Techni
ENGINEERING SOLUTIONS

EN

FORD TRANSIT

3.5L EcoBoost 2023 MY - Single Alternator

Cargo Van, Passenger Van, Cutaway + Chassis Cab

CODE / CODICE: 0500.0452

COMPRESSOR / COMPRESSEUR / KOMPRESSOR / COMPRESSORE / COMPRESOR :

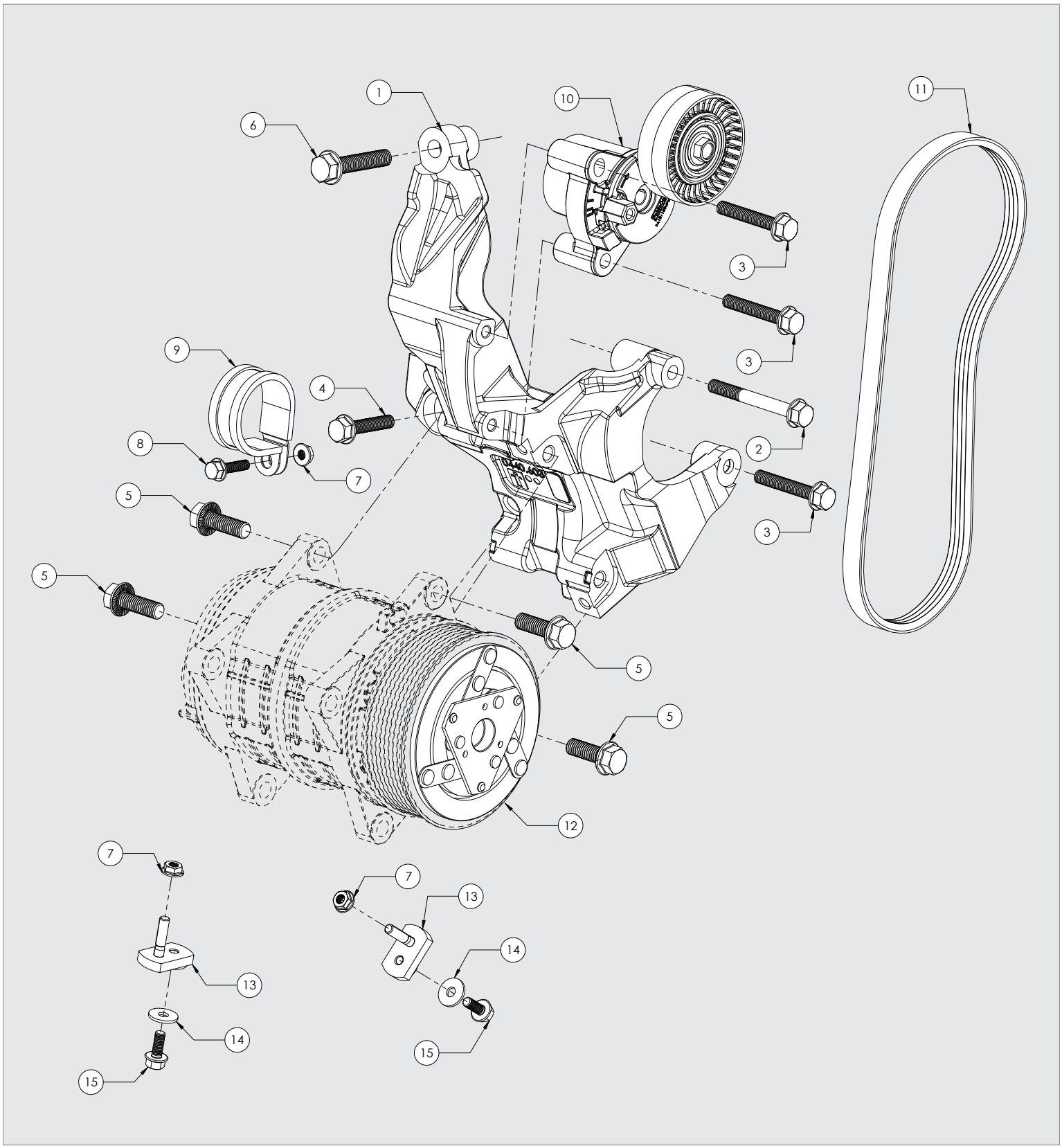
VALEO TM 13 / 15 / 16
QUE QP 13 / 15 / 16
SANDEN SD 5 / 7

