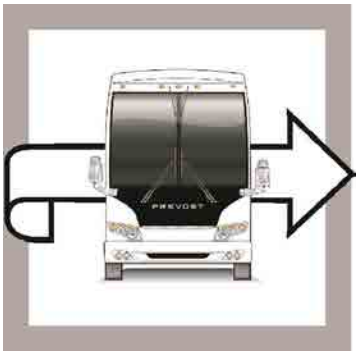


PREVOST

WARRANTY BULLETIN

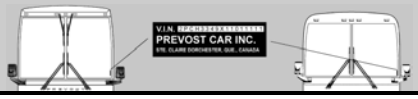
WB15-19

DATE :	JULY 2015	SECTION :	22 - HVAC
EXPIRATION:	JULY 2017		
SUBJECT :	**BITZER A/C COMPRESSOR VIBRATION – ADDITION OF A REINFORCEMENT BRACKET TO THE MOUNTING**		

APPLICATION

NOTICE TO SERVICE CENTERS

*Verify vehicle eligibility by checking warranty bulletin status with **SAP** or via **ONLINE WARRANTY SYSTEM** available on Service / Warranty tab of Prevost website.*

Model	VIN 
H3-41, H3-45 coaches Model Year : 2013 - 2015	2PCH33494**D**C71**2272** And from 2PCH33499DC71**2364** up to 2PCH33495FC71***2994*** incl.
H3-45 VIP motorhomes Model Year : 2013 - 2015	From 2PCVS3499DC71**2399** up to 2PCVS349XFC71***2950*** incl. equipped with Bitzer A/C compressor
X3-45 coaches Model Year : 2013 - 2016	2PCG33491**D**C73**5388**, 2PCG33492**D**C73**5433** From 2PCG33497EC73**5459** up to 2PCG33494GC73***5910*** incl.
X3-45 VIP motorhomes Model Year : 2014 - 2015	2PCBS3499***E***C73***5539*** 2PCBS3499***F***C73***5798*** 2PCBS3499***E***C73***5587*** 2PCBS3498***F***C73***5808*** 2PCBS3498***F***C73***5789*** 2PCBS3490***F***C73***5818***
X3-45 VIP commercial use Model Year : 2014 - 2015	From 2PCCS3497EC73***5494*** up to 2PCCS3496FC73***5911*** incl. equipped with Bitzer A/C compressor
XLII-45 Entertainer Model Year : 2013	2PCYS3492***D***C73***5374*** 2PCYS3490***D***C73***5468*** 2PCY33491***D***C73***5461*** 2PCYS3498***D***C73***5489***

This bulletin does not necessarily apply to all the above-mentioned vehicles, some vehicles may have been modified before delivery. The owners of the vehicles affected by this bulletin will be advised by a letter indicating the Vehicle Identification Number (VIN) of each vehicle concerned.

DESCRIPTION

On the vehicles affected by this bulletin, vibration is causing damage to A/C compressor and compressor harness connectors. Addition of a reinforcement bracket to Bitzer A/C compressor is needed to increase the installation stiffness and reduce vibration amplitude.

IMPORTANT NOTE: Warranty bulletin WB14-06 must have been completed on your vehicle prior undertaking WB15-19.

The latest version of WB14-06 is available through Prevost Technical Publications site.

Access all our Service Bulletins on *https://secureus5.volvo.com/technicalpublications/en/pub.asp*

MATERIAL

Order kit #457769 which includes the following parts:

Part No.	Description	Qty
069206	HARNESS, A/C COMPRESSOR	1
069356	DECAL	1
457675	REINFORCEMENT BRACKET, A/C COMPRESSOR	1
502949	SCREW, CAP BUTTON HEX M10-1.5 x 25lg STAINLESS STEEL	2
504637	NYLON TIE, BLACK (MEDIUM) 3/16in x 13in	1
509815	TREE MOUNT, FT7	1
D450179	DIAGRAM, A/C COMPRESSOR W/O ALTERNATOR	1
D450180	DIAGRAM, A/C COMPRESSOR, ALTERNATOR	1

Other parts (bulk) that may be required:

Part No.	Description	Qty
504637	CABLE TIES, NYLON 3/16" x 13"	20 app.
507664	CABLE TIE, NYLON 3/16" x 11" DOUBLE LOOP HEAD	5 app.

NOTE

Material can be obtained through regular channels.

PROCEDURE

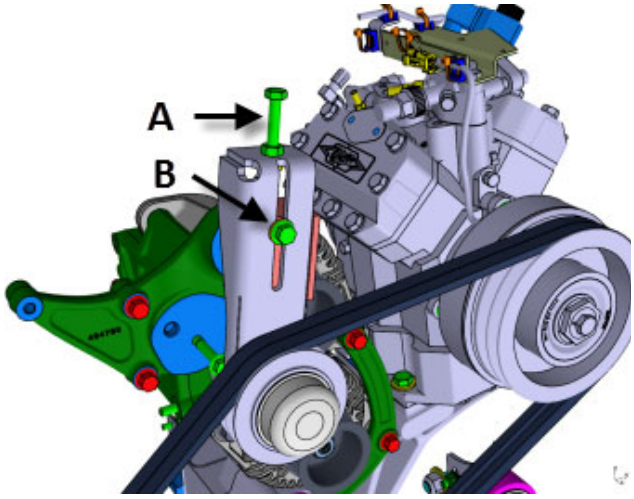
DANGER

Park vehicle safely, apply parking brake, stop engine. Prior to working on the vehicle, set the ignition switch to the OFF position and trip the main circuit breakers equipped with a trip button. On the Commuter type vehicles, set the battery master switch (master cut-out) to the OFF position.

REINFORCEMENT BRACKET INSTALLATION

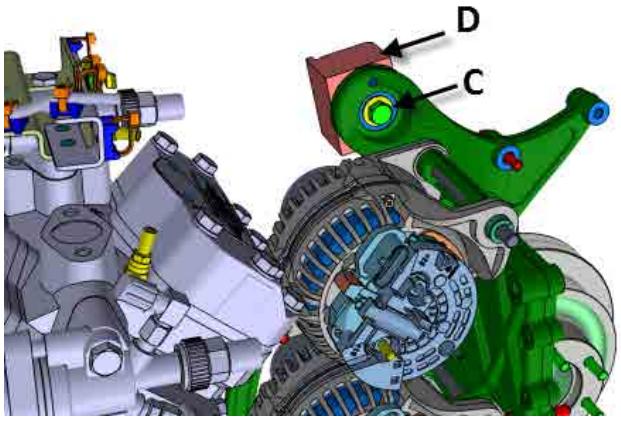
1. Loosen bolt (**A**).
2. Unscrew and remove bolt (**B**).
3. Remove the drive belt bender.
4. Remove the drive belts.

