2. To: (Receiving Organization)  
3. From: (Originating Organization)  
4. Related EDT No.: N/A  
5. Proj./Prog./Dept./Div.: W-314/TWRS  
7. Purchase Order No.: N/A  
8. Originator Remarks: 
This EDT release the approved ATP's for the 241-AN-A and B packages part of Project W-314.

11B. Does this document contain any new or changed data or information? [ ] Yes [X] No  
11C. Does this document contain any new or changed data or information that are not required for the performance of the work? [ ] Yes [X] No  

15. DATA TRANSMITTED  

16. KEY  

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)  

18. Signature of EDT Originator  
19. Authorized Representative Date for Receiving Organization  
20. Design Authorized Representative Date  
21. DOE APPROVAL (if required)  

BD-7400-172-1
241-AN-B Valve Pit Manifold Valves
And Position Indication
Acceptance Test Procedure

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Maintenance Concepts
Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

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B&R Code: EW3130010       Total Pages: 107

Key Words: Acceptance Test Procedure

Abstract: This document describes the method used to test design criteria for gear actuated ball valves installed in 241-AN-B Valve Pit located at 200E Tank Farms.
241-AN-B VALVE PIT MANIFOLD VALVES AND POSITION INDICATION
ACCEPTANCE TEST PROCEDURE
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# TEST EXECUTION SHEET

**Document Title:** 241 AN B Valve Pit Transfer Valves

## TEST PERSONNEL (PRINT NAMES)

<table>
<thead>
<tr>
<th>Role</th>
<th>Signature/Date</th>
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<tbody>
<tr>
<td>Test Director</td>
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<td>Operations Engineer</td>
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<tr>
<td>Authorized Inspector</td>
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<td>Recorder</td>
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## TEST EXECUTION

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<tr>
<td>Fluor Daniels Northwest Construction Engineer Signature/Date:</td>
<td></td>
</tr>
<tr>
<td>Operations Engineer Signature/Date</td>
<td></td>
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<tr>
<td>Recorder Signature/Date:</td>
<td></td>
</tr>
</tbody>
</table>

## APPROVAL AND ACCEPTANCE OF TEST RESULTS

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<th>With Exceptions Resolved</th>
<th>With Exceptions Remaining</th>
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<td>(✓)</td>
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<table>
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<td></td>
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<tr>
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<td>FDNW Quality Assurance Signature/Date:</td>
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<td>LMHC Quality Assurance Signature/Date:</td>
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<td>Operations Engineer Signature/Date:</td>
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<tr>
<td>Authorized Inspector Signature/Date:</td>
<td></td>
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<tr>
<td>Design Authority Signature/Date:</td>
<td></td>
</tr>
</tbody>
</table>
1.0 Purpose

1.1 Scope

This procedure is to demonstrate the following:

- New manifold Valves in the 241-AN-B Valve Pit are fully operable using the handwheels of the valve operators.
- Brafted drawings
- Equipment is properly installed, labeled, and documented on.

This Acceptance Test Procedure will test the following Valves in the 241-AN-B:

Two-Way Valves

- ANB-MT-V-302
- ANB-MT-V-304

Three-Way Valves

- ANB-MT-V-213
- ANB-MT-V-209
- ANB-MT-V-208
- ANB-MT-V-206
- ANB-MT-V-204

Encasement Drain Valves

- ANB-MT-V-409
- ANB-MT-V-410

New Valve Locking devices function properly.

New Valve position Switches will function properly.

New Valve position indicators on the valve operators will show correct valve position.

1.2 Scope

New manifolds of the valve operators.
2.0 INFORMATION

2.1 TERMS AND DEFINITIONS

2.1.1 ATR - Acceptance Test Report

2.1.2 ATP - Acceptance Test Procedure

2.2 RESPONSIBILITIES

2.2.1 Each company or organization participating in the conduct of this procedure will designate personnel to assume the responsibilities and duties as defined herein for their respective roles. The names of these designees shall be provided to the Recorder for listing on the Working Copy of the Test Execution Sheet prior to the performance of any part of this procedure.

2.2.2 The Fluor Daniel Northwest Project Manager is responsible for the following:

- Designation of a test director
- Signing the Test Execution Sheet when the Acceptance Test Procedure is approved and accepted as complete

2.2.3 The Operations Engineer is responsible for the following:

- Setting the safe boundaries for performing this procedure
- Ensuring plant configuration is in proper status for performing this procedure
- Signing for operations where applicable in this procedure.
- Performing a Post-Test Review of Acceptance Test documentation
- Obtaining concurrence from Tank Farm Shift Manager prior to commencing the test, or upon restart of testing after a temporary suspension of testing

2.2.4 The Operations Representative is responsible for the following:

- Ensuring that safe work boundaries for testing are complied with
- Coordinating all support craft and personnel in field with the Test Director and the Construction Engineer.
- Obtaining release of this ATP for field testing from shift office.
2.2 RESPONSIBILITIES (cont.)

2.2.5 The Test Director is responsible for the following:

- Coordination of all acceptance testing
- Signing the ATP Exception Record when a test exception has been resolved
- Preparing and issuing an Acceptance Test Report for the approved and accepted Acceptance Test Procedure when testing is completed.
- Scheduling and conducting a pre-test meeting with acceptance test participants prior to start of testing
- Notification of the persons performing and witnessing the test prior to the start of testing
- Notification of all concerned parties when a change is made in the testing schedule
- Acting as liaison between the participants in acceptance testing
- Stopping any test which may cause damage to the system until the Acceptance Test Procedure has been revised.
- Approving field changes to the Acceptance Test Procedure in accordance with Section 2.5.
- Obtaining revisions to the Acceptance Test Procedure, as necessary, to comply with authorized field changes or to accommodate existing field conditions in accordance with Section 2.5.
- Taking necessary actions to clear exceptions to the Acceptance Test Procedure
- Evaluating recorded data, discrepancies, and exceptions
- Signing Test Execution Sheet when this Acceptance Test Procedure has been performed
- Signing ATP Exception Record when a retest to clear an exception has been executed and accepted
- Obtaining required signatures on the Acceptance Test Procedure Working Copy prior to reproduction and distribution
2.2 RESPONSIBILITIES (cont.)

2.2.6 The Recorder is responsible for the following:
- Performing all recording duties using black ink
- Recording the names of all designated personnel on the Working Copy of this procedure prior to start of testing
- Observing tests, recording test data, and maintaining the ATP Performance Log
- Signing the Test Execution Sheet as the Recorder
- Initialing every test verification step requiring initials on the Working Copy of this Acceptance Test Procedure as that step is successfully performed, to indicate that Acceptance Criterion has been met
- Recording authorized field changes to this Acceptance Test Procedure
- Recording Test Exceptions and individual Test Procedure steps that are not performed satisfactorily on the ATP Exception Record and ensuring that the information is transferred (in ink or typed) to the master Working Copy of ATP Exception Record(s). Additional ATP Exception Records are to be added as needed
- Notifying the Test Director at the time any objection is made during performance of the Acceptance Test Procedure
- Submitting the completed master Working Copy of this Acceptance Test Procedure to the Test Director for approval signatures and distribution.

2.2.7 The Construction Engineer is responsible for the following:
- Ensuring all equipment required for performing this Acceptance Test Procedure listed in Section 4.1 will be available at the start of testing
- Obtaining from the NHC and LMHC Project Engineer any information or changes necessary to clear or resolve objections
- Coordinating field personnel and activities with the Test Director and Operations Representative
- Ensuring that field testing and inspection of the system or portion of the system to be tested has been completed prior to start of this ATP
- Providing technical input to test personnel as needed relating to the configuration of equipment and systems to be tested and utilized in this procedure.
- Post Review of Acceptance Test Documentation.
2.2 RESPONSIBILITIES (cont.)

2.2.8 Fluor Daniel Northwest Quality Assurance is responsible for the following:
- Review and approval of test exception resolutions
- Performing a Post-Test Review of Acceptance Test documentation
- Assisting Construction Engineer in Pre-Test verification of construction documentation (i.e. CWPs, submittals, receiving reports etc.

2.2.9 Lockheed Martin Quality Assurance is responsible for the following:
- Review and approval of test results
- Performing a Post-Test Review of Acceptance Test documentation

2.2.10 Fluor Daniel Hanford Authorized Inspector is responsible for the following:
- Witnessing test execution
- Approval and signature of acceptance upon completion of this procedure.

2.2.11 Industrial Health And Safety Tech. is responsible for the following:
- Monitor for toxic and combustible gases or vapors and report out of compliance levels to TWRS Industrial Hygiene technician
- Evaluate exposure potential using field data and according to HNF-SD-WM-HSP-002 or other industrial hygiene exposure prevention criteria and recording monitored levels in applicable steps in work package.

2.2.12 Quality Control is responsible for the following:
- Witness and signing, lift land records torquing, and the installation and removal of all temporary wiring and devices as applicable in this procedure.

2.3 RECORDS

2.3.1 The completed master "Working Copy" of this Acceptance Test Procedure, the completed "Test Execution Sheet", Acceptance test report, the completed "ATP Performance Log" and "ATP Exception Log", and all "Test Exception Sheets" generated during performance of this Acceptance Test Procedure, shall be kept as permanent records in accordance with HNF-PRO-232.
INSTRUCTIONS FOR WESTLOCK ACCUTRACK 1000, 2000, AND 106.

SUBMITTAL # M-314-C1-101A INSTALLATION AND OPERATING

EXTENSION

CONNECTIONS, KYANAR SEATS AND SEALS, AND PREPARED FOR STEM
ADJUST-0-SEAL BALL VALVE WITH BUILT WELD (SCH 40) PIPE

PMI, INC. DRAWING SPH-37-BW SP37-91142A, "2" SPH-37-2-WAY NON

EXTENSION

CONNECTIONS, KYANAR SEATS AND SEALS, AND PREPARED FOR STEM
ADJUST-0-SEAL BALL VALVE WITH BUILT WELD (SCH 40) PIPE

PMI, INC. DRAWING SPH-37-BW SP37-91142A, "2" SPH-37-2-WAY NON

2.4 REFERENCES (cont.)

STOP PIN & MOUNTING BRACKET (FLOW PATTERN #5)
1-PORT SIZE ENTRY NON-ADJUST-0-SEAL BALL VALVE W/ REINFORCED
PMI, INC. DRAWING MPH-77-BW MP77-91145A, "3" MPH-77-3-WAY

STOP PIN AND MOUNTING BRACKET (FLOW PATTERN #5)
1-PORT SIZE ENTRY NON-ADJUST-0-SEAL BALL VALVE WITH REINFORCED
PMI, INC. DRAWING MPH-77-BW MP77-91145A, "3" MPH-77-3-WAY

H-14-100988 INSTM FIELD TERMINAL BOX INTERCONNECTION DIAGRAM

H-14-100987 SHEET 3, "INSTM VALUE POSITION SWITCHES VALUE PIT B

INSTM FIELD TERMINAL BOX INTERCONNECTION DIAGRAM

H-14-100978 SHEETS 1-3, "INSTM VALUE POSITION SWITCHES LOOP

H-14-100978 SHEETS 1-3, "INSTM VALUE POSITION SWITCHES LOOP

H-14-100976 SHEETS 1 & 2, "VALUE ACTUATOR DETAILS

H-14-100976 SHEETS 1 & 2, "VALUE ACTUATOR DETAILS

H-14-100975 SHEET 2, "VALUE ACTUATOR ARRANGEMENT VALUE PIT

H-14-100970, "PIT COVER PAINTING DIAGRAM H-14-AN-B

H-14-100946, "JUMPER ARRANGEMENT VALUE PIT H-14-AN-B

H-14-100942, "P & ID VALUE PIT H-14-AN-B

The following documents were used to write or are referenced in this

2.4 REFERENCES

2.4 REFERENCES

2.4 REFERENCES
2.5 GENERAL INFORMATION

2.5.1 All steps in this Acceptance Test Procedure are performed at the 241-AN-B Valve Pit unless otherwise noted.

2.5.2 The OPEN or CLOSED position of a 2-way valve in the valve pit, is indicated at the valve operator, by the position of flow ports on decal on the round indicating disc, attached to the valve extension handle. (Ref. H-14-100976).

2.5.3 The three positions (A, B, and C) of a 3-way valve in the valve pit are indicated at the valve operator by the position of flow ports on decal on the round Indicating Disc attached to the valve extension handle (see H-14-100976).

