

# SS 781-WST Western Star vehicles with excessive water intrusion into the air system.

## **Applicable Vehicles**

New Western Star 47x, 49x, 57x all builds.

## **Symptoms**

New Western Star 47x, 49x, 57x vehicles built with 480-040 Wabco SS1200 dryer are experiencing high claim rates of moisture in the air system. This can lead to failure of the air dryer. Issue may be specific to certain applications requiring more volume of air than originally specked for. Issue may also be seen more in certain regions with higher humidity.

Resulting in the following symptoms:

- Excessive moisture in airlines.
- Excessive water in air tanks.
- Freezing water in air lines.

## **Issue**

1. discharge line heat rejection problem (likely @ charge air horn)
2. air dryer insufficient for some applications
3. air compressor insufficient for some applications
4. PCCV (pressure control check valve) problem (fault, incorrect installation)

## **Solution**

If encountering any of the symptoms listed above:

Vehicles with 480-040 Wabco SS1200 dryer with excessive water intrusion into the air system. Ensure that the Pressure Controlled Check Valve (PCCV) is correctly installed. REF: module-871 for the relevant install to the vehicle Serial #.

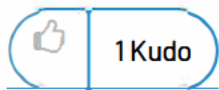
Vehicles with lower expected duty cycle of air system, replace existing Wabco SS1200 dryer and add discharge line insulation per 131-D70100. For more detailed information refer to the attachment.

Labels :



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## Attachments

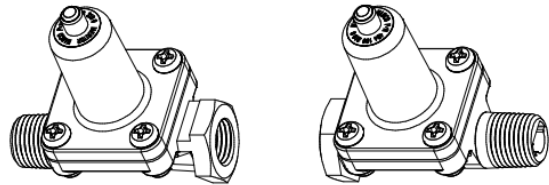
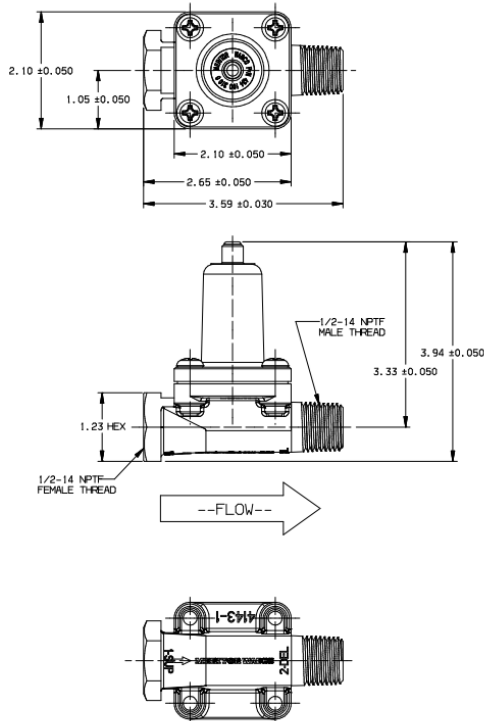


Comment

# Vehicles with excessive water intrusion into the air system.

For vehicles with 480-040 Wabco SS1200 dryer with excessive water intrusion into the air system.

1. Ensure that the Pressure Controlled Check Valve (PCCV) is correctly installed. REF: module-871 for the relevant install to the vehicle.



#### NOTES:

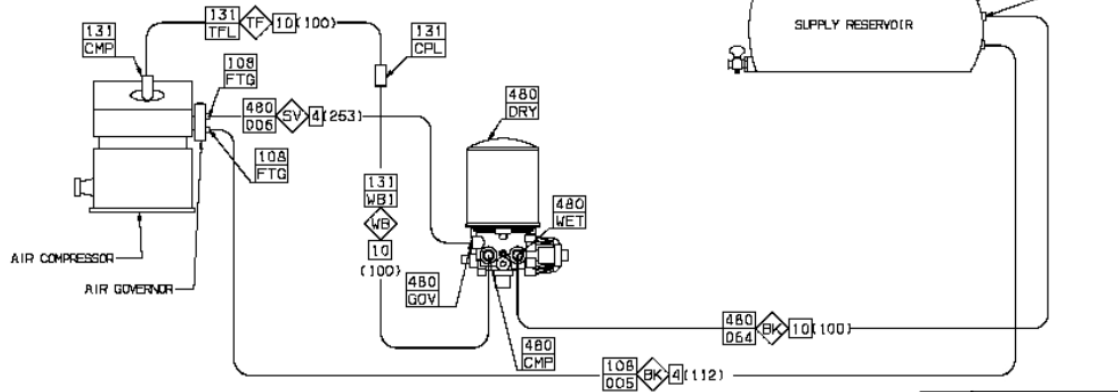
- 1) PRESSURE CONTROLLED CHECK VALVE DESIGNED SPECIFICALLY TO REPLACE THE CHECK VALVE BETWEEN MET TANK AND SECONDARY AIR TANK IN A HEAVY TRUCK AIR BRAKE SYSTEM.
  - 2) ALLOWS BACK FLOW (IN REVERSE DIRECTION OF ARROW) EQUIVALENT TO A 0.015 MIN DIA ORIFICE AT SYSTEM PRESSURES ABOVE 110 PSIG AND A 0.050 MIN DIA ORIFICE AT SYSTEM PRESSURES ABOVE 105 PSIG FOR AIR DRYER REGENERATION. THE VALVE DOES NOT ALLOW BACK FLOW AT SYSTEM PRESSURES BELOW 90 PSIG.
  - 3) CHECK VALVE ALLOWS FLOW IN THE DIRECTION OF THE ARROW EQUIVALENT TO A 0.30 DIA ORIFICE MINIMUM AT 3 PSIG INLET PRESSURE MAXIMUM.
- (A) 4) DIMENSIONS IN INCHES AND ARE FOR REFERENCE ONLY.
- (B) 5) REVISED AND REDRAWN FROM SOLID MODEL GEOMETRY.