FITTING INSTRUCTIONS

EINBAUANLEITUNGEN
INSTRUCTIONS POUR LE MONTAGE
INSTRUZIONI DI MONTAGGIO
INSTRUCCIONES DE MONTAJE

Contents

PARTS VIEW / VISTA EXPLOSIONADA



PARTS LIST / LISTA DE PIEZAS

ITEM	CODE / CODICE / KODE / CODIGO	DESCRIPTION / DESCRIZIONE / BESCHREIBUNG / DESRIPCION	QTY.	COMMENTS
1	0441.6031	CMB Assembly - Ford 3.5 2020 MY	1	-
2	2704.5931	Hexagon flange bolt - M8 x 70 : 1.25	1	-
3	2704.0101	Hexagon flange bolt Durlok - M8 x 50 : 1.25	3	-
4	2704.0201	Hexagon flange bolt Durlok - M8 x 40 : 1.25	1	-
5	2705.0491	Hexagon flange bolt Durlok - M10 x 30 : 1.50	4	-
6	2705.0341	Hexagon flange bolt Durlok - M10 x 50 : 1.50	1	-
7	2732.0041	Hexagon flange nut Durlok - M6 : 1.00	3	-
8	2702.0111	Hexagon flange bolt Durlok - M6 x 25 : 1.00	1	-
9	2771.0471	P-Clip 45mm	1	-
10	1705.5271	Automatic Belt Tensioner - Ford	1	-
11	0820.8631	Belt Poly Groove 4PK 1483 or 1488	1	Dual Sourced Part
12	0421.0011	Clutch Armature SL - Valeo/QUE 13/15/16	1	-
13	3020.8942	Threaded Mounting Assy M6	2	-
14	2806.0501	Washer M6 x 18 x 1.6 - DIN 9021 A2	2	-
15	2702.0131	Hexagon flange bolt Durlok - M6 x 16 : 1.00	2	-

COMPATIBLE COMPRESSORS / RECOMENDADAS COMPRESORES

VALEO	TM-13 HS	TM-15 HS	TM-16 HS
Comp No	0381.0152	0381.0802	0381.0752
Valeo No.	103-54320	103-55320	103-56320
Mounting	Ear	Ear	Ear
Rotor	8PV	8PV	8PV
GL	34.09	34.09	34.09
Armature	SL	SL	SL
Diameter	119	119	119
Voltage	12	12	12
Orientation	V	V	V
Fitting	3/4 x 7/8	3/4 x 7/8	3/4 x 7/8
Manifold	Bolt	Bolt	Bolt

QUE	QP-13 HS	QP-15 HS	QP-16 HS
Comp No	0391.0152	0391.0802	0391.0752
Que No.	QP13-1150	QP15-1512	QP16-1249
Mounting	Ear	Ear	Ear
Rotor	8PV	8PV	8PV
GL	34.09	34.09	34.09
Armature	SL	SL	SL
Diameter	119	119	119
Voltage	12	12	12
Orientation	V	V	V
Fitting	3/4 x 7/8	3/4 x 7/8	3/4 x 7/8
Manifold	Bolt	Bolt	Bolt

SANDEN	-	-	SD7H15
Comp No	-	-	0370.0061
Sanden No.	-	-	8103
Mounting	-	-	Ear
Rotor	-	-	8PV
GL	-	-	34.09
Armature	-	-	SL
Diameter	-	-	119
Voltage	-	-	12
Orientation	-	-	V
Fitting	-	-	3/4 x 7/8

NOTES

STANDARD FASTENER TORQUE VALUES

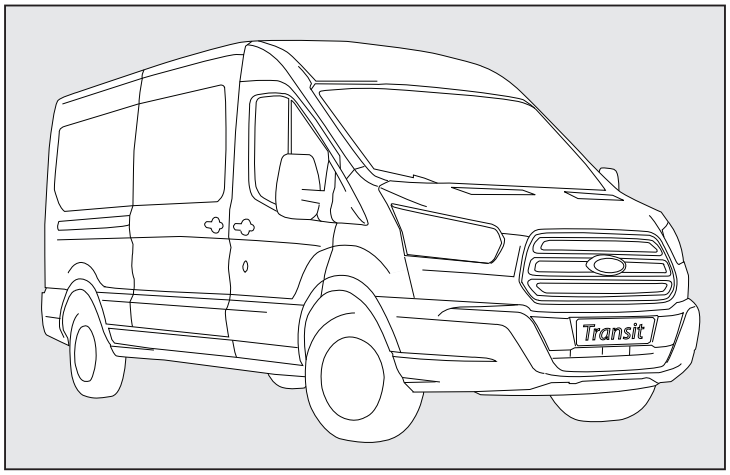
In the absence of specific torque values detailed in this fitting instruction manual, the following chart can be used as a guide to the maximum safe torque for specific size and grade of fastener.

VALORES ESTÁNDAR DE LOS PARES DE APRIETE Y FIJACIÓN

En ausencia de valores para los pares de apriete específicos detallados en este manual de instrucciones de montaje, se puede utilizar la siguiente tabla como guía para consultar el máximo par de torsión seguro para un tamaño concreto y su grado de fijación.

Caution: Measures must be followed accurately to steer clear of the possibility of damage to individuals
Warning: This calls awareness to actions which must be pursued to avoid damage to the components.
NB: This calls awareness to make the job easier or gives useful information.