2.5.4 ACCEPTANCE CRITERIA. All Test Procedure steps using the word VERIFY are considered Acceptance Criteria steps, and each must have successful execution indicated by having initials and the date entered in the provided space to be considered complete.

2.5.5 Valves are aligned such that the stripes on decal align with stripes on housing when valve is in the fully CLOCKWISE position: (Closed for Two-Way OR "C", or 180° for Three-Way).

2.5.6 All entries recorded in this procedure shall be made in black ink, except for those noted using the redline method.
2.5 GENERAL INFORMATION (Cont.)

2.5.7 Editorial changes to this procedure may be made by the Test Director and Cognizant Engineer per HNF-IP-0842, Vol I Sect. 2.11, "Technical Procedure Requirements", as long as the changes do not impact operational facility safety function or performance, and will not compromise or influence the test data. Any technical change must be made by ECN.

2.5.8 Acceptance Test steps detailed in individual Test Sections shall be performed sequentially, unless otherwise noted or as directed by the Test Director.

- Individual Test Sections may be performed out of sequence at the direction of the Test Director, if the intent of the test is not compromised.

- As required by subsection 2.2.6, as each step is completed, the Recorder will check off (or enter "N/A" for), or initial each Test step as required in the spaces provided on the Working Copy of this Acceptance Test Procedure.

- Any step that requires verification of data must also be recorded on the Working Copy.

2.5.9 Any non-conformance of the instrumentation, unexpected results or exceptions during testing shall be sequentially numbered and recorded in the ATP Exception Log and on individual ATP Exception Records. Thus, case-by-case resolution, recording, approval, and distribution of each exception will be achieved.

2.5.10 When an exception is identified during testing, initiate an ATP Exception Record in the following manner (an example of a test exception would be when the system, fabricated per the design media, does not perform as expected):

- Number each exception sequentially as it occurs and record it on the ATP Exception Log

- Enter the sequential exception number, Date, and a description of the exception on an ATP Exception Record; identify additional detail as required
2.5 GENERAL INFORMATION (Cont.)

- Enter the name and the organization of the initiator of the objecting party for each exception in the "Initiator Of Exception" section of the ATP Exception Record

- Enter a description of actions planned to resolve each exception on the ATP Exception Record when such a determination is made.

2.5.11 Resolve test exceptions in the following manner:

- Record the action taken to resolve each exception in the "Resolution of Exception" section of the ATP Exception Record (the action taken does not have to be the same as the recorded planned action).

- When the action taken results in an acceptable retest, initial and date the Correction Approval Section of the Exception Sheet.

- When the action taken does not result in an acceptable retest, provide a detailed explanation of why the retest action was not acceptable, and what additional plans are required. The explanation may include why the system should be Accepted-As-Is. The NHC Project Engineer then signs and dates the Resolution of Exception Section of the ATP Exception Record, and obtains any other approvals required.

- Distribute requisite copies of the completed ATP Exception Records to the client at the completion of the Acceptance Test Procedure.

2.5.12 Upon completion of the Acceptance Test Procedure, obtain approval of the test performance. The Acceptance Test will be complete when all the test sections have been performed, all test exceptions resolved, and the Acceptance Test Report is prepared. The test will be approved by checking the proper response, with or without exceptions, on the Test Execution Sheet under the "Approval and Acceptance of Test Results" Section of the Test Execution Sheet.

NOTE - The following three sections detail the conditions that may exist at the completion of the Acceptance Test Procedure, and the steps necessary to complete Procedure acceptance in those conditions:

2.5.13 The completed test may be approved without test exceptions.

- Check applicable space on Test Execution Sheet to show that the Acceptance Test Procedure has been performed and no exceptions have been recorded.

- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided.

- Distribute requisite copies as directed by the client.

- Send the Master Copy of the completed Acceptance Test Procedure to the client.
2.5 GENERAL INFORMATION (Cont.)

2.5.14 The completed test may be approved with exceptions resolved.

- Check applicable space on Test Execution Sheet to show that this procedure has been performed with exceptions recorded and resolved.
- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided.
- Distribute requisite copies as directed by the client.
- Send the Master Copy of the completed Acceptance Test Procedure to the client.

2.5.15 The completed test may be approved with exceptions outstanding.

- Check applicable space on Test Execution Sheet to show that this procedure has been performed with exceptions recorded, part or all of which are presently outstanding, unresolved.
- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided.
- Distribute requisite copies as directed by the client.
- Send the Master Copy of the completed Acceptance Test Procedure to the client.
- All outstanding exceptions shall be added to project punchlist.

2.5.16 It is the intent to perform this Acceptance Test Procedure uninterrupted from beginning to end. If testing is terminated due to time constraints at the end of an individual Test Section, the system will be placed in a safe configuration by the Test Director, with concurrence of the Operations Engineer, and the terminated test configuration noted in the ATP Performance Log. The test will restart at the next scheduled shift by establishing the noted test configuration, and documenting this in ATP Performance Log.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 PERSONNEL SAFETY

3.1.1 Individuals shall carry out their assigned work in a safe manner to protect themselves, others, and the equipment from undue hazards and to prevent damage to property and environment.

3.1.2 Operations Representative shall assure the safety of all activities within their areas to prevent injury, property damage, or interruption of operation.

3.1.3 Any hazard identified during the performance of the procedure shall be reported to the appropriate waste tank farm facility line manager.

3.1.4 Performance of test activities shall always include safety and health aspects as delineated in the Operations Manuals and as directed by the Test Director.

3.1.5 The primary safety concerns for the performance of this Acceptance Test Procedure are related to the force required to operate valve operator handwheel. Maintain proper body alignment at all times while operating valve handwheel.

3.2 RADIATION AND CONTAMINATION CONTROL

Work in Radiological Areas will be performed using an approved Radiation Work Permit, following review by Radiological Control per the ALARA Program (HNF-IP-0842, Volume VII, Section 1.1).
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies shall be available at the test site:

- Electrician protective gloves
- Electrician protective eyewear (goggles or face shield)
- Calibrated Volt Ohm Meter (Fluke)
- Long-shank lockout padlock
- Ruler, with minimum scale markings of 1/16 inch
- Fuse Puller
- Torquing Screwdriver (17-20 inch lbs)
- 24 volt dc Power Supply.

NOTE - Calibrated electrical test equipment data shall be recorded at the beginning of each individual test section.

4.2 PERFORMANCE DOCUMENTS

The following documents are required to be at the test site, before and during the performance of this procedure:

- HNF-4644, “241-AN-B VALVE PIT MANIFOLD VALVES ACCEPTANCE TEST PROCEDURE”.
- Manufacturers Specifications

4.3 CONSTRUCTION STATUS

4.3.1 All documentation and construction work is complete to the point of support for this ATP.

Construction Engineer Signature  Date
4.4.3 Test Director VERIFY that Section 4.0 has been completed by SIGNING below.

Date__

Test Director Signature__

4.4.2 Test Director VERIFY that 241-AN-A valve pit is isolated from all other transfer routes by SIGNING below.

Date__

Test Director Signature__

4.4.1 A pre-job briefing has been held, and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this AFP.

NOTE: The following shall be documented on AFP performance log daily if test is stopped and continued or if personnel changes during the following conditions must be met before this acceptance test procedure.

4.4 CONDITIONS AND ACTIONS
5.0 TEST PROCEDURES

5.1 TEST 2-WAY VALVES

5.1.1 TEST 2-inch valve ANB-WT-V-204.

5.1.1.1 RECORD calibrated electrical test equipment data below.

<table>
<thead>
<tr>
<th>TOOL NAME</th>
<th>ID. NUMBER</th>
<th>CAL DUE DATE</th>
<th>INITIAL/DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.1.1.2 ENSURE that ANB-WT-V-204 is CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.1.3 VERIFY the indicator line is oriented to BLOCK flow from ANB-WT-V-203 to 2-inch Connector "R5".

Test Director Initial / Date

5.1.1.4 VERIFY the indicator line is lined up with the correct reference pins for the CLOSED position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

Test Director Initial / Date

5.1.1.5 PLACE the long-shank padlock through the locking device in the ANB-WT-V-204 handwheel.

5.1.1.6 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.1.1.7 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.1.1.5.

5.1.1.8 REMOVE the cover from ANB-WT-V-204 valve position sensor assembly.

5.1.1.9 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.

5.1.1.10 POSITION ANB-WT-V-204 OPEN by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.1.11 VERIFY the indicator line is oriented to show FLOW from ANB-WT-V-203 to 2-inch blank Connector "R5".

Test Director Initial / Date

5.1.1.12 VERIFY the indicator line is lined up with the correct reference pins for the FLOW THROUGH position, AND within the RED area on the decal.

Test Director Initial / Date

5.1.1.13 PLACE the long shank padlock through the locking device in the ANB-WT-V-204 handwheel.

5.1.1.14 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.1.1.15 REMOVE the long-shank padlock that was placed on the handwheel.

5.1.1.16 ADJUST the bottom CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.1.1.17 ENSURE top CAM is NOT positioned at the non-contact switch for valve position A when in position B.

5.1.1.18 VERIFY installation of positive jumpers located within the valve position sensor terminal block. Reference drawing No. H-14-100987, sh 1, for positive lead jumper locations.

Test Director Initial / Date

5.1.1.19 APPLY 24 volts dc to Terminal TB-DC4-4 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.1.20 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-68 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ______________

5.1.1.21 VERIFY the voltage recorded in Step 5.1.1.20 is at a nominal voltage of "24" Volts dc.

Test Director Initial Date

5.1.1.22 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-67 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ______________

5.1.1.23 VERIFY the voltage recorded in Step 5.1.1.22 is at a nominal voltage of "0" Volts dc.

Test Director Initial Date

5.1.1.24 POSITION ANB-WT-V-204 CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.1.25 VERIFY that ANB-WT-V-204 valve operator position indicator is oriented to BLOCK flow from ANB-WT-V-203 to 2-inch Connector "R5".

Test Director Initial Date

5.1.1.26 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-68 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ______________

5.1.1.27 VERIFY the voltage recorded in Step 5.1.1.26 is at a nominal voltage of "0" Volts dc.

Test Director Initial Date
5.1.33 VERIFY by signing below that test 5.1 is complete.

<table>
<thead>
<tr>
<th>Close</th>
<th>Open</th>
</tr>
</thead>
</table>

5.1.32 RECORD the final position for valve and M1-Y-204 below.

5.1.31 POSITION valve and M1-Y-204 as directed by the Test Director.

5.1.30 REPLACE limit switch cover and tighten bolts in preparation for torque.

**NOTE**:
The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this APP and GC.

Shall verify, the torque value will be between 17 and 20 inch lbs. Voltage of 24VDC. Verify the voltage recorded in step 5.1.28 is at a nominal voltage of the negative terminal on the 24 volt DC power supply.

5.1.28 MEASURE AND RECORD the voltage between Terminals TB-DC1-67 and

Printed on: Jun 9, 99 9:06 am
5.1 TEST 2-WAY VALVES (Cont.)

5.1.2 TEST 2-inch valve ANB-WT-V-206.

5.1.2.1 RECORD calibrated electrical test equipment data below.

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</table>

5.1.2.2 ENSURE that ANB-WT-V-206 is CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.2.3 VERIFY the indicator line is oriented to BLOCK flow from ANB-WT-V-205 to 2-inch Connector "R7".

\[
\text{Test Director Initial} \quad / \quad \text{Date}
\]

5.1.2.4 VERIFY the indicator line is lined up with the correct reference pins for the CLOSED position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

\[
\text{Test Director Initial} \quad / \quad \text{Date}
\]

5.1.2.5 PLACE the long-shank padlock through the locking device in the ANB-WT-V-206 handwheel.

5.1.2.6 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

\[
\text{Test Director Initial} \quad / \quad \text{Date}
\]

5.1.2.7 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.1.2.5.

5.1.2.8 REMOVE the cover from ANB-WT-V-206 valve position sensor assembly.

5.1.2.9 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.

5.1.2.10 POSITION ANB-WT-V-206 OPEN by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.
5.1.2.12 VERIFY the indicator line is aligned with the correct reference area on the decal.

