

# Adhesion Force Procedure-WI 038

<b>Part #: Non specific</b>		<b>Part Name/Product: Non specific</b>		<b>Operation:</b> <b>Adhesion Force Gage Setup and Operation Procedure</b>	
<b>Originated 02/16/99 by B. Skiba</b>	<b>Plan Revision: B</b>	<b>Revised 05/05/03 by: L. Richards</b>	<b>Approved by: J. Beliveau 05/06/03</b>	<b>*Equipment: 1. Digital Force Five Gage 100 x 0.1 lb 2. Adhesion Bar T0501-3 3. Fixture to support items 1 &amp; 2</b>	<b>Page 1</b>
<b>Procedure Purpose: To quantify the amount of force used to dislodge the cured dispensed gasket from the substrate.</b>					

Step #	Procedure	Part #	Part Description	Qty	To/Location	How/Using	TQC Information	Fig.
010	Set-up		Adhesion Force Gage Fixture	1	Inspection Area	Manually	✓ Turn on the force gage: Press the power button	1,1A
020	Set-up		Adhesion Force Gage Fixture	1	Inspection Area	Visually and Manually	✓ Check to see if force gage display screen is reading in Newton. <b>NOTE: There will be a small "N" in the bottom right corner of the display.</b> ✓ <b>NOTE: If force gage is not reading Newton use set-up instructions on back side of force gage and also see Q.C. Engineer or Q.C. Technicians for help if needed.</b>	1A,1B
030	Set-up		Adhesion Force Gage Fixture	1	Inspection Area	Manually	✓ Set the force gage to display peak values on the display screen by pressing the middle button labeled <b>"PEAK"</b>	1A
040	Set-up		Adhesion Force Gage	1	Inspection Area	Visually and Manually	✓ Make sure the display screen is reading zero, if it doesn't, Press the top button labeled <b>"ZERO"</b>	1A



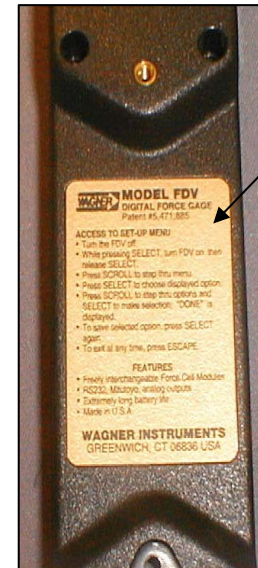
**Fig. 1**

**Adhesion Force Gage Fixture**



**Fig. 1A**

- Display Screen
- Zero Button
- Peak Button
- Power Button



**Fig. 1B**

Set-Up Instructions  
On Back Side of  
Force Gage

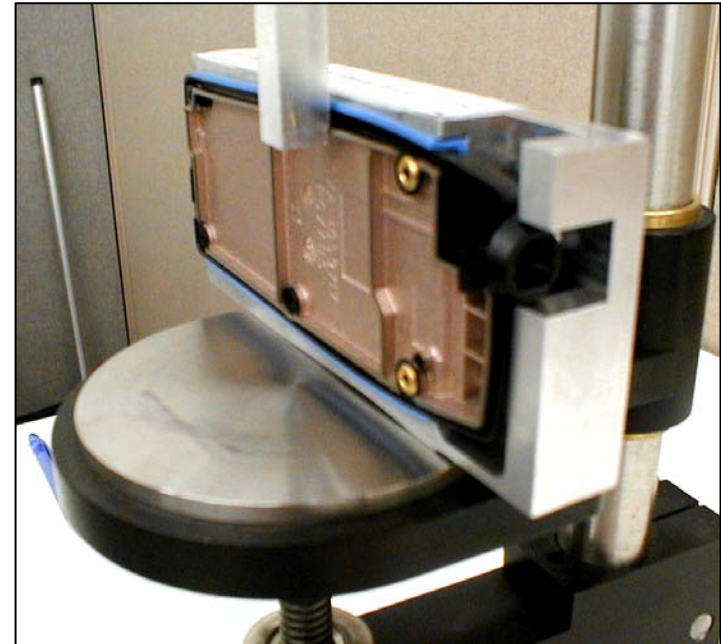
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Step #	Procedure	Part #	Part Description	Qty	To/Location	How/Using	TQC Information	Fig.
050	Part Placement	N/A	Gasketed Housing	1	Inspection Area	Manually	✓ Place a gasketed part in the mount/holding fixture and place in Adhesion Force Gage Fixture as shown.	3,3A
060	Measuring Adhesion	N/A	Gasketed Housing	1	Inspection Area	Manually	✓ Turn the hand-wheel until the adhesion bar slides past gasket using versions the 'Test till Failure' or until the spec. limit is met. Spec. Information can be obtained from the part specific Process Documentation. ✓ <b>NOTE: See additional instructions as shown in Fig. 4</b>	4



**Fig. 3**



**Fig. 3A**

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Fig. 4

## Measuring Instructions:

1. Place a gasketed part in the Adhesion Force Gage Fixture and hold firmly into place as shown.
2. Turn the hand-wheel clockwise until the adhesion bar notch makes contact to the gasket from the side as shown in **Fig. 3A**.
3. Keep turning hand-wheel until the probe slides past the gasket; The 'Test till Failure' method or the adhesion specification limit is met.

**NOTE: Specification information can be obtained from Process Documentation.**

4. Record reading off the force gage display screen.
5. Lower the stage/round base by turning the hand-wheel counter clockwise to make room for the next part.
6. Zero the force gage see **Fig. 1A** and repeat steps above 1 through 5 for each additional part.

## Equipment Source:

- Items 1 & 3, Force Five Gage and Fixture are available through Wagner Instruments, Greenwich, Connecticut 06836 USA.  
Phone: (203) 698-9681  
Fax: (203) 698-9696
- Item 2: T0501-3 The adhesion bar is 1 cm square (.394") x 5 cm in length (2.0"). The notch depth is to be approximately 60% of the gasket height to be tested. This is to assure the adhesion bar contacts only the gasket and not the substrate. The bar is made from aluminum and may be machined at a local machine shop.

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## Revision History

<b>L. Richards 01/17/01 Rev – to A</b> <b>1. Addition of Probe part # T0501-3</b>
<b>L. Richards 05/05/03 Rev A to B</b> <b>1. Addition of equipment source information page 3.</b> <b>2. Addition of procedure purpose in header.</b>