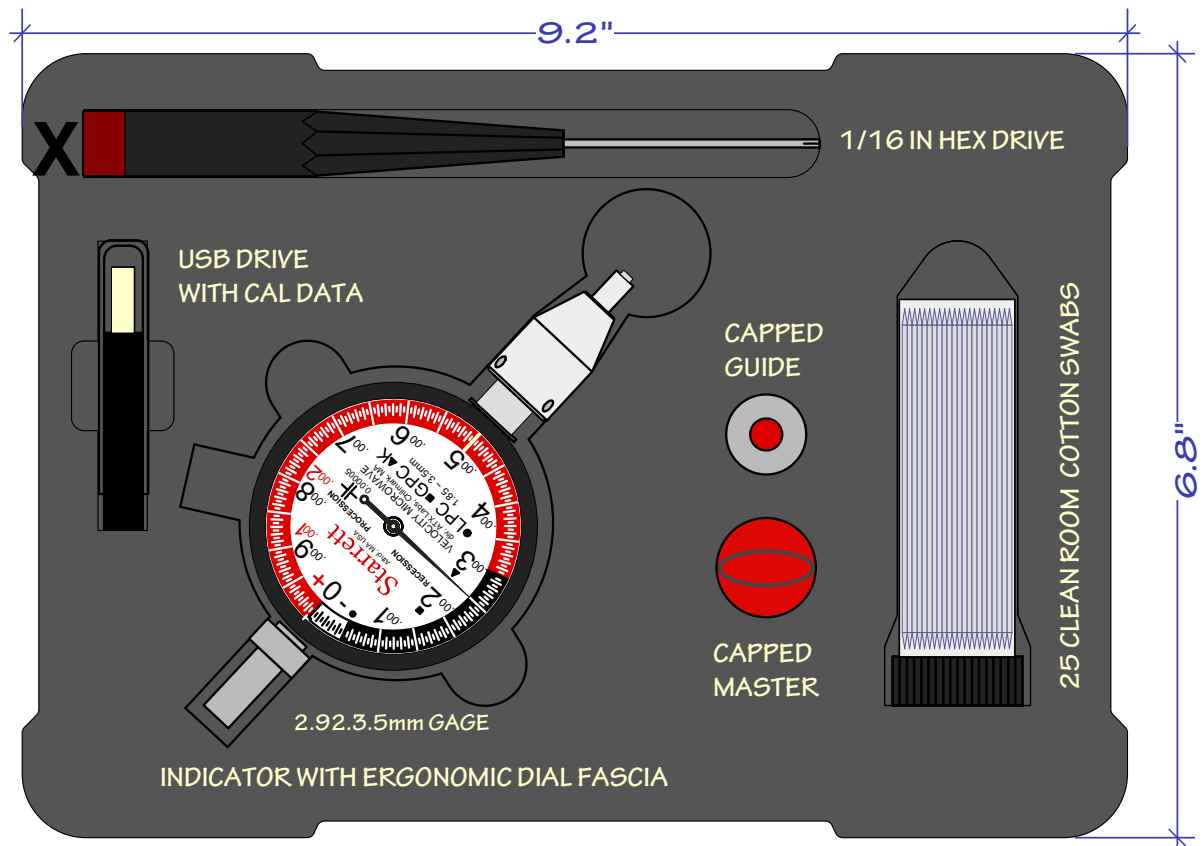


N	
SMA	
3.5	X
K	X
2.4	
1.85	

ACCURACY:
+/- .0001
RESOLUTION:
.00005



PAT. PEND. 61986978, 61868548, 61986822

OVERVIEW: PRECISION GAGE KIT FOR THE DIMENSIONAL GAGING OF MALE AND FEMALE MICROWAVE COMPONENTS. THE KIT EMPLOYS A SINGLE SPINDLE AND DISPLAY WITH AN ERGONOMICALLY ADVANTAGED FASCIA TO SIMPLIFY GAGING. THE INSTRUMENT'S DESIGN ELIMINATES THE REQUIREMENT FOR A SECOND GAGE AND/OR BUSHING ORDER TO ACCOMODATE THE OPPOSITE GENDER. ADVANTAGEOUSLY, ONE MASTER GAGE IS USED FOR ALL STANDARDS INCLUDING MIL-STD-348, MIL-C-39012 AND IEEE287, THEREBY ELIMINATING THE PROCUREMENT REQUIREMENT OF MULTIPLE MASTERS.

