

**TECHNICAL SERVICE BULLETIN**

**Bulletin No.:** TSB-047

**Date:** March 06, 2023

**Subject:** VP Chassis RSS Update

**Models:** Select Quantum VP Trailers

**Background**

Select Quantum Virtual Pipeline (VP) trailers with PRATT chassis were built with the intent to have Roll Stability Support (RSS) ABS installed on the chassis. However, the supplier of the RSS, Meritor WABCO, was not able to produce enough modules for demand due to a computer chip shortage. These trailers were shipped with standard ABS and are ready to install RSS Modules when available.

**Condition**

The Quantum special permit DOT-SP 16524 (TENTH REVISION) requires that all trailers (chassis) operating under this permit must be equipped when manufactured or retrofitted with Roll Stability Control (RSC) by no later than May 31, 2023.

**Cause**

Due to a global chip shortage, the affected PRATT chassis were built with the intent to have RSS ABS and were shipped with standard ABS.

**Correction**

The affected PRATT chassis will need to be retrofitted with an RSS module no later than May 31, 2023. Included in this bulletin is the Quantum upgrade kit P/N and installation instructions provided by PRATT. This installation will need to be completed by personal with knowledge and the required equipment to properly install and calibrate the RSS ABS system.

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**Labor Time**

Estimated labor time per chassis:

VP Lite Trailers:

Labor OP: TSB047

Time: 8.0 Hrs

**Parts Information**

Description	Part Number	Fits	Qty
Upgrade kit, PRATT RSS	121606	Select VP PRATT chassis	1 ea

**Tool Information**

Description	Part Number	Qty
Meritor WABCO toolbox software	N/A	A/R
Noregon Trailer Diagnostic Adapter kit w/ Power cable	122511	A/R
Pratt .ecu file	N/A	1

**Application**

The chassis can be identified by locating the manufacturers identification plate located on the frame rail of the chassis.

PRATT chassis S/N	PRATT chassis S/N	PRATT chassis S/N
1P9CC4122NB343910	1P9CC412XPB343026	1P9CC4126PB343041
1P9CC4124PB343023	1P9CC4121PB343027	1P9CC4128PB343042
1P9CC4122NB343907	1P9CC4123PB343028	1P9CC412XPB343043
1P9CC4124NB343908	1P9CC4125PB343029	1P9CC4121PB343044
1P9CC4126NB343909	1P9CC4121PB343030	1P9CC4123PB343045
1P9CC4124NB343911	1P9CC4123PB343031	1P9CC4125PB343046
1P9CC4126NB343912	1P9CC4126PB343038	1P9CC4127PB343047
1P9CC4126PB343024	1P9CC4128PB343039	1P9CC4129PB343048
1P9CC4128PB343025	1P9CC4124PB343040	1P9CC4120PB343049
1P9CC4127PB343050	1P9CC4127PB343100	1P9CC4126PB343105
1P9CC4129PB343051	1P9CC4121PB343111	1P9CC4122PB343098
1P9CC4122PB343053	1P9CC4123PB343112	
1P9CC4129PB343101	1P9CC4125PB343113	
1P9CC4122PB343103	1P9CC4124PB343104	

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**TECHNICAL SERVICE BULLETIN**

To expedite the installation of the RSS ABS module please observe the following guidelines:

- The trailer will need to be at service minimum pressure 200 psi (13.8 bar).
- Make sure there is no damage to the chassis and it is in good working order.
- Verify there are no ABS trouble codes active.
- Verify the brake system has been properly maintained and is in good working order.
- Verify that all electrical connections and associated wiring are in good condition.
- Verify ABS wheel speed sensors, wheel speed sensor wiring and tone rings are in good condition
- The chassis will need to be off the ground and on solid footing for the calibration to be completed.

The following instructions will enable you to properly retrofit PRATT chassis with the RSS ABS module.

# **QUANTUM FUEL SYSTEMS**

## **MODEL: GN412LA-HDS-R004**

**COMPLETE INSTRUCTIONS TO REPLACE THE EXISTING 4S-2M  
STANDARD ABS SYSTEM WITH A MERITOR WABCO  
4S-2MRSS (ROLL STABILITY SUPPORT) ABS SYSTEM.**



PRATT INDUSTRIES US

11365 RED ARROW HWY.

BRIDGMAN MI, 49106

**THE FOLLOWING INSTALLATION INSTRUCTIONS WILL PROVIDE A SERIES OF DETAILS AIMED TO GUIDE A TECHNICIAN FROM QUANTUM FUEL SYSTEMS THROUGH THE PROCESS OF REPLACING THE EXISTING ABS COMPONENTS FROM A STANDARD 4S-2M ABS SYSTEM WITH ALL THE COMPONENTS REQUIRED TO INSTALL A MERITOR WABCO 4S-2MRSS (ROLL STABILITY SUPPORT) ABS SYSTEM. PLEASE USE THE FOLOWING PICTURES, TAG INFORMATION, & WRITTEN DESCRIPTIONS TO COMPLETE THE REPLACEMENT PROCESS. ALSO, PLEASE CLEAN THE REAR WHEEL AREA FROM DIRT AND ROAD SALT ETC.. PRIOR TO BEGINNING PROJECT.**

1-1 THE FIRST STEP OF THIS PROCESS BEGINS WITH THE TECHNICIAN DISCONNECTING THE ABS POWER WIRE, ALL WHEEL SENSOR WIRES, ALL 3/8" BLUE, RED, & BLACK NYLON LINES FROM THE EXISTING 4S-2M ECU. PLEASE MARK THE ORIGINS OF EACH WHEEL SENSOR WIRE & EACH 3/8" BLUE, RED, & BLACK NYLON LINE REMOVED FROM THE ECU. LABEL WHEEL SENSOR WIRES & NYLON AIR LINES WITH WHITE TAPE & A BLACK SHARPIE MARKER. SEE FIGURE 1-1 BELOW. **NOTE THAT THE NEW EMERGENCY LINES RUNNING TO THE NEW 4S-2MRSS (ROLL STABILITY SUPPORT) VALVE WILL BE CHANGED 1/2" RED NYLON LINES.**

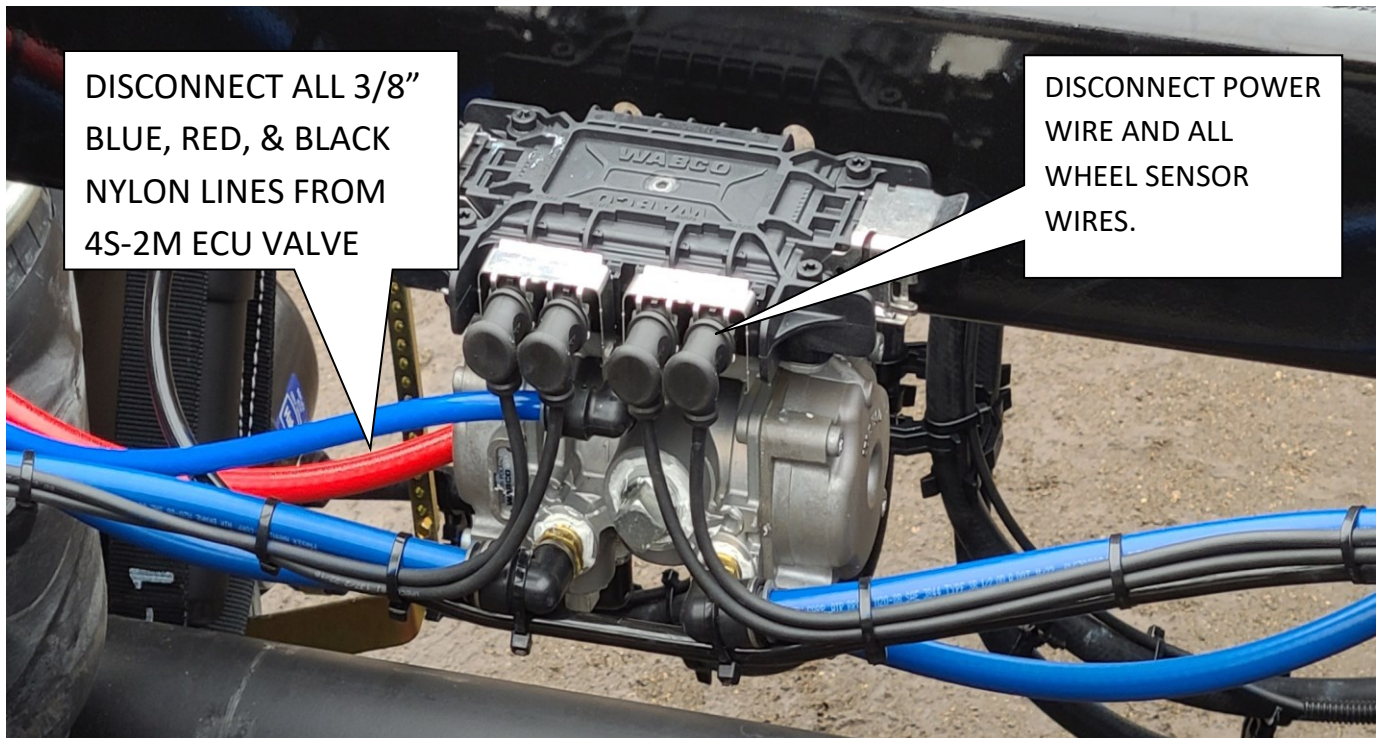


FIGURE 1-1

1-2 NEXT, CONNECT THE 1/2" RED NYLON LINE FROM THE 1/2"-1/2"-90 DEGREE FITTING ON THE ROADSIDE END OF THE AIR TANK TO THE REAR SIDE OF THE 4S-2MRSS ECU TO PORT NO. 1. 1/2-1/2-90 DEGREE FITTING. SEE FIGURE 1-2 BELOW.