STRENGTH	4.8		8.8		10.9		12.9	
	Max Torque		Max Torque		Max Torque		Max Torque	
Dia / Pitch	lb.ft	Nm	lb.ft	Nm	lb.ft	Nm	lb.ft	Nm
M5 x 0.80	2	3	4.5	6	6.5	9	7.5	10
M6 x 1.00	4	5.5	7.5	10	11	15	13	18
M8 x 1.25	10	13	18	25	26	35	33	45
M10 x 1.25	20	27	39	53	57	78	66	90
M10 x 1.50	18	25	37	50	55	73	63	86
M12 x 1.75	33	45	63	85	97	130	111	150
M14 x 2.00	55	75	103	140	151	205	177	240
M16 x 2.00	85	115	159	215	232	315	273	370



VEHICLE DETAILS

Manufacturer	Ford
Model	Transit
Type	Cargo Van, Passenger Van, Cutaway + Chassis Cab
Engine Details	3.5L EcoBoost
Year	2023 MY
Chassis Nos.	N/A
LHD	YES
RHD	YES
PAS	YES
A/C	YES
Voltage	12v

KIT DETAILS

Kit Part No.	0500.0452
Description	Standard Kit
Compressor RPM	6000 @ 4500 Engine Speed
Fitting Time	90 Minutes
Suction Fitting	Straight
Discharge Fitting	Straight
Belt	4PK 1483 /1488
Belt Part Number	0820.8631
Note:	Single Alternator Only

FOREWORD

The purpose of this manual is to facilitate the installation of a direct drive compressor. The information given is merely instructive, should any complications arise contact the Technical department. The manufacturer's warranty does not cover any problems caused by defective installation or alterations made unless authorised. The manufacturer shall not be responsible for any injury, damage or loss caused directly or indirectly as a result of using this manual or the information contained within it.

1 SAFETY MEASURES:

Before fitting the Compressor adapter drive kit, ensure the following for damage:

- **a** Inner and outer trim and body work
- **b** Engine idle pace
- **c** Check all the vehicle functions

Check list:

- **a** Ensure that the right kit has been selected
- **b** Before installing, check that all the correct pieces are present; also ensure that there are no missing or broken pieces
- **c** When fitting, make sure the vehicle is properly protected against damage.

Installation apparatus

- **a** Calibrated torque wrench
- **b** Hand service tools
- **c** Protective covers and shields

2 PRECAUTIONS

- **a** Detach the battery negative lead.
- **b** Torque all bolts where stated using a calibrated torque wrench.
- **c** Take extreme care with moving parts.
- **d** Remove the vehicle's ignition key and keep it with you.
- **e** Wear safeguards and make sure that liquid refrigerant never touches your skin

PRE- INSTALLATION

N.B Before proceeding please read the installation precautions. The letters on drawings relate to text, numbers circled relate to the parts list in this manual.

REMOVAL OF PARTS

1. Plastic shield Ⓐ below the front bumper; 10 x screws - Fig 1

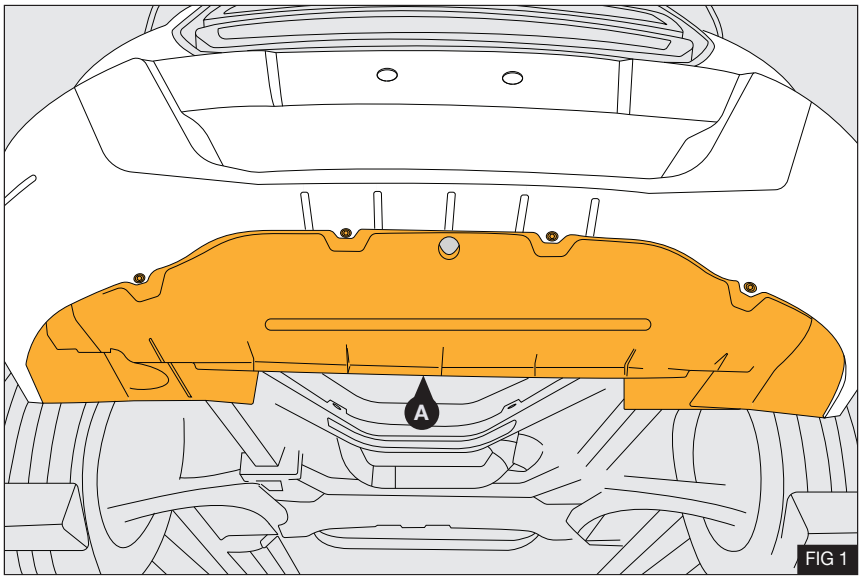


FIG 1

2. Remove and discard bolts Ⓑ securing the charge ducts Ⓒ & Ⓓ - Fig 2
3. Remove lower section of ducts Ⓒ & Ⓓ as shown - Fig 2

Note: The EGR valve (not shown) will need its wiring plug disconnecting.