5.1.2.12 VERIFY the indicator line is oriented to show flow from AND-WT-Y-205 to 2-inch blank connector "FR".

5.1.2.13 PLACE the long-shank padlock through the locking device in the

5.1.2.13 PLACE the long-shank padlock through the locking device in the

5.1.2.14 VERIFY that the limited movement of the handwheel does NOT cause

5.1.2.14 VERIFY that the limited movement of the handwheel does NOT cause

5.1.2.15 REMOVE the long-shank padlock that was placed on the handwheel.

5.1.2.15 REMOVE the long-shank padlock that was placed on the handwheel.

5.1.2.17 ENSURE top CAM is NOT positioned at the non-contact switch for

5.1.2.17 ENSURE top CAM is NOT positioned at the non-contact switch for

5.1.2.18 VERIFY installation of positive jumpers located within the value

5.1.2.18 VERIFY installation of positive jumpers located within the value

5.1.2.19 APPLY 24 Volts dc to Terminal TB-DC-6 in Field Terminal Box

5.1.2.19 APPLY 24 Volts dc to Terminal TB-DC-6 in Field Terminal Box

Date ____________ / ____________ Director Initials

Date ____________ / ____________ Director Initials

5.1.2.18 VERIFY installation of positive jumpers located within the value

5.1.2.18 VERIFY installation of positive jumpers located within the value

100987, sh l, for positive lead jumper locations.

100987, sh l, for positive lead jumper locations.

5.1.2.12 VERIFY installation of positive jumpers located within the value

5.1.2.12 VERIFY installation of positive jumpers located within the value

Date ____________ / ____________ Director Initials

Date ____________ / ____________ Director Initials

5.1.2.17 ENSURE top CAM is NOT positioned at the non-contact switch for

5.1.2.17 ENSURE top CAM is NOT positioned at the non-contact switch for

5.1.2.18 VERIFY installation of positive jumpers located within the value

5.1.2.18 VERIFY installation of positive jumpers located within the value

Date ____________ / ____________ Director Initials

Date ____________ / ____________ Director Initials

5.1.2.19 APPLY 24 Volts dc to Terminal TB-DC-6 in Field Terminal Box

5.1.2.19 APPLY 24 Volts dc to Terminal TB-DC-6 in Field Terminal Box

Date ____________ / ____________ Director Initials

Date ____________ / ____________ Director Initials

5.1.2.18 VERIFY installation of positive jumpers located within the value

5.1.2.18 VERIFY installation of positive jumpers located within the value

Date ____________ / ____________ Director Initials

Date ____________ / ____________ Director Initials
5.1 TEST 2-WAY VALVES (Cont.)

5.1.2.20 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-73 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.2.21 VERIFY the voltage recorded in Step 5.1.2.20 is at a nominal voltage of "24" Volts dc.

__/__
Test Director Initial / Date

5.1.2.22 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-72 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.2.23 VERIFY the voltage recorded in Step 5.1.2.22 is at a nominal voltage of "0" Volts dc.

__/__
Test Director Initial / Date

5.1.2.24 POSITION ANB-WT-V-206 CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.2.25 VERIFY that ANB-WT-V-206 valve operator position indicator is oriented to BLOCK flow from ANB-WT-V-205 to 2-inch Connector "R7".

__/__
Test Director Initial / Date

5.1.2.26 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-73 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.2.27 VERIFY the voltage recorded in Step 5.1.2.26 is at a nominal voltage of "0" Volts dc.

__/__
Test Director Initial / Date
5.1 TEST 2-WAY VALVES (Cont.)

5.1.2.28 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-72 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ________

5.1.2.29 VERIFY the voltage recorded in Step 5.1.2.28 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.1.2.30 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.

5.1.2.31 POSITION valve ANB-WT-V-206 as directed by the Test Director.

5.1.2.32 RECORD the final position for valve ANB-WT-V-206 below.

5.1.2.33 VERIFY by signing below that test 5.1.2 is complete.

Test Director Signature ____________________ Date ___________

Operations Signature ____________________ Date ___________

REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.

POSITION valve ANB-WT-V-206 as directed by the Test Director.

RECORD the final position for valve ANB-WT-V-206 below.

VERIFY by signing below that test 5.1.2 is complete.

Test Director Signature ____________________ Date ___________

Operations Signature ____________________ Date ___________

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5.1 TEST 2-WAY VALVES (Cont.)

5.1.3 TEST 2-inch valve ANB-WT-V-208.

5.1.3.1 RECORD calibrated electrical test equipment data below.

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</table>

__5.1.3.2__ ENSURE that ANB-WT-V-208 is CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

__5.1.3.3__ VERIFY the indicator line is oriented to BLOCK flow from ANB-WT-V-207 to 2-inch Connector "R9".

Test Director Initial / Date

__5.1.3.4__ VERIFY the indicator line is lined up with the correct reference pins for the CLOSED position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

Test Director Initial / Date

__5.1.3.5__ PLACE the long-shank padlock through the locking device in the ANB-WT-V-208 handwheel.

__5.1.3.6__ VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

__5.1.3.7__ REMOVE the long-shank padlock that was placed on the handwheel in Step 5.1.3.5.

__5.1.3.8__ REMOVE the cover from ANB-WT-V-208 valve position sensor assembly.

__5.1.3.9__ ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.

__5.1.3.10__ POSITION ANB-WT-V-208 OPEN by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.3.11 VERIFY the indicator line is oriented to show FLOW from ANB-WT-V-207 to 2-inch blank Connector "R9".

Test Director Initial / Date

5.1.3.12 VERIFY the indicator line is lined up with the correct reference pins for the FLOW THROUGH position, AND within the RED area on the decal.

Test Director Initial / Date

5.1.3.13 PLACE the long shank padlock through the locking device in the ANB-WT-V-208 handwheel.

5.1.3.14 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.1.3.15 REMOVE the long-shank padlock that was placed on the handwheel.

5.1.3.16 ADJUST the bottom CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.1.3.17 ENSURE top CAM is NOT positioned at the non-contact switch for valve position A when in position B.

5.1.3.18 VERIFY installation of positive jumpers located within the valve position sensor terminal block. Reference drawing No. H-14-100987, sh 1, for positive lead jumper locations.

Test Director Initial / Date

5.1.3.19 APPLY 24 volts dc to Terminal TB-DC4-8 in Field Terminal Box ANZ41-WT-TBX-101, using the 24 vdc power supply.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.3.20 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-78 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE __________

5.1.3.21 VERIFY the voltage recorded in Step 5.1.3.20 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.1.3.22 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-77 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE __________

5.1.3.23 VERIFY the voltage recorded in Step 5.1.3.22 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.1.3.24 POSITION ANB-WT-V-208 CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.3.25 VERIFY that ANB-WT-V-208 valve operator position indicator is oriented to BLOCK flow from ANB-WT-V-207 to 2-inch Connector "R9".

Test Director Initial / Date

5.1.3.26 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-78 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE __________

5.1.3.27 VERIFY the voltage recorded in Step 5.1.3.26 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date
### 6-17 TEST-2 WAY VALVES (Cont.)

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<table>
<thead>
<tr>
<th>Date</th>
<th>Test Director Signature</th>
</tr>
</thead>
<tbody>
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</table>

5-1-3-33 **VERIFY** by signing below that test 5-1-3 is complete.

<p>| | |</p>
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</tr>
<tr>
<td>/</td>
<td>/</td>
</tr>
</tbody>
</table>

5-1-3-32 RECORD the final position for valve ANB-MT-V-208 below.

5-1-3-31 POSITION valve ANB-MT-V-208 as directed by the Test Director.

5-1-3-30 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.

**NOTE -** The next step prepares limit switch cover for torquing. All values will be torqued at one time at end of this A/P and O/C.

5-1-3-29 MEASURE the voltage recorded in Step 5-1-3-28 is at a nominal voltage of 14.4 volts dc.

5-1-3-28 MEASURE AND RECORD the voltage between terminal TB-DCL-77 and the NEGATIVE terminal on the 24 volt dc power supply.

Printed on: Jul 9, 99 9:06 AM

CONTROLLED COPY
5.1 TEST 2-WAY VALVES (Cont.)

5.1.4 TEST 2-inch valve ANB-WT-V-803.

5.1.4.1 RECORD calibrated electrical test equipment data below.

ELECTRICAL TEST EQUIPMENT DATA TABLE

<table>
<thead>
<tr>
<th>TOOL NAME</th>
<th>ID. NUMBER</th>
<th>CAL DUE DATE</th>
<th>INITIAL/DATE</th>
</tr>
</thead>
</table>

5.1.4.2 ENSURE that ANB-WT-V-803 is CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.4.3 VERIFY the indicator line is oriented to BLOCK flow from ANB-WT-V-203 to 2-inch Connector "R20".

Test Director Initial / Date

5.1.4.4 VERIFY the indicator line is lined up with the correct reference pins for the CLOSED position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

Test Director Initial / Date

5.1.4.5 PLACE the long-shank padlock through the locking device in the ANB-WT-V-803 handwheel.

5.1.4.6 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.1.4.7 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.1.4.5.

5.1.4.8 REMOVE the cover from ANB-WT-V-803 valve position sensor assembly.

5.1.4.9 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.

5.1.4.10 POSITION ANB-WT-V-803 OPEN by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.4.11 VERIFY the indicator line is oriented to show FLOW from ANB-WT-V-203 to 2-inch Connector "R20".

---

5.1.4.12 VERIFY the indicator line is lined up with the correct reference pins for the FLOW THROUGH position, AND within the RED area on the decal.

---

5.1.4.13 PLACE the long shank padlock through the locking device in the ANB-WT-V-803 handwheel.

---

5.1.4.14 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

---

5.1.4.15 REMOVE the long-shank padlock that was placed on the handwheel.

---

5.1.4.16 ADJUST the bottom CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

---

5.1.4.17 ENSURE top CAM is NOT positioned at the non-contact switch for valve position A when in position B.

---

5.1.4.18 VERIFY installation of positive jumpers located within the valve position sensor terminal block. Reference drawing No. H-14-100987, sh 1, for positive lead jumper locations.

---

5.1.4.19 APPLY 24 volts dc to Terminal TB-DC4-46 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.4.20 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-11 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ___________

5.1.4.21 VERIFY the voltage recorded in Step 5.1.4.20 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.1.4.22 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-10 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ___________

5.1.4.23 VERIFY the voltage recorded in Step 5.1.4.22 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.1.4.24 POSITION ANB-WT-V-803 CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.4.25 VERIFY that ANB-WT-V-803 valve operator position indicator is oriented to BLOCK flow from ANB-WT-V-203 to 2-inch Connector "R20".

Test Director Initial / Date

5.1.4.26 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-11 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ___________

5.1.4.27 VERIFY the voltage recorded in Step 5.1.4.26 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date
5.1 TEST 2-WAY VALVES (Cont.)

5.1.4.28 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-10 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.1.4.29 VERIFY the voltage recorded in Step 5.1.4.28 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC. Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.1.4.30 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.

5.1.4.31 POSITION valve ANB-WT-V-803 as directed by the Test Director.

5.1.4.32 RECORD the final position for valve ANB-WT-V-803 below.

5.1.4.33 VERIFY by signing below that test 5.1.4 is complete.

Test Director Signature Date

Operations Signature Date
5.1 TEST 2-WAY VALVES (Cont.)

5.1.5 TEST 3-inch valve ANB-WT-V-213.

5.1.5.1 RECORD calibrated electrical test equipment data below.

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</table>

5.1.5.2 ENSURE that ANB-WT-V-213 is CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.5.3 VERIFY the indicator line is oriented to BLOCK flow from ANB-WT-V-214 to 3-inch Connector "R14".

Test Director Initial / Date

5.1.5.4 VERIFY the indicator line is lined up with the correct reference pins for the CLOSED position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

Test Director Initial / Date

5.1.5.5 PLACE the long-shank padlock through the locking device in the ANB-WT-V-213 handwheel.

5.1.5.6 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.1.5.7 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.1.5.5.

5.1.5.8 REMOVE the cover from ANB-WT-V-213 valve position sensor assembly.

5.1.5.9 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.

5.1.5.10 POSITION ANB-WT-V-213 OPEN by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.5.11 VERIFY the indicator line is oriented to show FLOW from ANB-WT-V-214 to 3-inch blank Connector “R14”.

Test Director Initial / Date

5.1.5.12 VERIFY the indicator line is lined up with the correct reference pins for the FLOW THROUGH position, AND within the RED area on the decal.

Test Director Initial / Date

5.1.5.13 PLACE the long shank padlock through the locking device in the ANB-WT-V-213 handwheel.

5.1.5.14 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.1.5.15 REMOVE the long-shank padlock that was placed on the handwheel.

5.1.5.16 ADJUST the bottom CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.1.5.17 ENSURE top CAM is NOT positioned at the non-contact switch for valve position A when in position B.