BENEFITS:

- ~ GUIDED BUSHING DESIGN ELIMINATES TORQUE REQUIREMENT AND ASSOCIATED TORQUE UNCERTAINTY;
- ~ HIGH PERFORMANCE ANALOG AND DIGITAL STARRETT METERS WITH 0.00005 INCH RESOLUTION;
- ~ CERTIFIED ACCURACY OF 0.00012 INCHES (DIGITAL) AND 0.0001 (ANALOG);
- ~ SINGLE FLAT SURFACE MASTER GAGE FOR THE ELIMINATION OF FEATURE SIZE UNCERTAINTY;
- ~ EXPEDITED GAGING OF BOTH 2.92mm AND 3.5mm MALE AND FEMALE CONNECTORS;
- ~ INCLUDED ISO-17025 TRACEABLE STARRETT CALIBRATION AND CERTIFICATION ;
- ~ INCLUDED USB DRIVE WITH GAGE APPLICATION FOR COMPARING GAGED VALUE TO COMMON STANDARDS;
- ~ INCLUDED 25 SHARP & DENSE POINT, SMALL SIZE, EXTREMELY LOW LINTING, STATIC FREE SWABS;
- ~ INCLUDED CRM72 TOOL STEEL HEX DRIVER WITH ROCKWELL 50-61 HARDNESS & CORROSION FREE FINISH;
- ~ INCLUDED ONE MID WARRANTY TRACEABLE CALIBRATION AND CERTIFICATION;
- ~ INSTRUMENT BACKS AND FASCIA WITH STANDARDS REQUIREMENTS AND INTERFACE METRICS.
- ~ INCLUDED ONE WATER PROOF AND CRUSH PROOF NK-7 RESIN CASE WITH STAINLESS STEEL POWER CLAW LATCHING SYSTEM AND VAPOR RELEASE VALVE , 8.6LX6.8WX3.8H INCHES EXTERIOR DIMENSIONS.

GENERAL SPECIFICATION

- ~SURFACE FINISH OF Ra4 - Ra16 ON WORKING SLIDABLE SURFACE; BETTER THAN Ra32 IN REGIONS OF NON-CONTACT.
- ~MASTER GAGE FINISH OF Ra 8 OR BETTER.
- ~PRECISION SWISS TURNED AND MILLED STAINLESS STEEL.
- ~CRITICAL TOLERANCES OF 0.0005.
- ~CERTIFIED DIAL ACCURACY OF +/- 0.0001 ANALOG & DIGITAL
- ~ALL STAINLESS COMPONENTS PASSIVATED PER ASTM-A967.
- ~STAINLESS 6-32 SET SCREWS [X3] WITH ASME B18.3 ROCKWELL C28 HARDNESS.
- ~DIAL FASCIA AND DIAL BACKS WITH STANDARDS DELINATION.

WARRANTY

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

PRECISION GAGE KITS

2.92mm & 3.5mm ERGON SERIES

MALE & FEMALE

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

THE ACT OF "GAGING" A MICROWAVE CONNECTOR IS SIMPLY THE ACT OF DETERMINING THE DIFFERENCE IN GRADE BETWEEN TWO POINTS INSIDE THE CONECTOR: TYPICALLY THE OUTER COAXIAL BODY'S FRONT (MATING) PLANE AND A GEOMETRIC FEATURE ON THE MALE PIN (TYPICALLY SHOULDER) OR FEMALE PIN (TYPICALLY FRONT PLANE). GAGING IS SIMPLE IN BOTH CONCEPT AND EXECUTION.