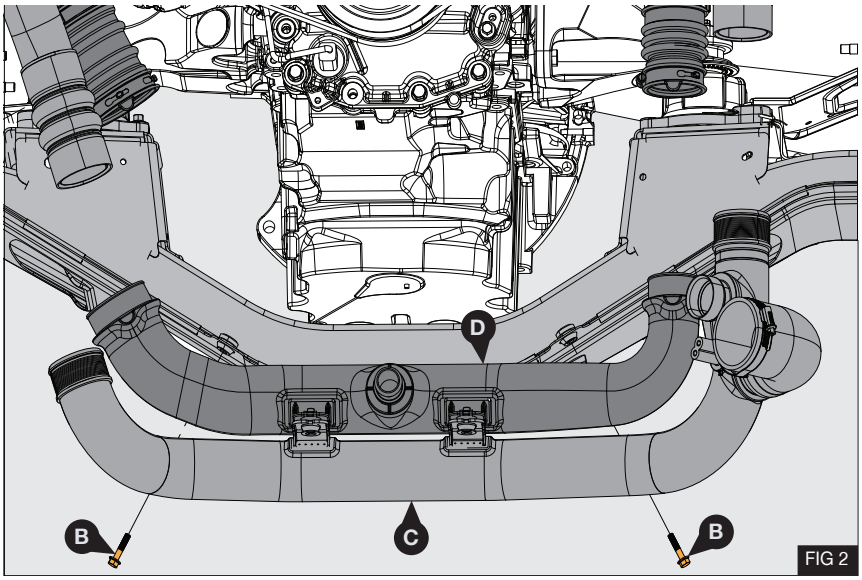


FIG 2

4. Release tension on automatic tensioner Ⓔ
5. Remove and retain drive belt Ⓕ
6. Cut remove and discard the AC compressor stretch belt Ⓖ - Fig 3

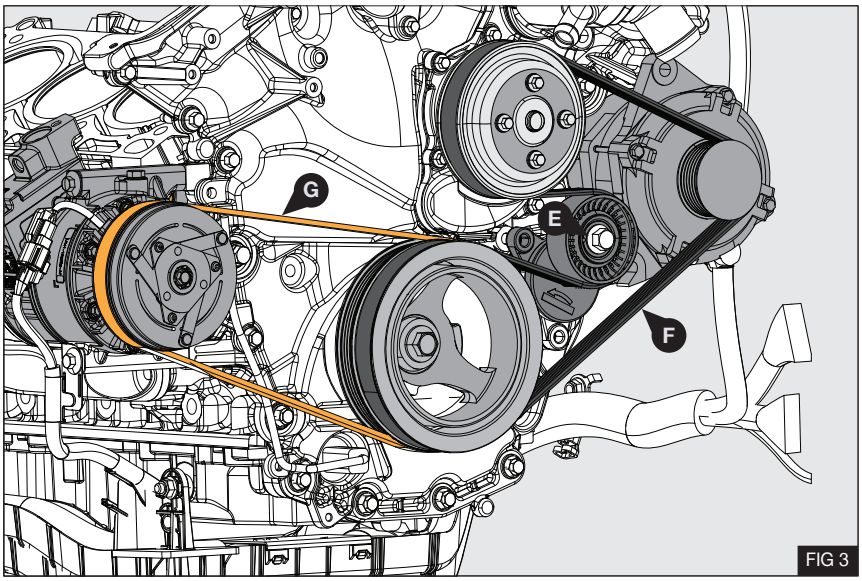


FIG 3

7. Temporarily remove 3 x bolts Ⓗ from the AC compressor Ⓘ – do not disconnect harness or pipes. Secure the compressor to one side with tie wraps to prevent stress on the pipes and wiring connectors - Fig 4

8. Remove and discard bolts Ⓙ - Fig 4

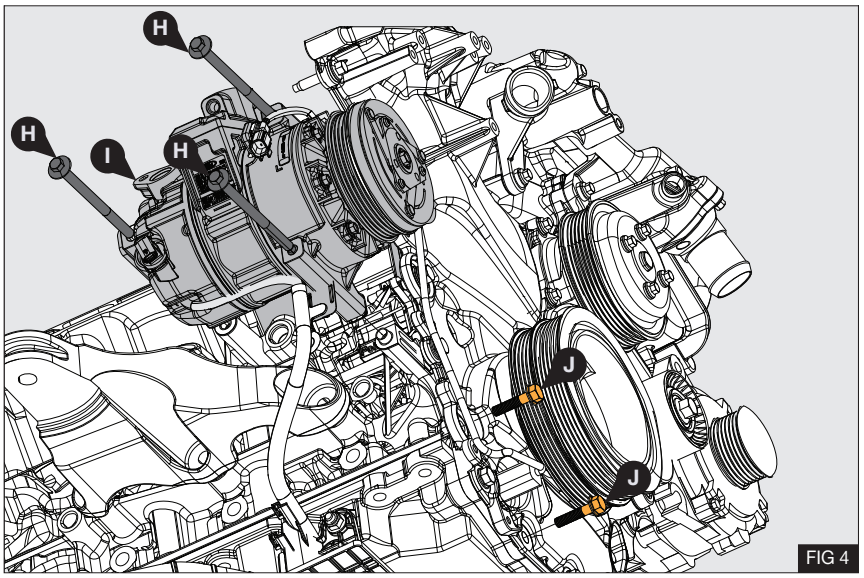


FIG 4

9. Remove the fasteners (K1) and (K2) securing the electrical harness carrier Ⓛ. Unclip the carrier Ⓛ from its mountings - Fig 5