5.1.5.18 VERIFY installation of positive jumpers located within the valve position sensor terminal block. Reference drawing No. H-14-100987, sh 1, for positive lead jumper locations.

Test Director Initial / Date

5.1.5.19 APPLY 24 volts dc to Terminal TB-DC4-12 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.5.20 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-87 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.5.21 VERIFY the voltage recorded in Step 5.1.5.20 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.1.5.22 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-86 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.5.23 VERIFY the voltage recorded in Step 5.1.5.22 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.1.5.24 POSITION ANB-WT-V-213 CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.5.25 VERIFY that ANB-WT-V-213 valve operator position indicator is oriented to BLOCK flow from ANB-WT-V-214 to 3-inch Connector "R14".

Test Director Initial / Date

5.1.5.26 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-87 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.5.27 VERIFY the voltage recorded in Step 5.1.5.26 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date
5.1 TEST 2-WAY VALVES (Cont.)

5.1.5.28 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-86 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.5.29 VERIFY the voltage recorded in Step 5.1.5.28 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.1.5.30 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.

5.1.5.31 POSITION valve ANB-WT-V-213 as directed by the Test Director.

5.1.5.32 RECORD the final position for valve ANB-WT-V-213 below.

![OPEN / CLOSED]

5.1.5.33 VERIFY by signing below that test 5.1.5 is complete.

Test Director Signature Date

Operations Signature Date
5.1 TEST 2-WAY VALVES (Cont.)

5.1.6 TEST 3-inch valve ANB-WT-V-215.

5.1.6.1 RECORD calibrated electrical test equipment data below.

**ELECTRICAL TEST EQUIPMENT DATA TABLE**

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</table>

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5.1.6.2 ENSURE that ANB-WT-V-215 is CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.6.3 VERIFY the indicator line is oriented to BLOCK flow from ANB-WT-V-214 to 3-inch Connector "R15".

---

**Test Director Initial** / **Date**

---

5.1.6.4 VERIFY the indicator line is lined up with the correct reference pins for the CLOSED position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

---

**Test Director Initial** / **Date**

---

5.1.6.5 PLACE the long-shank padlock through the locking device in the ANB-WT-V-215 handwheel.

---

5.1.6.6 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

---

**Test Director Initial** / **Date**

---

5.1.6.7 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.1.6.5.

---

5.1.6.8 REMOVE the cover from ANB-WT-V-215 valve position sensor assembly.

---

5.1.6.9 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.

---

5.1.6.10 POSITION ANB-WT-V-215 OPEN by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.6.11 VERIFY the indicator line is oriented to show FLOW from ANB-WT-V-214 to 3-inch blank Connector “R15”.

Test Director Initial / Date

5.1.6.12 VERIFY the indicator line is lined up with the correct reference pins for the FLOW THROUGH position, AND within the RED area on the decal.

Test Director Initial / Date

5.1.6.13 PLACE the long shank padlock through the locking device in the ANB-WT-V-215 handwheel.

5.1.6.14 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.1.6.15 REMOVE the long-shank padlock that was placed on the handwheel.

5.1.6.16 ADJUST the bottom CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.1.6.17 ENSURE top CAM is NOT positioned at the non-contact switch for valve position A when in position B.

5.1.6.18 VERIFY installation of positive jumpers located within the valve position sensor terminal block. Reference drawing No. H-14-100987, sh 1, for positive lead jumper locations.

Test Director Initial / Date

5.1.6.19 APPLY 24 volts dc to Terminal TB-DC4-14 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.6.20 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-92 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.6.21 VERIFY the voltage recorded in Step 5.1.6.20 is at a nominal voltage of "24" Volts dc.

_________________________________________ / ____________________
Test Director Initial                      Date

5.1.6.22 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-91 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.6.23 VERIFY the voltage recorded in Step 5.1.6.22 is at a nominal voltage of "0" Volts dc.

_________________________________________ / ____________________
Test Director Initial                      Date

5.1.6.24 POSITION ANB-WT-V-215 CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.6.25 VERIFY that ANB-WT-V-215 valve operator position indicator is oriented to BLOCK flow from ANB-WT-V-214 to 3-inch Connector "R15".

_________________________________________ / ____________________
Test Director Initial                      Date

5.1.6.26 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-92 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.6.27 VERIFY the voltage recorded in Step 5.1.6.26 is at a nominal voltage of "0" Volts dc.

_________________________________________ / ____________________
Test Director Initial                      Date
5.1 TEST 2-WAY VALVES (Cont.)

5.1.6.28 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DCI-91 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ______________________

5.1.6.29 VERIFY the voltage recorded in Step 5.1.6.28 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.1.6.30 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.

5.1.6.31 POSITION valve ANB-WT-V-215 as directed by the Test Director.

5.1.6.32 RECORD the final position for valve ANB-WT-V-215 below.

<table>
<thead>
<tr>
<th>OPEN</th>
<th>CLOSED</th>
</tr>
</thead>
</table>

5.1.6.33 VERIFY by signing below that test 5.1.6 is complete.

Test Director Signature __________________ Date ______________

Operations Signature __________________ Date ______________
5.1 TEST 2-WAY VALVES (Cont.)

5.1.7 TEST 3-inch valve ANB-WT-V-217.

5.1.7.1 RECORD calibrated electrical test equipment data below.

<table>
<thead>
<tr>
<th>TOOL NAME</th>
<th>ID. NUMBER</th>
<th>CAL DUE DATE</th>
<th>INITIAL/DATE</th>
</tr>
</thead>
</table>

5.1.7.2 ENSURE that ANB-WT-V-217 is CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.7.3 VERIFY the indicator line is oriented to BLOCK flow from ANB-WT-V-216 to 3-inch Connector "R16".

Test Director Initial / Date

5.1.7.4 VERIFY the indicator line is lined up with the correct reference pins for the CLOSED position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

Test Director Initial / Date

5.1.7.5 PLACE the long-shank padlock through the locking device in the ANB-WT-V-217 handwheel.

5.1.7.6 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.1.7.7 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.1.7.5.

5.1.7.8 REMOVE the cover from ANB-WT-V-217 valve position sensor assembly.

5.1.7.9 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.

5.1.7.10 POSITION ANB-WT-V-217 OPEN by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.7.11 VERIFY the indicator line is oriented to show FLOW from ANB-WT-V-216 to 3-inch blank Connector "R16".

  Test Director Initial / Date

5.1.7.12 VERIFY the indicator line is lined up with the correct reference pins for the FLOW THROUGH position, AND within the RED area on the decal.

  Test Director Initial / Date

5.1.7.13 PLACE the long shank padlock through the locking device in the ANB-WT-V-217 handwheel.

5.1.7.14 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

  Test Director Initial / Date

5.1.7.15 REMOVE the long-shank padlock that was placed on the handwheel.

5.1.7.16 ADJUST the bottom CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.1.7.17 ENSURE top CAM is NOT positioned at the non-contact switch for valve position A when in position B.

5.1.7.18 VERIFY installation of positive jumpers located within the valve position sensor terminal block. Reference drawing No. H-14-100987, sh 1, for positive lead jumper locations.

  Test Director Initial / Date

5.1.7.19 APPLY 24 volts dc to Terminal TB-DC4-16 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.
5.1 TEST 2-WAY VALVES (Cont.)

- **5.1.7.20** MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-97 AND the NEGATIVE Terminal on the 24 volt dc power supply.
  
  VOLTAGE ____________

- **5.1.7.21** VERIFY the voltage recorded in Step 5.1.7.20 is at a nominal voltage of "24" Volts dc.

  Test Director Initial / Date

- **5.1.7.22** MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-96 AND the NEGATIVE Terminal on the 24 volt dc power supply.
  
  VOLTAGE ____________

- **5.1.7.23** VERIFY the voltage recorded in Step 5.1.7.22 is at a nominal voltage of "0" Volts dc.

  Test Director Initial / Date

- **5.1.7.24** POSITION ANB-WT-V-217 CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

- **5.1.7.25** VERIFY that ANB-WT-V-217 valve operator position indicator is oriented to BLOCK flow from ANB-WT-V-216 to 3-inch Connector "R16".

  Test Director Initial / Date

- **5.1.7.26** MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-97 AND the NEGATIVE Terminal on the 24 volt dc power supply.
  
  VOLTAGE ____________

- **5.1.7.27** VERIFY the voltage recorded in Step 5.1.7.26 is at a nominal voltage of "0" Volts dc.

  Test Director Initial / Date
5.1 TEST 2-WAY VALVES (Cont.)

5.1.7.28 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-96 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE __________________

5.1.7.29 VERIFY the voltage recorded in Step 5.1.7.28 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.1.7.30 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.

5.1.7.31 POSITION valve ANB-WT-V-217 as directed by the Test Director.

5.1.7.32 RECORD the final position for valve ANB-WT-V-217 below.

<table>
<thead>
<tr>
<th>OPEN</th>
<th>CLOSED</th>
</tr>
</thead>
</table>

5.1.7.33 VERIFY by signing below that test 5.1.7 is complete.

Test Director Signature Date

Operations Signature Date
5.1 TEST 2-WAY VALVES (Cont.)

5.1.8 TEST 3-inch valve ANB-WT-V-219.

5.1.8.1 RECORD calibrated electrical test equipment data below.

ELECTRICAL TEST EQUIPMENT DATA TABLE

<table>
<thead>
<tr>
<th>TOOL NAME</th>
<th>ID. NUMBER</th>
<th>CAL DUE DATE</th>
<th>INITIAL/DATE</th>
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</tr>
</tbody>
</table>

5.1.8.2 ENSURE that ANB-WT-V-219 is CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.8.3 VERIFY the indicator line is oriented to BLOCK flow from ANB-WT-V-218 to 3-inch Connector "R19".

Test Director Initial / Date

5.1.8.4 VERIFY the indicator line is lined up with the correct reference pins for the CLOSED position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

Test Director Initial / Date

5.1.8.5 PLACE the long-shank padlock through the locking device in the ANB-WT-V-219 handwheel.

5.1.8.6 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.1.8.7 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.1.8.5.

5.1.8.8 REMOVE the cover from ANB-WT-V-219 valve position sensor assembly.

5.1.8.9 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.

5.1.8.10 POSITION ANB-WT-V-219 OPEN by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.
5.1 TEST 2-WAY VALVES (Cont.)

____ 5.1.8.11 VERIFY the indicator line is oriented to show FLOW from ANB-WT-V-218 to 3-inch blank Connector "R19".

<table>
<thead>
<tr>
<th>Test Director Initial</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
</tbody>
</table>

____ 5.1.8.12 VERIFY the indicator line is lined up with the correct reference pins for the FLOW THROUGH position, AND within the RED area on the decal.

<table>
<thead>
<tr>
<th>Test Director Initial</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

____ 5.1.8.13 PLACE the long shank padlock through the locking device in the ANB-WT-V-219 handwheel.

____ 5.1.8.14 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

<table>
<thead>
<tr>
<th>Test Director Initial</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

____ 5.1.8.15 REMOVE the long-shank padlock that was placed on the handwheel.

____ 5.1.8.16 ADJUST the bottom CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

____ 5.1.8.17 ENSURE top CAM is NOT positioned at the non-contact switch for valve position A when in position B.

____ 5.1.8.18 VERIFY installation of positive jumpers located within the valve position sensor terminal block. Reference drawing No. H-14100987, sh 1, for positive lead jumper locations.

<table>
<thead>
<tr>
<th>Test Director Initial</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

____ 5.1.8.19 APPLY 24 volts dc to Terminal TB-DC4-18 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.

____ 5.1.8.20 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-2 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________
5.1 TEST 2-WAY VALVES (Cont.)

5.1.8.21 VERIFY the voltage recorded in Step 5.1.8.20 is at a nominal voltage of "24" Volts dc.

<table>
<thead>
<tr>
<th>Test Director Initial</th>
<th>Date</th>
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</thead>
</table>

5.1.8.22 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-1 AND the NEGATIVE Terminal on the 24 volt dc power supply.

<table>
<thead>
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<th>VOLTAGE</th>
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5.1.8.23 VERIFY the voltage recorded in Step 5.1.8.22 is at a nominal voltage of "0" Volts dc.

<table>
<thead>
<tr>
<th>Test Director Initial</th>
<th>Date</th>
</tr>
</thead>
</table>

5.1.8.24 POSITION ANB-WT-V-219 CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.8.25 VERIFY that ANB-WT-V-219 valve operator position indicator is oriented to BLOCK flow from ANB-WT-V-218 to 3-inch Connector "R19".

