.
- ~PRECISION SWISS TURNED AND MILLED STAINLESS STEEL.
- ~CRITICAL TOLERANCES AS GOOD AS 0.0005.
- ~CERTIFIED DIAL ACCURACY RANGE OF 0.0005 TO +/- 0.0001 FOR SUBMINIATURE CONNECTOR FAMILIES.
- ~ALL STAINLESS COMPONENTS PASSIVATED PER ASTM-A967.
- ~DIAL FASCIA AND DIAL BACKS WITH STANDARDS DELINIATION.

### WARRANTY

ALL YM MICROWAVE GAGES COME WITH A ONE YEAR WARRANTY ON THE INDICATOR AND A 10 YEAR WARRANTY ON ALL STAINLESS COMPONENTS.

P.1

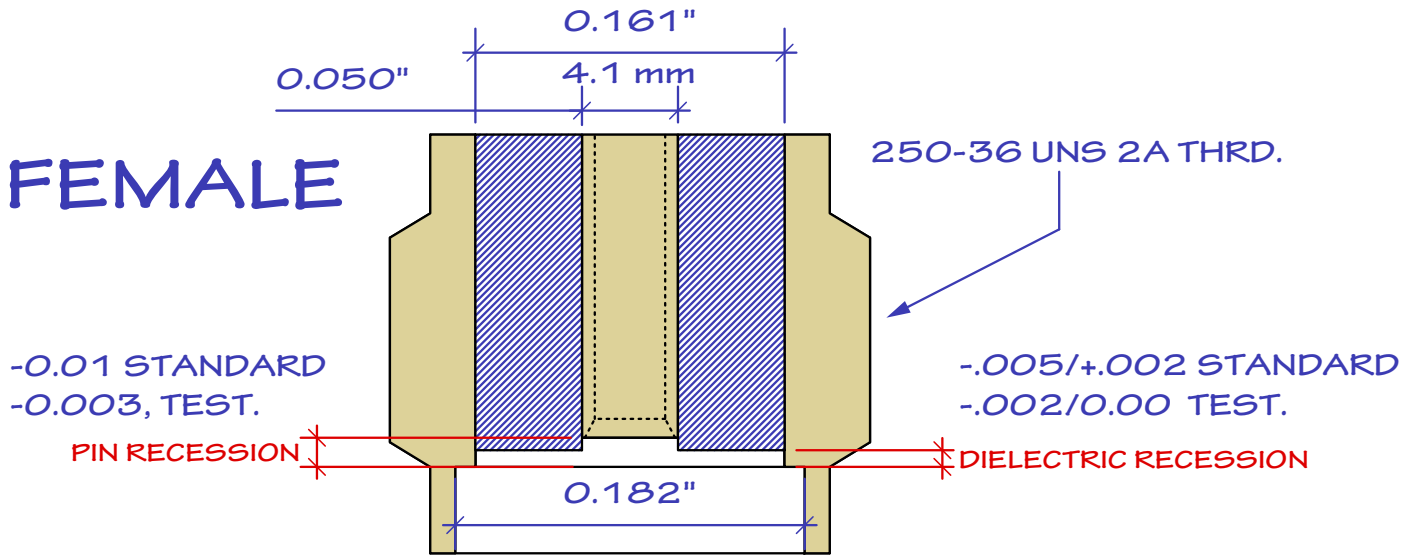
## PRECISION GAGE KITS

**SMA ERGO SERIES**

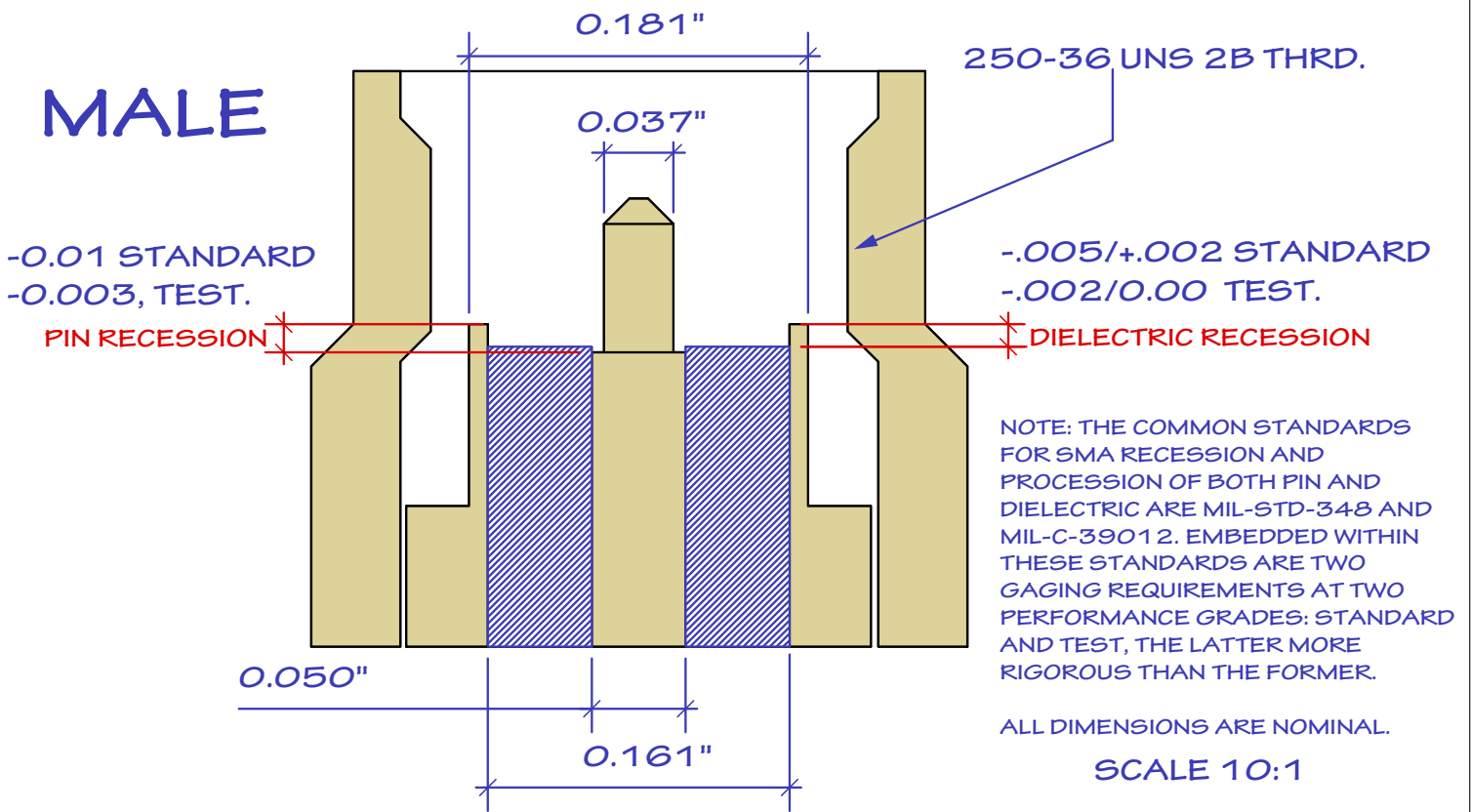
MALE & FEMALE [PIN OR DIELECTRIC]