   Note: Keep hardware for later use



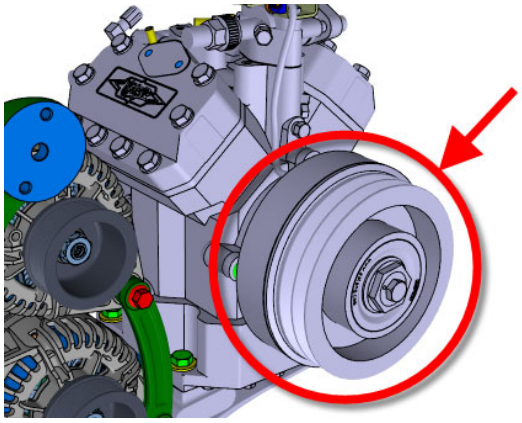
5. Unscrew and remove bolt (**C**).
6. Discard block (**D**).

   Note: Keep hardware for later use

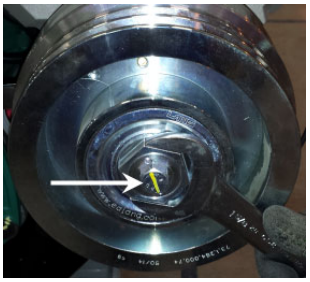


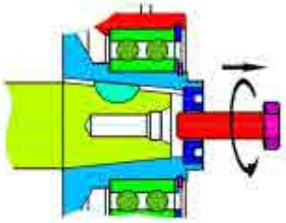
7. Remove the LANG electromagnetic clutch assembly.

   If a Linnig electromagnetic clutch is installed, refer to "LINNIG ELECTROMAGNETIC CLUTCH INSTALLATION/REMOVAL" at the end of this document



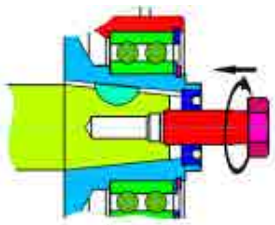
8. Hold the Lang rotor with the appropriate key. Loosen and remove the M12 rotor mounting screw.





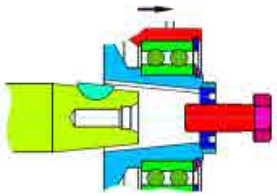
REMOVING THE M12

9. Use a M16 screw as a pulling-off screw and screw it in the straining washer. The rotor will detach from the compressor shaft.
10. Remove the rotor.



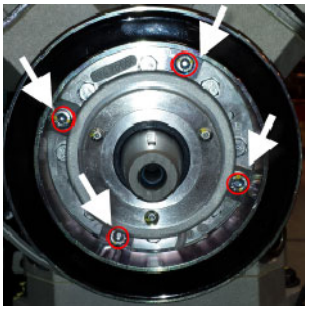
PULL OFF THE ROTOR WITH M16 SCREW

SCREW



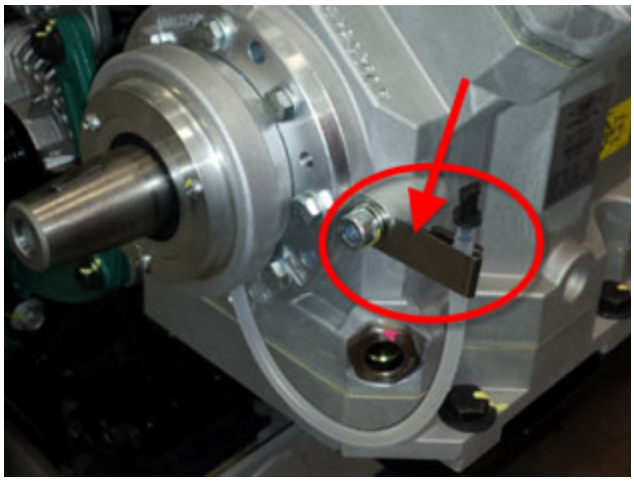
TAKE OFF THE ROTOR

11. Loosen the fastening screws (4x) of the coil and pull the coil off the retainer.



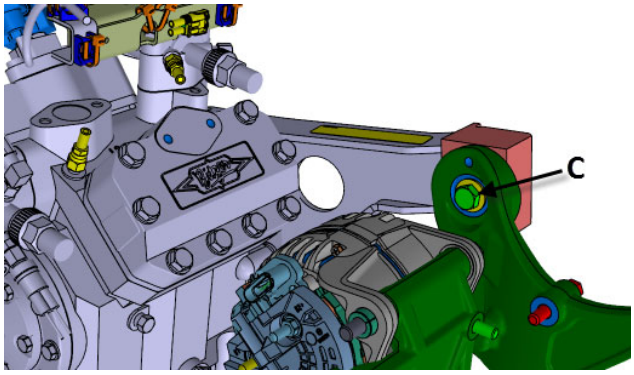
12. Remove the existing shaft seal drain tube and support.
13. Reinstall on the opposite side as seen on the image on the right.

    Note: Use existing hex socket head bolt and lock washer. Use blue Loctite 243 on threads.



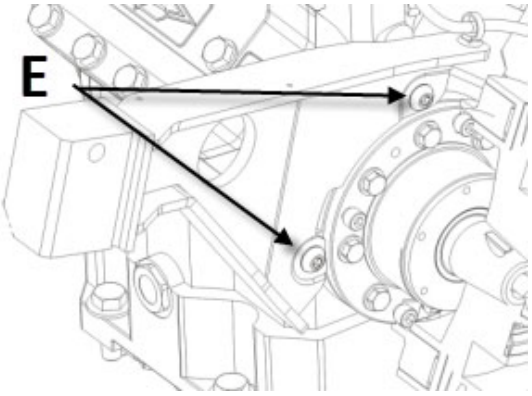
14. Install new reinforcement bracket #457675 as shown using previously removed hardware (bolt (**C**) and flat washer). <u>DO NOT tighten at this moment</u>.

    Note: Use blue Loctite 243 on threads.



15. Carry on with the installation of new reinforcement bracket #457675 as shown. Use two cap screws #502949 (**E**).

    Note: Use blue Loctite 243 on threads.

