

DOCUMENT TITLE: **INJECTOR/SEAL PACK TEST PROCEDURE**

SYSTEM/ASSEMBLY NAME: **ALLIANCE,717,715 INJECTORS / ALLIANCE, 717 SEAL PACKS**

PART NUMBER AFFECTED **WAT077-02, WAT077-01, WAT045540, WAT045559, WAT078949, 279000925, 289001994, WAT270576, 279003915, 289012412**

TEST EQUIPMENT NAME: **INJECTOR / SEAL PACK TESTER**

TEST EQUIPMENT NUMBER: **TE82503**



TEST SOFTWARE:

AUTHOR(S): **MARK JUSSAUME**

DATE: **January 15, 1997**

REVISED BY: **MARK JUSSAUME**

DATE: **February 21, 2018**

EQUIPMENT REQUIRED

Quantity	Part Number	Description
1	TE 82503	INJECTOR / SEAL PACK TESTER
2	NA	5/16" open end wrench
1	NA	5/8" open end wrench
1	NA	T10 Torx driver
1	NA	10 ml Graduate
3	WAT025569	18" x 1/16" x .020" stainless tubing
3	WAT999165	Hardened stainless test tube
1	9025295	5/16" torque wrench set to 36 in/lbs or equivalent
1	TE 82605	Seal pack base (717 only)
1	279000925	TE modified Injector (spare Alliance seal packs only)

DISPOSABLES REQUIRED

Quantity	Part Number	Description
AR	NA	100% RECYCLED Methanol (when available) filtered and degassed. If not available use 100% filtered and degassed virgin Methanol
1	NA	Squeeze bottle of 100% Filtered Methanol
AR	NA	90 – 100 PSI shop air

REFERENCE DOCUMENTATION

Document #	Description
721008073	Alliance 2695 Oper Guide
WAT270694	PERF SPEC INJECTOR/SEAL PAK
WAT271129	FINAL TEST PROCEDURE, 2690
WAT078944	TEST SPEC, M717
WAT078895	PERF. SPEC 717 PLUS
WAT078500	PERF SPEC, 717 AUTOSAMPLER
WAT045355	TEST SPEC M715 SEAL PACK 7
WAT045356	TEST SPEC M715 SEAL PAK
WAT078734	MANUAL, SERVICE, M717

DEFINITIONS AND ABBREVIATIONS

Term	Definition
AR	As required
PSI	Pounds per square inch
ML	Milliliter
Δ Production Support Checks (PSC)	Tests performed in support of product design specifications to assure product quality, and/or verify pre/post test conditions.

TEST SPECIFICATIONS AND TRACEABILITY MATRIX (717 / 715)

Test #	Test Specification & Condition	Acceptance criteria	Reference
1	Seal Wash: Duration 15 seconds Solvent: Methanol	LSL = ≥ 1.25 MLS	WAT045355 Needle Wash Performance page 5
2	Decay Test: Pressure: 4500 PSI Duration: 3 minutes Solvent: Methanol	USL = ≤ 270 PSI	Production Support Check (PSC) – pressurizes seals for down count and to ensure that assembly performs as intended once installed into instrument.
3	Down Count (Stream): Back pressure: > 500 PSI Solvent: Methanol	LSL = 50 Steps USL = 126 steps	PSC – to position sensor bracket to support Injector Adjustment Test. WAT078944 sec 2
4	Seal Width	LSL = ≥ 50 steps	WAT078734 Seal Pack calibration Pg. 2-12

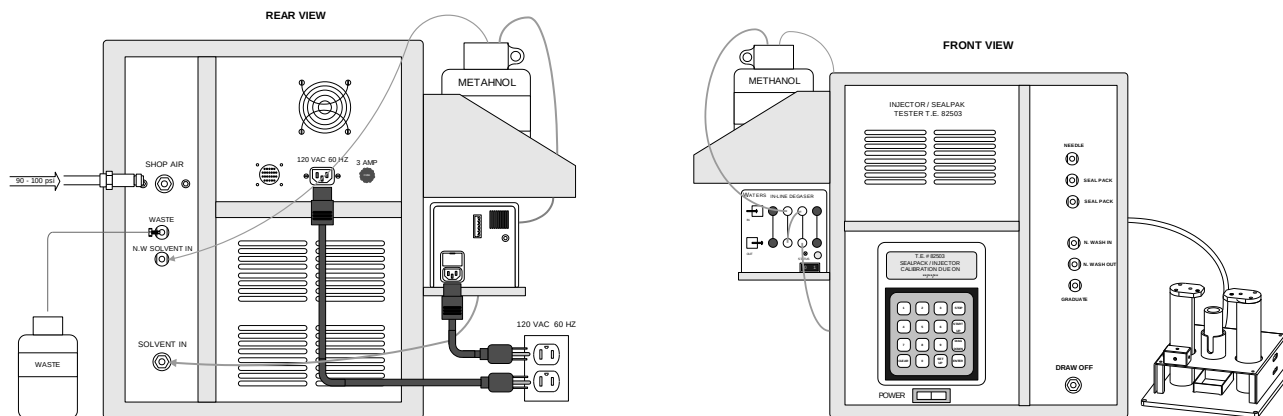
TEST SPECIFICATIONS AND TRACEABILITY MATRIX (ALLIANCE)