Mfg: Velocity Microwave ~ div. ATX Labs  
www.velocitymicrowave.com

# FEMALE



# MALE



# SMA THIN WALL INTERFACE

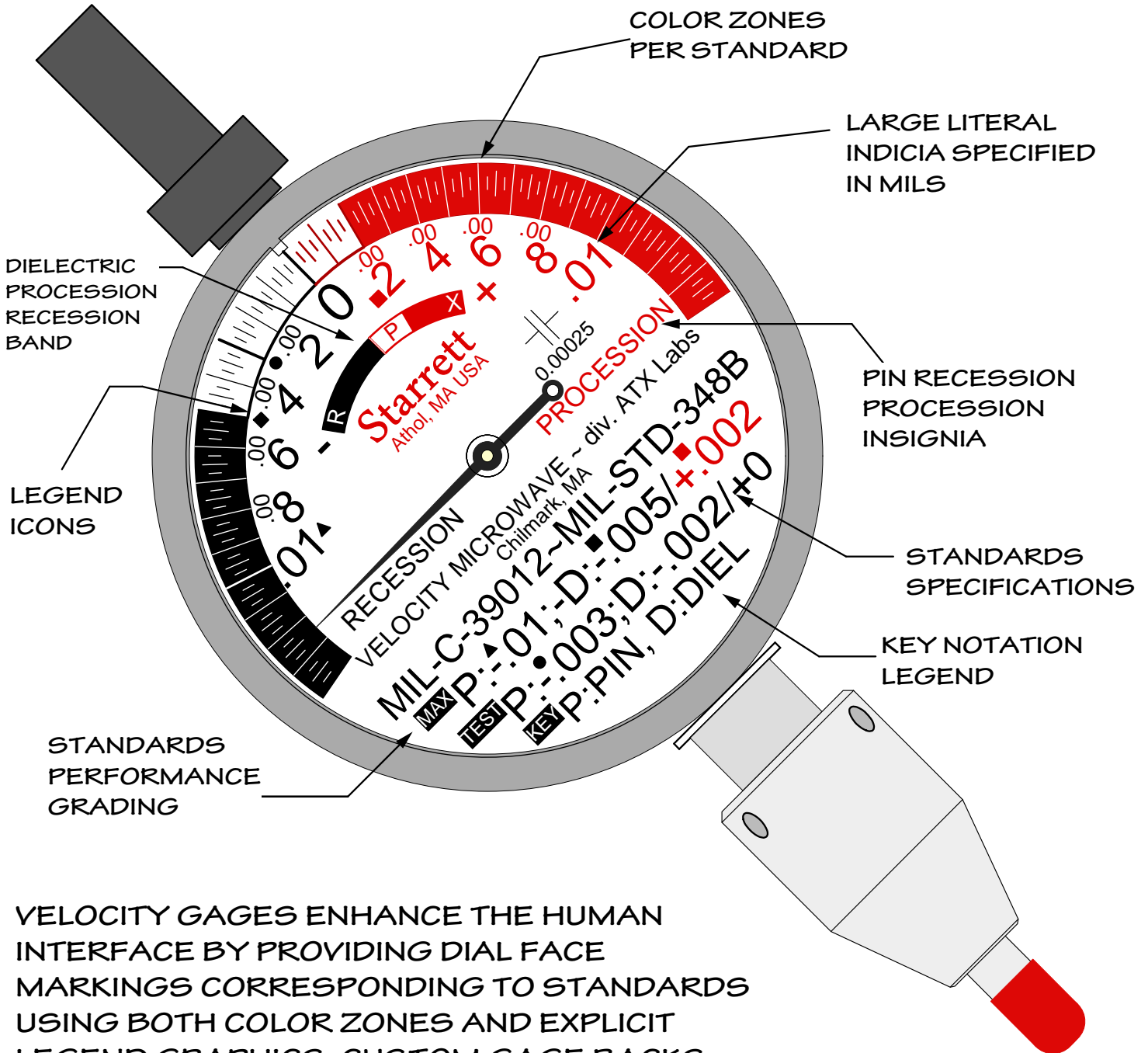
PRECISION GAGE KITS

**SMA** ERGON SERIES

MALE & FEMALE [PIN OR DIELECTRIC]

Mfg: Velocity Microwave ~ div. ATX Labs

www.velocitymicrowave.com



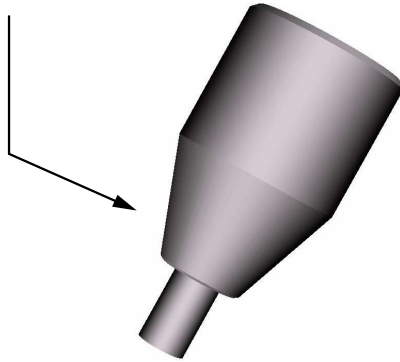
VELOCITY GAGES ENHANCE THE HUMAN INTERFACE BY PROVIDING DIAL FACE MARKINGS CORRESPONDING TO STANDARDS USING BOTH COLOR ZONES AND EXPLICIT LEGEND GRAPHICS. CUSTOM GAGE BACKS ALSO CONTAIN STANDARDS INFORMATION FOR SMA AND SUBMINIATURE CONNECTOR COMPLIANCE.