THE CONVENTIONAL METHOD FOR DETERMINING A GRADE DIFFERENCE IS TO USE A DIAL INDICATOR THAT HAS A FIXED STEM AND A MOVABLE RACK OR SPINDLE. THE SPINDLE COMMUNICATES ITS MOTION TO THE HAND ON THE INDICATOR'S DIAL FACE. THE TRADITIONAL APPROACH IN MICROWAVE GAGING IS TO ATTACH A FIXED BUSHING TO A CONVENTIONAL DIAL INDICATOR'S STEM AND A CONTACT POINT TO THE DIAL INDICATOR'S MOVABLE SPINDLE. WHEN THE BUSHING IS MADE TO REST ON THE OUTER BODY'S MATING PLANE AND THE CONTACT POINT IS MADE TO REST ON THE FEATURE OF INTEREST, LIKE A PIN'S SHOULDER, THE HAND OF THE DIAL SHOWS THE GRADE DIFFERENCE. WHILE THIS TRADITIONAL APPROACH ADDS A BUSHING AND CONTACT POINT, NO CHANGE IS MADE TO THE DIAL INDICATOR'S INDICIA OR FASCIA. IN THIS MANNER, THE "RECESSION" (OR "PROCESSION" IN THE CASE OF NON-COMPLIANCE) OF THE MALE PIN'S SHOULDER OR THE FEMALE PIN'S FRONTAL PLANE RELATIVE TO THE OUTER COAXIAL BODY'S MATING PLANE WOULD BE DETERMINED.

VM'S PATENTED APPROACH

THUS, IN THE MANNER DISCRIBED ABOVE, AND IN THE SIMPLIFIED SECTIONAL IMAGES OF SUBMINIATURE CONNECTORS SHOWN TO THE RIGHT, THE DIFFERENCE R-S WOULD BE COMPARED TO A STANDARD THAT REPRESENTS THE INTERFACE SPECIFICATION THAT THE CONNECTOR IS REQUIRED TO BE IN COMPLIANCE WITH.

TO THIS END, FOR THE LAST HALF CENTURY THE MICROWAVE GAGING OF SUBMINIATURE CONNECTORS HAS TYPICALLY EMPLOYED A SEPARATE GAGE FOR EACH CONNECTOR GENDER - THEREBY INCREASING THE COST OF OWNERSHIP. WITHIN THIS APPROACH A DISTINCTION WAS MADE BETWEEN FREE HAND GAGING, IN WHICH THE USER PLACES THE WORKING END OF THE GAGE ON THE CONNECTOR'S INTERFACE MANUALLY, AND THREADED ENGAGEMENT, WHEREIN THE USER THREADS THE GAGE ON TO THE CONNECTOR IN THE SAME MANNER AS AN ACTUAL MALE/FEMALE CONNECTOR ENGAGEMENT.

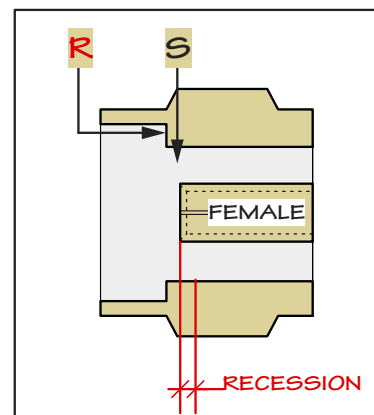
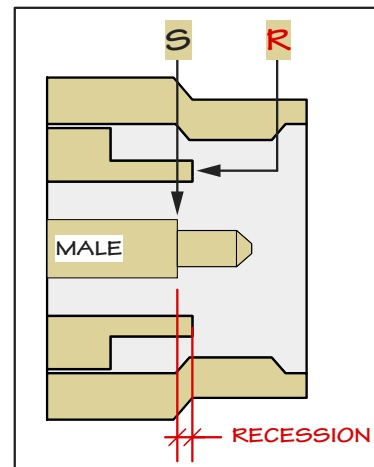
VM'S PATENTED APPROACH TO SUBMINIATURE GAGING IS BASED ON SEVERAL DIFFERENT PRINCIPLES.