<table>
<thead>
<tr>
<th>Test Director Initial</th>
<th>Date</th>
</tr>
</thead>
</table>

5.1.8.26 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-2 AND the NEGATIVE Terminal on the 24 volt dc power supply.

<table>
<thead>
<tr>
<th>VOLTAGE</th>
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</thead>
</table>

5.1.8.27 VERIFY the voltage recorded in Step 5.1.8.26 is at a nominal voltage of "0" Volts dc.

<table>
<thead>
<tr>
<th>Test Director Initial</th>
<th>Date</th>
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</thead>
</table>

5.1.8.28 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-1 AND the NEGATIVE Terminal on the 24 volt dc power supply.

<table>
<thead>
<tr>
<th>VOLTAGE</th>
<th></th>
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</thead>
</table>
5.1.8.33 VERIFY by signing below that Test 5.1.8 is complete.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed</td>
<td>Open</td>
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</tbody>
</table>

5.1.8.32 RECORD the final position for Valve AND-MT-V-219 below.

5.1.8.31 POSITION Valve AND-MT-V-219 as directed by the Test Director.

5.1.8.30 REPLACE Limit switch cover and tighten bolts in preparation for torque.

NOTE - The next step prepares Limit switch cover for torqueing. All Shutoff values shall be between 17 and 20 inch lbs. Shutoff value will be torqued at one time at end of this AFP and 0C. Voltage of 24" Volts dc. Verify the voltage recorded in Step 5.1.8.28 is at a nominal.

Date / Initial /
5.1 TEST 2-WAY VALVES (Cont.)

5.1.9 TEST 3-inch valve ANB-WT-V-221.

5.1.9.1 RECORD calibrated electrical test equipment data below.

ELECTRICAL TEST EQUIPMENT DATA TABLE

<table>
<thead>
<tr>
<th>TOOL NAME</th>
<th>ID. NUMBER</th>
<th>CAL DUE DATE</th>
<th>INITIAL/DATE</th>
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<td></td>
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<tr>
<td></td>
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</tr>
</tbody>
</table>

5.1.9.2 ENSURE that ANB-WT-V-221 is CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.9.3 VERIFY the indicator line is oriented to BLOCK flow from ANB-WT-V-218 to 3-inch blank Connector "D".

5.1.9.4 VERIFY the indicator line is lined up with the correct reference pins for the CLOSED position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

5.1.9.5 PLACE the long-shank padlock through the locking device in the ANB-WT-V-221 handwheel.

5.1.9.6 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

5.1.9.7 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.1.9.5.

5.1.9.8 REMOVE the cover from ANB-WT-V-221 valve position sensor assembly.

5.1.9.9 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.

5.1.9.10 POSITION ANB-WT-V-221 OPEN by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.9.11 VERIFY the indicator line is oriented to show FLOW from ANB-WT-V-218 to 3-inch blank Connector “D”.

_________________________ / ____________
Test Director Initial Date

5.1.9.12 VERIFY the indicator line is lined up with the correct reference pins for the FLOW THROUGH position, AND within the RED area on the decal.

_________________________ / ____________
Test Director Initial Date

5.1.9.13 PLACE the long shank padlock through the locking device in the ANB-WT-V-221 handwheel.

5.1.9.14 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

_________________________ / ____________
Test Director Initial Date

5.1.9.15 REMOVE the long-shank padlock that was placed on the handwheel.

5.1.9.16 ADJUST the bottom CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.1.9.17 ENSURE top CAM is NOT positioned at the non-contact switch for valve position A when in position B.

5.1.9.18 VERIFY installation of positive jumpers located within the valve position sensor terminal block. Reference drawing No. H-14-100987, sh 1, for positive lead jumper locations.

_________________________ / ____________
Test Director Initial Date

5.1.9.19 APPLY 24 volts dc to Terminal TB-DC4-20 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.9.20 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-7 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.9.21 VERIFY the voltage recorded in Step 5.1.9.20 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.1.9.22 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-6 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.9.23 VERIFY the voltage recorded in Step 5.1.9.22 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.1.9.24 POSITION ANB-WT-V-221 CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.9.25 VERIFY that ANB-WT-V-221 valve operator position indicator is oriented to BLOCK flow from ANB-WT-V-218 to 3-inch BLANK Connector "D".

Test Director Initial / Date

5.1.9.26 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-7 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.9.27 VERIFY the voltage recorded in Step 5.1.9.26 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date
5.1 TEST 2-WAY VALVES (Cont.)

5.1.9.28 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC2-6 AND the NEGATIVE Terminal on the 24 volt dc power supply.

   VOLTAGE ________________

5.1.9.29 VERIFY the voltage recorded in Step 5.1.9.28 is at a nominal voltage of "24" Volts dc.

   Test Director Initial / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.1.9.30 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.

5.1.9.31 POSITION valve ANB-WT-V-221 as directed by the Test Director.

5.1.9.32 RECORD the final position for valve ANB-WT-V-221 below.

   OPEN   CLOSED

5.1.9.33 VERIFY by signing below that test 5.1.9 is complete.

   Test Director Signature             Date

   Operations Signature               Date
5.1 TEST 2-WAY VALVES (Cont.)

5.1.10 TEST 2-inch valve ANB-WT-V-209.

5.1.10.1 RECORD calibrated electrical test equipment data below.

**ELECTRICAL TEST EQUIPMENT DATA TABLE**

<table>
<thead>
<tr>
<th>TOOL NAME</th>
<th>ID. NUMBER</th>
<th>CAL DUE DATE</th>
<th>INITIAL/DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.1.10.2 ENSURE that ANB-WT-V-209 is CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.10.3 VERIFY the indicator line is oriented to BLOCK flow from Blank Connector "C" to Valve "ANB-WT-V-207".

Test Director Initial / Date

5.1.10.4 VERIFY the indicator line is lined up with the correct reference pins for the CLOSED position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

Test Director Initial / Date

5.1.10.5 PLACE the long-shank padlock through the locking device in the ANB-WT-V-209 handwheel.

5.1.10.6 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.1.10.7 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.1.10.5.

5.1.10.8 REMOVE the cover from ANB-WT-V-209 valve position sensor assembly.

5.1.10.9 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.

5.1.10.10 POSITION ANB-WT-V-209 OPEN by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.10.11 VERIFY the indicator line is oriented to show FLOW from Blank Connector "C" to "ANB-WT-V-207".

Test Director Initial / Date

5.1.10.12 VERIFY the indicator line is lined up with the correct reference pins for the FLOW THROUGH position, AND within the RED area on the decal.

Test Director Initial / Date

5.1.10.13 PLACE the long shank padlock through the locking device in the ANB-WT-V-209 handwheel.

5.1.10.14 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.1.10.15 REMOVE the long-shank padlock that was placed on the handwheel.

5.1.10.16 ADJUST the bottom CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.1.10.17 ENSURE top CAM is NOT positioned at the non-contact switch for valve position A when in position B.

5.1.10.18 VERIFY installation of positive jumpers located within the valve position sensor terminal block. Reference drawing No. H-14-100987, sh 1, for positive lead jumper locations.

Test Director Initial / Date

5.1.10.19 APPLY 24 volts dc to Terminal TB-DC4-9 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.
5.1 TEST 2-WAY VALVES (Cont.)

5.1.10.20 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-80 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.10.21 VERIFY the voltage recorded in Step 5.1.10.20 is at a nominal voltage of "24" Volts dc.

____________________ / ____________
Test Director Initial   Date

5.1.10.22 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-79 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.10.23 VERIFY the voltage recorded in Step 5.1.10.22 is at a nominal voltage of "0" Volts dc.

____________________ / ____________
Test Director Initial   Date

5.1.10.24 POSITION ANB-WT-V-209 CLOSED by rotating the valve handwheel CLOCKWISE until the handwheel turns no farther.

5.1.10.25 VERIFY that ANB-WT-V-209 valve operator position indicator line is oriented to BLOCK flow from Blank Connector "C" to Valve "ANB-WT-V-207".

____________________ / ____________
Test Director Initial   Date

5.1.10.26 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-80 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.10.27 VERIFY the voltage recorded in Step 5.1.10.26 is at a nominal voltage of "0" Volts dc.

____________________ / ____________
Test Director Initial   Date
5.1 TEST 2-WAY VALVES (Cont.)

5.1.10.28 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-79 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.1.10.29 VERIFY the voltage recorded in Step 5.1.10.28 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC. Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.1.10.30 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.

5.1.10.31 POSITION valve ANB-WT-V-209 as directed by the Test Director.

5.1.10.32 RECORD the final position for valve ANB-WT-V-209 below.

<table>
<thead>
<tr>
<th>OPEN</th>
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</tr>
</thead>
</table>

5.1.10.33 VERIFY by signing below that test 5.1.10 is complete.

Test Director Signature Date

Operations Signature Date

5.1.11 Test Director VERIFY that Section 5.1 is COMPLETE by SIGNING below.

Test Director Signature Date

Operations Signature Date
5.2 TEST 3-WAY VALVES

5.2.1 TEST 2-inch valve ANB-WT-V-203.

5.2.1.1 RECORD calibrated electrical test equipment data below.

ELECTRICAL TEST EQUIPMENT DATA TABLE

<table>
<thead>
<tr>
<th>TOOL NAME</th>
<th>ID. NUMBER</th>
<th>CAL DUE DATE</th>
<th>INITIAL/DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

  5.2.1.2 ENSURE that 2-inch valve ANB-WT-V-203 is in Position “A” by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

  5.2.1.3 VERIFY ANB-WT-V-203 is in Position “A” by the line indicator tee connecting ANB-WT-V-204 and ANB-WT-V-205.

  Test Director Initial / Date

  5.2.1.4 VERIFY the indicator lines are lined up with the correct reference pins, AND within the RED area on the decal.

  Test Director Initial / Date

  5.2.1.5 VERIFY the indicator lines are oriented to BLOCK flow from ANB-WT-V-803.

  Test Director Initial / Date

  5.2.1.6 PLACE the long-shank padlock through the locking device in the ANB-WT-V-203 handwheel.

  5.2.1.7 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

  Test Director Initial / Date

  5.2.1.8 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.2.1.6.

  5.2.1.9 REMOVE the cover from ANB-WT-V-203 valve position sensor assembly.

  5.2.1.10 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.
5.2.1.13 Verify that ANB-MT-V-203 valve position indicator is aligned to MT-V-203 by rotating the valve handwheel clockwise until the valve is at mid position.

5.2.1.12 Position ANB-MT-V-203 to allow flow from ANB-MT-V-803 to ANB-MT-V-203.

5.2.1.11 Ensure the middle and bottom cams are not positioned at the associated non-contact switches.

5.2.1.10 Adjust the middle cam so that the pointer on the cam is centered.

5.2.1.09 Place the long-shank padlock through the locking device in the ANB-MT-V-203 handwheel.

5.2.1.08 Verify that the limited movement of the handwheel does not cause valve movement in either direction.

5.2.1.07 Ensure the top and bottom cams are not positioned at their associated non-contact switches.

5.2.1.06 Adjust the long-shank padlock that was placed on the handwheel.

5.2.1.05 Remove the long-shank padlock.

Date / Test Director Initial

5.2.1.04 Verify the indicator lines are oriented to block flow from ANB-MT-V-204.

Date / Test Director Initial

5.2.1.03 Verify the indicator line is lined up with the correct reference points for the "P" or "MID" position.

Date / Test Director Initial

5.2.1.02 The indicator line is aligned to allow flow from ANB-MT-V-803 to ANB-MT-V-203.

Date / Test Director Initial

5.2.1.01 Verify line on valve housing is not touching the red area on the decal is aligned as to be touching the black stripe within the "MID" position.

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CONTROLLED COPY
5.2 TEST 3-WAY VALVES (Cont.)

5.2.1.21 POSITION ANB-WT-V-203, to allow flow from ANB-WT-V-204 to ANB-WT-V-803 by rotating the valve handwheel CLOCKWISE as far as it will go.

5.2.1.22 VERIFY that ANB-WT-V-203 valve position indicator is aligned to allow flow from ANB-WT-V-204 to ANB-WT-V-803.

Test Director Initial / Date

5.2.1.23 ADJUST the lower CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position C.

5.2.1.24 ENSURE the top and middle CAMs are NOT positioned at their associated non-contact switches.

5.2.1.25 VERIFY the indicator lines are lined up with the correct reference pins, AND within the RED area on the decal black stripe to black stripe alignment.

