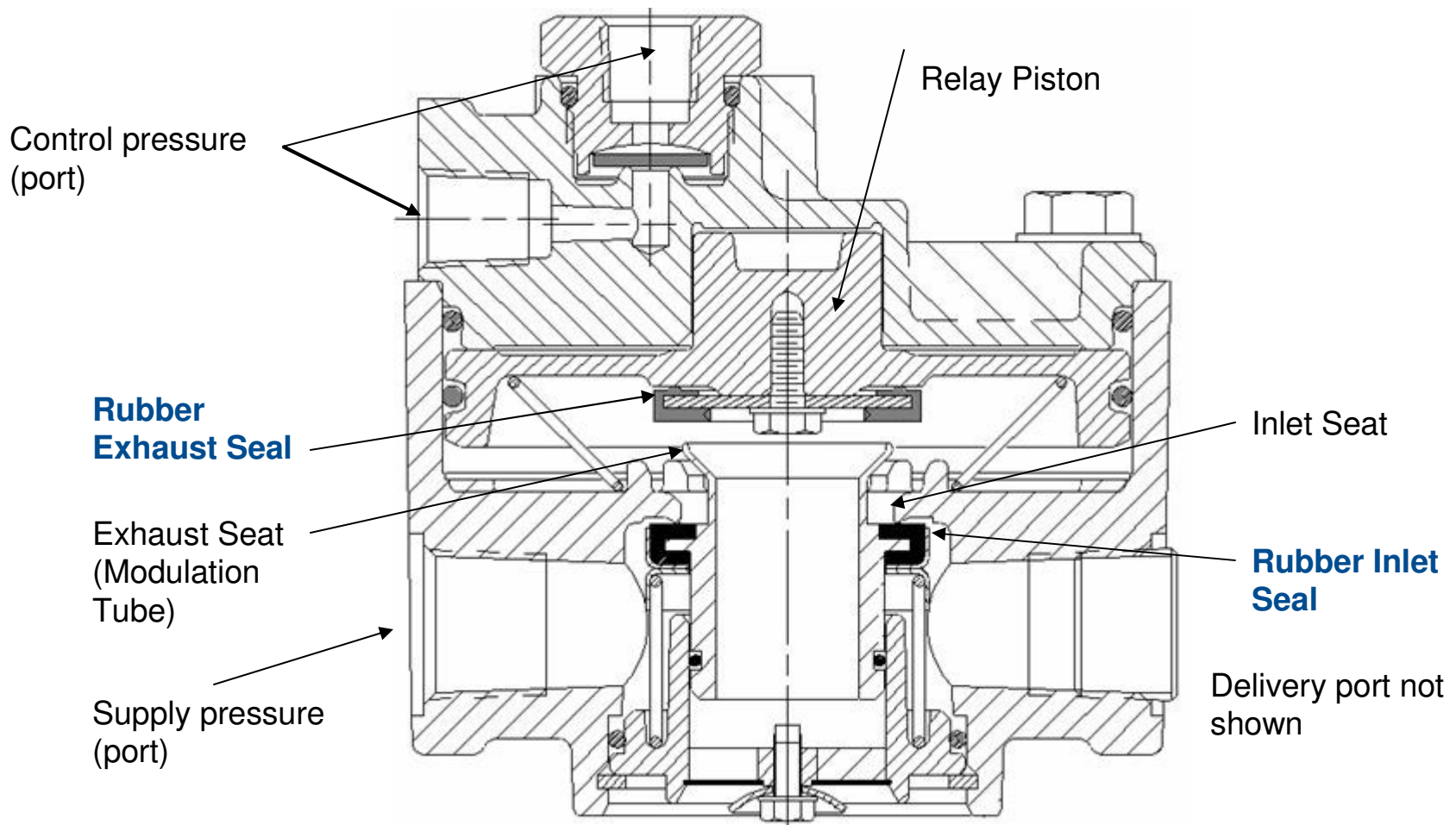


## **NHTSA ODI – EA09-009**

- The information that follows was prepared to supplement the Mack Trucks presentation and technical discussions on the subject during a review meeting December 17, 2009
- Attendees were from NHTSA, Mack Trucks, Haldex and Meritor WABCO
- For further information, see individual vehicle and product reports to be submitted to NHTSA in January, 2010.