# SMA GAGE [FRONT]

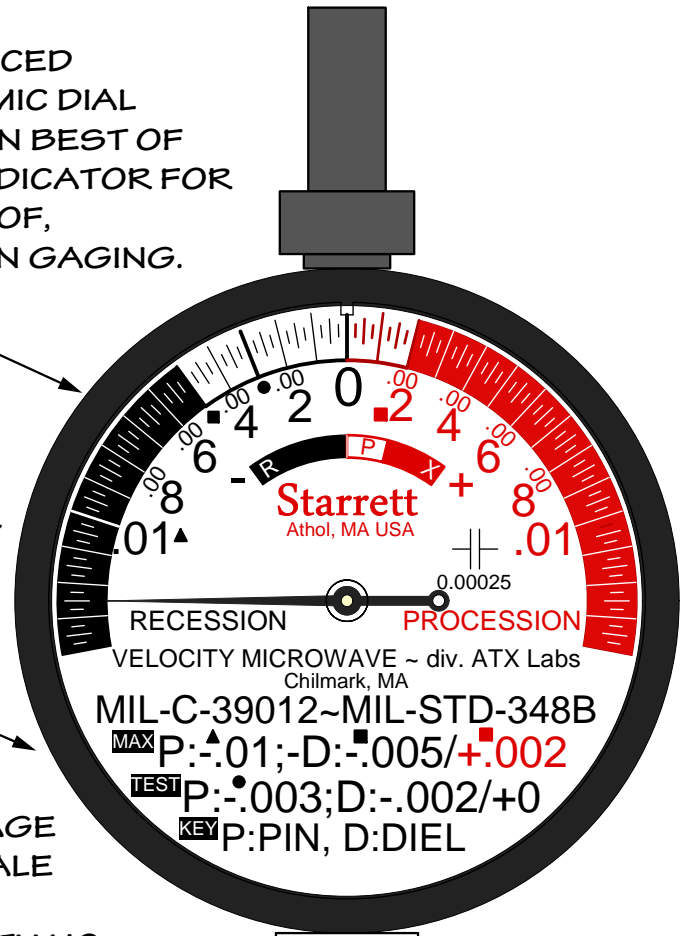
P.3

**PRECISION GAGE KITS**  
**SMA** ERGON SERIES  
 MALE & FEMALE [PIN OR DIELECTRIC]  
 Mfg: Velocity Microwave ~ div. ATX Labs  
[www.velocitymicrowave.com](http://www.velocitymicrowave.com)

1. TAPERED BUSHING DESIGN FOR GREATER FEEL & VISIBILITY.



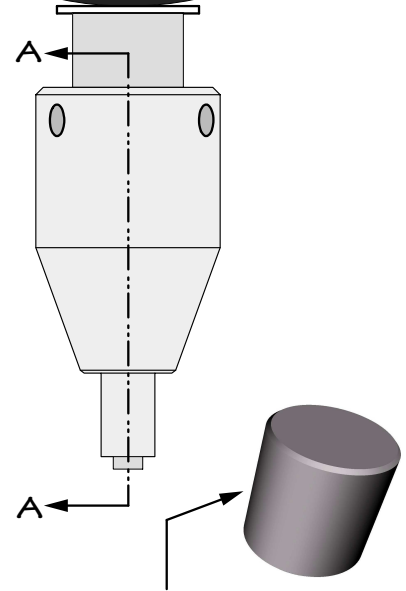
2. ENHANCED ERGONOMIC DIAL FASCIA ON BEST OF BREED INDICATOR FOR FOOLPROOF, PRECISION GAGING.