Test Director Initial / Date

5.2.1.26 PLACE the long-shank padlock through the locking device in the ANB-WT-V-203 handwheel.

5.2.1.27 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.2.1.28 REMOVE the long-shank padlock that was placed on the handwheel in step 5.2.1.26.

5.2.1.29 VERIFY installation of positive jumpers located on the valve position sensor terminal block. Refer to drawing H-14-100987, sh 1, for positive lead jumper locations.

Test Director Initial / Date
5.2 TEST 3-WAY VALVES (Cont.)

5.2.1.30 APPLY 24 volts dc to Terminal TB-DC4-3 in Field Terminal Box AN24I-WT-TBX-101, using the 24 vdc power supply.

5.2.1.31 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-66 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.1.32 VERIFY the voltage recorded in Step 5.2.1.31 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.2.1.33 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-65 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.1.34 VERIFY the voltage recorded in Step 5.2.1.33 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.1.35 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-64 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.1.36 VERIFY the voltage recorded in Step 5.2.1.35 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

NOTE-
To ensure proper alignment for mid position of Three-Way Valve, when rotating in counter clockwise rotation, go past the "B" or mid position, then rotate to Mid position from a Clockwise direction.

5.2.1.37 POSITION ANB-WT-V-203, to allow flow from ANB-WT-V-803 to ANB-WT-V-205 by rotating the valve handwheel COUNTER-CLOCKWISE until the valve is at the mid position.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.1.38 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-66 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE __________

5.2.1.39 VERIFY the voltage recorded in Step 5.2.1.38 is at a nominal voltage of "0" Volts dc.

/ Test Director Initial / Date

5.2.1.40 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-65 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE __________

5.2.1.41 VERIFY the voltage recorded in Step 5.2.1.40 is at a nominal voltage of "24" Volts dc.

/ Test Director Initial / Date

5.2.1.42 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-64 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE __________

5.2.1.43 VERIFY the voltage recorded in Step 5.2.1.42 is at a nominal voltage of "0" Volts dc.

/ Test Director Initial / Date

5.2.1.44 POSITION ANB-WT-V-203 to allow flow from ANB-WT-V-204 to ANB-WT-V-205 by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

5.2.1.45 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-66 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE __________
5.2 TEST 3-WAY VALVES (Cont.)

5.2.1.46 VERIFY the voltage recorded in Step 5.2.1.45 is at a nominal voltage of "0" Volts dc.

[Signature] / Date

5.2.1.47 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DCI-65 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.1.48 VERIFY the voltage recorded in Step 5.2.1.47 is at a nominal voltage of "0" Volts dc.

[Signature] / Date

5.2.1.49 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DCI-64 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.1.50 VERIFY the voltage recorded in Step 5.2.1.49 is at a nominal voltage of "24" Volts dc.

[Signature] / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC. Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.2.1.51 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.1.52 POSITION valve ANB-WT-V-203 as directed by the Test Director.

5.2.1.53 RECORD the final position for the valve ANB-WT-V-203 below.

<table>
<thead>
<tr>
<th>✓</th>
<th>POS.&quot;A&quot;</th>
<th>✓</th>
<th>POS.&quot;B&quot;</th>
<th>✓</th>
<th>POS.&quot;C&quot;</th>
</tr>
</thead>
</table>

5.2.1.54 VERIFY by signing below that test 5.2.1 is complete.

Test Director Signature  Date

Operations Signature  Date
5.2 TEST 3-WAY VALVES (Cont.)

5.2.2 TEST 2-inch valve ANB-WT-V-205.

5.2.2.1 RECORD calibrated electrical test equipment data below.

ELECTRICAL TEST EQUIPMENT DATA TABLE

<table>
<thead>
<tr>
<th>TOOL NAME</th>
<th>ID. NUMBER</th>
<th>CAL DUE DATE</th>
<th>INITIAL/DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

5.2.2.2 ENSURE that 2-inch valve ANB-WT-V-205 is in Position “A” by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

5.2.2.3 VERIFY ANB-WT-V-205 is in Position “A” by the line indicator tee connecting ANB-WT-V-206 and ANB-WT-V-207.

Test Director Initial / Date

5.2.2.4 VERIFY the indicator lines are lined up with the correct reference pins, AND within the RED area on the decal.

Test Director Initial / Date

5.2.2.5 VERIFY the indicator lines are oriented to BLOCK flow from ANB-WT-V-203.

Test Director Initial / Date

5.2.2.6 PLACE the long-shank padlock through the locking device in the ANB-WT-V-205 handwheel.

5.2.2.7 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.2.2.8 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.2.2.6.

5.2.2.9 REMOVE the cover from ANB-WT-V-205 valve position sensor assembly.

5.2.2.10 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.
5.2 TEST 3-WAY VALVES (Cont.)

---

5.2.2.11 **ENSURE** the middle and the bottom CAMs are NOT positioned at their associated non-contact switches.

5.2.2.12 **POSITION** ANB-WT-V-205, to allow flow from ANB-WT-V-203 to ANB-WT-V-207 by rotating the valve handwheel CLOCKWISE until the valve is at mid position.

5.2.2.13 **VERIFY** that ANB-WT-V-205 valve position indicator is aligned to ALLOW FLOW from ANB-WT-V-203 to ANB-WT-V-207.

---

**Test Director Initial** / **Date**

5.2.2.14 **VERIFY** the indicator line is lined up with the correct reference pins for the "B" or "MID" position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

---

**Test Director Initial** / **Date**

5.2.2.15 **VERIFY** the indicator lines are oriented to BLOCK flow from ANB-WT-V-206.

---

**Test Director Initial** / **Date**

5.2.2.16 **ADJUST** the middle CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.2.2.17 **ENSURE** the top and bottom CAMs are NOT positioned at their associated non-contact switches.

5.2.2.18 **PLACE** the long-shank padlock through the locking device in the ANB-WT-V-205 handwheel.

5.2.2.19 **VERIFY** that the limited movement of the handwheel does NOT cause valve movement in either direction.

---

**Test Director Initial** / **Date**

5.2.2.20 **REMOVE** the long-shank padlock that was placed on the handwheel in Step 5.2.2.18.
5.2 TEST 3-WAY VALVES (Cont.)

- **5.2.2.21** POSITION ANB-WT-V-205, to allow flow from ANB-WT-V-206 to ANB-WT-V-203 by rotating the valve handwheel CLOCKWISE as far as it will go.

- **5.2.2.22** VERIFY that ANB-WT-V-205 valve position indicator is aligned to allow flow from ANB-WT-V-206 to ANB-WT-V-203.

  
  
  **Test Director Initial** / Date

- **5.2.2.23** ADJUST the lower CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position C.

- **5.2.2.24** ENSURE the top and middle CAMS are NOT positioned at their associated non-contact switches.

- **5.2.2.25** VERIFY the indicator lines are lined up with the correct reference pins, AND within the RED area on the decal black stripe to black stripe alignment.

  
  
  **Test Director Initial** / Date

- **5.2.2.26** PLACE the long-shank padlock through the locking device in the ANB-WT-V-205 handwheel.

- **5.2.2.27** VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

  
  
  **Test Director Initial** / Date

- **5.2.2.28** REMOVE the long-shank padlock that was placed on the handwheel in step 5.2.2.26.

- **5.2.2.29** VERIFY installation of positive jumpers located on the valve position sensor terminal block. Refer to drawing H-14-100987, sh 1, for positive lead jumper locations.

  
  
  **Test Director Initial** / Date
5.2 TEST 3-WAY VALVES (Cont.)

5.2.2.30 APPLY 24 volts dc to Terminal TB-DC4-5 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.

5.2.2.31 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-71 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE ____________

5.2.2.32 VERIFY the voltage recorded in Step 5.2.2.31 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.2.2.33 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-70 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE ____________

5.2.2.34 VERIFY the voltage recorded in Step 5.2.2.33 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.2.35 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-69 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE ____________

5.2.2.36 VERIFY the voltage recorded in Step 5.2.2.35 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

NOTE- To ensure proper alignment for mid position of Three-Way Valve, when rotating in counter clockwise rotation, go past the "B" or mid position, then rotate to Mid position from a Clockwise direction.

5.2.2.37 POSITION ANB-WT-V-205, to allow flow from ANB-WT-V-203 to ANB-WT-V-207 by rotating the valve handwheel COUNTER-CLOCKWISE until the valve is at the mid position.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.2.38 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-71 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.2.39 VERIFY the voltage recorded in Step 5.2.2.38 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.2.40 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-70 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.2.41 VERIFY the voltage recorded in Step 5.2.2.40 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.2.2.42 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-69 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.2.43 VERIFY the voltage recorded in Step 5.2.2.42 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.2.44 POSITION ANB-WT-V-205 to allow flow from ANB-WT-V-206 to ANB-WT-V-207 by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

5.2.2.45 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-71 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________
5.2 TEST 3-WAY VALVES (Cont.)

5.2.2.46 VERIFY the voltage recorded in Step 5.2.2.45 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.2.47 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-70 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.2.48 VERIFY the voltage recorded in Step 5.2.2.47 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.2.49 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-69 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.2.50 VERIFY the voltage recorded in Step 5.2.2.49 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.2.2.51 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.2.52 POSITION valve ANB-WT-V-205 as directed by the Test Director.

5.2.2.53 RECORD the final position for the valve ANB-WT-V-205 below.

<table>
<thead>
<tr>
<th>✓ POS.&quot;A&quot;</th>
<th>✓ POS.&quot;B&quot;</th>
<th>✓ POS.&quot;C&quot;</th>
</tr>
</thead>
</table>

5.2.2.54 VERIFY by signing below that test 5.2.2 is complete.

Test Director Signature ____________________ Date _____________

Operations Signature ____________________ Date _____________
5.2 TEST 3-WAY VALVES (Cont.)

5.2.3 TEST 2-inch valve ANB-WT-V-207.

5.2.3.1 RECORD calibrated electrical test equipment data below.

ELECTRICAL TEST EQUIPMENT DATA TABLE

<table>
<thead>
<tr>
<th>TOOL NAME</th>
<th>ID. NUMBER</th>
<th>CAL DUE DATE</th>
<th>INITIAL/DATE</th>
</tr>
</thead>
<tbody>
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<td></td>
</tr>
</tbody>
</table>

5.2.3.2 ENSURE that 2-inch valve ANB-WT-V-207 is in Position “A” by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

5.2.3.3 VERIFY ANB-WT-V-207 is in Position “A” by the line indicator tee connecting ANB-WT-V-208 and ANB-WT-V-205.

Test Director Initial / Date

5.2.3.4 VERIFY the indicator lines are lined up with the correct reference pins, AND within the RED area on the decal.

Test Director Initial / Date

5.2.3.5 VERIFY the indicator lines are oriented to BLOCK flow from ANB-WT-V-209.

Test Director Initial / Date

5.2.3.6 PLACE the long-shank padlock through the locking device in the ANB-WT-V-207 handwheel.

5.2.3.7 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.2.3.8 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.2.3.6.

5.2.3.9 REMOVE the cover from ANB-WT-V-207 valve position sensor assembly.

5.2.3.10 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.3.11 ENSURE the middle and the bottom CAMs are NOT positioned at their associated non-contact switches.

5.2.3.12 POSITION ANB-WT-V-207, to allow flow from ANB-WT-V-208 to ANB-WT-V-209 by rotating the valve handwheel CLOCKWISE until the valve is at mid position.

5.2.3.13 VERIFY that ANB-WT-V-207 valve position indicator is aligned to ALLOW FLOW from ANB-WT-V-208 to ANB-WT-V-209.

---

5.2.3.14 VERIFY the indicator line is lined up with the correct reference pins for the "B" or "MID" position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

---

5.2.3.15 VERIFY the indicator lines are oriented to BLOCK flow from ANB-WT-V-205.

---

5.2.3.16 ADJUST the middle CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.2.3.17 ENSURE the top and bottom CAMs are NOT positioned at their associated non-contact switches.

5.2.3.18 PLACE the long-shank padlock through the locking device in the ANB-WT-V-207 handwheel.

5.2.3.19 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

---

5.2.3.20 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.2.3.18.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.3.21 POSITION ANB-WT-V-207, to allow flow from ANB-WT-V-205 to ANB-WT-V-209 by rotating the valve handwheel CLOCKWISE as far as it will go.