10. When the carrier Ⓛ is dismounted remove and discard the fastener (K3) from the oil pan - Fig 5

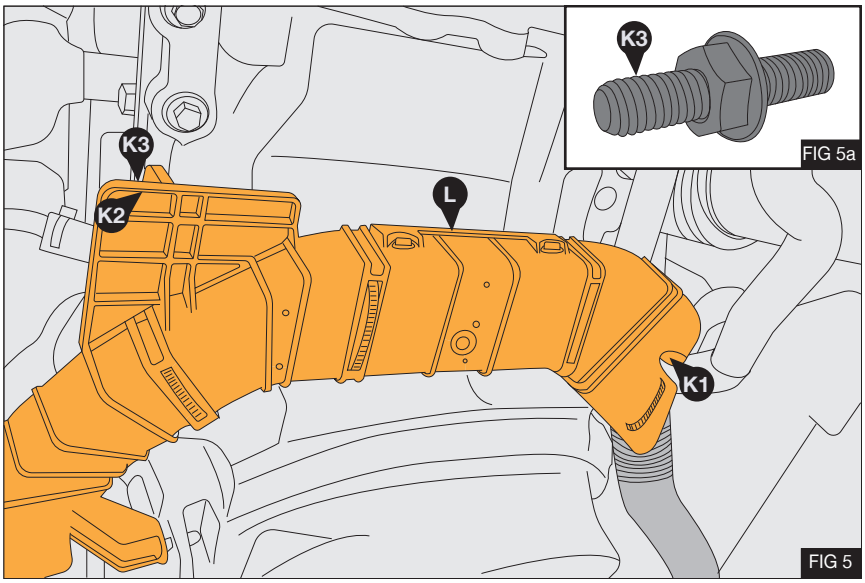


FIG 5a
FIG 5

HARNESS CARRIER MODIFICATIONS

Note: The harness carrier needs to be modified and repositioned to create clearance for the additional compressor.

1. Carefully cut and remove the sections indicated - Fig 6

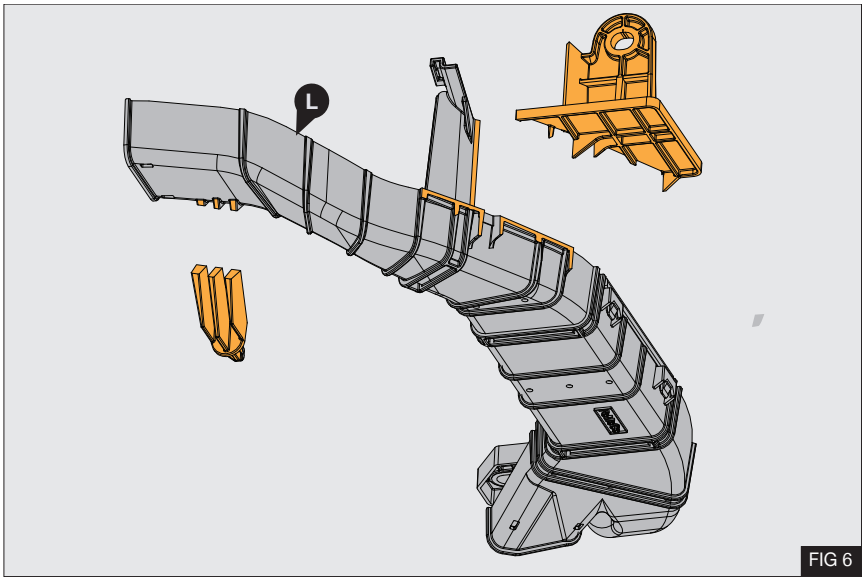


FIG 6

2. Fit the modified carrier Ⓛ securing it with the original fastener (K1) - Fig 7

3. Using the P clamp (9) with M6 x 25 bolt (8) and nut (7) secure the carrier Ⓛ to the oil pan at the position shown - Fig 7