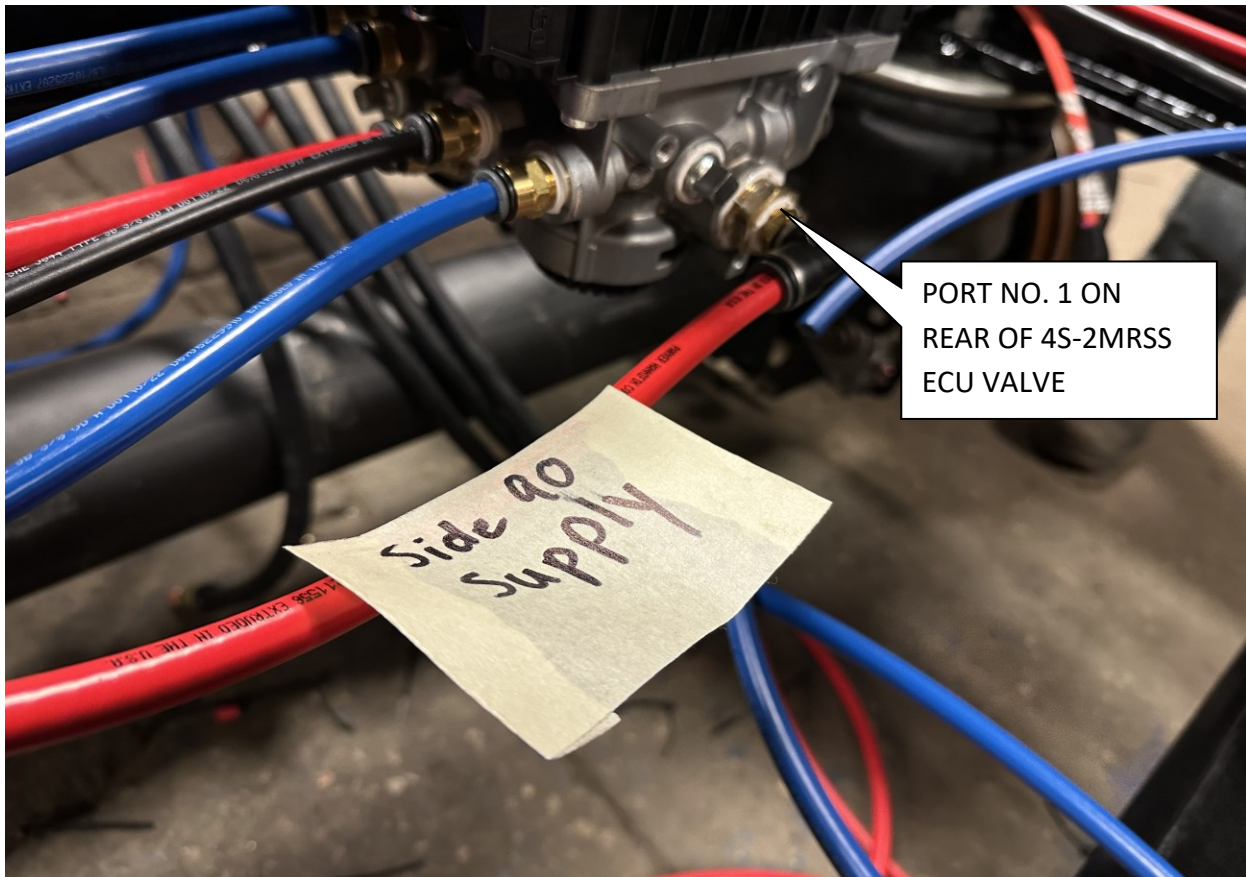


FIGURE 1-2

1-3 NEXT, START WITH THE 3/8" RUBBER LINE CONNECTED TO THE AXLE NO.1 ROADSIDE BRAKE CHAMBER SERVICE PORT. FOLLOW THAT UP TO THE FRONT AXLE STATION PLATE. CHANGE TO 1/2 " BLUE NYLON LINE AND CONNECT IT TO THE FRONT NO. 2.1 PORT ON THE ROADSIDE OF THE 4S-2MRSS ECU VALVE. WITH A 1/2 "-1/2 " STRAIGHT FITTING. SEE FIGURE 1-3 BELOW.

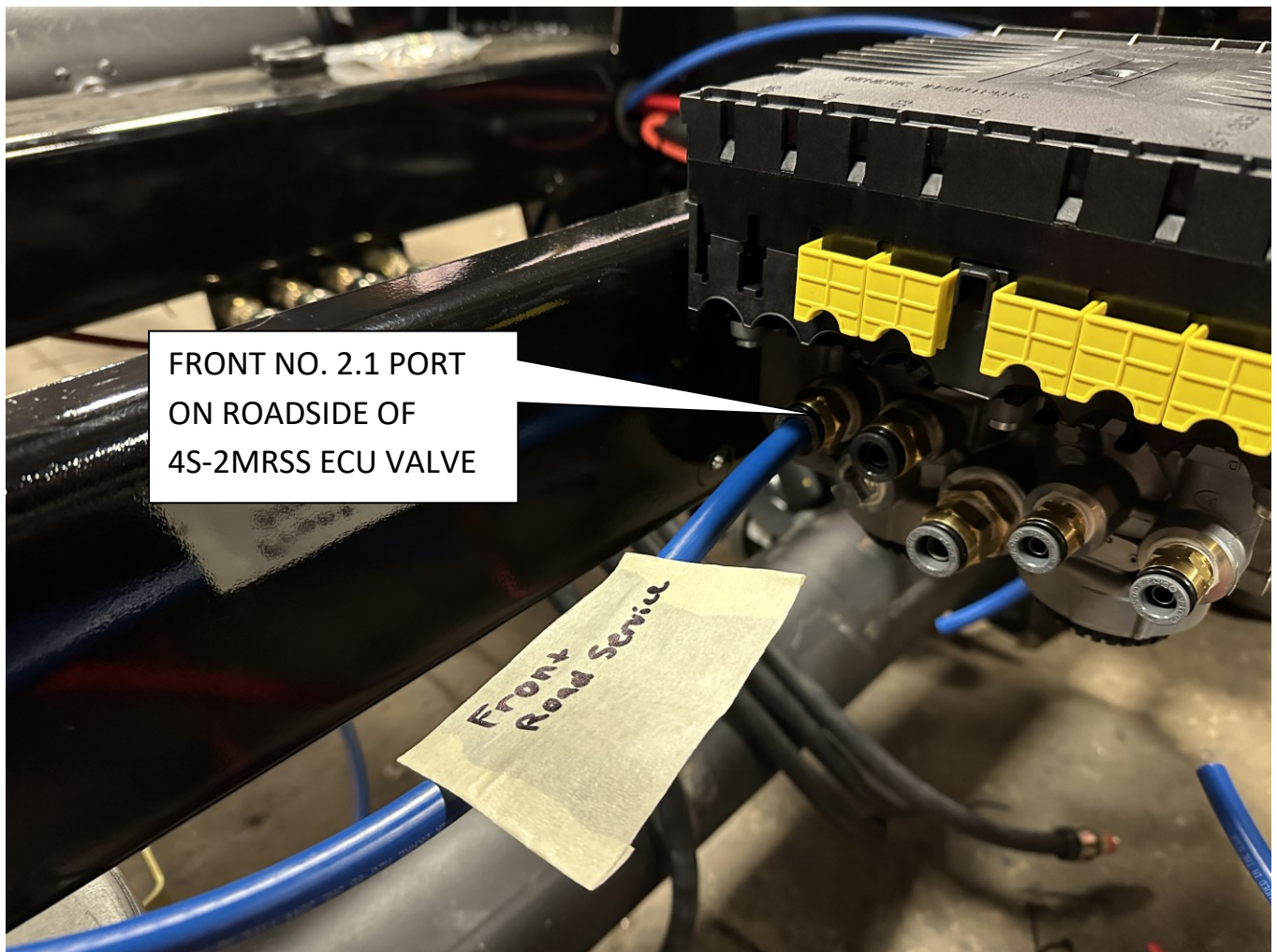


FIGURE 1-3

1-4 NEXT, START WITH THE 3/8" RUBBER LINE CONNECTED TO THE AXLE NO.2 ROADSIDE BRAKE CHAMBER SERVICE PORT. FOLLOW THAT UP TO THE REAR AXLE STATION PLATE. CHANGE TO 1/2" BLUE NYLON LINE AND CONNECT IT TO THE SECOND NO. 2.1 PORT ON THE ROADSIDE OF THE 4S-2MRSS ECU VALVE. WITH A 1/2"-1/2" STRAIGHT FITTING. SEE FIGURE 1-4 BELOW.