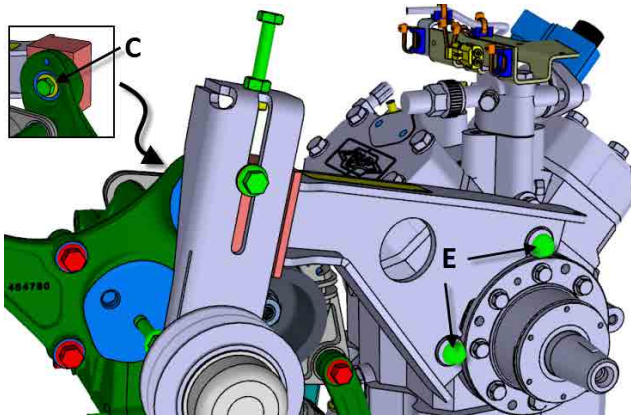


16. Tighten bolts (**E**) and bolt (**C**).

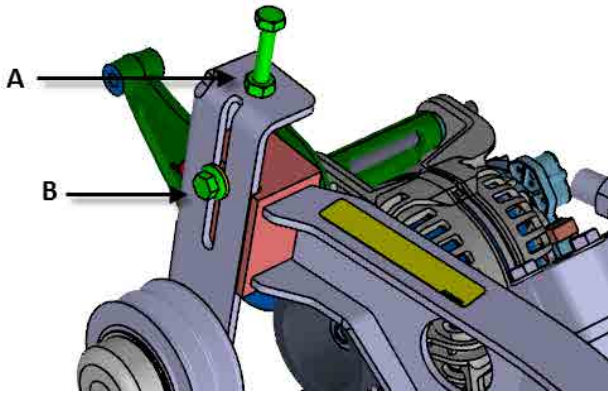
***E**= 32 lbf-ft*

***C**= 74 lbf-ft*

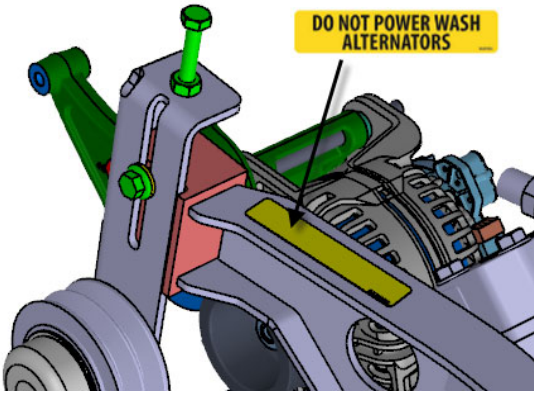
*Note: If bolts **C** & **E** are difficult to drive in hole, the compressor may be moved. Loosen the compressor mounting bolts (4x) at the base. Tighten compressor mounting bolts to 74 lbf-ft.*



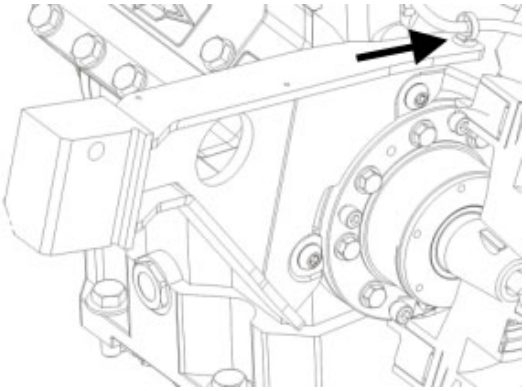
17. Reinstall bolt and washer (**B**) and bolt and nut (**A**). You don't have to tighten these bolts as the belt tension adjustment will be done later in this procedure.



18. Apply decal #069356 were indicated on the image.



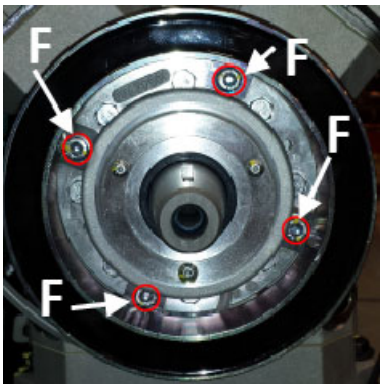
19. Install nylon tie mount #509815 where indicated on the image.



20. Reinstall the electromagnetic clutch coil. Slip the coil on the retainer on the compressor flange. Fasten the coil with 4 screws to the compressor. Do not buckle the cable.

    Coil mounting screws (**F**): 22 lbf-ft. *Use blue Loctite 243.*

    Caution: *Pay attention to the precise seat of the coil. A non-observance may cause the destruction of the clutch components during operation.*



21. Mount the pulley on the shaft end.

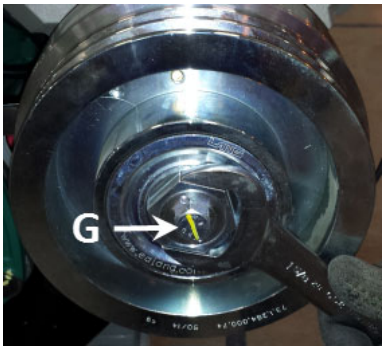
    The flange and the shaft end of the compressor must be free from dirt. Apply high temperature approved assembly grease on the shaft end for easy dismounting of the clutch. We recommend the use of Molykote G-rapid-plus or Molykote P 40.

22. Mount the rotor on the shaft end: slip the rotor carefully by hand on the shaft end of the compressor till reaching the stop. The Woodruff key on the shaft end and the groove in the location hole of the rotor must be flush. Never use a hammer for pressing the rotor on.

23. Fasten the rotor to the shaft end by using the M12 screw and by holding-up with a wrench on the rotor.

    *Rotor mounting screw (**G**): 60 lbf-ft. Use blue Loctite 243.*

24. Turn rotor by hand and pay attention to the free run and the generation of noises. In case of grinding or similar noises, dismount the clutch and check installation.



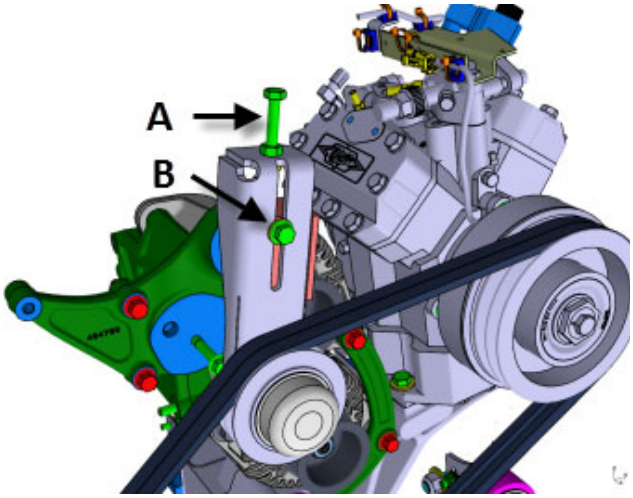
25. Reinstall the drive belts.