5.2.3.22 VERIFY that ANB-WT-V-207 valve position indicator is aligned to allow flow from ANB-WT-V-205 to ANB-WT-V-209.

---

5.2.3.23 ADJUST the lower CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position C.

5.2.3.24 ENSURE the top and middle CAMs are NOT positioned at their associated non-contact switches.

5.2.3.25 VERIFY the indicator lines are lined up with the correct reference pins, AND within the RED area on the decal black stripe to black stripe alignment.

---

5.2.3.26 PLACE the long-shank padlock through the locking device in the ANB-WT-V-207 handwheel.

5.2.3.27 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

---

5.2.3.28 REMOVE the long-shank padlock that was placed on the handwheel in step 5.2.3.26.

5.2.3.29 VERIFY installation of positive jumpers located on the valve position sensor terminal block. Refer to drawing H-14-100987, sh 1, for positive lead jumper locations.

---

Date
Test Director Initial / Date

Test Director Initial / Date

Test Director Initial / Date
5.2 TEST 3-WAY VALVES (Cont.)

5.2.3.30 APPLY 24 volts dc to Terminal TB-DC4-7 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.

5.2.3.31 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-76 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE ____________

5.2.3.32 VERIFY the voltage recorded in Step 5.2.3.31 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.2.3.33 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-75 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE ____________

5.2.3.34 VERIFY the voltage recorded in Step 5.2.3.33 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.3.35 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-74 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE ____________

5.2.3.36 VERIFY the voltage recorded in Step 5.2.3.35 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

NOTE- To ensure proper alignment for mid position of Three-Way Valve, When rotating in counter clockwise rotation, go past the "B" or mid position, then rotate to Mid position from a Clockwise direction.

5.2.3.37 POSITION ANB-WT-V-207, to allow flow from ANB-WT-V-209 to ANB-WT-V-208 by rotating the valve handwheel COUNTER-CLOCKWISE until the valve is at the mid position.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.3.38 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-76 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.3.39 VERIFY the voltage recorded in Step 5.2.3.38 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.3.40 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-75 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.3.41 VERIFY the voltage recorded in Step 5.2.3.40 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.2.3.42 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-74 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.3.43 VERIFY the voltage recorded in Step 5.2.3.42 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.3.44 POSITION ANB-WT-V-207 to allow flow from ANB-WT-V-205 to ANB-WT-V-208 by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

5.2.3.45 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-76 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE
5.2 TEST 3-WAY VALVES (Cont.)

5.2.3.46 VERIFY the voltage recorded in Step 5.2.3.45 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.3.47 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-75 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.3.48 VERIFY the voltage recorded in Step 5.2.3.47 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.3.49 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-74 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.3.50 VERIFY the voltage recorded in Step 5.2.3.49 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.2.3.51 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.3.52 POSITION valve ANB-WT-V-205 as directed by the Test Director.

5.2.3.53 RECORD the final position for the valve ANB-WT-V-205 below.

<table>
<thead>
<tr>
<th>POS. &quot;A&quot;</th>
<th>POS. &quot;B&quot;</th>
<th>POS. &quot;C&quot;</th>
</tr>
</thead>
</table>

5.2.3.54 VERIFY by signing below that test 5.2.3 is complete.

Test Director Signature   Date

Operations Signature   Date
5.2 TEST 3-WAY VALVES (Cont.)

5.2.4 TEST 3-inch valve ANB-WT-V-214.

5.2.4.1 RECORD calibrated electrical test equipment data below.

### ELECTRICAL TEST EQUIPMENT DATA TABLE

<table>
<thead>
<tr>
<th>TOOL NAME</th>
<th>ID. NUMBER</th>
<th>CAL DUE DATE</th>
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</table>

5.2.4.2 ENSURE that 2-inch valve ANB-WT-V-214 is in Position “A” by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

5.2.4.3 ENSURE that 2-inch valve ANB-WT-V-214 is in Position “A” by the line indicator tee connecting ANB-WT-V-215 and ANB-WT-V-216.

---

**Test Director Initial** / **Date**

5.2.4.4 VERIFY the indicator lines are lined up with the correct reference pins, AND within the RED area on the decal.

---

**Test Director Initial** / **Date**

5.2.4.5 VERIFY the indicator lines are oriented to BLOCK flow from ANB-WT-V-213.

---

**Test Director Initial** / **Date**

5.2.4.6 PLACE the long-shank padlock through the locking device in the ANB-WT-V-214 handwheel.

5.2.4.7 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

---

**Test Director Initial** / **Date**

5.2.4.8 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.2.4.6.

5.2.4.9 REMOVE the cover from ANB-WT-V-214 valve position sensor assembly.

5.2.4.10 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.4.11 **ENSURE** the middle and the bottom CAMs are NOT positioned at their associated non-contact switches.

5.2.4.12 **POSITION** ANB-WT-V-214, to allow flow from ANB-WT-V-213 to ANB-WT-V-216 by rotating the valve handwheel CLOCKWISE until the valve is at mid position.

5.2.4.13 **VERIFY** that ANB-WT-V-214 valve position indicator is aligned to ALLOW FLOW from ANB-WT-V-213 to ANB-WT-V-216.

```
  Test Director Initial / Date
```

5.2.4.14 **VERIFY** the indicator line is lined up with the correct reference pins for the "B" or "MID" position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

```
  Test Director Initial / Date
```

5.2.4.15 **VERIFY** the indicator lines are oriented to BLOCK flow from ANB-WT-V-215.

```
  Test Director Initial / Date
```

5.2.4.16 **ADJUST** the middle CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.2.4.17 **ENSURE** the top and bottom CAMs are NOT positioned at their associated non-contact switches.

5.2.4.18 **PLACE** the long-shank padlock through the locking device in the ANB-WT-V-214 handwheel.

5.2.4.19 **VERIFY** that the limited movement of the handwheel does NOT cause valve movement in either direction.

```
  Test Director Initial / Date
```

5.2.4.20 **REMOVE** the long-shank padlock that was placed on the handwheel in Step 5.2.4.18.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.4.21 POSITION ANB-WT-V-214, to allow flow from ANB-WT-V-215 to ANB-WT-V-213 by rotating the valve handwheel CLOCKWISE as far as it will go.

5.2.4.22 VERIFY that ANB-WT-V-214 valve position indicator is aligned to allow flow from ANB-WT-V-215 to ANB-WT-V-213.

Test Director Initial / Date

5.2.4.23 ADJUST the lower CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position C.

5.2.4.24 ENSURE the top and middle CAMs are NOT positioned at their associated non-contact switches.

5.2.4.25 VERIFY the indicator lines are lined up with the correct reference pins, AND within the RED area on the decal black stripe to black stripe alignment.

Test Director Initial / Date

5.2.4.26 PLACE the long-shank padlock through the locking device in the ANB-WT-V-214 handwheel.

5.2.4.27 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.2.4.28 REMOVE the long-shank padlock that was placed on the handwheel in step 5.2.4.26.

5.2.4.29 VERIFY installation of positive jumpers located on the valve position sensor terminal block. Refer to drawing H-14-100987, sh 1, for positive lead jumper locations.

Test Director Initial / Date
5.2 TEST 3-WAY VALVES (Cont.)

5.2.4.30 APPLY 24 volts dc to Terminal TB-DC4-13 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.

5.2.4.31 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-90 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.4.32 VERIFY the voltage recorded in Step 5.2.4.31 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.2.4.33 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-89 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.4.34 VERIFY the voltage recorded in Step 5.2.4.33 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.4.35 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-88 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.4.36 VERIFY the voltage recorded in Step 5.2.4.35 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

NOTE- To ensure proper alignment for mid position of Three-Way Valve, when rotating in counter clockwise rotation, go past the "B" or mid position, then rotate to Mid position from a Clockwise direction.

5.2.4.37 POSITION ANB-WT-V-214, to allow flow from ANB-WT-V-213 to ANB-WT-V-216 by rotating the valve handwheel COUNTER-CLOCKWISE until the valve is at the mid position.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.4.38 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-90 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.4.39 VERIFY the voltage recorded in Step 5.2.4.38 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.4.40 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-89 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.4.41 VERIFY the voltage recorded in Step 5.2.4.40 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.2.4.42 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-88 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.4.43 VERIFY the voltage recorded in Step 5.2.4.42 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.4.44 POSITION ANB-WT-V-214 to allow flow from ANB-WT-V-215 to ANB-WT-V-216 by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

5.2.4.45 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-90 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________
5.2 TEST 3-WAY VALVES (Cont.)

5.2.4.46 VERIFY the voltage recorded in Step 5.2.4.45 is at a nominal voltage of "0" Volts dc.

_________________________ / ____________
Test Director Initial Date

5.2.4.47 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-89 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ________________

5.2.4.48 VERIFY the voltage recorded in Step 5.2.4.47 is at a nominal voltage of "0" Volts dc.

_________________________ / ____________
Test Director Initial Date

5.2.4.49 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-88 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ________________

5.2.4.50 VERIFY the voltage recorded in Step 5.2.4.49 is at a nominal voltage of "24" Volts dc.

_________________________ / ____________
Test Director Initial Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.2.4.51 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.4.52  POSITION valve ANB-WT-V-214 as directed by the Test Director.

5.2.4.53  RECORD the final position for the valve ANB-WT-V-214 below.

<table>
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<th>✓ POS. &quot;B&quot;</th>
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</table>

5.2.4.54  VERIFY by signing below that test 5.2.4 is complete.

Test Director Signature  Date

Operations Signature  Date
5.2 TEST 3-WAY VALVES (Cont.)

5.2.5 TEST 3-inch valve ANB-WT-V-216.

5.2.5.1 RECORD calibrated electrical test equipment data below.

ELECTRICAL TEST EQUIPMENT DATA TABLE

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<thead>
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<th>TOOL NAME</th>
<th>ID. NUMBER</th>
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5.2.5.2 ENSURE that 2-inch valve ANB-WT-V-216 is in Position “A” by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

5.2.5.3 VERIFY ANB-WT-V-216 is in Position “A” by the line indicator tee connecting ANB-WT-V-217 and ANB-WT-V-218.

__ Test Director Initial / __ Date

5.2.5.4 VERIFY the indicator lines are lined up with the correct reference pins, AND within the RED area on the decal.

__ Test Director Initial / __ Date

5.2.5.5 VERIFY the indicator lines are oriented to BLOCK flow from ANB-WT-V-214.

__ Test Director Initial / __ Date

5.2.5.6 PLACE the long-shank padlock through the locking device in the ANB-WT-V-216 handwheel.

5.2.5.7 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

__ Test Director Initial / __ Date

5.2.5.8 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.2.5.6.

5.2.5.9 REMOVE the cover from ANB-WT-V-216 valve position sensor assembly.

5.2.5.10 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.5.11 ENSURE the middle and the bottom CAMs are NOT positioned at their associated non-contact switches.

5.2.5.12 POSITION ANB-WT-V-216, to allow flow from ANB-WT-V-214 to ANB-WT-V-218 by rotating the valve handwheel CLOCKWISE until the valve is at mid position.

5.2.5.13 VERIFY that ANB-WT-V-216 valve position indicator is aligned to ALLOW FLOW from ANB-WT-V-214 to ANB-WT-V-218.

5.2.5.14 VERIFY the indicator line is lined up with the correct reference pins for the "B" or "MID" position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

5.2.5.15 VERIFY the indicator lines are oriented to BLOCK flow from ANB-WT-V-217.

5.2.5.16 ADJUST the middle CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.2.5.17 ENSURE the top and bottom CAMs are NOT positioned at their associated non-contact switches.

5.2.5.18 PLACE the long-shank padlock through the locking device in the ANB-WT-V-216 handwheel.

5.2.5.19 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

5.2.5.20 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.2.5.18.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.5.21 **POSITION** ANB-WT-V-216, to allow flow from ANB-WT-V-217 to ANB-WT-V-214 by rotating the valve handwheel **CLOCKWISE** as far as it will go.

5.2.5.22 **VERIFY** that ANB-WT-V-216 valve position indicator is aligned to allow flow from ANB-WT-V-217 to ANB-WT-V-214.

[Signature] / Date

5.2.5.23 **ADJUST** the lower CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position C.

5.2.5.24 **ENSURE** the top and middle CAMs are **NOT** positioned at their associated non-contact switches.

5.2.5.25 **VERIFY** the indicator lines are lined up with the correct reference pins, **AND** within the RED area on the decal black stripe to black stripe alignment.

[Signature] / Date

5.2.5.26 **PLACE** the long-shank padlock through the locking device in the ANB-WT-V-216 handwheel.