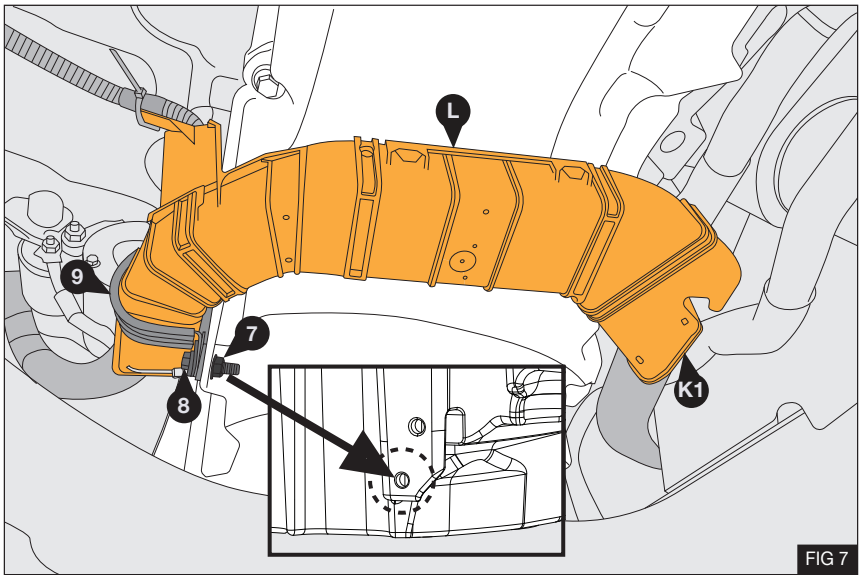


FIG 7

BRACKET INSTALLATION

1. Install the mounting bracket (1) using bolt M8 x 70 (2) and M8 x 50 bolt (3). Use M10 x 50 bolt (6) and M8 x 40 bolt (4) - Fig 8

2. Hand tighten all bolts then torque to the following

   - Bolts (2),(3) and (4) to 21.4 lb.ft / 29 Nm
   - Bolt (6) to 37 lb.ft / 50 Nm

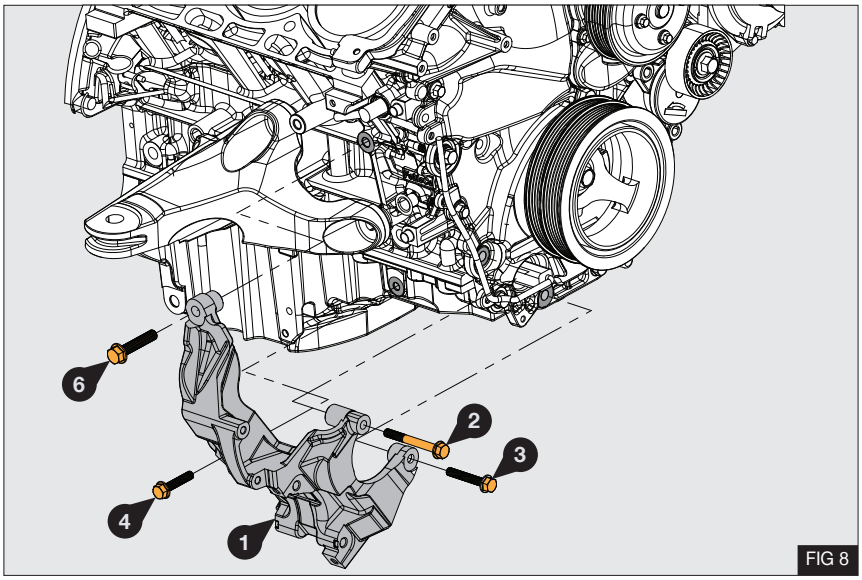


FIG 8

3. Re fit the AC compressor Ⓘ using the 3x original bolts Ⓗ - Fig 9

   - Torque bolts to Ⓗ to 18 lb.ft / 24 Nm

4. Fit the belt tensioner (10) to the bracket (1) using 2x M8 x50 bolts (3) - Fig 9

   - Torque bolts (3) 21.4 lb.ft / 29 Nm

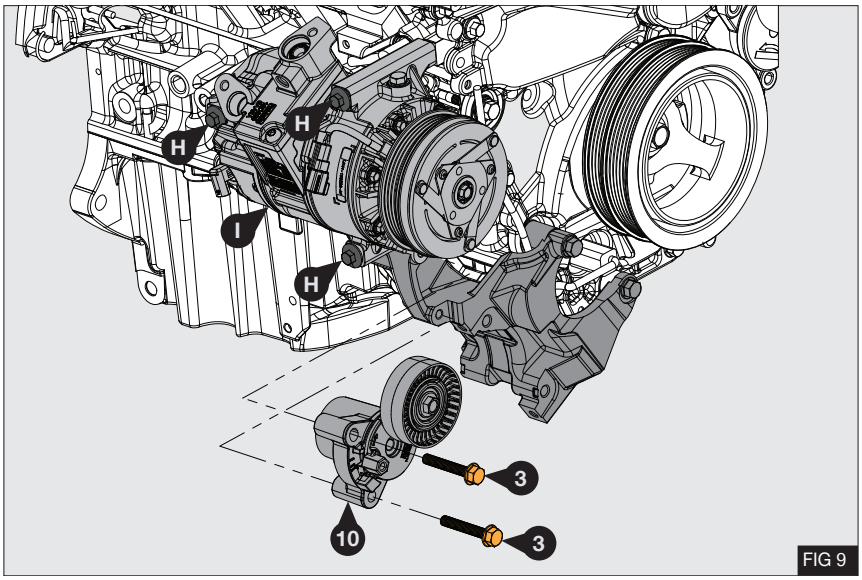


FIG 9

5. The compressor must have a leaf spring style armature installed. If the compressor is not pre-equipped with this type, fit the supplied armature (17) following guidelines in the compressor service manual - Fig 10