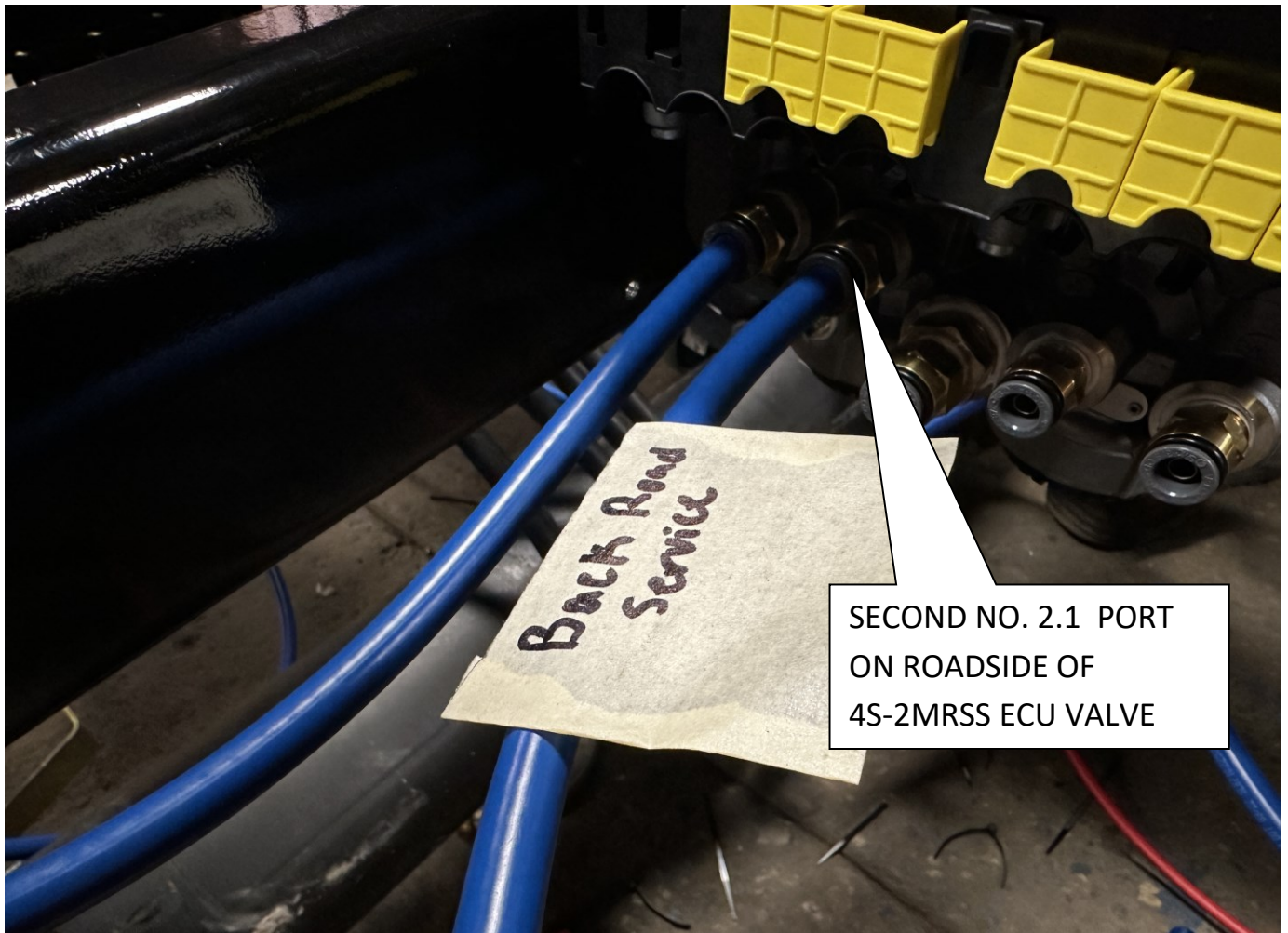


FIGURE 1-4

1-5 NEXT, CONNECT THE 1/2" RED NYLON LINE FROM THE 1/2"-1/2"-90 DEGREE FITTING ON THE ROADSIDE FRONT OF THE AIR TANK TO THE ROADSIDE OF THE 4S-2MRSS ECU TO PORT NO. 1. WITH A 1/2"-1/2" STRAIGHT FITTING. SEE FIGURE 1-5 BELOW.

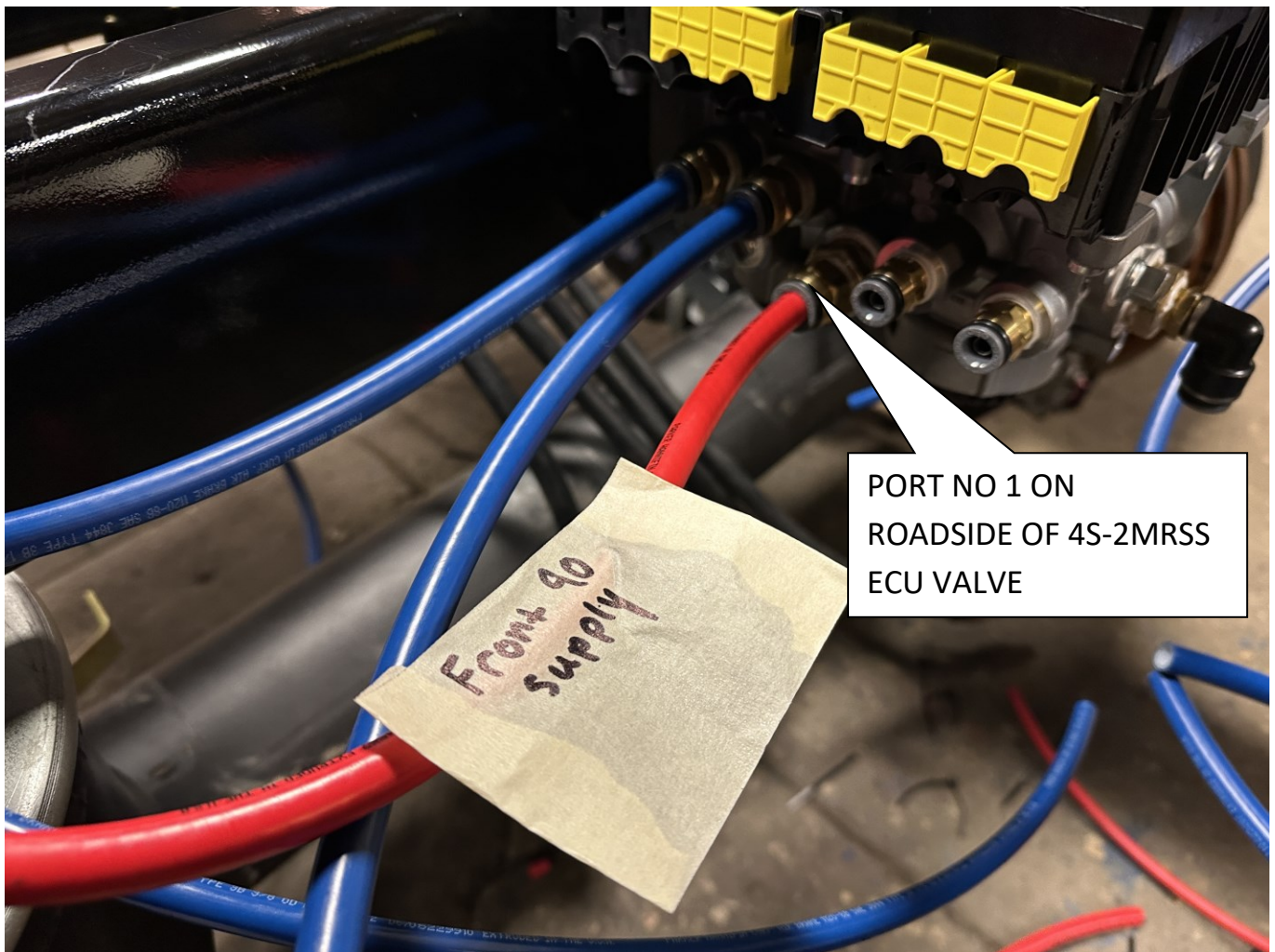


FIGURE 1-5

1-6 NEXT, CONNECT THE 3/8" BLACK NYLON LINE FROM THE NO. 5 PORT ON THE ROADSIDE OF THE 4S-2MRSS ECU VALVE. CONNECT TO A 3/8" TEE LOCATED DIRECTLY TO THE ROADSIDE. THIS WILL SUPPLY THE AIR BAGS. SEE FIGURE 1-6 BELOW.