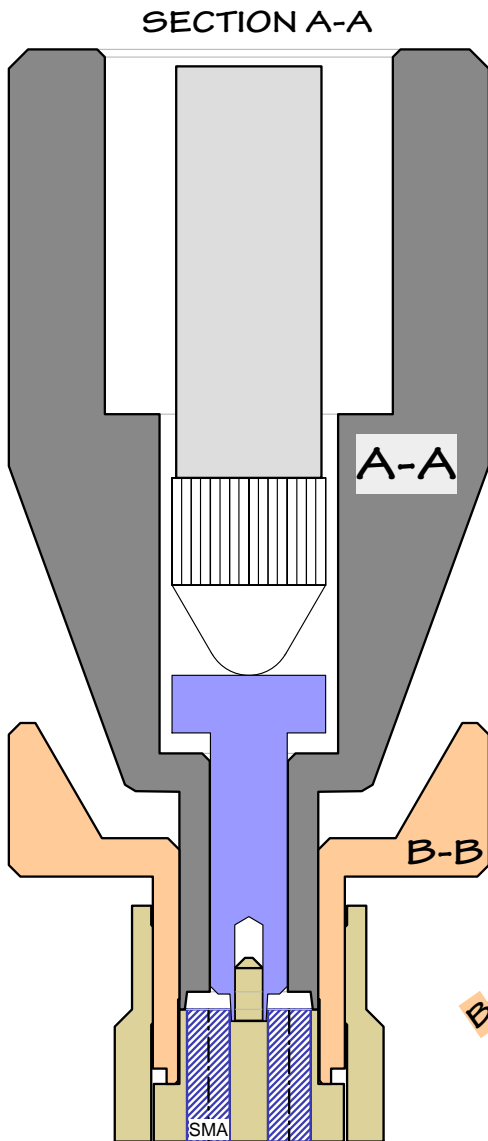
3. STANDARDS GUIDE FOR MIL-STD-348 & MIL-C-39012 ON FASCIA.

4. SINGLE GAGE FOR BOTH MALE AND FEMALE GENDERS WITH NO CHANGE-OVER OR RE-MASTERING REQUIREMENTS.

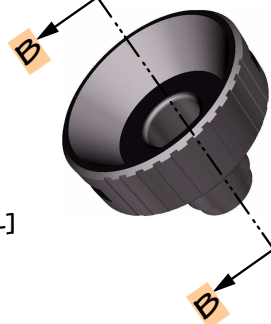
5. INCLUDED MALE BUSHING GUIDE FOR OPTIMAL CONTACT WITHOUT TORQUE REQUIREMENT & TORQUE UNCERTAINTY.



6. SINGLE FLAT MASTER FOR ERROR FREE ZERO SETTING.



[MALE CONNECTOR SECTIONAL]