## Meritor WABCO / Haldex Relay Valve



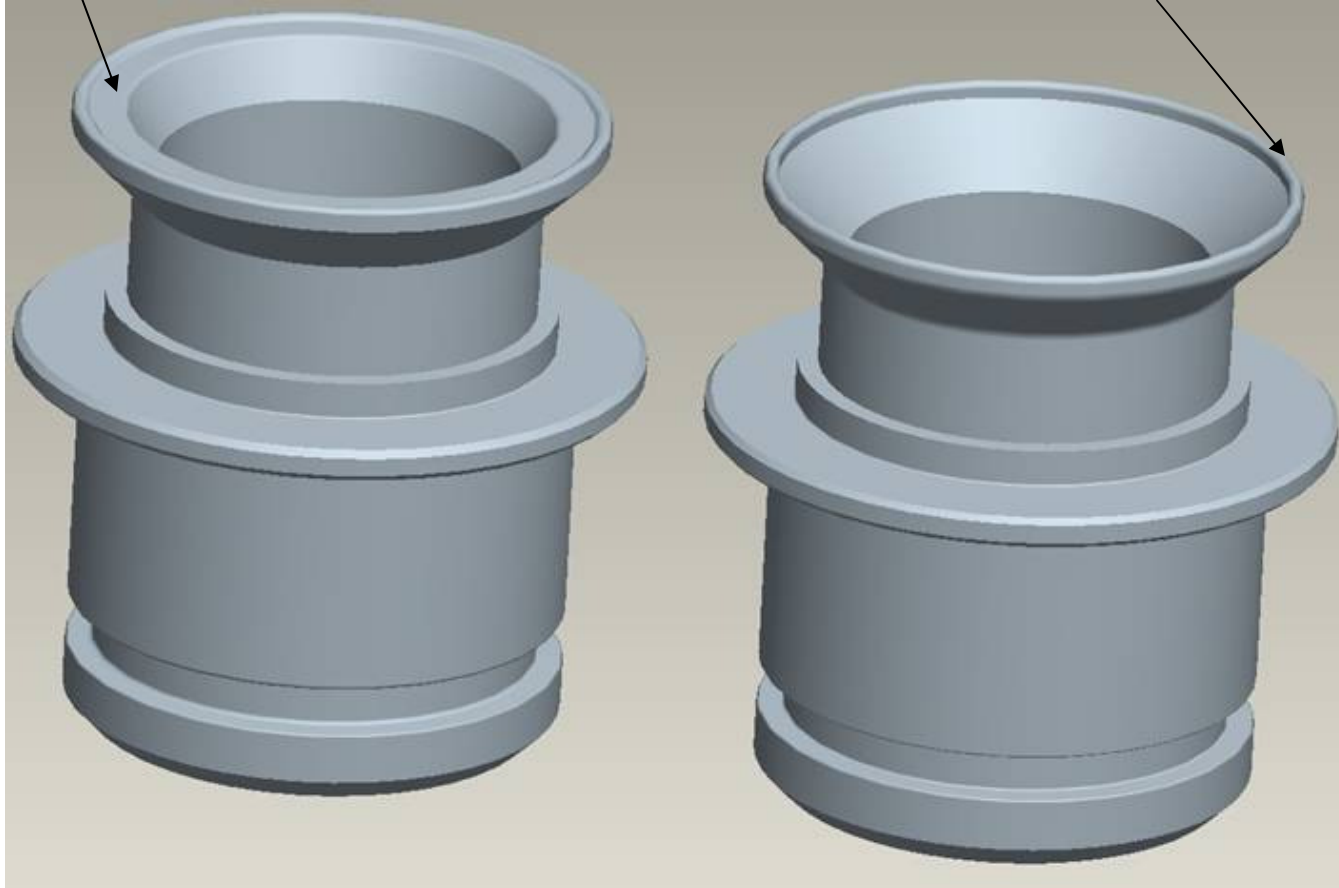
## Relay Valve Exhaust Seat / Modulation Tube Design Change – Phase I

Phase 1 Implemented Jan 2009

(Additional metal to reduce rubber deflection)