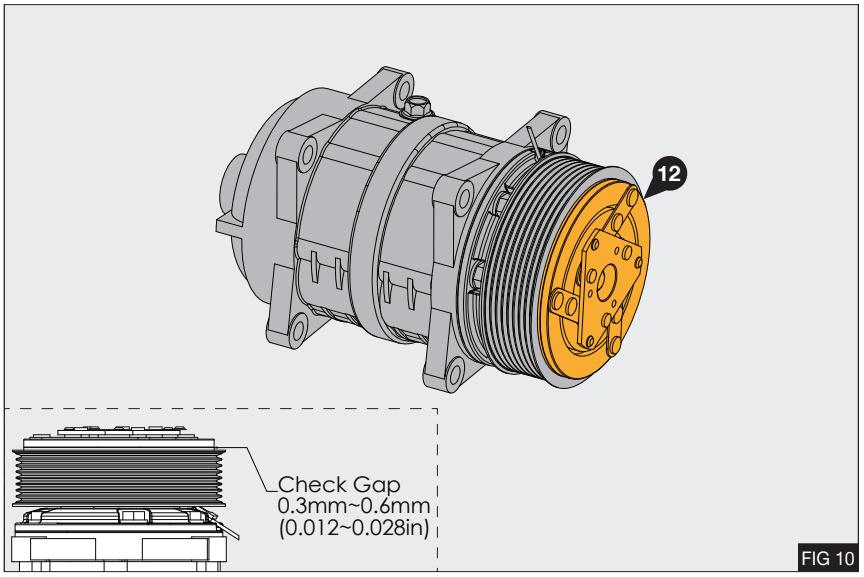


FIG 10

6. Fit the compressor to the bracket (1) using 4x M10 x 30 bolts (5) - Fig 11

   - Torque bolts (5) to 37 lb.ft / 50 Nm

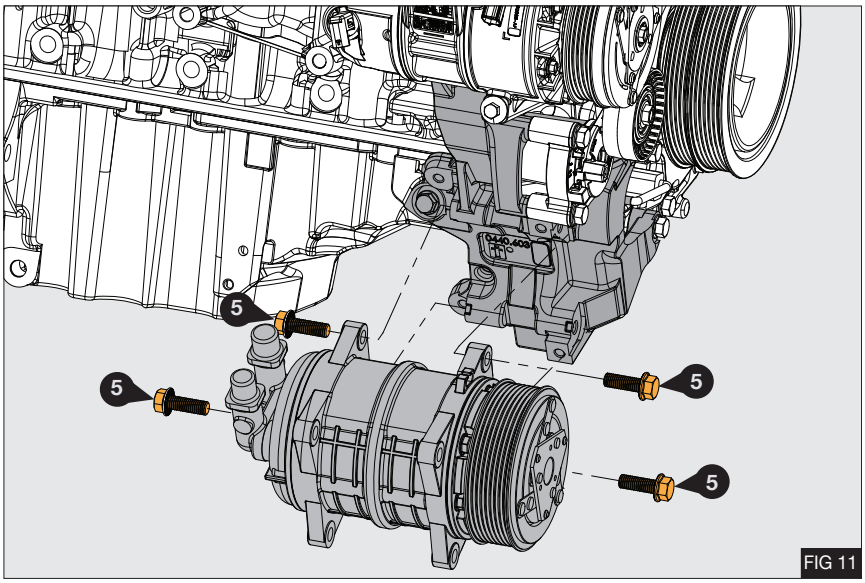


FIG 11

BELT

1. Install the drive belt (11) - Fig 12

   Note: Position belt into the correct grooves on the compressor. Fig 12

   A. Crank pulley
   B. OEM AC compressor
   C. Additional Compressor
   D. Automatic tensioner

2. Re fit the original drive belt © (Fig 2)