# DUAL GENDER SINGLE GAGE DESIGN

## PRECISION GAGE KITS

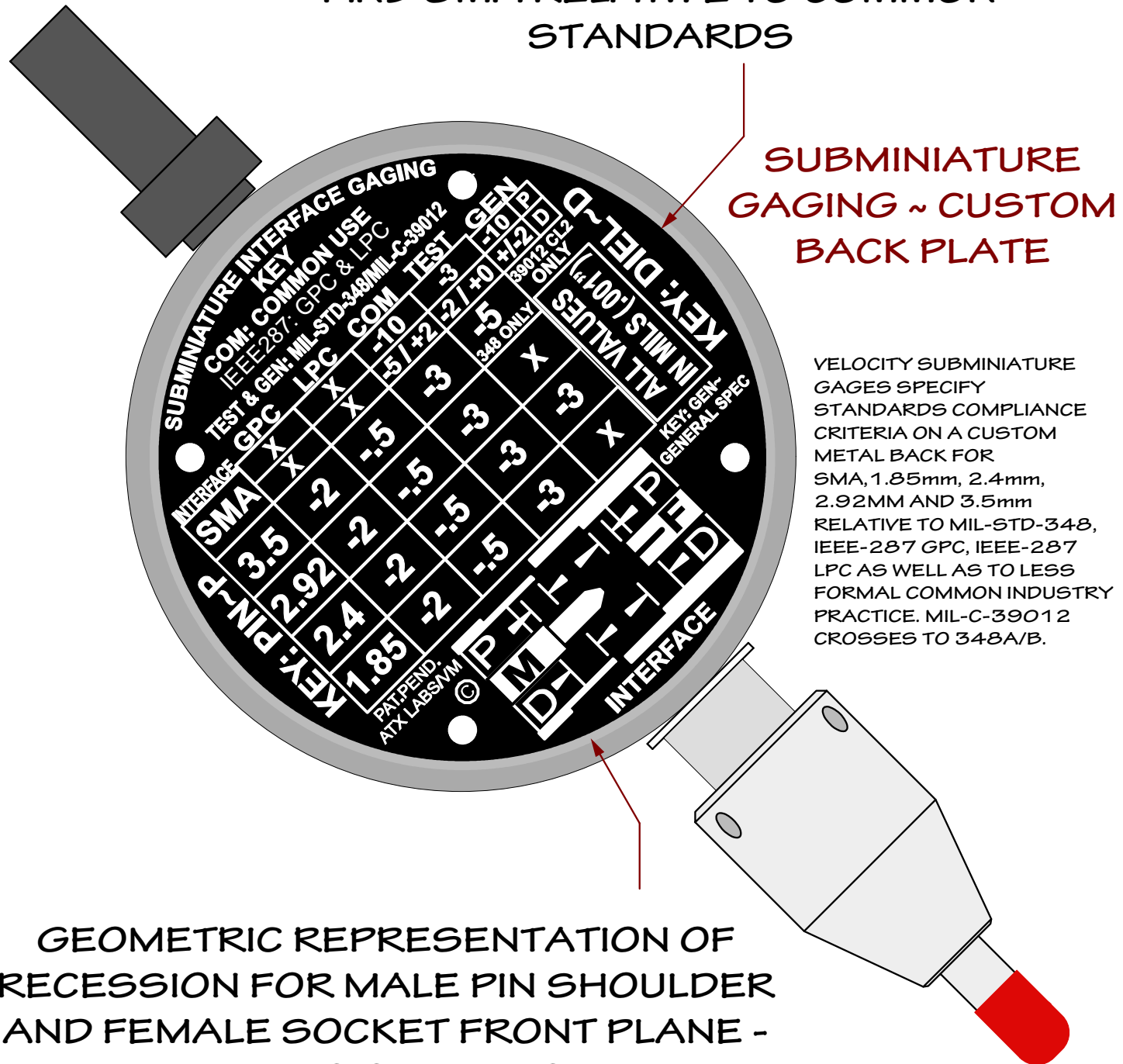
**SMA** ERGON SERIES

MALE & FEMALE [PIN OR DIELECTRIC]

Mfg: Velocity Microwave ~ div. ATX Labs  
www.velocitymicrowave.com



INTERFACE RECESSION SPECS FOR  
1.85mm, 2.4mm, 2.92mm, 3.5mm  
AND SMA RELATIVE TO COMMON  
STANDARDS



**SUBMINIATURE  
GAGING ~ CUSTOM  
BACK PLATE**

VELOCITY SUBMINIATURE GAGES SPECIFY STANDARDS COMPLIANCE CRITERIA ON A CUSTOM METAL BACK FOR SMA, 1.85mm, 2.4mm, 2.92MM AND 3.5mm RELATIVE TO MIL-STD-348, IEEE-287 GPC, IEEE-287 LPC AS WELL AS TO LESS FORMAL COMMON INDUSTRY PRACTICE. MIL-C-39012 CROSSES TO 348A/B.

GEOMETRIC REPRESENTATION OF  
RECESSION FOR MALE PIN SHOULDER  
AND FEMALE SOCKET FRONT PLANE -  
RELATIVE TO OUTER COAXIAL  
CONDUCTOR

**SMA GAGE  
[BACK]**

**PRECISION GAGE KITS**

**SMA** *ERGON SERIES*

MALE & FEMALE [PIN OR DIELECTRIC]

Mfg: Velocity Microwave ~ div. ATX Labs

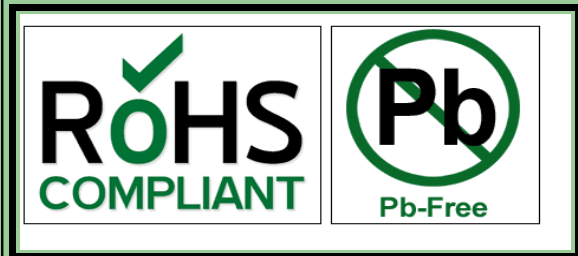
[www.velocitymicrowave.com](http://www.velocitymicrowave.com)

# — RoHS / REACH —

## COMPLIANCE CERTIFICATION



# Velocity Microwave (div. ATX Labs) RoHS Compliance Certification



Velocity Microwave [hereafter designated VM], a division of ATX Labs, certifies that all of the products manufactured under the Velocity Microwave brand are in compliance with EU Directive 2011/65EU on the use of certain substances employed in electrical, electronic and microwave equipment that have been designated as hazardous.