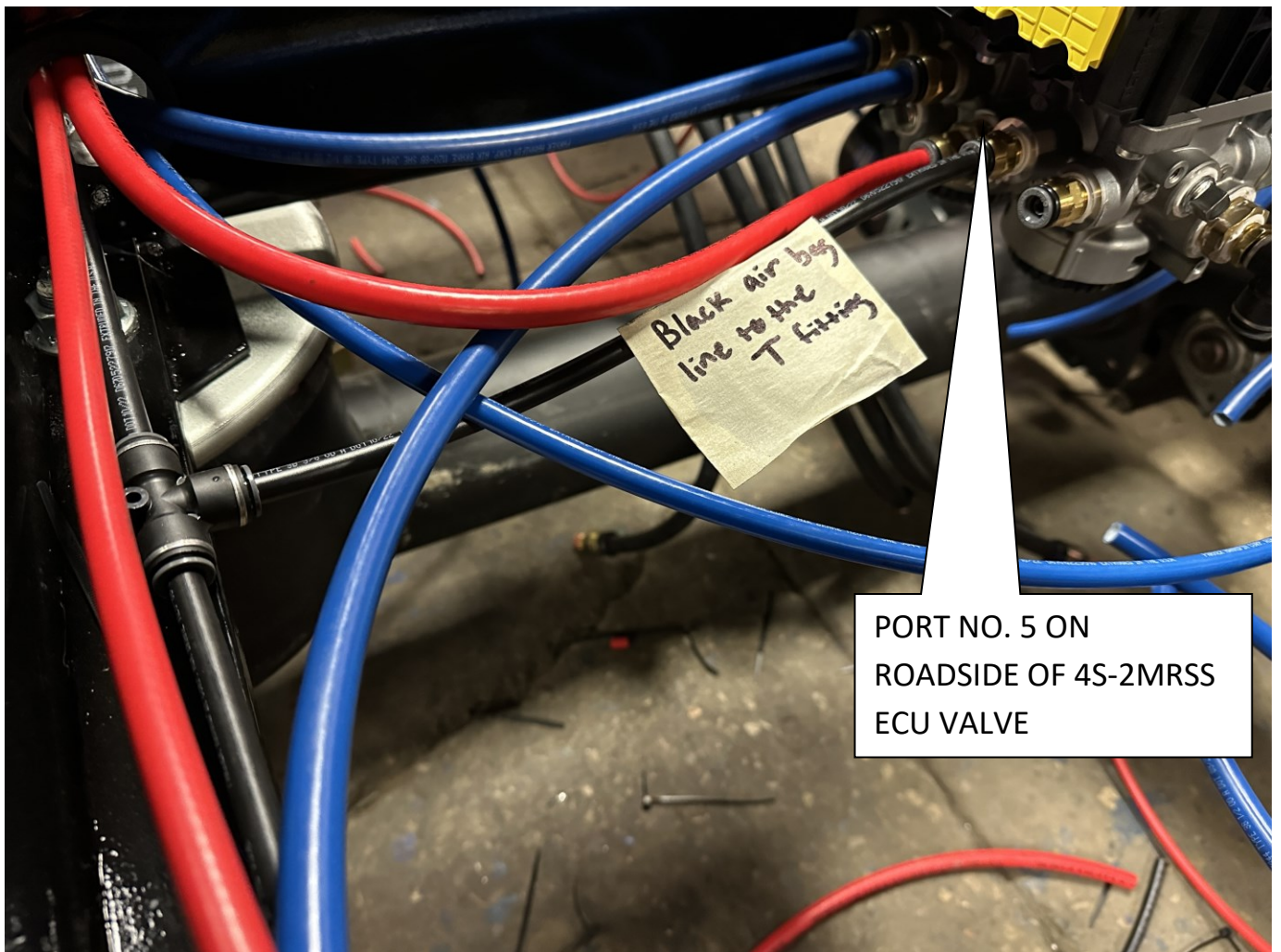


FIGURE 1-6

1-7 NEXT, CONNECT THE 3/8" BLUE NYLON LINE FROM PORT NO. 4 ON THE ROADSIDE OF THE 4S-2MRSS ECU VALVE. THIS WILL BE RUN TO THE CURBSIDE AND FORWARD TO A 3/8" TEE SLIGHTLY FORWARD OF THE FRONT AIR TANK. ONE 3/8" BLUE LINE WILL CONTINUE FORWARD TO THE FRONT SERVICE GLAD HAND. THE OTHER 3/8" BLUE LINE WILL CONNECT TO THE TOP 3/8" CONTROL PORT OF THE 110800 SPRING BRAKE CONTROL VALVE. SEE FIGURES 1-7-1 & 1-7-2 BELOW & ON NEXT PAGE.

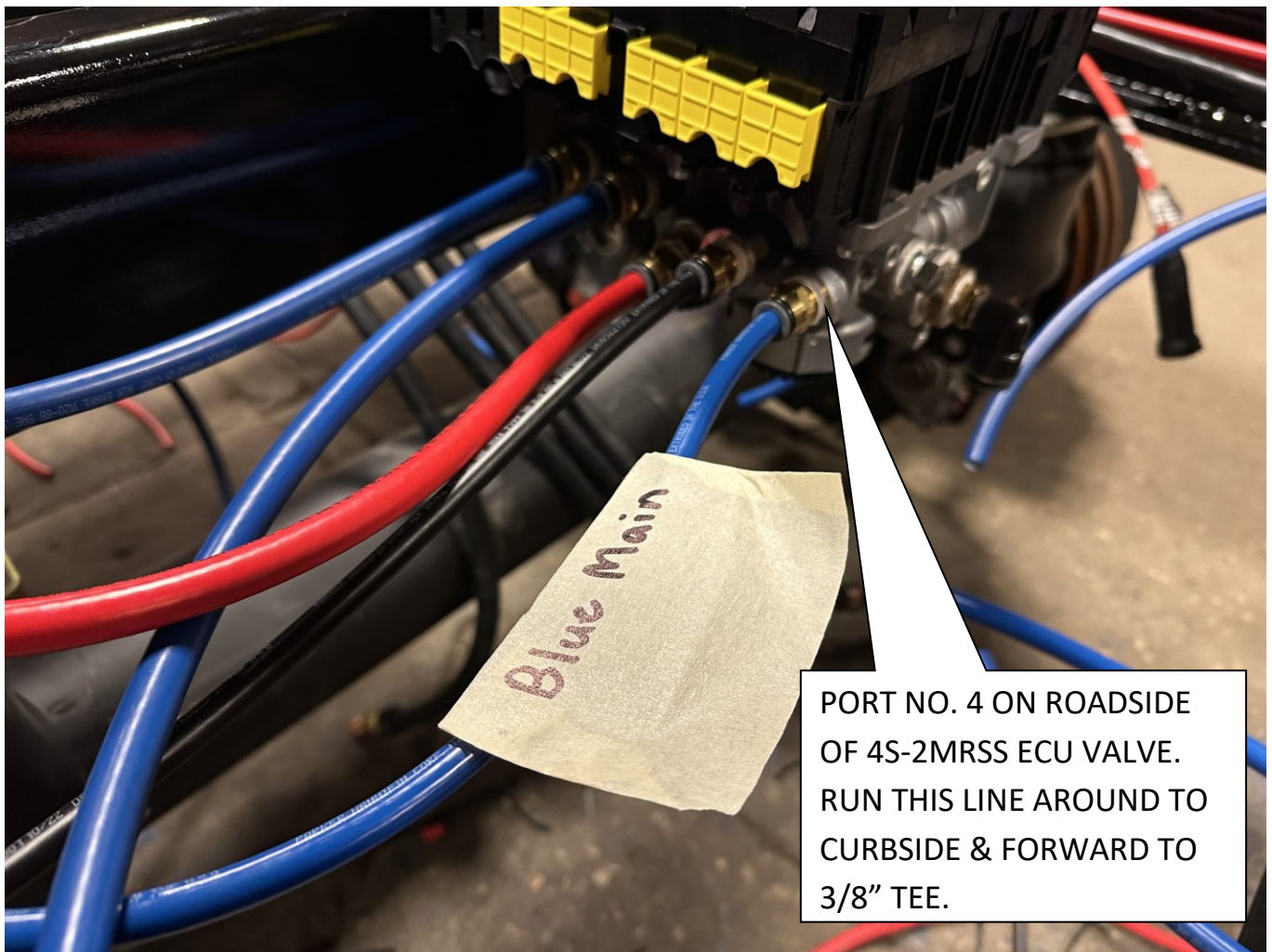


FIGURE 1-7-1

1-7 CONTINUED FROM PAGE NUMBER 8.