LINE SIZE LEGEND		
SIZE	WIREBRAID/TEFLON	NYLON
4	44	1/4"
6	46	3/8"
8	48	1/2"
10	50	5/8"
12	52	3/4"
16	56	1"

TABLE 1	
BK	BLACK
GN	GREEN
RD	RED
OR	ORANGE
SV	SILVER
BL	BLUE
YL	YELLOW
BR	BROWN
TF	TEFLON
CB	COTTON BRAID
WB	WIRE BRAID

LINE COLOR  
 LINE SIZE  
 MODULE  
 ITEM NO.

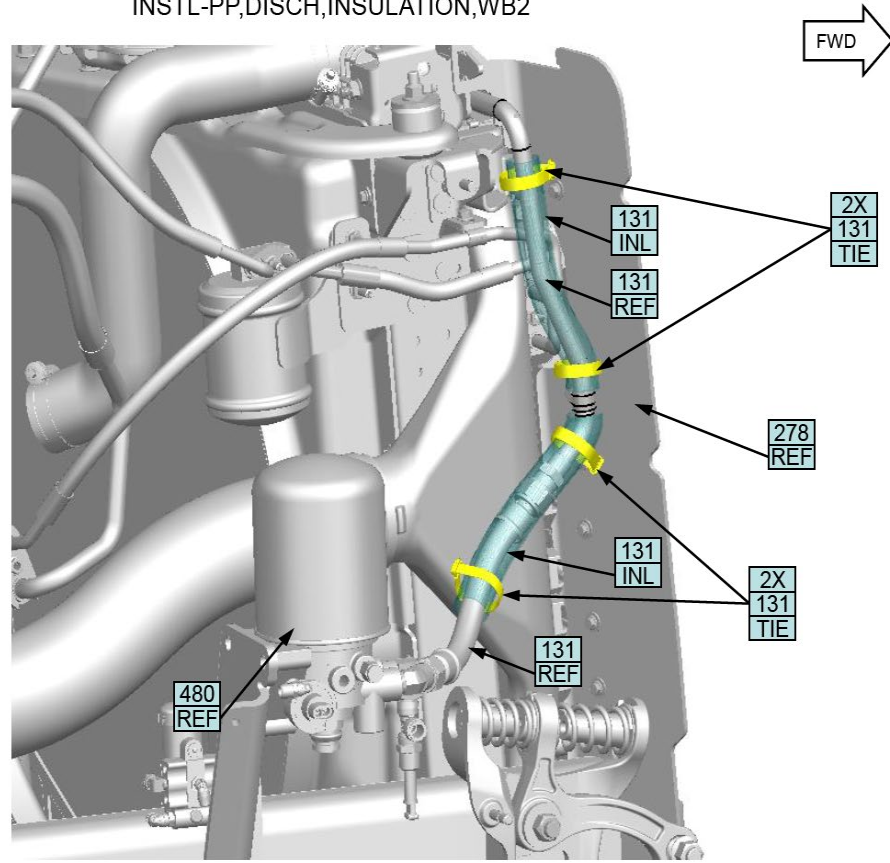
THIS SYMBOL DESIGNATION  
 DEFINES THE AIR BRAKE CIRCUITS.  
 SEE TABLE 1 FOR THE COLOR CODES.



1. **PRESSURE CONTROL CHECK VALVE (PCCV) REPLACES THE STANDARD CHECK VALVE.**
2. **EXACT PIPING MAY VARY. SEE INDIVIDUAL MODULES FOR APPLICABLE DIAGRAMS**

2. For vehicles with lower expected duty cycle of air system, replace existing Wabco SS1200 dryer and add discharge line insulation per 131-D70100.