Original Design

(No metal stop other than seat – results in more rubber deflection)



|                                | Vehicle Identification                                                              |                                                                                      |                                                                                       |
|--------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                | PA/NJ1                                                                              | FRN/PA                                                                               | RDG/PA1                                                                               |
| Mileage                        | 348,000                                                                             | 131,382 / 127,126                                                                    | 625,670                                                                               |
| System Status                  | Dryer cartridge not serviced                                                        | Dryer cartridge replaced @ 100K                                                      | Dryer replaced @ 566,245. Incorrect installation – not enough purge                   |
| Vehicle Performance            | Reported – leakage found on site                                                    | SS121 apply .23 sec, drive OK                                                        | SS121 apply .21 sec                                                                   |
| Dryer Cartridge Inlet / Outlet |    |    |    |
| Relay Valve – Exhaust          |   |   |   |
| Relay Valve - Inlet            |  |  |  |

**MERITOR WABCO**

NHTSA EA09-009 Review – December 17,2009

|                                | Vehicle Identification                                                              |                                                                                      |                                                                                       | MERITOR WABCO |
|--------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------|
|                                | PA/NJ2                                                                              | TX                                                                                   | PA/NJ3                                                                                |               |
| Mileage                        | 329,421                                                                             | 107,786                                                                              | Not Available                                                                         |               |
| System Status                  | Dryer cartridge not serviced                                                        | Excessive bio fuel                                                                   | Assume same as PA/NJ2                                                                 |               |
| Vehicle Performance            | PBBT OK – 0.53 brake force ratio                                                    | Reported problem                                                                     | Reported problem PBBT on different vehicle OK – 0.60 brake force ratio                |               |
| Dryer Cartridge Inlet / Outlet |    | Not available                                                                        | Not available                                                                         |               |
| Relay Valve – Exhaust          |   |   |   |               |
| Relay Valve - Inlet            |  |  |  |               |

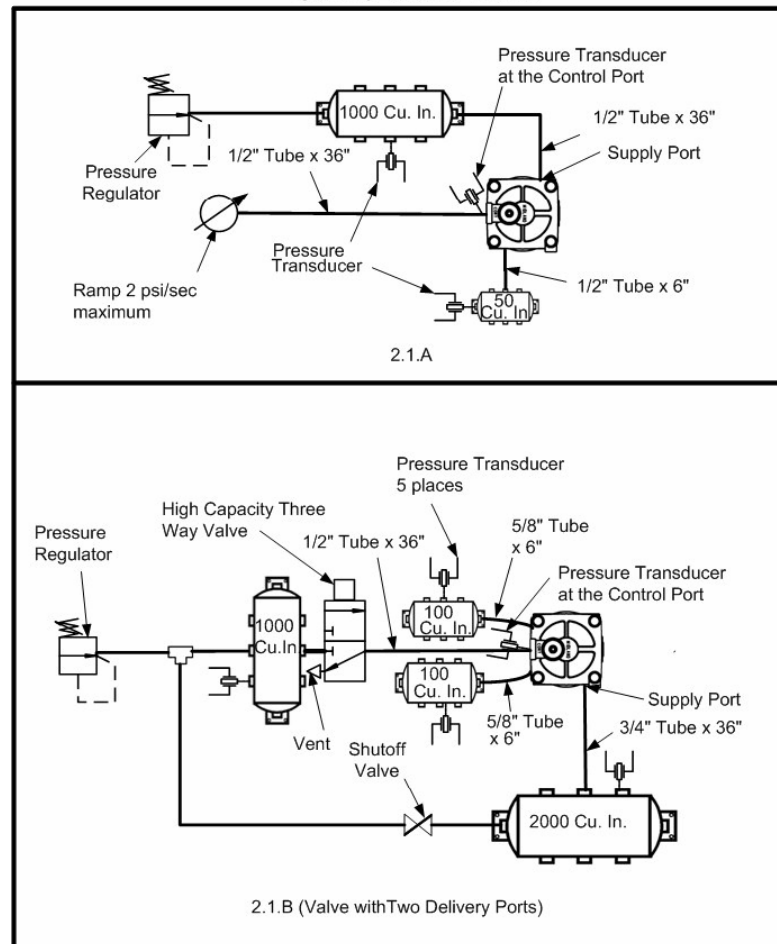
NHTSA EA09-009 Review – December 17,2009

# Meritor WABCO Product Specification – Apply / Release Timing Test Set-Up

## APPENDIX G

Sheet 1 of 2

### TEST SPECIFICATION SERVICE RELAY VALVE



## Apply / Release Timing Test Results – Lab versus Vehicle