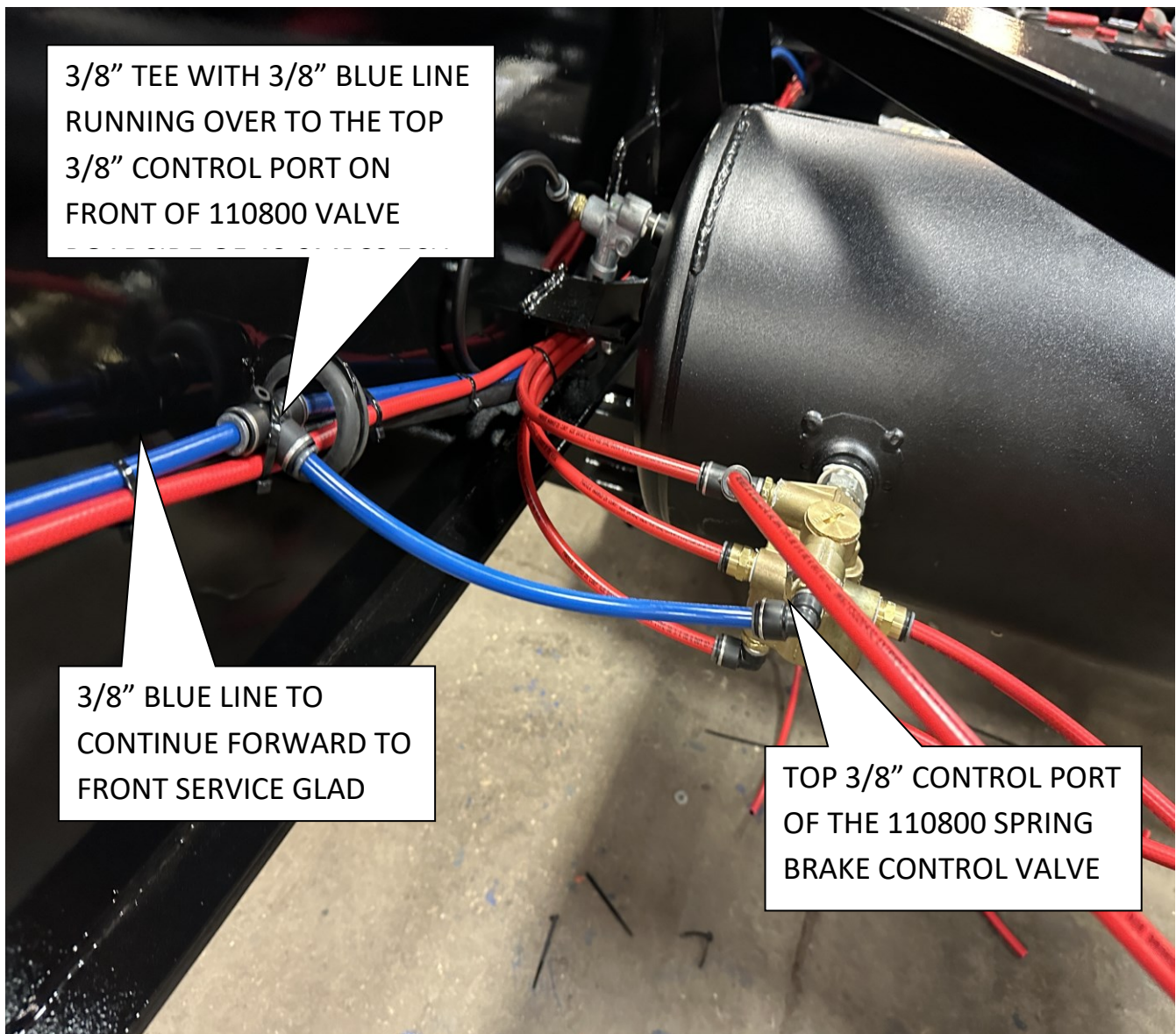


FIGURE 1-7-2

1-8 NEXT, START WITH THE 3/8" RUBBER LINE CONNECTED TO THE AXLE NO.2 CURBSIDE BRAKE CHAMBER SERVICE PORT. FOLLOW THAT UP TO THE REAR AXLE STATION PLATE. CHANGE TO 1/2 " BLUE NYLON LINE AND CONNECT IT TO THE REAR NO. 2.2 PORT ON THE CURBSIDE OF THE 4S-2MRSS ECU VALVE. USE A 1/2"-1/2" STRAIGHT FITTING. SEE FIGURE 1-8 BELOW.



FIGURE 1-8

1-9 NEXT, START WITH THE 3/8" RUBBER LINE CONNECTED TO THE AXLE NO.1 CURBSIDE BRAKE CHAMBER SERVICE PORT. FOLLOW THAT UP TO THE FRONT AXLE STATION PLATE. CHANGE TO 1/2" BLUE NYLON LINE AND CONNECT IT TO THE FRONT NO. 2.2 PORT ON THE CURBSIDE OF THE 4S-2MRSS ECU VALVE. USE A 1/2"-1/2" STRAIGHT FITTING. SEE FIGURE 1-9 BELOW.

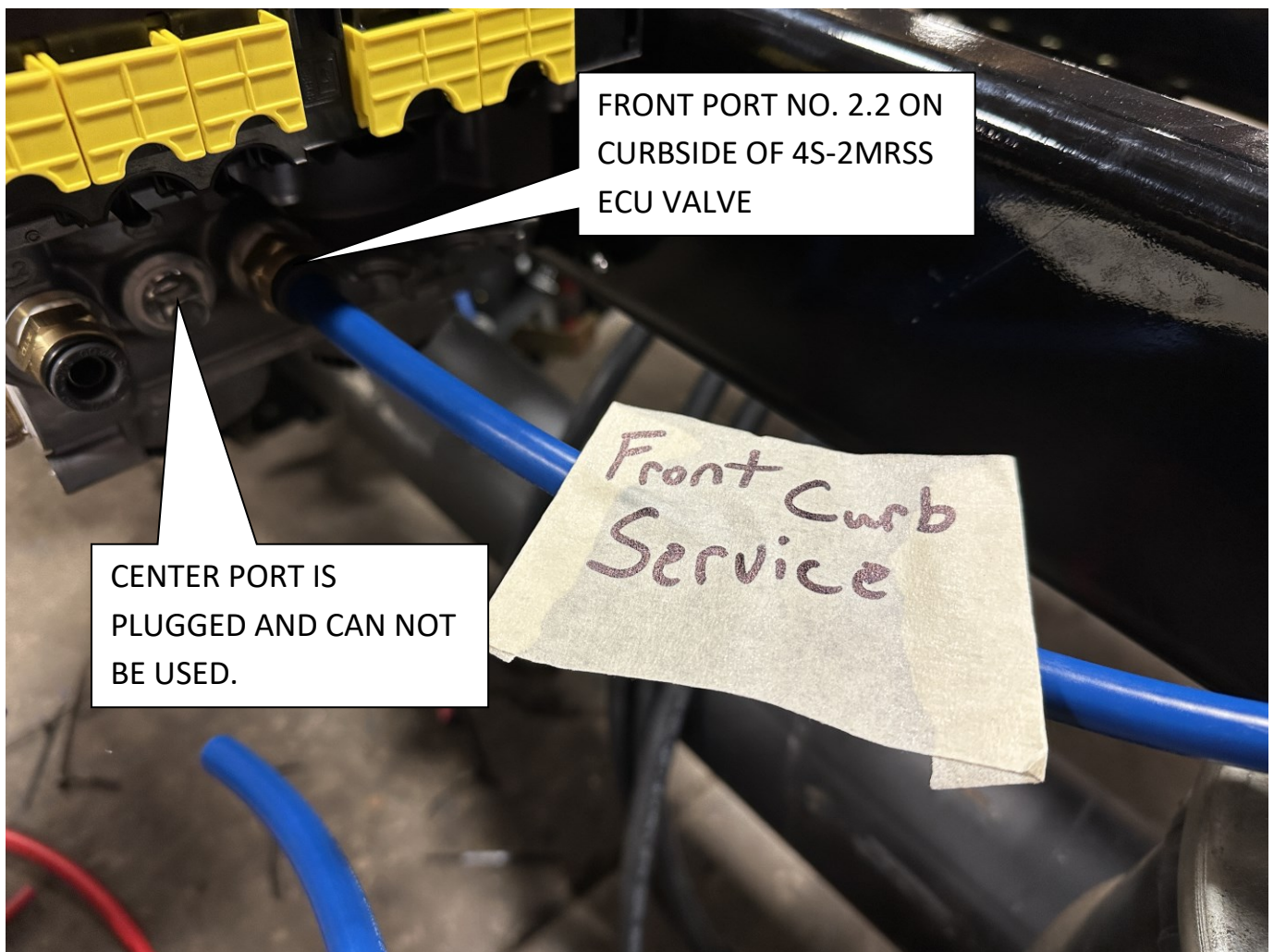
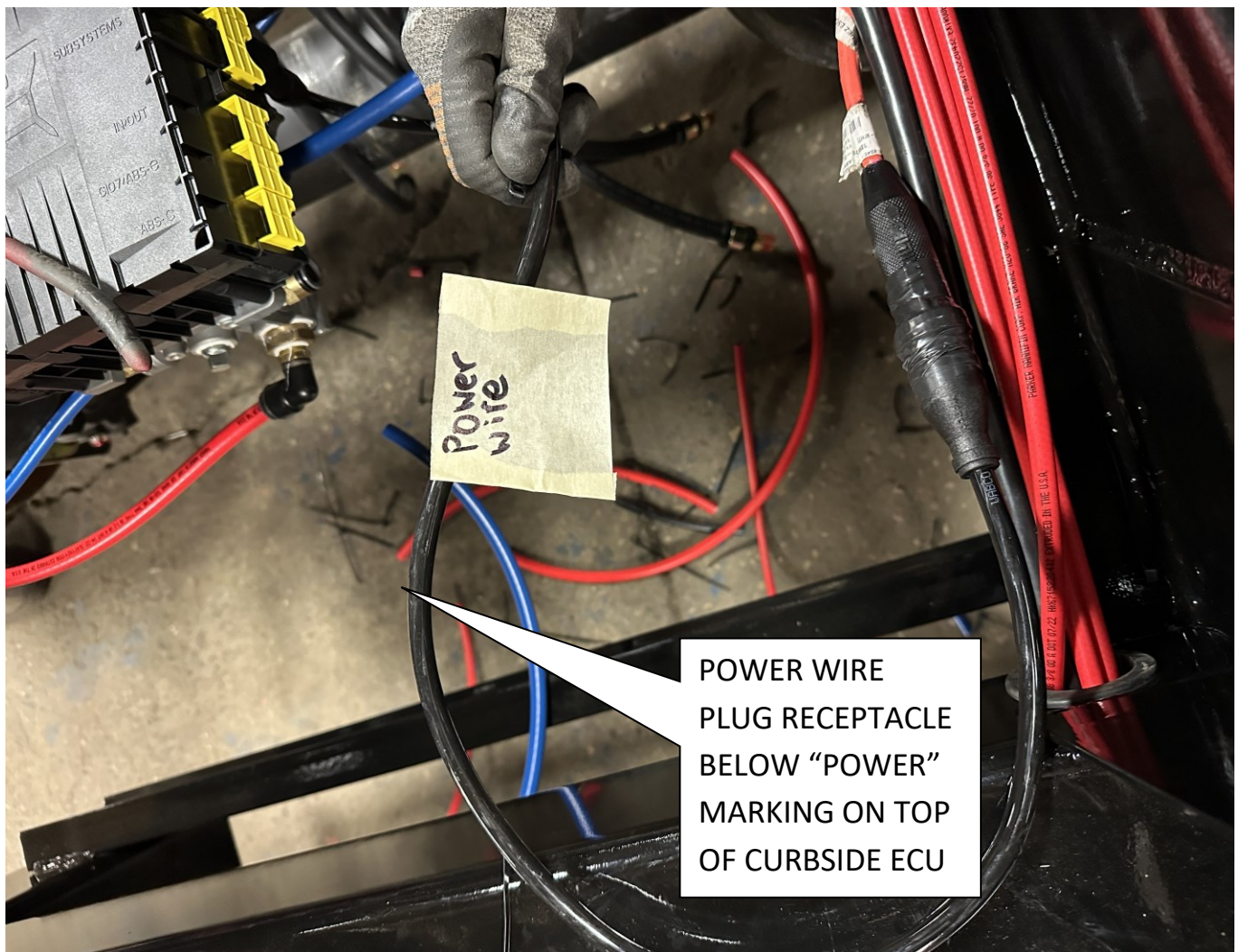