[1] A SINGLE GAGE/INDICATOR (AS OPPOSED TO THE CUSTOMARY TWO) IS USED FOR BOTH MALE AND FEMALE GENDERS THEREBY SIMPLIFYING GAGING AND SUBSTANTIALLY REDUCING COST, BUT WITH NO LOSS IN ACCURACY OR PRECISION;

[2] ONLY ONE MASTER GAGE IS USED (AS OPPOSED TO CONVENTIONAL DUAL MASTERS) THAT CONTAINS A PRECISION GROUND, CLOSELY TOLERANCED, *FLAT* STAINLESS STEEL SURFACE - THERBY VIRTUALLY ELIMINATING MASTER GAGE ERROR;

[3] FOR MALE GAGING A SEPARATE THREADED GUIDE IS PROVIDED THAT REQUIRES NO SPECIFIC TORQUE, IS EASIER TO MATE THAN TORQUE SPECIFIC THREADED ENGAGEMENT, AND INTRODUCES NO MEASUREMENT UNCERTAINTY AS A FUNCTION OF AN UNCERTAIN TORQUE WRENCH CALIBRATION OR SETTING;

[4] THE HUMAN INTERFACE IS ENHANCED WITH ADVANCED ERGONOMICS TO PROVIDE INSTANT FEEDBACK RELATIVE TO ALL STANDARDS, AND REAL VALUE INDICIA ARE USED TO SPECIFY TRUE RECESSION AND TRUE PROCESSION - THEREBY SPEEDING GAGING AND ELIMINATING POTENTIAL CONFUSION.



GENERAL SPECIFICATION

- ~SURFACE FINISH OF Ra4 - Ra16 ON WORKING SLIDABLE SURFACE; BETTER THAN Ra32 IN REGIONS OF NON-CONTACT.
- ~MASTER GAGE FINISH OF Ra 8 OR BETTER.
- ~PRECISION SWISS TURNED AND MILLED STAINLESS STEEL.
- ~CRITICAL TOLERANCES OF 0.0005.
- ~CERTIFIED DIAL ACCURACY OF +/- 0.0001 ANALOG & DIGITAL
- ~ALL STAINLESS COMPONENTS PASSIVATED PER ASTM967.
- ~STAINLESS 6-32 SET SCREWS [X3] WITH ASME B18.3 ROCKWELL C28 HARDNESS.
- ~DIAL FASCIA AND DIAL BACKS WITH STANDARDS DELINATION.

WARRANTY

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

PRECISION GAGE KITS

2.92mm & 3.5mm **ERGON SERIES**

MALE & FEMALE

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www.velocitymicrowave.com

WHY THE VM PRECISION GAGE IS DIFFERENT

1. TAPERED BUSHING DESIGN FOR GREATER FEEL & VISIBILITY.

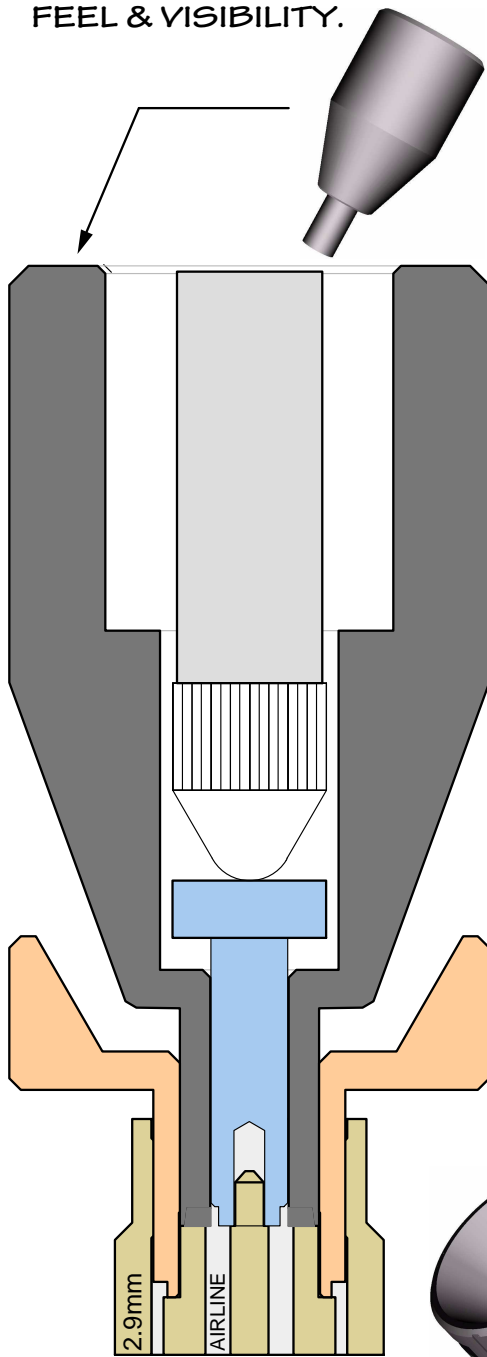
2. ENHANCED ERGONOMIC DIAL FASCIA ON BEST OF BREED INDICATOR FOR FOOLPROOF, PRECISION GAGING.