Restricted Substance	Maximum Threshold Limit
Cadmium and its compounds	100 ppm (0.01 weight %)
Mercury and its compounds	1000 ppm (0.1 weight %)
Hexavalent chromium and its compounds	1000 ppm (0.1 weight %)
Lead and its compounds *	1000 ppm (0.1 weight %)
Polybrominated biphenyls (PBB)	1000 ppm (0.1 weight %)
Polybrominated diphenyl ethers (PBDE)	1000 ppm (0.1 weight %)
Decabromine diphenyl ether (DECA BDE)	1000 ppm (0.1 weight %)

\* Except when allowed by the Directive. For example, 3500 ppm in steel, 4000 ppm in aluminum alloys and 40000 ppm in copper alloys.

\*\*\*\*\*

## VM Partial Materials List

The products in the following classes: **Flexus** cable assemblies; **Benchflex** cable assemblies; **Conexus** cable assemblies; **Conexus HD** cable assemblies; **Continuum** cable assemblies; **Vector** cable assemblies; **Ergon** interface gages and kits, **Legacy** interface gages and kits, **Element** interface gages and kits, **Datum** interface gages and kits; **VM repair** kits; VM connectors of species **SMA, 2.92mm (K); 3.5mm; 2.4mm; 1.85mm; Type N; TNC; APC-7** – contain some or all of the following materials – as well as materials not listed though nevertheless fully compliant with **EU Directive 2011/65EU**.

Material Class	Finish, Construction or Reference Standard
Alloy Steel	Copper Clad per ASTM B-501
Soft Copper	Silver plated per ASTM B-298

Copper foil	Silver plated per ASTM-B-298		
Expanded PTFE	Type F6 per MIL-C-17 or ASTM D-14577		
FEP	Per ASTM D-2116, FQQ flammability test UL94		
(BLANK)			
Stainless Steel	Class AISI-303 UNS20200 SAE30303 – Per:		
	per AMS 5664U Type 1	ASTM A582 12	ASTM A262 10 Practice A/E
	AASTM E112 96	Federal Spec QQ-S-764B	DFARS 232.225.7009 10-4-11
	ASTM A484 13	DIN 50049/en10204 Type 3.1	ASTM 484 13
	Passivation per ASTM A967, AMS 2700, QQ-P-35		
PEI (Polyetherimide)	Resin certified to ASTM D 5205 PEI 0113		
Solder	SnAgCu: ~ 2.5% Silver, 0.9% copper, (100-2.5-0.9)% Tin balance; Typ.		
Aluminum	6061T6, anodized TYPES II & III per		
Polyolefin	Thin wall Heat shrinkable polyolefin MIL-DTL-23053/5 Class 1 & 3 UL224 corrosion and fire rated		
	Thick wall Heat shrinkable polyolefin MIL-DTL-23053/5 Class 1 & 3 UL224 corrosion and fire rated; encapsulating modified polyamide adhesive		
	Ultra thin wall Heat shrinkable polyolefin MIL-DTL-23053/5 Class 1 & 3 UL224 corrosion and fire rated		
Foam	Closed cell polyethylene, 2.3 lb – 4 lb. ASTM D 3575-93		
	Convolutated static dissipative <10e11 ohms polyurethane pink foam laminated to top and fitted in bottom; California 117 - Note: All Testing Done By ASTM D 3574Standard Rev. 1, 12-3-02		
Jacketing	Polyethylene terephthalate FMVSS302, UL94 flame resistance, ASTM G21 Fungus resistance		
Rubber	Oil resistant Buna N O-ring SAE J200 Durometer A70		
	High temperature Silicone SAE J200 Durometer A70		
	Steam Resistant EPDM SAE J200 Durometer A70		
Packaging	ESD shielding with lid closed; “Faraday Cage” effect restricting electrostatic charges to exterior; tested per FED-STD-101, Method 3005 for reducible sulfur		
Vinyl	Connector caps durometer of 75A, maximum temperature of 180° F. - assorted colors.		
	Vinyl substrate 30 mil (.08mm) magnetic mats and signage		
Pigments	Inkjet applied Orcal eco-solvent based inks UV protected		
Adhesives	Polyacrylate, Acrylate polymers permanent, transparent		