FIGURE 1-9

**1-10 NEXT, REMOVE POWER WIRE FROM EXISTING 4S-2M ABS SYSTEM. CONNECT THE NEW PLUG FROM THE 4S-2MRSS ABS SYSTEM TO THE POWER WIRE HARNESS ORANGE WIRE. TAPE OR SHRINK WRAP THE CONNECTION FOR ADDITIONAL SAFETY. SEE FIGURE 1-10 BELOW.**



**FIGURE 1-10**

1-11 NEXT, CONNECT THE NEW POWER WIRE FROM THE NEW 42-2MRSS ABS SYSTEM TO THE PLUG CONNECTION ON THE CURBSIDE FRONT PLUG RECEPTACLE DIRECTLY BELOW THE MARKING “POWER” ON THE CURBSIDE TOP OF NEW 4S-2MRSS ECU VALVE. BE SURE THE PLUG IS SECURELY LOCKED IN PLACE. SEE FIGURE 1-11 BELOW.



FIGURE 1-11

1-12 NEXT, CONNECT AXLE NO. 1 ROADSIDE ABS WHEEL SENSOR TO THE PLUG RECEPTACLE ON THE ROADSIDE OF THE NEW 4S-2MRSS ECU VALVE DIRECTLY BELOW THE MARKING “ABS-f-006”. BE SURE THE PLUG IS SECURELY LOCKED IN PLACE. SEE FIGURE 1-12 BELOW.

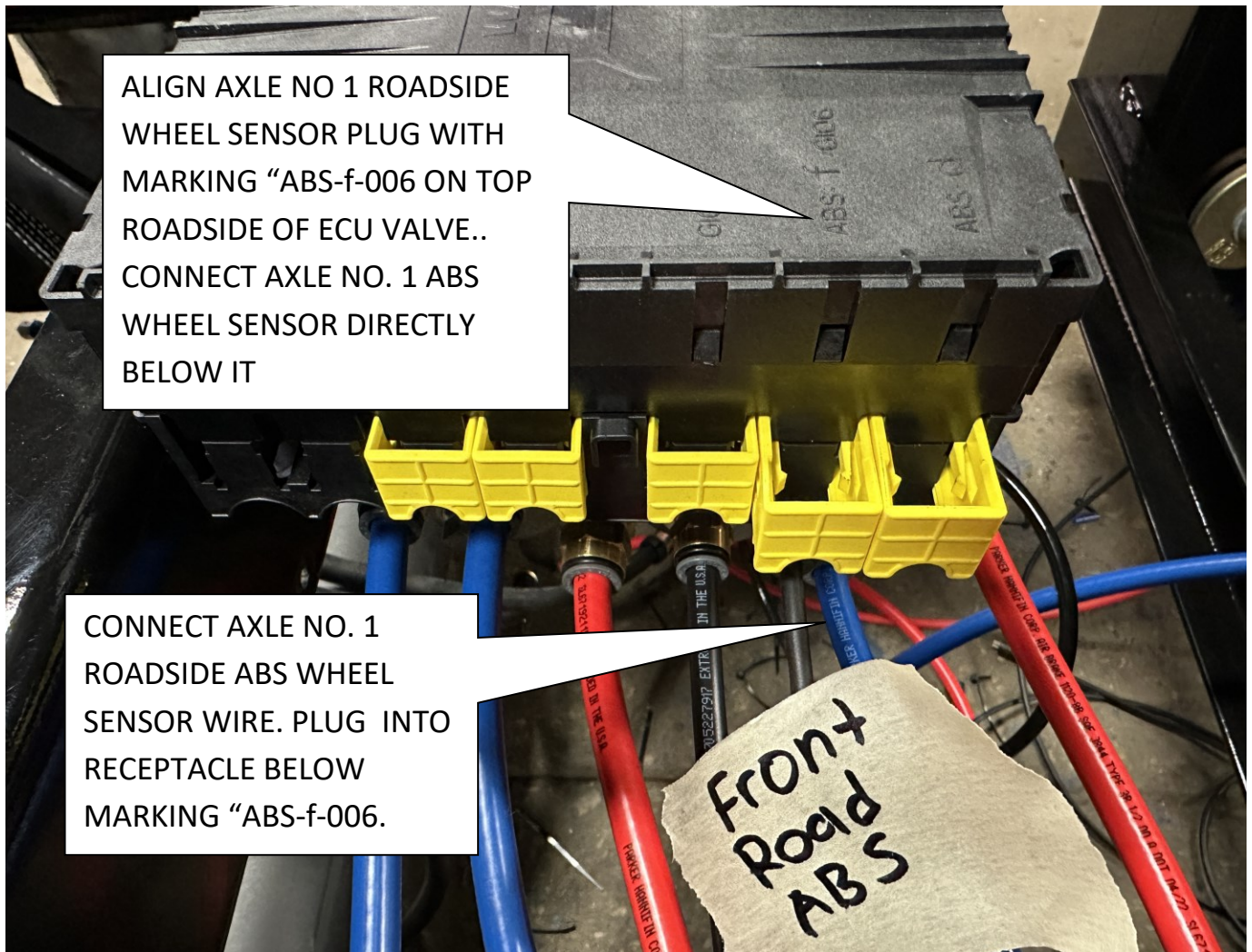


FIGURE 1-12

1-13 NEXT, CONNECT AXLE NO. 1 ROADSIDE ABS WHEEL SENSOR TO THE PLUG RECEPTACLE ON THE ROADSIDE OF THE NEW 4S-2MRSS ECU VALVE DIRECTLY BELOW THE MARKING “ABS-f-006”. BE SURE THE PLUG IS SECURELY LOCKED IN PLACE. SEE FIGURE 1-13 BELOW.