3. STANDARDS GUIDE ON REAR OF INDICATOR.

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

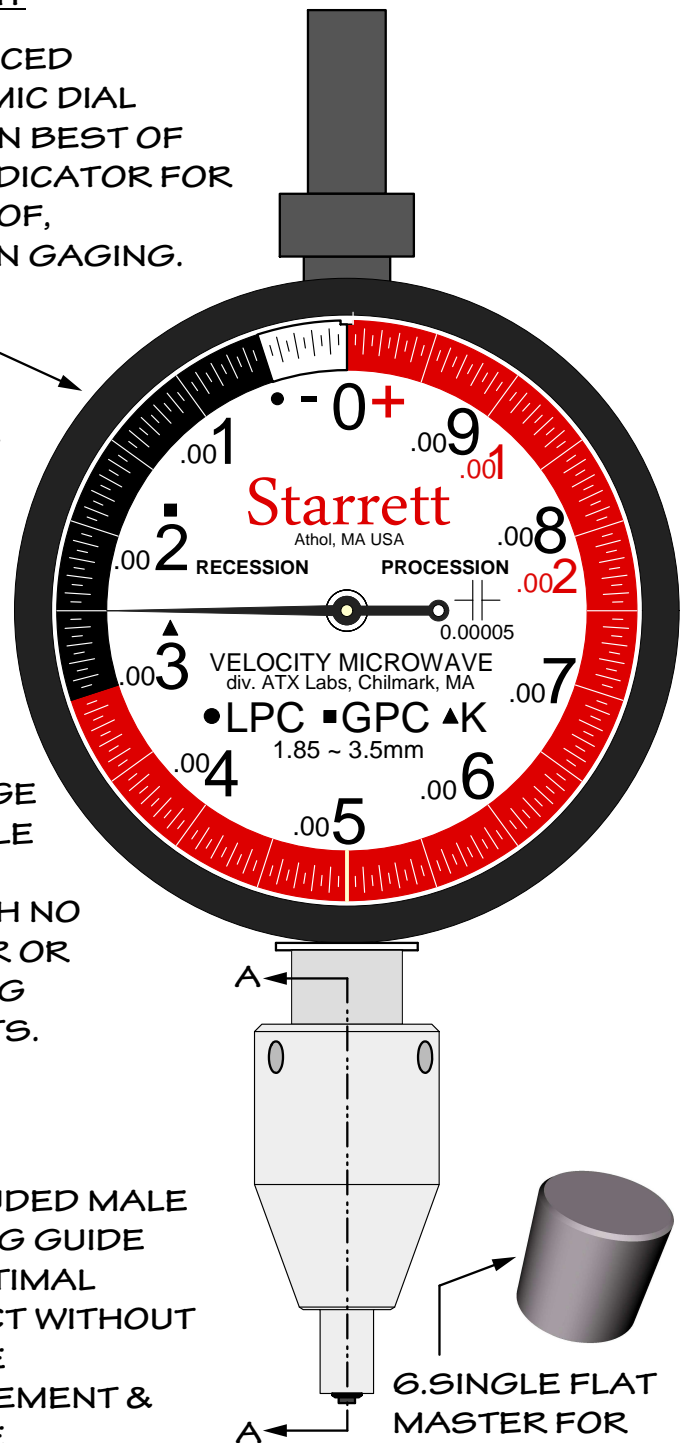
5. INCLUDED MALE BUSHING GUIDE FOR OPTIMAL CONTACT WITHOUT TORQUE REQUIREMENT & TORQUE UNCERTAINTY.