Test #	Test Specification & Condition	Acceptance criteria	Reference
1	Seal Wash: Duration 15 seconds Solvent: Methanol	LSL = ≥ 1.25 MLS	WAT270694 Sec 4.0
2	Decay Test: Pressure: 5000 PSI Duration: 3 minutes Solvent: Methanol	USL = ≤ 270 PSI	PSC – pressurizes seals for down count and to ensure that assembly performs as intended once installed into an instrument.
3	Down Count (Stream): Back pressure: > 500 PSI Solvent: Methanol	LSL = 85 Steps USL = 125 steps	PSC – position sensor bracket to support Injector Adjustment Test. WAT271129 Sec 19
4	Seal Width	LSL = ≥ 60 steps	721008073 table 8 – 2 See Note 2

Note 2: In some cases, the manufacturing specification is tighter than documented (performance specification, marketing requirements, etc.)

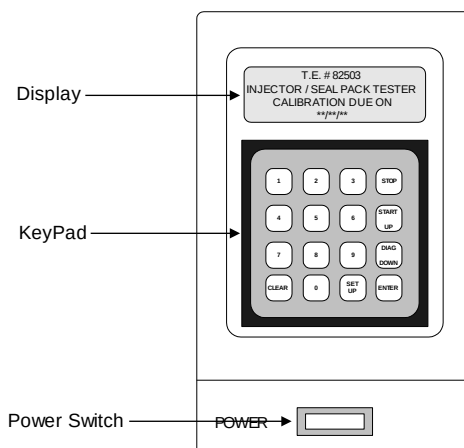
1. TESTER SETUP:

- 1.1. Plug Tester into appropriate AC outlet.
- 1.2. Plug Degasser Module into appropriate AC outlet.
- 1.3. Connect shop air to "SHOP AIR IN" (90 PSI min.), located on the rear of Tester.
- 1.4. Connect solvent lines to Degasser and Tester as shown.
- 1.5. Route "WASTE" to appropriate waste container.
- 1.6. Connect base fixture that matches sub-assembly or customer spare to be tested.
- 1.7 Verify that the Test Software version listed on the front page of this procedure matches that displayed by tester (power must be on).



TESTER SETUP

2. TEST SETUP:



2.1. Switch Degasser POWER on.

2.2. Switch "POWER" on, the display should read:

CHECKSUM TEST
VERIFYING EPROM

Once EPROM is verified OK, display should read:

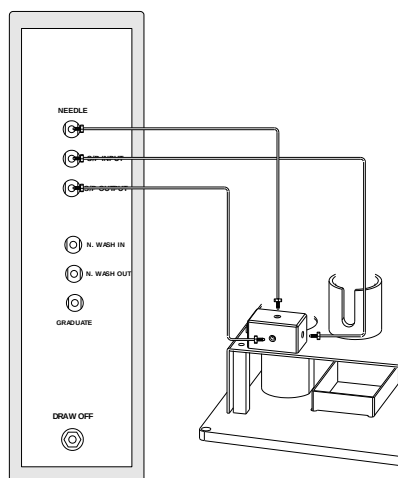
READY TO TEST
PRESS START TO BEGIN

2.3. Press  on Keypad, the display should read:

CONNECT 'NEEDLE' &
'SEAL PACK' TUBES TO
T ON INJECTOR STAND,
THEN PRESS 'ENTER'.

2.4. Connect "NEEDLE", "S/P INPUT" & "S/P OUTPUT" tubes as shown in the following diagram.

Tighten with 5/16" wrench.



Note: Order of connection to block not important.

2.5. Press  on keypad, the display should read:

PURGING
FOR
SYSTEM DECAY TEST

The pump will start and the message on the display should read:

RAMPING TO *** PSI,
TO PERFORM A DECAY
TEST ON THE TESTER &
EXTERNAL TUBING.

When the Tester reaches pressure, the display switches to:

DECAY TEST RUNNING

TIME REMAINING ** : **
PRESSURE = **** PSI

and will continually update pressure and test time remaining throughout the decay test.

2.6. After test is complete, Pass / Fail and Decay results will be displayed momentarily

AUTO ZERO COMPLETE
DECAY SPEC IS ***
!PASSED!
DECAY = *** PSI.

. If this test fails repeatedly, contact Test Engineering.

