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| 3. ORIGINATOR | b. ADDRESS (Street, City, State, Zip Code) | 4. ORIGINATOR CAGE CODE | 5. NOR NO. |
| a. TYPED NAME (First, Middle Initial, Last) | Horstman Special Products 37362 Brownsville Road Slidell, LA 70460 | 1RPQ4 | 12346082-1-4 |
| Stephen Gaspard | | 6. DOCUMENT CAGE CODE | 7. DOCUMENT NO. |
| | | 01417 | SC-X17734B |
| 8. TITLE OF DOCUMENT | 9. REVISION LETTER | | 10. ECP/VECP NO. |
| M1 Hull Hydraulic Distribution Manifold – Specification Corrections and Clarifications – Acceptance Test oil temperatures | a. CURRENT | b. NEW | 12346082-1 |
| | B | C | |
| 11. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES | | | |
| 12346082 – Hull Dydraulic Distribution Manifold Assembly | | | |
| 12. DESCRIPTION OF REVISION | | | |
| Paragraph 4.1.3.1.2 of specification SC-X17734B – Acceptance (100%) inspection | | | |
| Add the following sentence to end of paragraph: Oil temperature for all acceptance tests shall be 125 ± 25 °F, with the exception of paragraph 4.2.1.13.2.2 (thermal bypass valve). High and low oil temperature testing shall be limited to pre-production (first article) testing only. | | | |
| Rationale: | | | |
| Many of the paragraphs in section 3 give performance requirements at the baseline oil temperature of 125 ± 25°F, called out in paragraph 3.2.1.1.1.2, as well as oil temperatures of 210 ± 20°F and -25 (-0, +25)°F. Horstman's design was verified to meet these requirements during First Article Testing. | | | |
| It is not common to require testing at hot and cold oil temperatures for acceptance testing for every unit in production, as these types of tests are usually reserved for qualification / first article testing since they are expensive and time consuming. Horstman has only performed acceptance testing in the past at nominal oil temp (125°F) (contract W56HZV-06-D-0083, qty 826 units), and did not anticipate testing with hot and cold fluid separately during this contract. The units are all manufactured to the same design and using the same methods that the First Article Units were built to. | | | |
| After reviewing the specification it is not clear whether these tests are required only as first article tests, as previously interpreted and accepted, or for each unit as an acceptance test, on top of the test at nominal oil temperature. Adding these tests will increase costs and lead time considerably. | | | |
| Horstman requests that acceptance testing only include performing each test at nominal oil temperature (125 ± 25°F), and that high and low oil temperature tests be limited to first article testing. | | | |
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| TARDEC- AMSR- TAR- E | | Marty IZIKSON | |
| d. TITLE | e. SIGNATURE | f. DATE (YYYYMMDD) | |
| Mechanical Engineer | M. E. Z. | 2014/02/19 | |
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| Stephen Gaspard | | 6. DOCUMENT CAGE CODE | 7. DOCUMENT NO. |
| | | 01417 | SC-X17734B |
| 8. TITLE OF DOCUMENT | 9. REVISION LETTER | | 10. ECP/VECP NO. |
| M1 Hull Hydraulic Distribution Manifold – Specification Corrections and Clarifications – Case Drain Pressure Increase | a. CURRENT | b. NEW | 12346082-1 |
| | B | C | |
| 11. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES | | | |
| 12346082 – Hull Hydraulic Distribution Manifold Assembly | | | |
| 12. DESCRIPTION OF REVISION | | | |
| Paragraph 3.2.1.6.2 of specification SC-X17734B – Pressure Increase | | | |
| From: With a flow of 0.0 ± 0.02 gpm through port CD to TO HE, port TO HE open to atmosphere, contacts B and C shall open on increasing differential pressure within 6 ± 4 psid measured between ports CD and TO HE. | | | |
| To: With a flow of 0.05 ± 0.02 gpm through port CD to TO HE, port TO HE open to atmosphere, contacts B and C shall open on increasing differential pressure within 6 ± 4 psid measured between ports CD and TO HE. | | | |
| Rationale: | | | |
| The specification calls for a flow of 0.0 ± 0.02 gpm through port CD to TO HE. Horstman believes that the design/testing intent is to generate a flow of 0.05 ± 0.02 gpm for this test, and the number as typed is an error. | | | |
| This test follows section 3.2.1.6.1 – Pressure Decrease, which requires the case drain switch to close with a flow of 0.05 ± 0.02 gpm and pressure decreasing but still within 6 ± 4 psid. | | | |
| The Pressure Increase test is simply a test to make sure the switch opens as pressure increases, while still within the same overall pressure and flow ranges. | | | |
| In addition, the 0.0 ± 0.02 allows a negative flow, which is not possible with a positive pressure drop. | | | |
| Horstman requests to use a flow of 0.05 ± 0.02 gpm in lieu of the 0.00 ± 0.02 indicated in the specification. | | | |