On vehicles not equipped with an auxiliary alternator (i.e. 2 identical belts), the belts tension should be within this range:

A belt strand tension gauge is needed
90-100 lbs new belts (mean of 2 belt values)
75-85 lbs used belts (mean of 2 belt values)

On vehicles equipped with an auxiliary alternator (i.e. 2 different belts), the belts tension should be within this range:

A belt strand tension gauge is needed
150-160 lbs new belts (mean of 2 belt values)
120-130 lbs used belts (mean of 2 belt values)

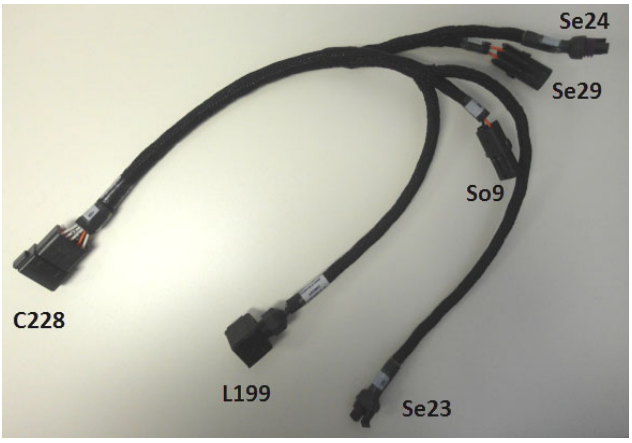


Adjust belt tension using bolt (**A**). Use the jam nut to prevent rotation of bolt (**A**). When proper tension is achieved, tighten bolt (**B**) to 43 lbf-ft.

NEW HARNESS #069206 INSTALLATION

1. While proceeding with one connector at a time, remove the existing A/C compressor harness simultaneously as you install the new harness. The new harness should be installed and routed like the one being removed.

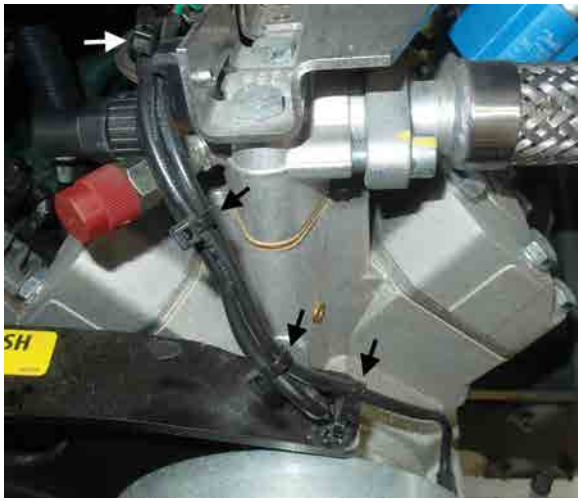
So9: A/C magnetic clutch
Se29: A/C pressure switch
L199: the R.H. side cylinder unloader
Se23: high side pressure transducer
Se24: low side pressure transducer
C228: other C228 connector half



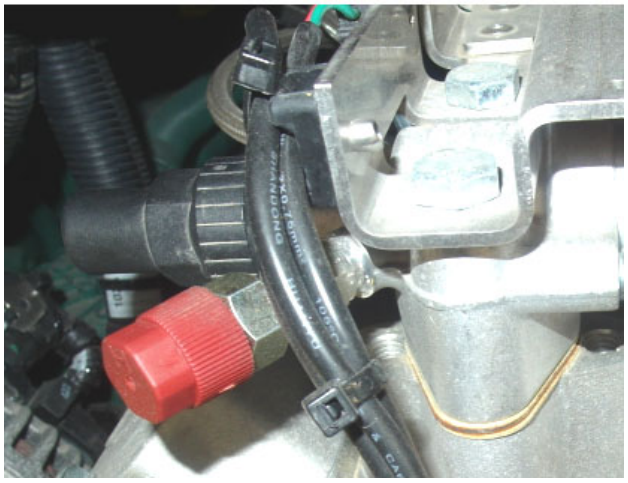
Take special care to route the harness according to the following figures.

Refer to best practices at the end of this document. Prefer larger, heat resistant cable ties over small cable ties to limit the “pinch effect”.

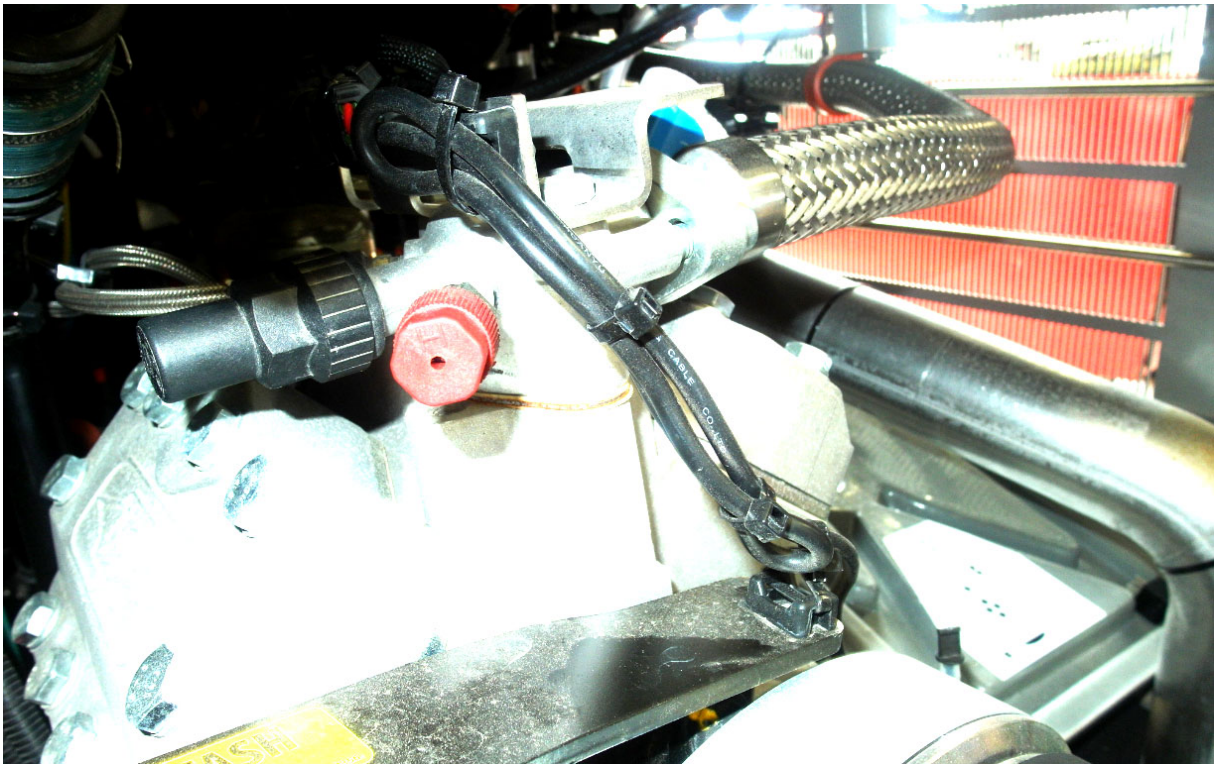
Secure the cable on the cable tie mounts where applicable.