5.2.5.27 **VERIFY** that the limited movement of the handwheel does **NOT** cause valve movement in either direction.

[Signature] / Date

5.2.5.28 **REMOVE** the long-shank padlock that was placed on the handwheel in step 5.2.5.26.

5.2.5.29 **VERIFY** installation of positive jumpers located on the valve position sensor terminal block. Refer to drawing H-14-100987, sh 1, for positive lead jumper locations.

[Signature] / Date
5.2 TEST 3-WAY VALVES (Cont.)

5.2.5.30 APPLY 24 volts dc to Terminal TB-DC4-15 in Field Terminal Box AN241-WT-TBX-101, using the 24 vdc power supply.

5.2.5.31 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-95 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.5.32 VERIFY the voltage recorded in Step 5.2.5.31 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.2.5.33 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-94 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.5.34 VERIFY the voltage recorded in Step 5.2.5.33 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.5.35 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-93 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.5.36 VERIFY the voltage recorded in Step 5.2.5.35 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

NOTE- To ensure proper alignment for mid position of Three-Way Valve, when rotating in counter clockwise rotation, go past the "B" or mid position, then rotate to Mid position from a Clockwise direction.

5.2.5.37 POSITION ANB-WT-V-216, to allow flow from ANB-WT-V-214 to ANB-WT-V-218 by rotating the valve handwheel COUNTER-CLOCKWISE until the valve is at the mid position.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.5.38 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-95 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.5.39 VERIFY the voltage recorded in Step 5.2.5.38 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.5.40 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-94 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.5.41 VERIFY the voltage recorded in Step 5.2.5.40 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.2.5.42 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-93 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.5.43 VERIFY the voltage recorded in Step 5.2.5.42 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.5.44 POSITION ANB-WT-V-216 to allow flow from ANB-WT-V-217 to ANB-WT-V-218 by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

5.2.5.45 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-95 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________
5.2 TEST 3-WAY VALVES (Cont.)

5.2.5.46 VERIFY the voltage recorded in Step 5.2.5.45 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.5.47 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-94 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.5.48 VERIFY the voltage recorded in Step 5.2.5.47 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.5.49 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-93 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.5.50 VERIFY the voltage recorded in Step 5.2.5.49 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.2.5.51 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.5.52 POSITION valve ANB-WT-V-216 as directed by the Test Director

5.2.5.53 RECORD the final position for the valve ANB-WT-V-216 below.

<table>
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<tr>
<th>✓ POS. &quot;A&quot;</th>
<th>✓ POS. &quot;B&quot;</th>
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<tbody>
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</tbody>
</table>

5.2.5.54 VERIFY by signing below that test 5.2.5 is complete.

________________________  __________________________
Test Director Signature  Date

________________________  __________________________
Operations Signature  Date
5.2 TEST 3-WAY VALVES (Cont.)

5.2.6 TEST 3-inch valve ANB-WT-V-218.

5.2.6.1 RECORD calibrated electrical test equipment data below.

<table>
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<tr>
<th>TOOL NAME</th>
<th>ID. NUMBER</th>
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</tr>
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<tbody>
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</table>

5.2.6.2 ENSURE that valve ANB-WT-V-218 is in Position "A" by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

Test Director Initial / Date

5.2.6.3 VERIFY ANB-WT-V-218 is in Position "A" by the line indicator tee connecting ANB-WT-V-216 and ANB-WT-V-219.

Test Director Initial / Date

5.2.6.4 VERIFY the indicator lines are lined up with the correct reference pins, AND within the RED area on the decal.

Test Director Initial / Date

5.2.6.5 VERIFY the indicator lines are oriented to BLOCK flow from ANB-WT-V-221.

Test Director Initial / Date

5.2.6.6 PLACE the long-shank padlock through the locking device in the ANB-WT-V-218 handwheel.

Test Director Initial / Date

5.2.6.7 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

Test Director Initial / Date

5.2.6.8 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.2.6.6.

5.2.6.9 REMOVE the cover from ANB-WT-V-218 valve position sensor assembly.

5.2.6.10 ADJUST the top CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position A.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.6.11 ENSURE the middle and the bottom CAMs are NOT positioned at their associated non-contact switches.

5.2.6.12 POSITION ANB-WT-V-218, to allow flow from ANB-WT-V-221 to ANB-WT-V-219 by rotating the valve handwheel CLOCKWISE until the valve is at mid position.

5.2.6.13 VERIFY that ANB-WT-V-218 valve position indicator is aligned to ALLOW FLOW from ANB-WT-V-221 to ANB-WT-V-219.

5.2.6.14 VERIFY the indicator line is lined up with the correct reference pins for the "B" or "MID" position, AND black stripe within the RED area on the decal is aligned as to be touching the applicable line on valve housing.

5.2.6.15 VERIFY the indicator lines are oriented to BLOCK flow from ANB-WT-V-216.

5.2.6.16 ADJUST the middle CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position B.

5.2.6.17 ENSURE the top and bottom CAMs are NOT positioned at their associated non-contact switches.

5.2.6.18 PLACE the long-shank padlock through the locking device in the ANB-WT-V-218 handwheel.

5.2.6.19 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

5.2.6.20 REMOVE the long-shank padlock that was placed on the handwheel in Step 5.2.6.18.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.6.21 POSITION ANB-WT-V-218, to allow flow from ANB-WT-V-216 to ANB-WT-V-221 by rotating the valve handwheel CLOCKWISE as far as it will go.

5.2.6.22 VERIFY that ANB-WT-V-218 valve position indicator is aligned to allow flow from ANB-WT-V-216 to ANB-WT-V-221.

5.2.6.23 ADJUST the lower CAM so that the pointer on the CAM is centered on the non-contact switch wired for valve position C.

5.2.6.24 ENSURE the top and middle CAMs are NOT positioned at their associated non-contact switches.

5.2.6.25 VERIFY the indicator lines are lined up with the correct reference pins, AND within the RED area on the decal black stripe to black stripe alignment.

5.2.6.26 PLACE the long-shank padlock through the locking device in the ANB-WT-V-218 handwheel.

5.2.6.27 VERIFY that the limited movement of the handwheel does NOT cause valve movement in either direction.

5.2.6.28 REMOVE the long-shank padlock that was placed on the handwheel in step 5.2.6.26.

5.2.6.29 VERIFY installation of positive jumpers located on the valve position sensor terminal block. Refer to drawing H-14-100987, sh 1, for positive lead jumper locations.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.6.30 APPLY 24 volts dc to Terminal TB-DC4-17 in Field Terminal Box AN241-WT-TBX-101 using the 24 volt dc power supply.

5.2.6.31 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-100 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.6.32 VERIFY the voltage recorded in Step 5.2.6.31 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.2.6.33 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-99 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.6.34 VERIFY the voltage recorded in Step 5.2.6.33 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.6.35 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-98 AND the NEGATIVE Terminal on the 24 volt power supply.

VOLTAGE __________

5.2.6.36 VERIFY the voltage recorded in Step 5.2.6.35 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

NOTE- To ensure proper alignment for mid position of Three-Way Valve, when rotating in counter clockwise rotation, go past the "B" or mid position, then rotate to Mid position from a Clockwise direction.

5.2.6.37 POSITION ANB-WT-V-218, to allow flow from ANB-WT-V-221 to ANB-WT-V-219 by rotating the valve handwheel COUNTER-CLOCKWISE until the valve is at the mid position.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.6.38 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-100 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.6.39 VERIFY the voltage recorded in Step 5.2.6.38 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.6.40 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-99 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.6.41 VERIFY the voltage recorded in Step 5.2.6.40 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

5.2.6.42 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-98 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________

5.2.6.43 VERIFY the voltage recorded in Step 5.2.6.42 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.6.44 POSITION ANB-WT-V-218 to allow flow from ANB-WT-V-216 to ANB-WT-V-219 by rotating the valve handwheel COUNTER-CLOCKWISE until the handwheel turns no farther.

5.2.6.45 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-100 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE ____________
5.2 TEST 3-WAY VALVES (Cont.)

5.2.6.46 VERIFY the voltage recorded in Step 5.2.6.45 is at a nominal voltage of "0" Volts dc.

Test Director Initial / Date

5.2.6.47 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-99 AND the NEGATIVE Terminal on the 24 volt dc power supply. VERIFY the voltage recorded in Step 5.2.6.47 is at a nominal voltage of "0" Volts dc.

VOLTAGE

5.2.6.48 MEASURE AND RECORD the voltage BETWEEN Terminal TB-DC1-98 AND the NEGATIVE Terminal on the 24 volt dc power supply.

VOLTAGE

5.2.6.49 VERIFY the voltage recorded in Step 5.2.6.49 is at a nominal voltage of "24" Volts dc.

Test Director Initial / Date

NOTE - The next step prepares limit switch cover for torquing. All valves will be torqued at one time at end of this ATP and QC Shall verify. The Torque value will be between 17 and 20 inch lbs.

5.2.6.51 REPLACE limit switch cover AND TIGHTEN bolts in preparation for torque.
5.2 TEST 3-WAY VALVES (Cont.)

5.2.6.52 POSITION valve ANB-WT-V-218 as directed by the Test Director

5.2.6.53 RECORD the final position for the valve ANB-WT-V-218 below.

- | / POS. "A" | / POS. "B" | / POS. "C"
---|---|---|---

5.2.6.54 VERIFY by signing below that test 5.2.6 is complete.

<table>
<thead>
<tr>
<th>Test Director Signature</th>
<th>Date</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Operations Signature</th>
<th>Date</th>
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</table>
5.3 VALVE TORQUING

5.3.1 QC VERIFY all valve limit switch covers for valves are installed and bolts torqued between 17 and 22 inch lbs. AND RECORD below.

<table>
<thead>
<tr>
<th>Valve Number</th>
<th>Limit Switch Cover (✓)</th>
<th>Limit Switch Cover Bolts Torqued (✓)</th>
<th>Valve Number</th>
<th>Limit Switch Cover (✓)</th>
<th>Limit Switch Cover Bolts Torqued (✓)</th>
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<tr>
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<td>ANB-WT-V-219</td>
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<td>ANB-WT-V-218</td>
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</table>

**QC**

5.3.2 VERIFY by signing below that Section 5.3 is complete.

- QC Signature

- Test Director Signature

- Operations Signature

---

**QC**

---
5.4 ENCASEMENT VALVE TESTING

5.4.1 Test Encasement Drain Valve ANB-WT-409.

5.4.1.1 ENSURE valve labeling on "TEE" handle is correct.

5.4.1.2 ENSURE "TEE" handle fits through coverblock, into funnel and sets into valve.

5.4.1.3 ROTATE "TEE" handle to "DRAIN" position AND VERIFY valve aligns properly with applicable line on coverblock.

Test Director Initial / Date

5.4.1.4 ROTATE "TEE" handle to "HYDRO" position AND VERIFY valve aligns properly with applicable line on coverblock.

Test Director Initial / Date

5.4.1.5 ROTATE "TEE" handle to "OPERATE" position AND VERIFY valve aligns properly with applicable line on coverblock.

Test Director Initial / Date

5.4.1.6 POSITION valve as directed by the Test Director.

5.4.1.7 RECORD the final position for valve ANB-WT-V-409 below.

<table>
<thead>
<tr>
<th>OPERATE</th>
<th>HYDRO</th>
<th>DRAIN</th>
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<tbody>
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5.4.3. Test Director VERIFY that Section 5.4 is Complete by SIGNING below.

5.4.2.7 RECORD the final position for valve ANB-WT-Y-410 below.

Test Director Initial

5.4.2.6 POSITION valve as directed by the Test Director.

Test Director Initial

5.4.2.5 ROTATE "TEE" handle to "OPERATE" position AND VERIFY valve aligns properly with applicable line on coverblock.

Test Director Initial

5.4.2.4 ROTATE "TEE" handle to "HYDRO" position AND VERIFY valve aligns properly with applicable line on coverblock.

Test Director Initial

5.4.2.3 SETS into valve.

5.4.2.2 ENSURE "TEE" handle fits through coverblock, into funnel and ENSURE valve labeling on "TEE" handle is correct.

5.4.2.1 Test Encasement Drain Valve ANB-WT-410.
## ATP Performance Log

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### ATP EXCEPTION RECORD

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<td>Project Engineer Signature:</td>
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<td>Quality Assurance Signature:</td>
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**Type**: CONTINUOUS  **Document No.**: HNF-4644  **Rev/Mod**: 0  **Release Date**:  **Page**: 104 of 106
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