Velocity Microwave  
(div. ATX Labs)  
**REACH Compliance Certification**



Velocity Microwave is deeply committed to the European Union Regulation governing the Registration, Evaluation and Authorization of Chemical (**REACH EC Regulation Number 1907 / 2006**).

[I] Velocity Microwave further represents that it monitors both its internal manufacturing process, as well as that of components in its supply chain, to be free of any substance on the Candidate List of Substances of Very High Concern for Authorization (SVHC) – published in accordance with **Article 59(10) of the REACH Regulation** – and deemed authentic in only the following locus:

**<https://echa.europa.eu/candidate-list-table>**

[II] Velocity Microwave still further represents that no substances on the REACH SVHC Candidate list, per the above, shall be found in a concentration greater than 0.1% - by weight – in any of the products below in the list designated as **2016 PMVM**, manufactured by Velocity Microwave, or transferred through Velocity Microwave as a pass through agent by either inattention or design.

**2016PMVM**

### **Microwave Test and Measurement Cable Assemblies**

**Flexus** microwave test cable assemblies commonly designated with the prefix FL; **Benchflex** microwave test cable assemblies commonly designated with the prefix BF; **Conexus** microwave test cable assemblies commonly designated with the prefix GP; **Conexus HD** microwave test cable assemblies commonly designated with the prefix GP and the subsequent designator HD; **Continuum** microwave test cable assemblies commonly designated with the prefix CTM; **Vector** microwave test cable assemblies commonly designated with the prefix TPX; **Custom** Assemblies developed to meet specific customer requirement; **VM repair kits** deployed as field repair aids for the above microwave test cables.

### **Microwave Gaging Apparatus**

**Ergon** microwave connector interface gages and kits containing ancillary components, **Legacy** microwave connector interface gages and kits containing ancillary components, **Datum** microwave connector interface gages and kits containing ancillary components; **Element** microwave connector interface gages and kits containing ancillary components; **Ancillary data port** connectors and devices for Datum Gage.

## **Microwave Connectors ~Subminiature and Larger Families**

**SMA** microwave connector of the subminiature class; **2.92mm (K)** microwave connector of the subminiature class; **3.5mm** microwave connector of the subminiature class; **2.4mm** microwave connector of the subminiature class; **1.85mm** microwave connector of the subminiature class; **Type N** microwave connector 7mm class; **APC7** hermaphroditic microwave connector of the 7mm class; **TNC** microwave connector.

## **Microwave Torquing Apparatus**

**8 in-lb Torque wrench** with 5/16 dimension designated for use with subminiature microwave connectors; **12 in-lb Torque wrench** with 19mm dimension designated for use with 7mm of the Type N class microwave connectors; **12 in-lb Torque wrench** with 20 dimension designated for use with 7mm of the Type N class microwave connectors; **12 in-lb Torque wrench** with 19mm dimension designated for use with NMD class microwave connectors; **12 in-lb Torque wrench** with 20 dimension designated for use with NMD class microwave connectors; **8 in-lb Torque wrench** with 19mm dimension designated for use with NMD class microwave connectors; **8 in-lb Torque wrench** with 20 dimension designated for use with NMD class microwave connectors; **20 in-lb Torque wrench** with 5/16 dimension designated for use with subminiature microwave connectors as a repair and installation aid.

### **Velocity Microwave**

[Div. ATX Labs]

Located at:

#### **Production**

151 Beach Road, Unit 1B  
Vineyard Haven, MA 02568  
Phone: 508-338-2333

#### **Material Test & Development**

9 Beechtree Road,  
Chilmark, MA 02535  
Phone: 508-645-7980

[www.velocitymicrowave.com](http://www.velocitymicrowave.com)