INSTL-PP,DISCH,INSULATION,WB2



VIEW LOOKING INBD AT RHS OF COOLING PACKAGE

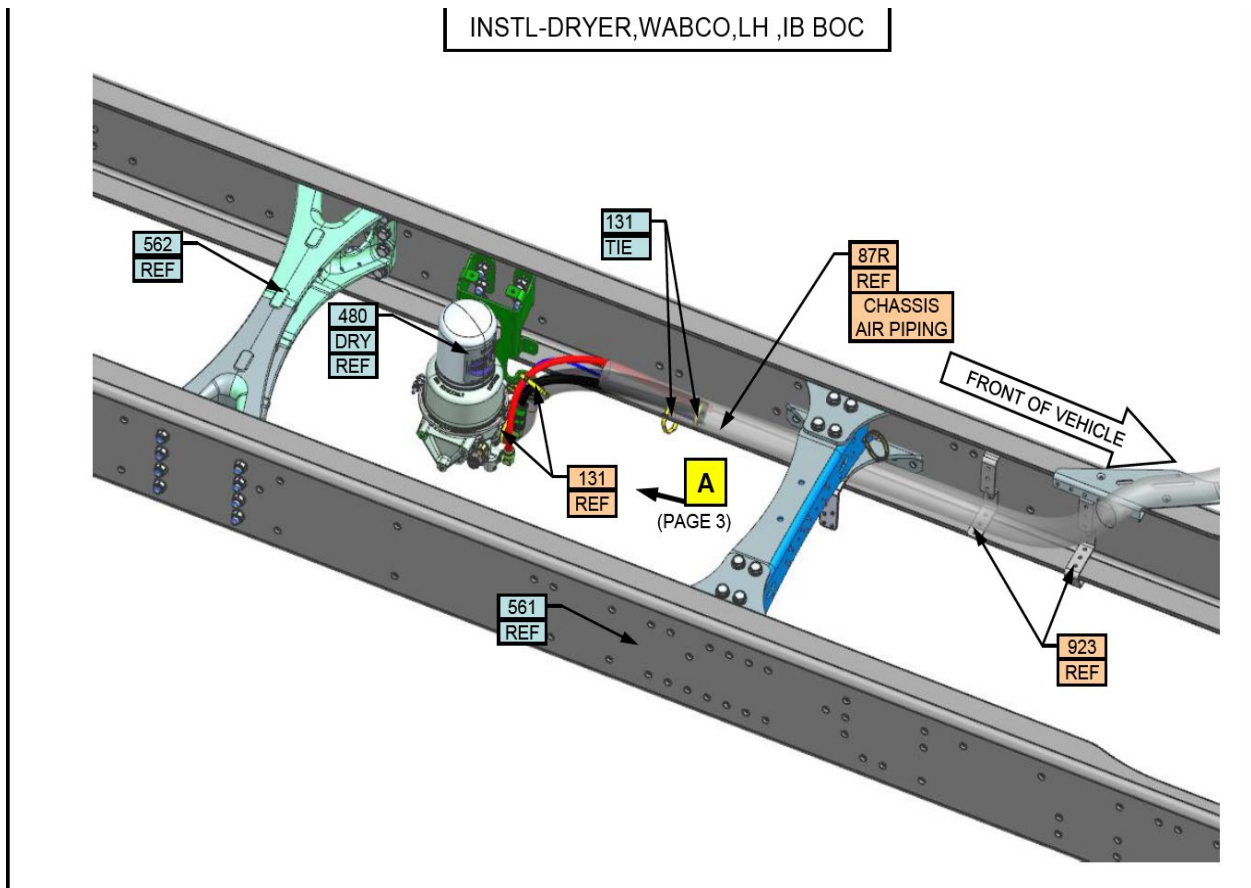
DWG	-----COMPONENT	ITEM-----	-----ITEM DESCRIPTION-----	----QTY----	UM	S
		BEN476263328	TUBE-RFLT SLV,1.25",HTSHD	2.000	FT	C
D00	D12-34582-000		INSTL-PP,DISCH,INSULATION,W		R	EA A
		TIE 23-13476-000	TIE-CLAMP, .5W,15L,4.13BUNDL	4.000	EA	P

3. For vehicles with higher expected duty cycle of air system, remove existing Wabco SS1200 air dryer and related discharge line and replace with either Wabco HP dryer or Bendix AD9si back-of-cab and route new discharge line.