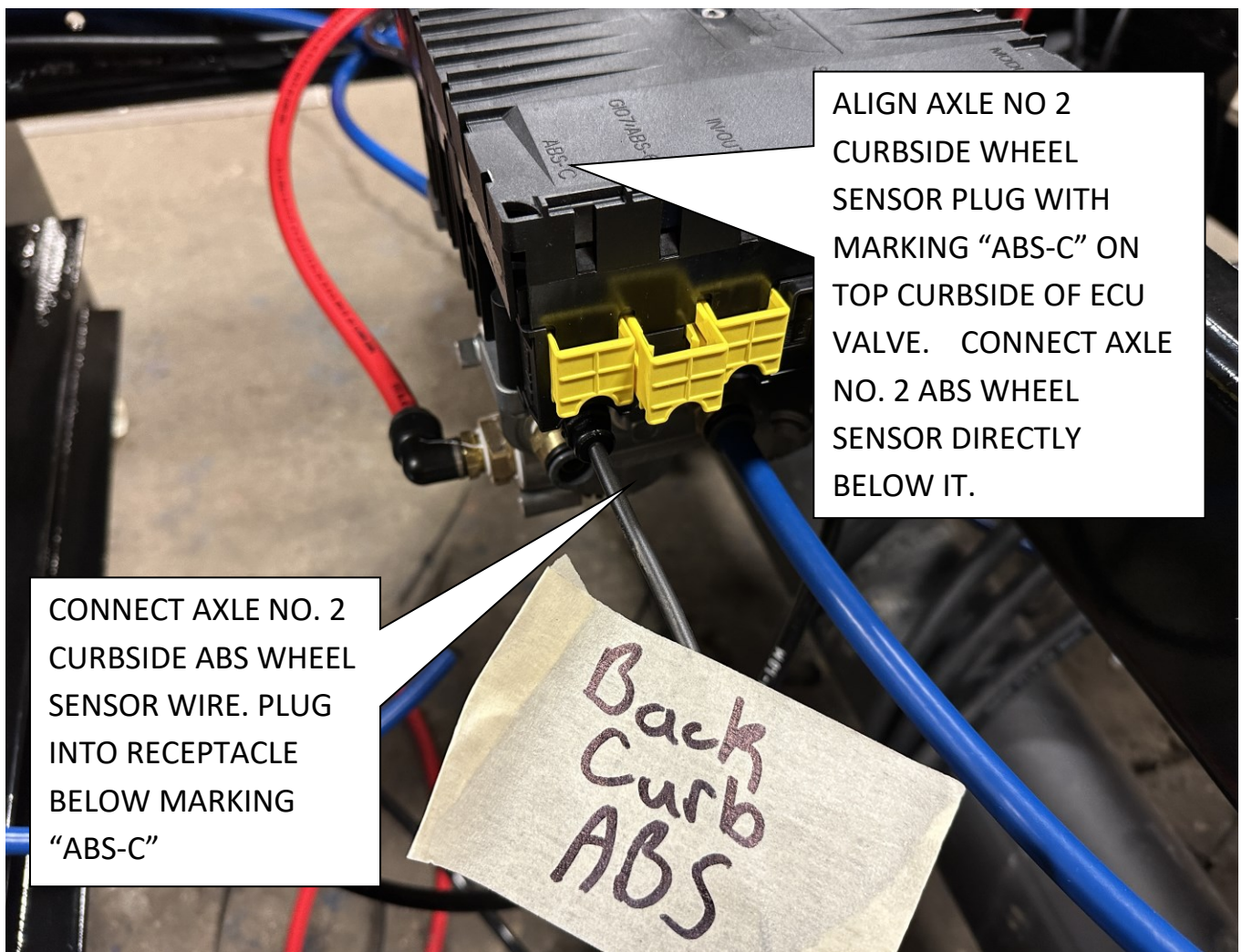


FIGURE 1-13

1-14 NEXT, CONNECT AXLE NO. 1 CURBSIDE ABS WHEEL SENSOR TO THE PLUG RECEPTACLE ON THE CURBSIDE OF THE NEW 4S-2MRSS ECU VALVE DIRECTLY BELOW THE MARKING “ABS-f-006”. BE SURE THE PLUG IS SECURELY LOCKED IN PLACE. SEE FIGURE 1-14 BELOW.

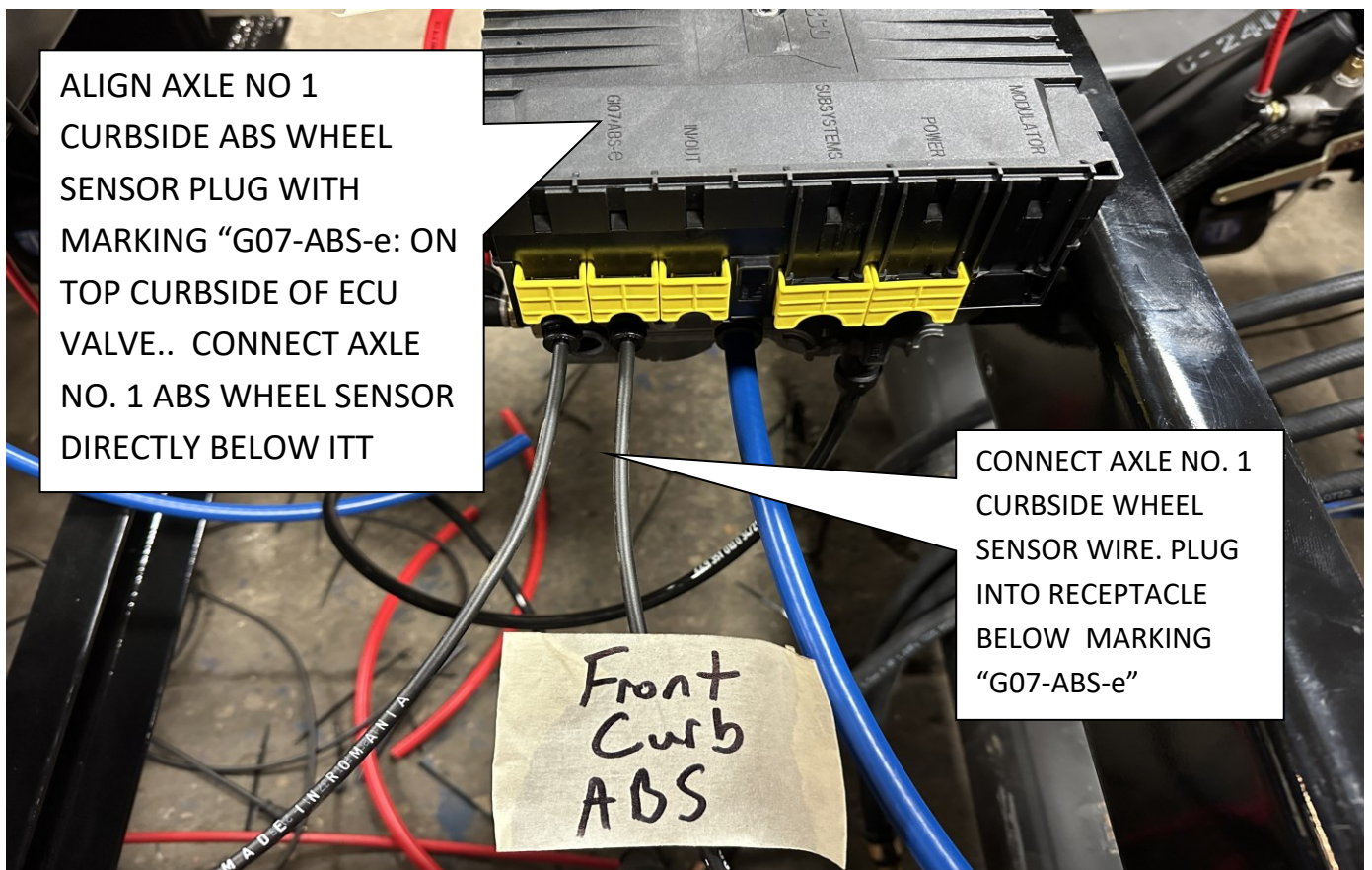


FIGURE 1-14

1-15 NEXT, CONNECT AXLE NO. 2 ROADSIDE ABS WHEEL SENSOR TO THE PLUG RECEPTACLE ON THE CURBSIDE OF THE NEW 4S-2MRSS ECU VALVE DIRECTLY BELOW THE MARKING “ABS-d”. BE SURE THE PLUG IS SECURELY LOCKED IN PLACE. SEE FIGURE 1-15 BELOW.