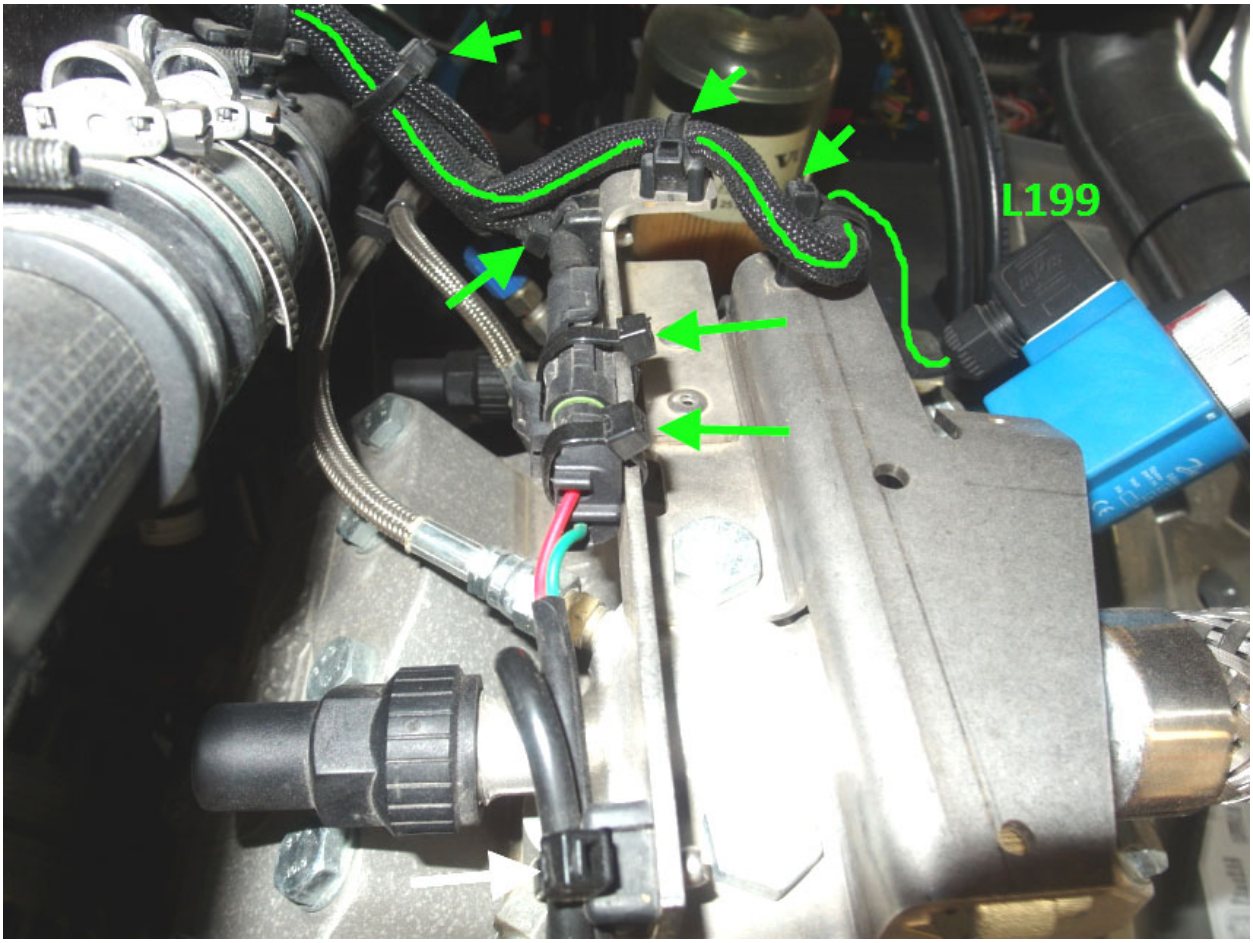
ELECTROMAGNETIC CLUTCH CABLE AND NYLON TIES LOCATION



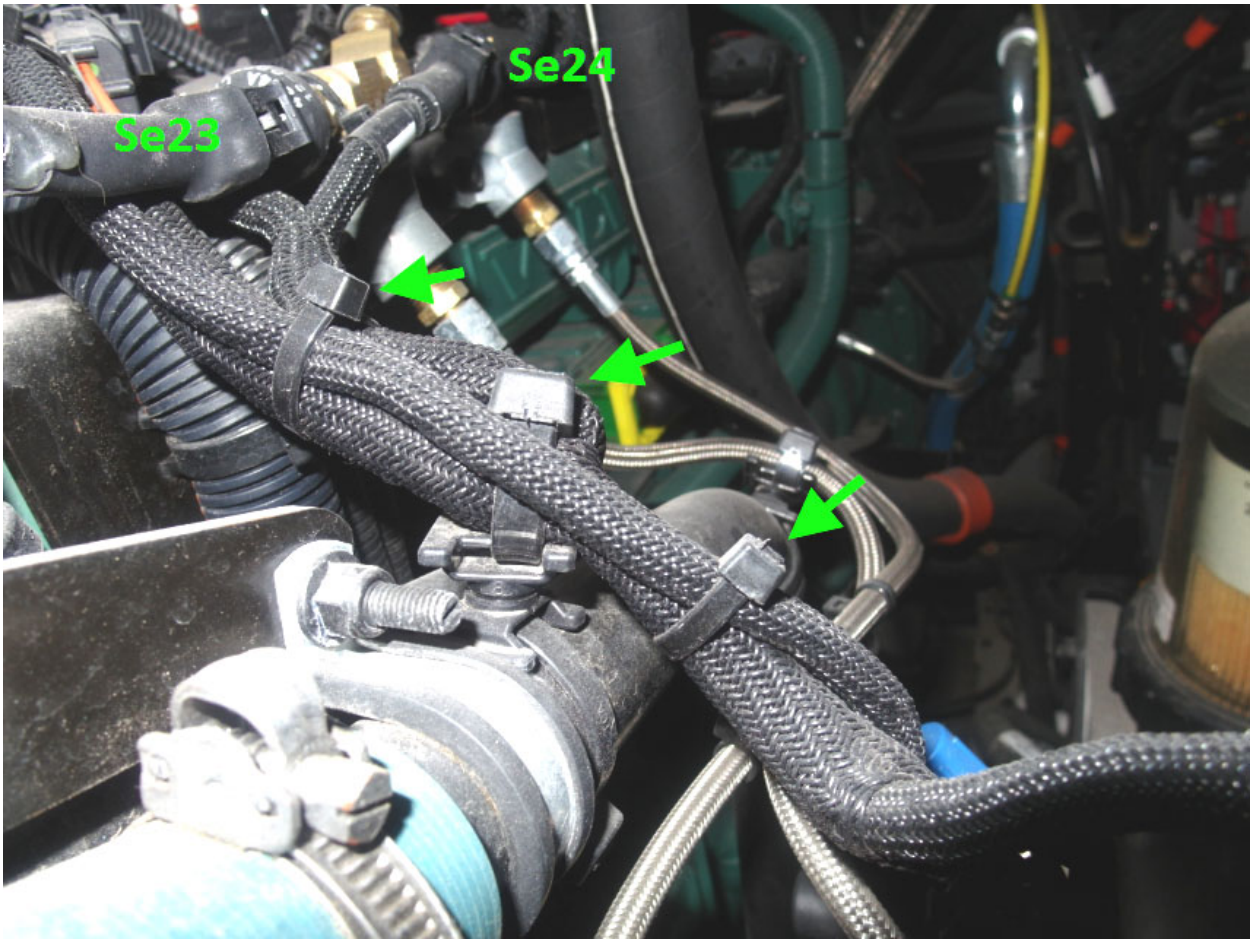
ELECTROMAGNETIC CLUTCH CABLE AND NYLON TIES LOCATION