READY TO TEST

PRESS START TO BEGIN

When ready, display should read:

3. TEST:

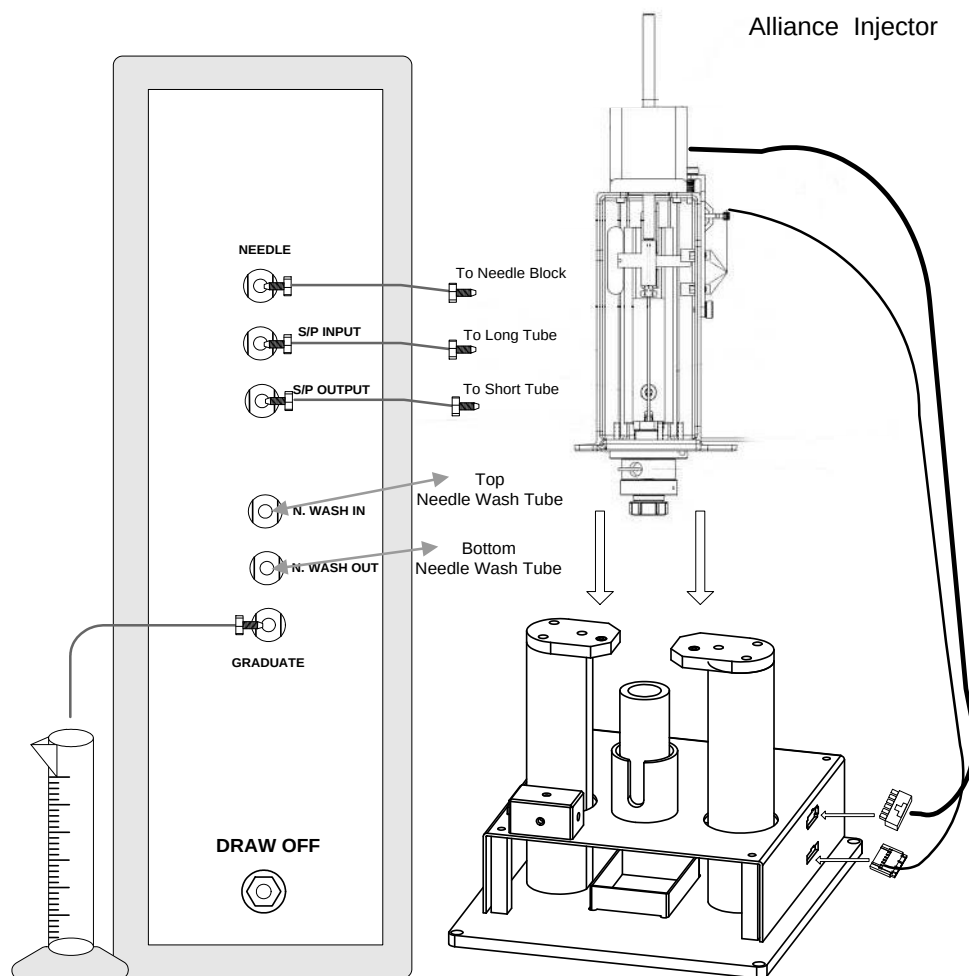
3.1 Place and secure Unit Under Test (UUT) to stand. Connect "NEEDLE", "S/P INPUT" & "S/P OUTPUT" tubes. Tighten using 5/16" wrench. Slip "N. WASH IN" & "N. WASH OUT" tubes over the needle wash tubes on the seal pack. **(The top tube is the input)** When testing injectors, be sure to connect the motor and sensor cables. When testing seal packs, frequently inspect the needle for scratches and replace it if necessary.

NOTES:

A) WET THE SEALS IN THE SEAL PACK WITH METHANOL BEFORE INSTALLING THE UUT ONTO THE STAND.

B) WHEN TESTING INJECTORS WITH FILTER ASSEMBLIES, THE "S/P INPUT" CONNECTS TO INLET OF FILTER ON UUT.

C) WHEN TESTING SPARE SEAL PACKS #289001994, USE MODIFIED 279000925 INJECTOR(SUPPLIED BY TEST ENGINEERING).



3.2. Press the  key to start testing, then follow instructions on display.

NOTES:

a) You may abort a test anytime by pressing  , the display will read:

THIS TEST HAS BEEN
STOPPED! FIX PROBLEM
& RESET OR CONNECT
A NEW UNIT FOR TEST.

b) If the pressure is over 6000 PSI, testing halts and the display reads:

OVER PRESSURE!!
SYSTEM PRESSURE HAS
GONE OVER 6000 PSI.
CHECK FOR BLOCKAGES.

c) If shop air goes below 60 PSI, testing halts and the display reads:

NO OR LOW SHOP AIR!!
CHECK THE AIR SOURCE
IT SHOULD BE SET FOR
A MINIMUM OF 60 PSI