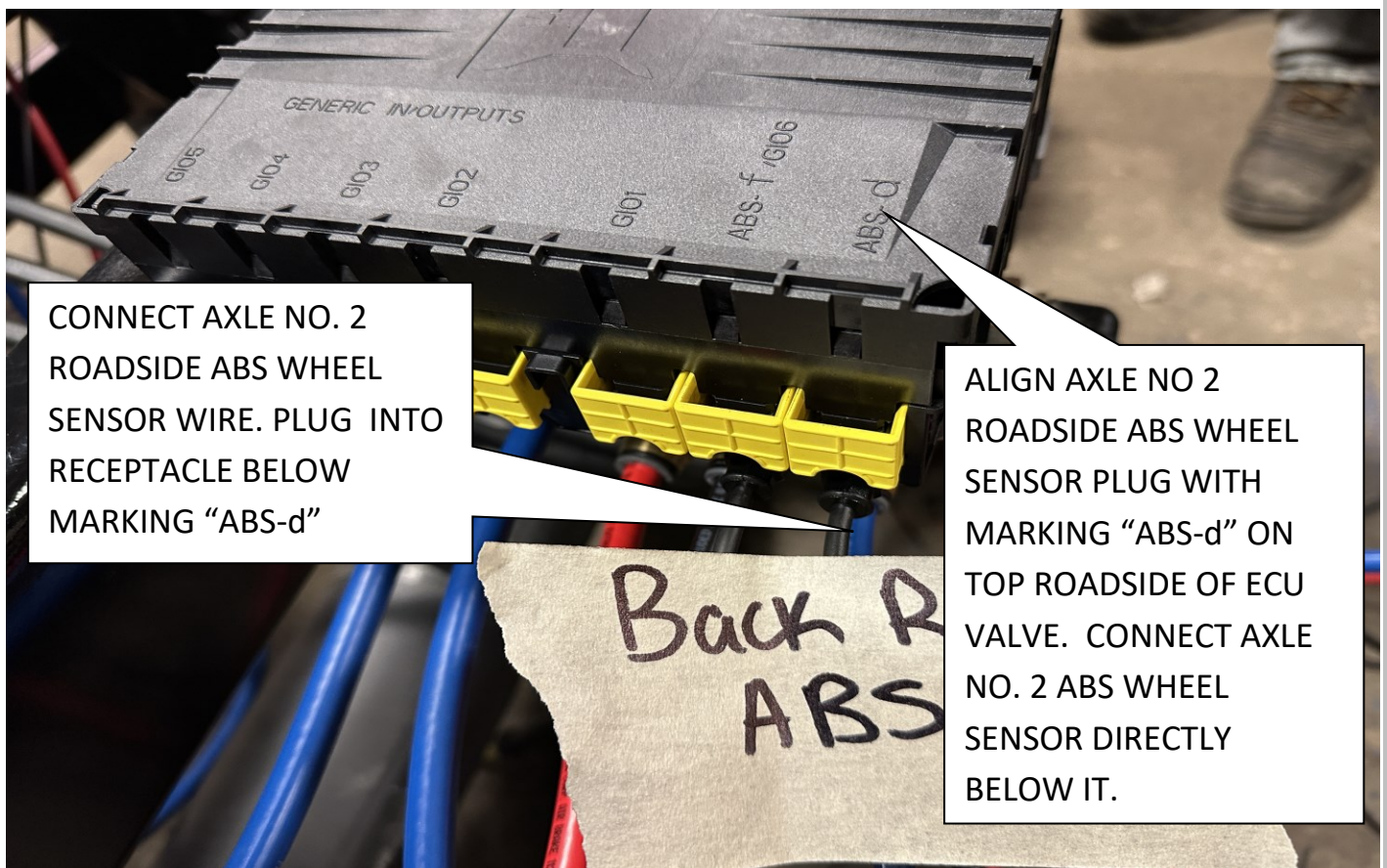
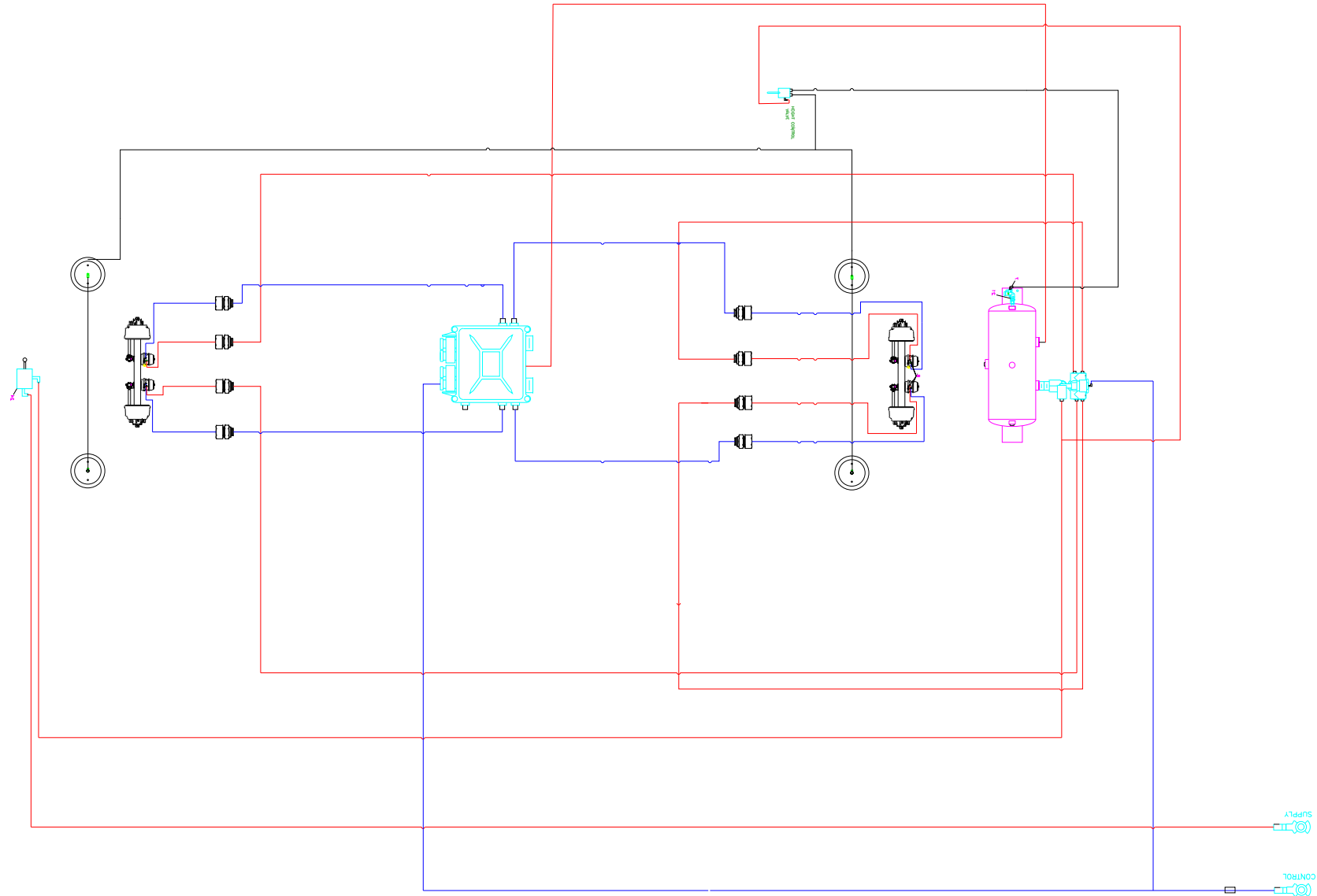


FIGURE 1-15

# ABS ONLY



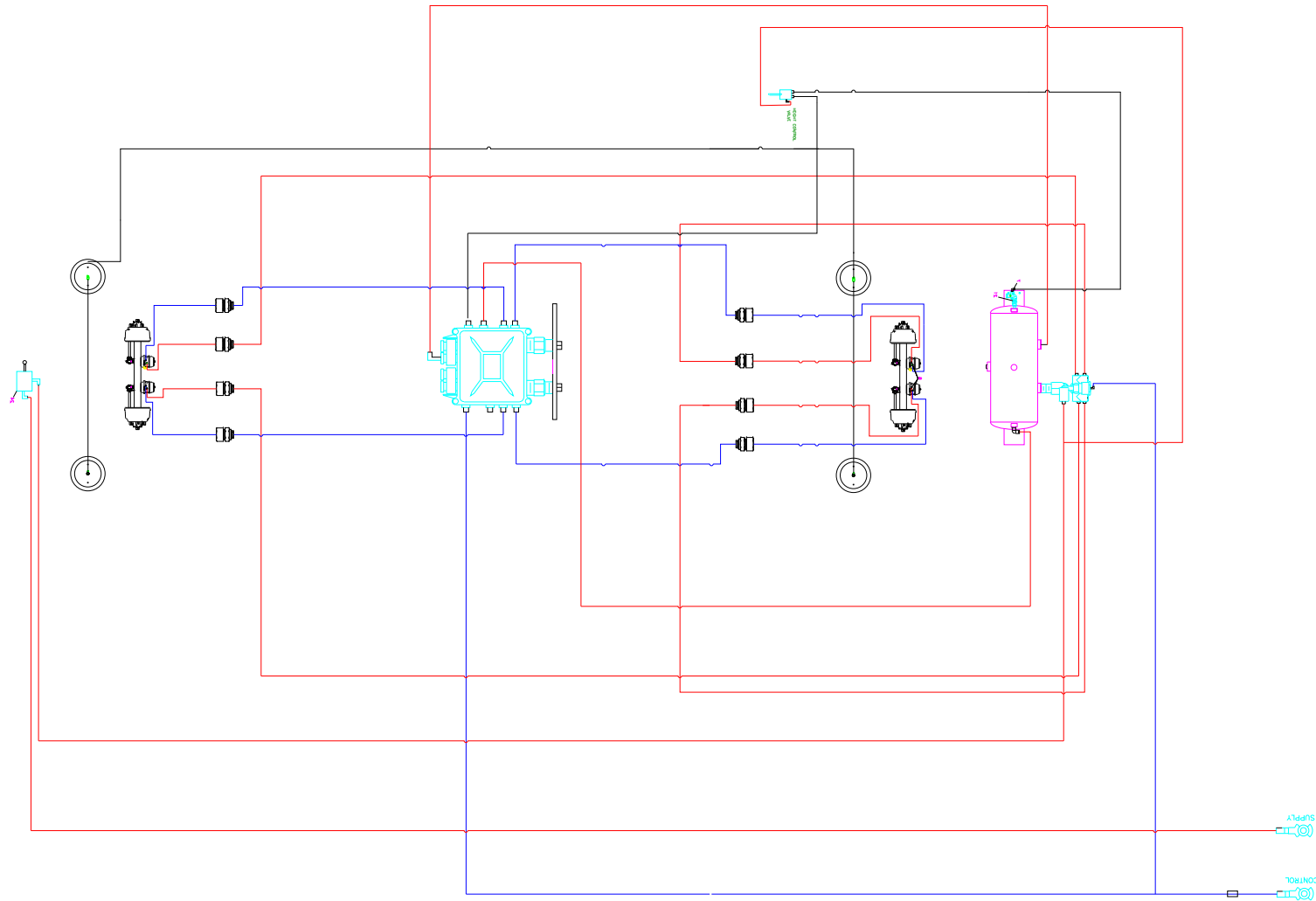
11365 Red Arrow Hwy  
 Bridgman, MI 49106  
 Tel.: (800) 546-7728  
 Fax: (269) 465-7677  
 E-mail: sales@prattinc.com  
 http://www.prattinc.com

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Advanced Design Intermodal Equipment

MODEL	GN412LA-HDS-R004
TITLE	AIR SCHEMATIC 4S2M
DATE BY JCS	DESIGN BY JCS
APPROVED BY JCS	02/01/23
PART NUMBER -	PRODUCT NUMBER xxx-00-SAL
SCALE FULL	SHEET 1 of 1
REV A	REV D

# With RSS ABS Retrofit



11365 Red Arrow Hwy  
 Bridgman, MI 49106  
 Tel.: (800) 546-7728  
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 E-mail: sales@prattinc.com  
 http://www.prattinc.com

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Advanced Design Intermodal Equipment

MODEL	GN412LA-HDS-R004		
TITLE	AIR SCHEMATIC RSS		
DATE BY	DESIGN BY	APP. NUMBER	PROJECT NUMBER
JCS	JCS	-	xxx-00-SAL
ISS	02/01/23	SCALE	SHEET
JCS		FULL	1 of 1
			REV
			A
			D