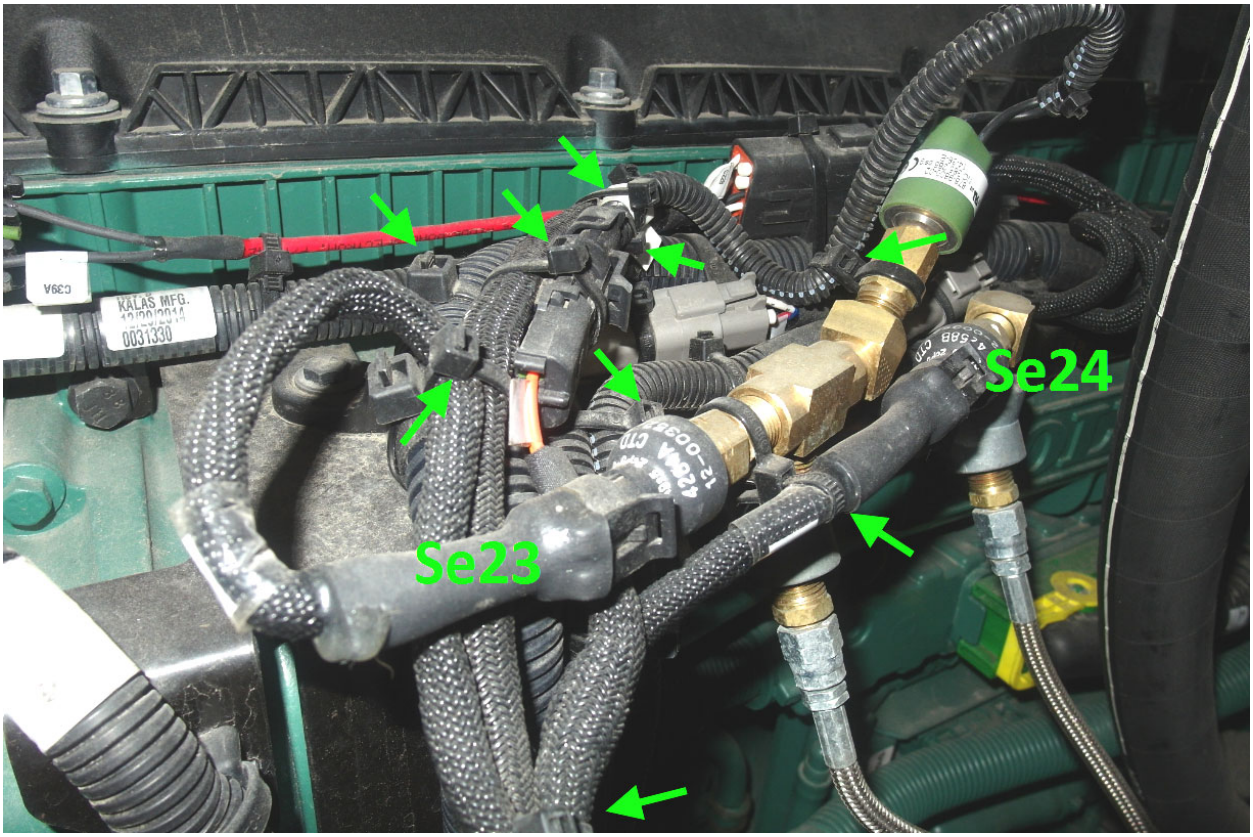
ELECTROMAGNETIC CLUTCH CABLE AND NYLON TIES LOCATION



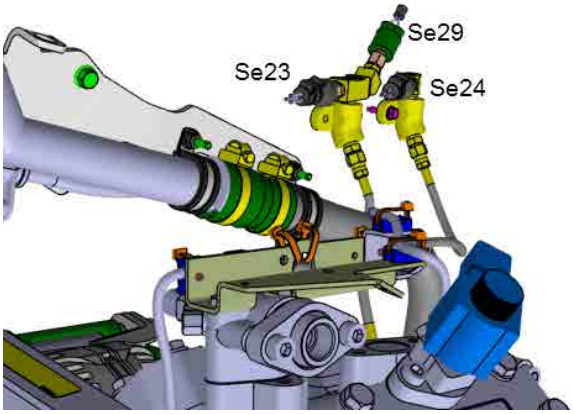
UNLOADER CABLE – NYLON TIES LOCATION SHOWN BY ARROWS