Example BOC air dryer spec: 480-C16780 - WABCO HP W/OC LHIB

DWG	-----COMPONENT	ITEM-----	-----ITEM DESCRIPTION-----	----QTY----	UM	S
		D12-26761-002	DRYER(S) I/B LH BOC		R	EA C
A00	D12-33694-000		INSTL-DRYER,WABCO,BOC,IB		R	EA C
B00	D12-33698-000		INSTL-DRYER,WABCO,LHIB,BOC		R	EA C
R00	D15-04741-059		DRLG-REF 8,2 HOLE		R	EA C
R01	D15-04741-059		DRLG-REF 8,2 HOLE		R	EA C
DRY	WAB432	480 145 0P	DRYER-AIR,WABCO SS HP,W/OC	1.000	EA	C
BK1	12-33228-000		BRKT-DRYER,IB-BOC	1.000	EA	P
CMP	210502	000046	ELB-90,SAE 45D 12X08 MPT	1.000	EA	C
WA1	23-09114-000		WASHER-HRDN,0.69X1.31X.177,	8.000	EA	C

WA2	23-09114-003	WASHER-HRDN,0.53X1.06X.177,	3.000	EA	C
BL2	23-09440-150	SCREW-CAP,HEX,1/2-13,GR8PO	3.000	EA	C
PLG	23-13848-001	PLUG-PIPE,HOLLOW HEX,1/2	1.000	EA	P
FIR	23-14137-001	CABLE TIE-FIR TREE MOUNT,TY	1.000	EA	C
BL1	23-14283-045	BOLT-HEX,PC10.9,PO,M16X1.5X	4.000	EA	P
GOV	23-14396-002	ELB-90,1/4 PTC X 1/4 MPT	1.000	EA	P
WET	23-14396-008	ELB-90,1/2 PTC X 1/2 MPT	1.000	EA	P
NT1	23-14451-116	NUT-HEX,LKG,VLH BLU,M16X1.5	4.000	EA	P
064	48-25811-020	TUBE-NYL 12,1/2",BLK,REINF	20.000	FT	C
006	48-25855-030	TUBE-NYL 12,1/4",SILVER	20.000	FT	P
BL2	49-00312-424	TRQ-BOLT,75NM,55FTLB,20PCT		R	EA P
NT1	49-00312-555	TRQ-NUT,230NM,170FTLB,20PCT		R	EA P



Example discharge line spec: 131-C21733 - DISCHARGE LINE DD13 LHIB

DWG	-----COMPONENT	ITEM-----	-----ITEM DESCRIPTION----	----QTY----	UM	S
WB1	A12-28712-014		HOSE ASSY-WIREBRAID,#12,HIT	1.000	EA	P
WB2	A12-28712-072		HOSE ASSY-WIREBRAID,#12,HIT	1.000	EA	P
IRP	A12-31498-000		TUBE-DISCH,LH BOC INRL PIPE	1.000	EA	C
DPE	A12-32298-000		TUBE-DISCH,DD13,MSAC,LHBOC	1.000	EA	C
C00	D12-26024-001		INSTL-DISCH,LH I/B BOC W/ G		R	EA P

A00	D12-28127-001	INSTL-DISCH, ENG, FPT, DD13	R	EA	P	
B00	D12-32364-000	INST-PP, DISCH, DD13, LHBOC, Z-	R	EA	C	
R00	D15-04741-000	DRLG-REF 8, 1 HOLE	R	EA	P	
BK1	12-25463-000	BRKT-R&C, INBD ZEE	1.000	EA	P	
BKE	12-30561-000	BRKT-DISCH, 43N, DD13, LHBOC	1.000	EA	C	
WS3	23-09114-000	WASHER-HRDN, 0.69X1.31X.177,	2.000	EA	C	
CL2	23-09528-140	CLAMP-SUPPORT, .750 ID	1.000	EA	P	
TIE	23-09796-309	CLAMP-CABLE TIE, 1-3/4X8	AR	25.000	EA	C
CMP	23-12866-001	ADPTR-1.06 45FTF TO M26 ORF	1.000	EA	C	
BL2	23-13345-020	SCRW HEX FLNG, M8X1.25X20,	1.000	EA	P	
BTE	23-13345-020	SCRW HEX FLNG, M8X1.25X20,	3.000	EA	P	
CL1	23-13824-000	CLAMP-HOSE, CUSHIONED, .75ID,	1.000	EA	P	
BL3	23-14067-040	BOLT-HEX, ZNAL, BK, M16X1.5X40	1.000	EA	P	
TRE	23-14137-000	CABLE TIE ASSY-FIR TREE MOU	AR	25.000	EA	C
NT3	23-14451-116	NUT-HEX, LKG, VLH BLU, M16X1.5	1.000	EA	P	
INL	48-02159-094	TUBE-RBR, INS, 1 1/8IDX1/2WL	2.000	FT	C	
NT3	49-00312-549	TRQ-NUT, 200NM, 148FTLB, 20PCT	R	EA	P	
NTE	913023 008003	NUT-HEX FLG, M8X1.25, PRVL TR	1.000	EA	C	
NT2	913023 008003	NUT-HEX FLG, M8X1.25, PRVL TR	1.000	EA	C	