6. SINGLE FLAT MASTER FOR ERROR FREE ZERO SETTING.



SECTION A-A

[MALE CONNECTOR SHOWN]



GENERAL SPECIFICATION

- ~SURFACE FINISH OF Ra4 - Ra16 ON WORKING SLIDABLE SURFACE; BETTER THAN Ra32 IN REGIONS OF NON-CONTACT.
- ~MASTER GAGE FINISH OF Ra 8 OR BETTER.
- ~PRECISION SWISS TURNED AND MILLED STAINLESS STEEL.
- ~CRITICAL TOLERANCES OF 0.0005.
- ~CERTIFIED DIAL ACCURACY OF +/- 0.0001 ANALOG & DIGITAL
- ~BUSHINGS AND MASTERS ELECTROPOLISHED PER ASTM B912.
- ~STAINLESS 6-32 SET SCREWS [X3] WITH ASME B18.3 ROCKWELL C28 HARDNESS.
- ~DIAL FASCIA AND DIAL BACKS WITH STANDARDS DELINATION.

WARRANTY

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

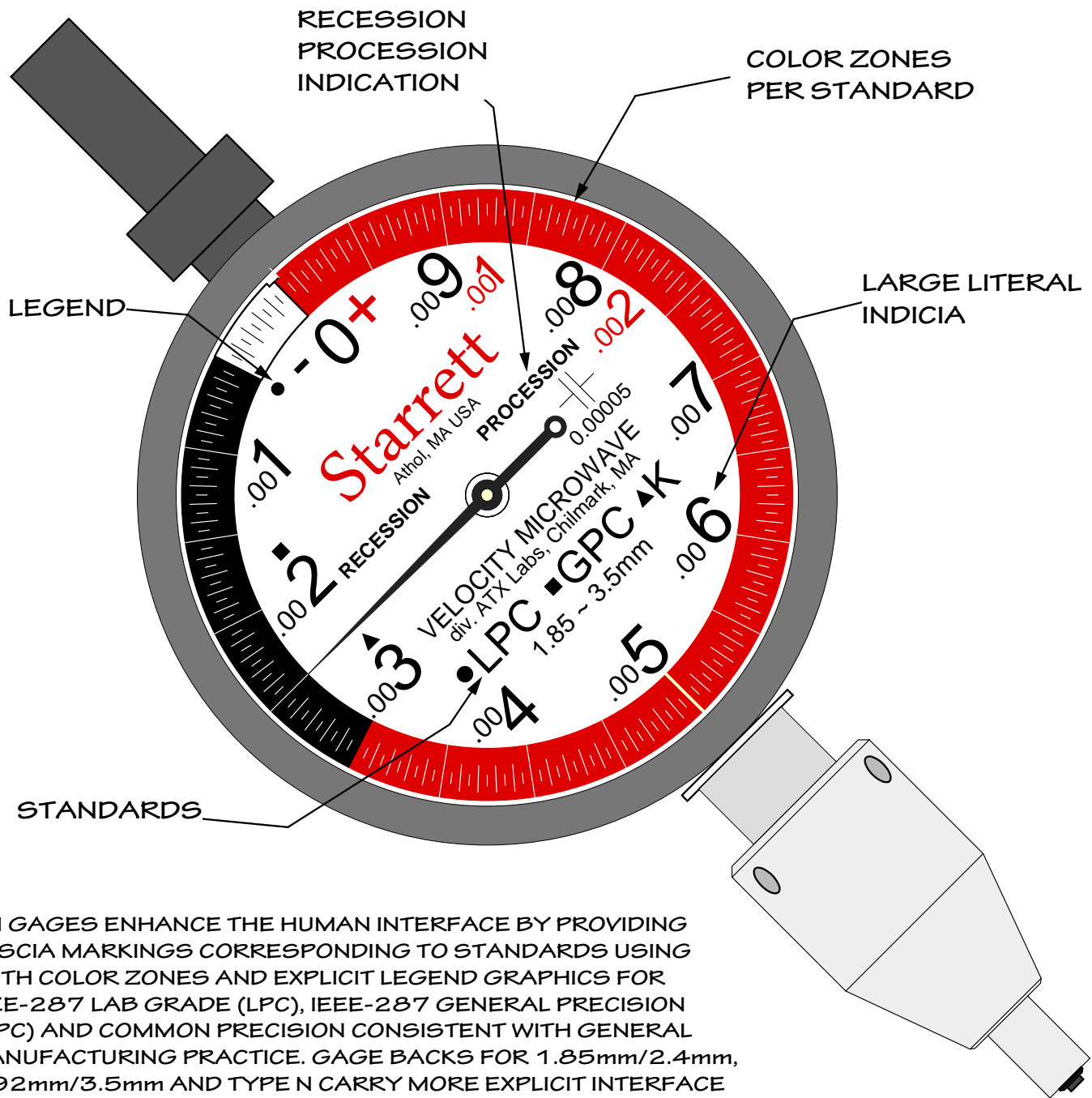
PRECISION GAGE KITS

2.92mm & 3.5mm

ERGON SERIES

MALE & FEMALE

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www.velocitymicrowave.com



VM GAGES ENHANCE THE HUMAN INTERFACE BY PROVIDING FASCIA MARKINGS CORRESPONDING TO STANDARDS USING BOTH COLOR ZONES AND EXPLICIT LEGEND GRAPHICS FOR IEEE-287 LAB GRADE (LPC), IEEE-287 GENERAL PRECISION (GPC) AND COMMON PRECISION CONSISTENT WITH GENERAL MANUFACTURING PRACTICE. GAGE BACKS FOR 1.85mm/2.4mm, 2.92mm/3.5mm AND TYPE N CARRY MORE EXPLICIT INTERFACE REFERENCES AND GEOMETRIC RENDERING FOR CLARITY.