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| TARDEC - AMSR - TAR-E | | Marty IZIKSON | |
| d. TITLE | e. SIGNATURE | f. DATE (YYYYMMDD) | |
| Mechanical Engineer |  | 2014/02/19 | |
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| a. TYPED NAME (First, Middle Initial, Last) | | 1RPQ4 | 12346082-1-2 |
| Stephen Gaspard | Horstman Special Products 37362 Brownsvillage Road Slidell, LA 70460 | 6. DOCUMENT CAGE CODE | 7. DOCUMENT NO. |
| | | 01417 | SC-X17734B |
| 8. TITLE OF DOCUMENT | 9. REVISION LETTER | | 10. ECP/VECP NO. |
| M1 Hull Hydraulic Distribution Manifold – Specification Corrections and Clarifications – Operation BRK RTN port | a. CURRENT | b. NEW | 12346082-1 |
| | B | C | |
| 11. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES | | | |
| 12346082 – Hull Dydraulic Distribution Manifold Assembly | | | |
| 12. DESCRIPTION OF REVISION | | | |
| Paragraph 4.2.1.11.5 of specification SC-X17734B – Operation BRK RTN port | | | |
| From: Using a power supply apply the 24 ± 6 Vdc to the connector pins P1-F (positive) and P1-H (return). | | | |
| To: Sentenced remove from paragraph. | | | |
| Rationale: Paragraph 4.2.1.11.5 calls for an application of 24 ± 6 Vdc to the connector pins P1-F (positive) and P1-H (return). Horstman believes this voltage application must be meant for a type I manifold assembly, which uses pin F as a positive terminal for excitation of a dump valve. Horstman's unit is a type II, which does not have a dump valve and therefore does not use pin F, as shown in the electrical schematic on drawing 12346082. However, specification SC-X17734B does not list this as applicable to only a type I unit, as it does in other areas (see section 4.2.1.1.2 – Electrical). Horstman requests to not apply 24 ± 6 Vdc to connector pins F and H during this test. | | | |
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| Mechanical Engineer | M. Fry | 2014/02/19 | |
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| a. TYPED NAME (First, Middle Initial, Last) | | 1RPQ4 | 12346082-1-3 |
| Stephen Gaspard | Horstman Special Products 37362 Brownsvillage Road Slidell, LA 70460 | 6. DOCUMENT CAGE CODE | 7. DOCUMENT NO. |
| | | 01417 | SC-X17734B |
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| M1 Hull Hydraulic Distribution Manifold – Specification Corrections and Clarifications – Thermal Bypass Valve Quality Conformance Inspection | | a. CURRENT | b. NEW |
| | | B | C |
| 10. ECP/VECP NO. 12346082-1 | | | |
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| 12346082 – Hull Dydraulic Distribution Manifold Assembly | | | |
| 12. DESCRIPTION OF REVISION | | | |
| Paragraph 4.2.1.13.2.2 of specification SC-X17734B – Quality Conformance Inspection | | | |
| <p>From: With fluid into port P1 at 20°F minimum and at 1650 ± 50 psi, the flow rate out of port RTN OUT shall be 5.0 ± 1.0 gpm. When fluid is increased to 70°F maximum, the flow rate from port RTN OUT shall be 0.25 (+0.25, -0.00) gpm.</p> <p>To: With fluid into port P1 at 20°F minimum and at 1650 ± 50 psi, the flow rate out of port RTN OUT shall be 5.0 ± 1.0 gpm. When fluid is increased to 70°F maximum, the flow rate from port RTN OUT shall be 0.25 (+0.25, -0.00) gpm. During test, it is allowable to let the temperature-controlled fluid saturate the line between ports TO HE and RTN IN to help actuate the thermal valve.</p> <p>Rationale: Paragraph 4.2.1.13.2.2 calls for fluid into port P1 at temperatures beginning at 20°F minimum and raising to 70°F maximum.</p> <p>The construction of the Distribution Manifold is such that the thermal element that controls the thermal bypass valve movement is located in the main line between ports RTN IN and TO HE. Horstman positioned the thermal element in this location to maintain continuity with the design of all other previously supplied distribution manifolds used on the M1, which are all built this way. Our understanding has always been that the fluid coming to port P1 was a branch off of the RTN IN – TO HE line, and the purpose of the thermal relief valve was to sense cold fluid in the main line and open to generate heat to warm the vehicle fluid.</p> <p>Specification SC-X17734B does not mention allowing fluid to enter the line between ports RTN IN and TO HE, nor does it not allow this by stating to plug all ports.</p> <p>Therefore, Horstman requests that during testing, temperature controlled fluid be allowed to soak the line between RTN IN and TO HE in order to actuate the valve. This fluid is the same temperature as the fluid connected to port P1.</p> | | | |
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| TARDEC - AMSR - TAR - E | | Marty IZIKSON | |
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| Mechanical Engineer |  | 2014/02/19 | |
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