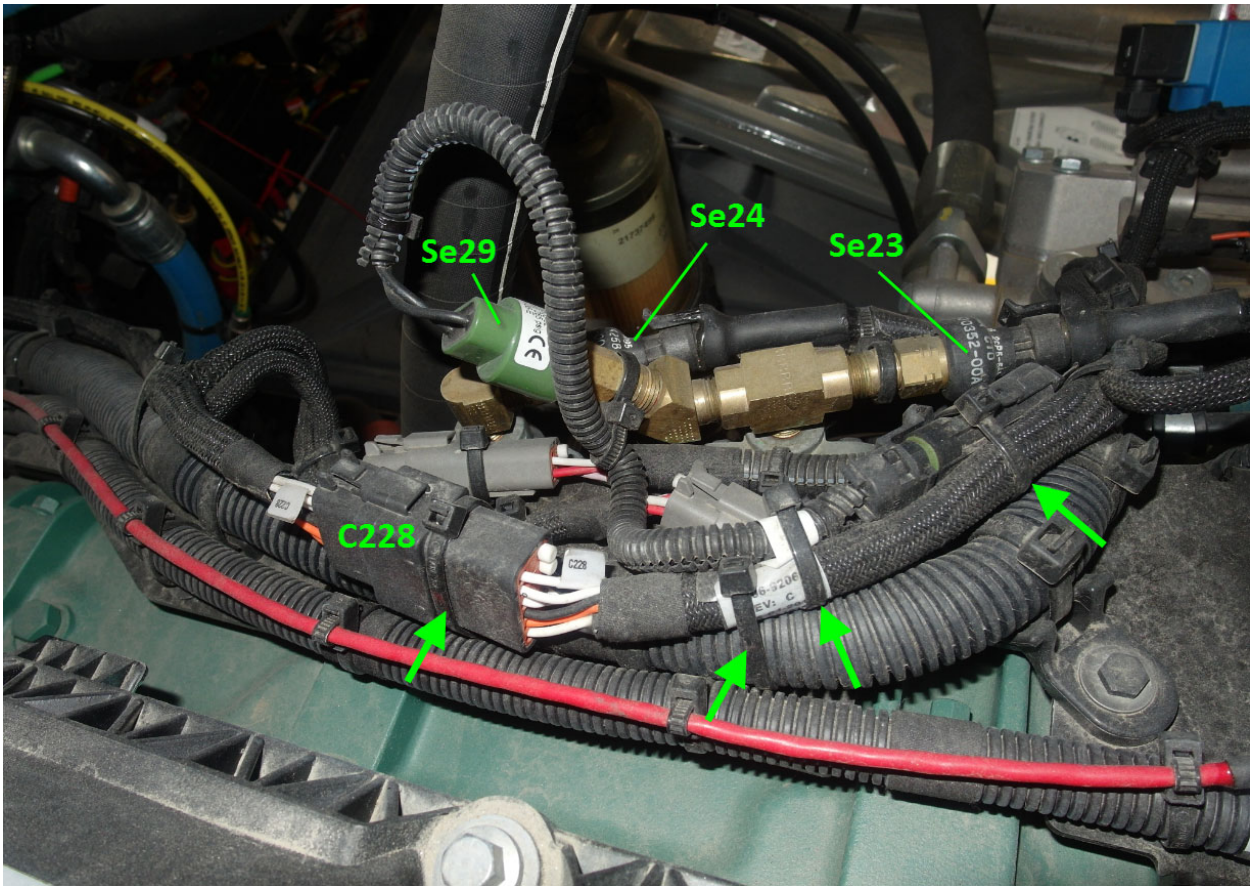
ATTACH THE EXCESS LENGTH OF CABLE ALONG MAIN STRAND OF HARNESS AS SHOWN– NYLON TIES LOCATION SHOWN BY ARROWS



ATTACH THE EXCESS LENGTH OF CABLE ALONG MAIN STRAND OF HARNESS AS SHOWN– NYLON TIES LOCATION SHOWN BY ARROWS



SENSOR IDENTIFICATION

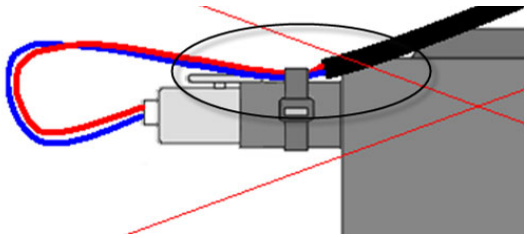


ATTACH THE EXCESS LENGTH OF CABLE ALONG MAIN STRAND OF HARNESS AS SHOWN– NYLON TIES LOCATION SHOWN BY ARROWS

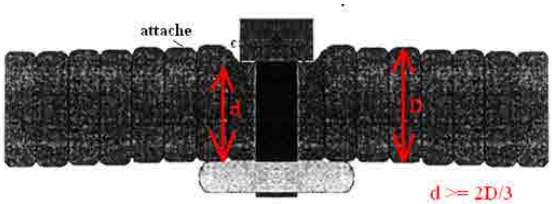
BEST PRACTICES FOR CABLE SECUREMENT AND ROUTING

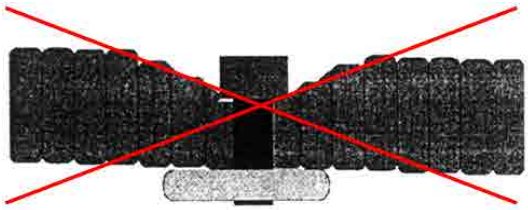
(Source: engineering Spec 20.0)

- Prefer larger cable ties over smaller cable ties in your assembly to limit local pinch effect.
- Avoid sharp edges to prevent chaffing and abrasion.
- Always attach over harness loom or corrugated tubes, not on the bare cables themselves.

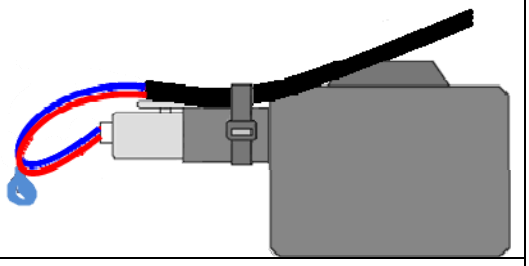


- No over-tightening of cable ties. (Must only prevent harness movement)

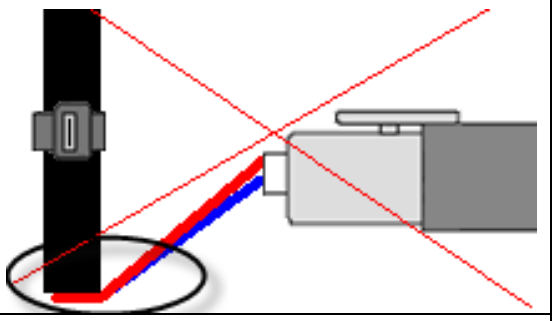




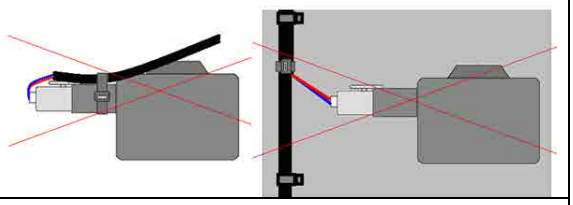
- Perform smart harness routing to prevent water intrusion in the connectors. (nearest low point: below connector)



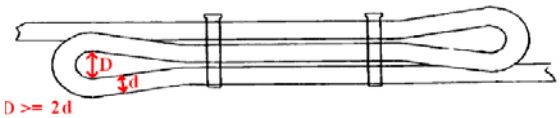
- Also avoid sharp edges of plastic corrugated tubes.



