



User's Guide

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TT 300 Adhesive Kit

DESCRIPTION

TT300 Adhesive Kits are designed for trouble - free preparation and bonding of strain gauges to most surfaces. TT300 adhesives are also specially formulated for highest performance under the recommended environmental conditions and are packaged to provide the user with maximum control in mixing and application. Each adhesive is dated to ensure freshness of contents, together with details for proper handling, storage, mixing and application.

PLEASE NOTE

It is usually false economy to attempt installing strain gauges with outdated adhesive, or adhesive not stored as recommended. It should also be noted that conventional industrial and consumer adhesives are not generally suitable for bonding strain gauges.

TT300 CEMENT, ADHESIVE KITS

A heat curing, two components epoxy resin adhesive which may be used to bond polyimide backed strain gauges for strain measurement up to 200°C. The adhesive may also be used to bond epoxy-backed gauges but the maximum operating temperature is then limited to 150°C. For optimum performance, the following installation should be followed.

SURFACE PREPARATION:

1. Excess oil, grease and other contaminants should be removed using rag soaked in a standard degreasing solvent.
2. Any surface, such as paint or rust, should be removed by sand blasting or abrading with coarse grade emery paper and then degreased.
3. The surface should be abraded to a fine finish using 400-grade abrasive paper, together with TT300 conditioner and wiped dry.
4. Place gauge alignment marks on the surface and clean surface with conditioner and cotton bud until a clean bud is not discolored. Then wipe dry.
5. All surfaces should then be scrubbed with a cotton bud and TT300 Neutralizer.

N.B.

Once this procedure has been carried out, the surface will be in a satisfactory condition able to receive a strain gauge. It is essential that the surface is not contaminated in any way, such as contact with the fingers, or the bond strength may be reduced. It is preferable to install the gauge within 20 minutes of completion of the preparation.

ADHESIVE PREPERATION:

The TT300 adhesive kit is made up of the following:

<u>Quantity</u>	<u>Amount</u>	<u>Description</u>	<u>Contents</u>
2	1oz	Resin	Araldite (EPN 1138SP), Tetrahydrofuran, Methyl Ethyl Ketone (trace), Acetone (trace).
2	1oz	Hardener	Pyromellitic Dianhydride (Benzenetetracarboxylic Anhydride), Tetrahydrofuran.
1	2oz	Solvent Cleaner	Acetone
1	2oz	Neutralizer	Distilled Water, Ammonia (trace), Decon 90 (trace).
1	2oz	Conditioner	Distilled Water, Phosphoric Acid (trace), Decon 90 (trace).
1	2oz	Rosin Solvent	Toluene, Isopropyl Alcohol.
1	1oz	Empty Bottle	N/A
2	N/A	Funnel (Ø38mm)	N/A
2	N/A	Cap Brushes	N/A
2	N/A	Surface Wipes	N/A

NOTE.

The resin and hardener should be at room temperature before opening.

The mixing procedure is as follows:

1. Pour the hardener into the resin bottle and shake vigorously for one minute.
2. Allow mixture to stand approximately five minutes so that any air bubbles that may have formed, have cleared. The shelf life of the resin-hardener is six weeks at normal room temperature. The shelf life of the unmixed components is indefinite provided that the bottles are kept sealed to prevent absorption of moisture by the components.

GAUGE BONDING

1. Place tape over the solder tabs to prevent adhesive contamination.
2. A thin coating of adhesive should be applied to both the prepared surface and the back of the gauge using the brush provided and left to air dry for a minimum of fifteen minutes. The brush may be cleaned in a solvent solution. The gauge should be placed on the surface in the required position and orientation.
4. A small piece of PTE tape should be positioned over the gauge and the adhesive 'rolled out' with a glass rod to give a thin glue line.

5. A clean piece of PTFE should now be placed over the gauge. A thin piece 1/8" to 1/4" of silicon rubber and metal back plate should be placed over the PTFE and a pressure of 15-50 psi applied, using spring clamps or deadweight. The rubber pad will ensure uniform distribution of the clamping pressure.
6. The clamped installation should be heated slowly to cure temperature at approximately 10 degrees Celsius per minute and cured as detailed in the Curing Cycle.
7. If post curing is required the clamps should be removed from the gauge installation and post cured at 30 degrees Celsius above maximum temperature or curing temperature, whichever is greater, for 2 hours.

CURING CYCLE: (MINIMUM)	
TEMPERATURE	TIME
100°C	3 Hours
125°C	2 Hours
150°C	1 Hour
Recommended Cycle: 2 hours @ 150°C	

If the above instructions have been followed, high quality results, with high stability and low hysteresis should be found.



WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

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RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. **BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS).** The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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