GAGE FRONT

GENERAL SPECIFICATION

- ~SURFACE FINISH OF Ra4 - Ra16 ON WORKING SLIDABLE SURFACE; BETTER THAN Ra32 IN REGIONS OF NON-CONTACT.
- ~MASTER GAGE FINISH OF Ra 8 OR BETTER.
- ~PRECISION SWISS TURNED AND MILLED STAINLESS STEEL.
- ~CRITICAL TOLERANCES OF 0.0005.
- ~CERTIFIED DIAL ACCURACY OF +/- 0.0001 ANALOG & DIGITAL
- ~BUSHINGS AND MASTERS ELECTROPOLISHED PER ASTM B912.
- ~STAINLESS 6-32 SET SCREWS [X3] WITH ASME B18.3 ROCKWELL C28 HARDNESS.
- ~DIAL FASCIA AND DIAL BACKS WITH STANDARDS DELINATION.

WARRANTY

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PRECISION GAGE KITS

2.92mm & 3.5mm

ERGON
SERIES

MALE & FEMALE

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

2.4mm, 2.92MM AND 3.5MM STANDARD
IEEE-287 GPC, IEEE-287 LPC AS WELL AS
INDUSTRY PRACTICE ARE SPECIFIED. MIL-
CROSSES TO 348A/B.

TYPE N & 1.85mm/2.4mm/2.92mm 3.5mm
GAGE BACK

WARRRANTY

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

2.92mm & 3.5mm

**ERGON
SERIES**

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