- No pulling or tension on connections.



- Avoid sharp radius routing paths. (routing path *inside* diameter = 2 X cable diameter)



Assembly instructions for electromagnetic clutches series LA16

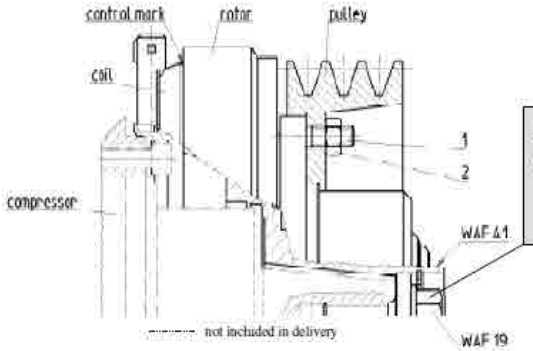
LINNIG®
Antriebstechnik

P.O.Box 1430
88672 Markdorf
Tel. +49 7544 / 9640
Fax. +49 7544 / 6218
Internet: http://www.linnig.com
Mail: webinfo@linnig.com

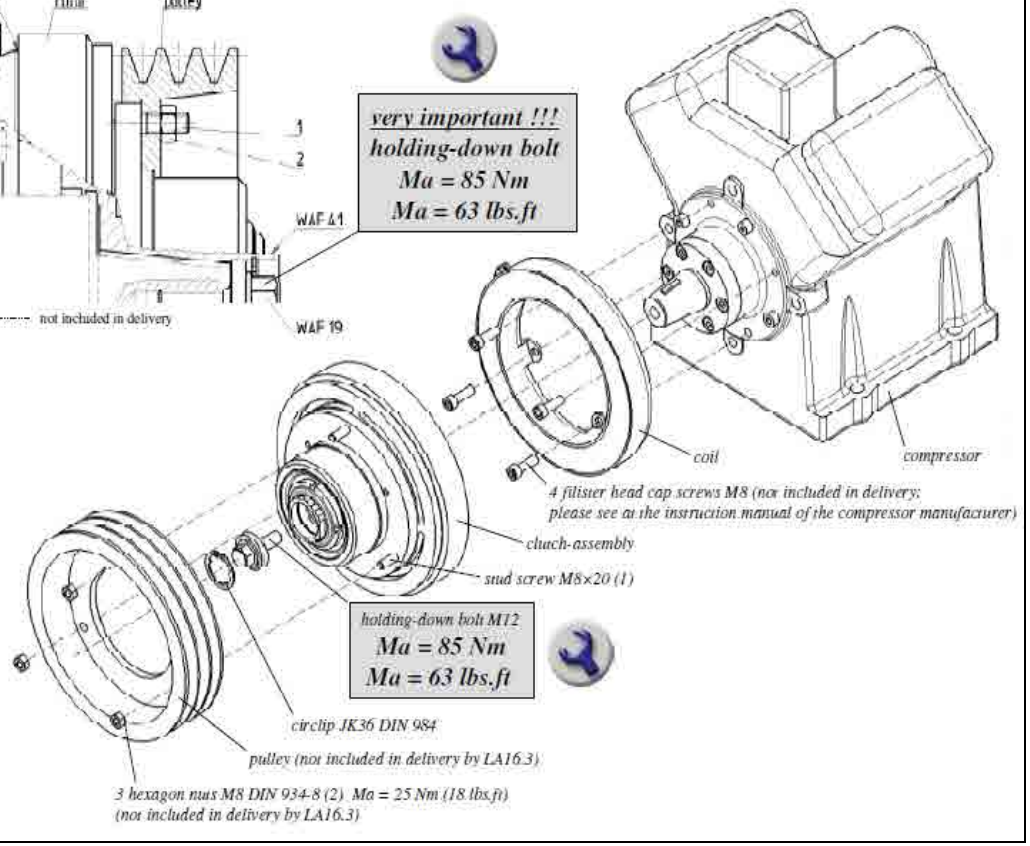
LINNIG-No.: 142.081
Revision: E
Rev.-Date: 22.11.2005

Assembly instruction:

1. Attach coil according to instruction manual of the compressor manufacturer. Connect cable in a way that avoids contact with hot components (only if coil contents a cable). $t_{max} = 105°C$
2. **Remove circlip and holding-down bolt** from clutch-assembly. Slide clutch-assembly onto compressor shaft. Look through the center-hole for a correct position of the compressor shaft key in the rotor-keyway. Rotor should turn freely **without touching the coil.** Consider the control mark! Insert and tighten holding-down bolt M12 **(tightening torque Ma = 85 Nm , Ma = 63 lbs.ft).** Hold down the rotor with an open-ended spanner or ring spanner WAF41. Insert circlip.
3. Slide pulley over the stud screws (1) and bolt on with nuts M8 DIN 934-8 (2) (only for LA16.3; for other LA16 is pulley integrated part of the clutch).
4. Connect cable respectively connector. The connection is independent of polarity. Allowed operating voltage 21 – 32 VDC.



very important !!!
holding-down bolt
Ma = 85 Nm
Ma = 63 lbs.ft



Disassembly instruction:

For disassembly **grease** circlip (do not romove circlip) and turn the holding-down bolt left to loosen. Hold down the rotor with an open-ended spanner or ring spanner WAF41. In this way the clutch will be disconnected from the cone-shaft.

! With any other method of disassembly (press or hammer) you risk a damage of the clutch. Clutch damages in this mode are outside any warrenty. !

PARTS / WASTE DISPOSAL

DO NOT RETURN THE REPLACED PARTS. Discard waste according to applicable environmental regulations (Municipal/State[Prov.]/ Federal)

WARRANTY

This modification is covered by Prevost's normal warranty. We will reimburse you the parts and 1½ hour (1.5) of labor upon receipt of a warranty claim. Please submit claim via our Online Warranty System, available at www.prevostcar.com (under Service \ Warranty section). Use Claim Type: "Bulletin/Recall" and select ''Warranty Bulletin WB15-19".

OTHER

VBC Bulletin	N/A
Fail Code	22.00
Defect Code	09
Syst. Cond	B
Causal Part	950002

Access all our Service Bulletins on *https://secureus5.volvo.com/technicalpublications/en/pub.asp*

or scan the QR-Code with your smart phone.

E-mail us at **technicalpublications_prev@volvo.com** and type "ADD" in the subject to receive our warranty bulletins by e-mail.