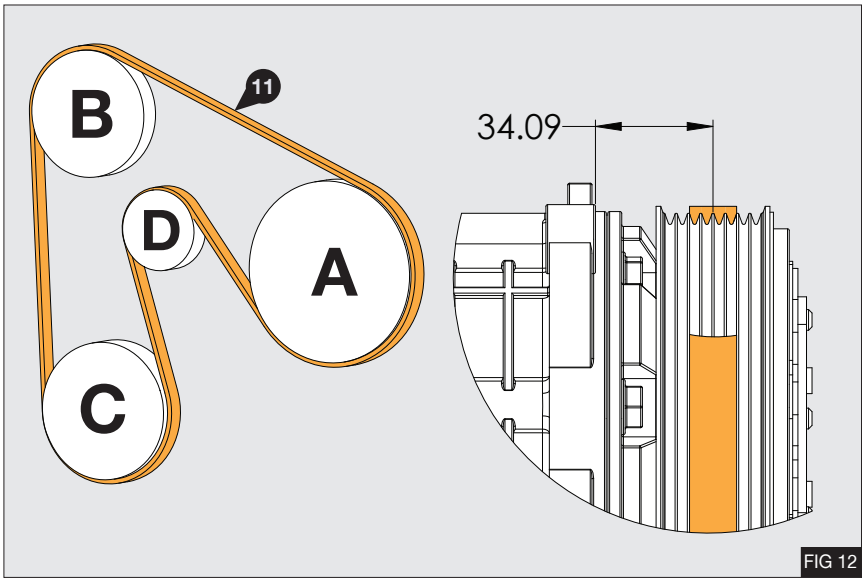


FIG 12

CHARGE DUCT MODIFICATION

1. Remove and discard lug nuts Ⓜ - Fig 13

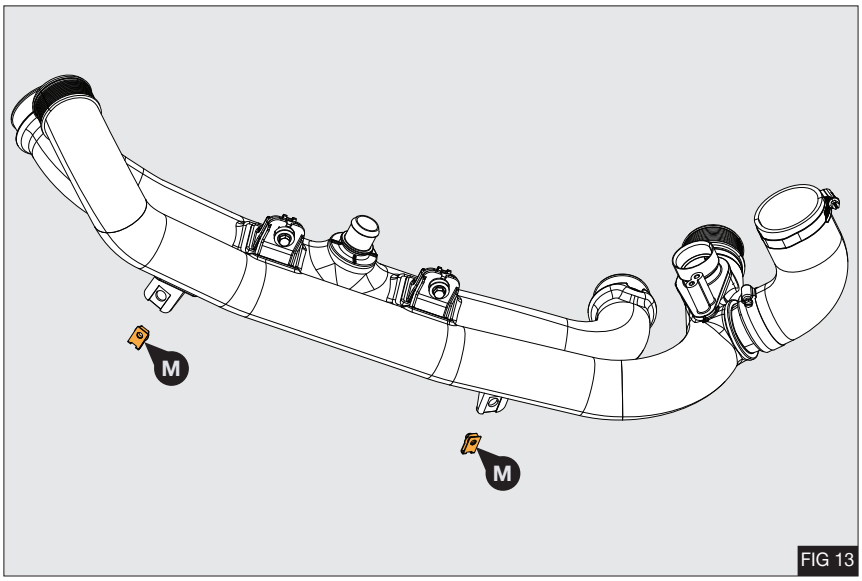


FIG 13

Note: To improve clearance to the additional compressor the charge duct assembly is now mounted slightly below the cross member.

2. Remove the bush inserts Ⓝ and re fit them from the direction shown - Fig 14

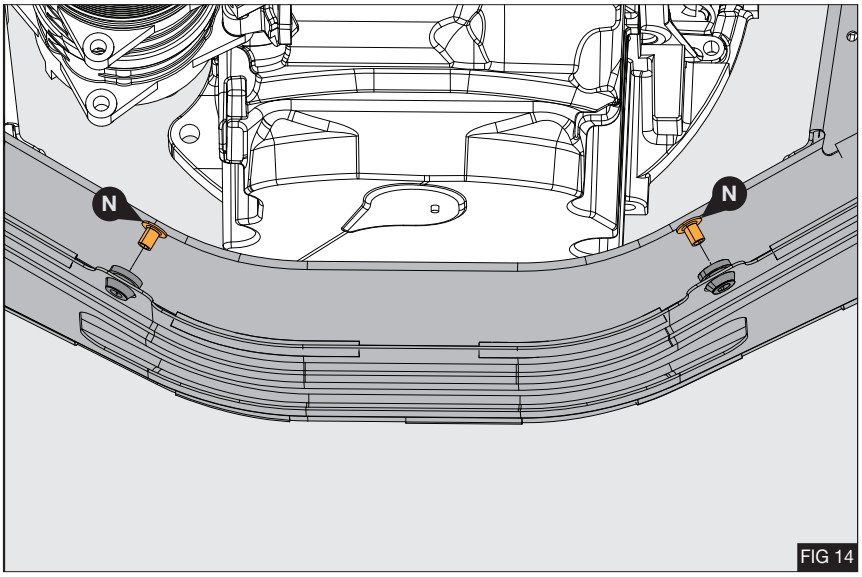


FIG 14

3. Install the threaded mounts (13) and secure with M6 nuts (7) - do not tighten - Fig 15

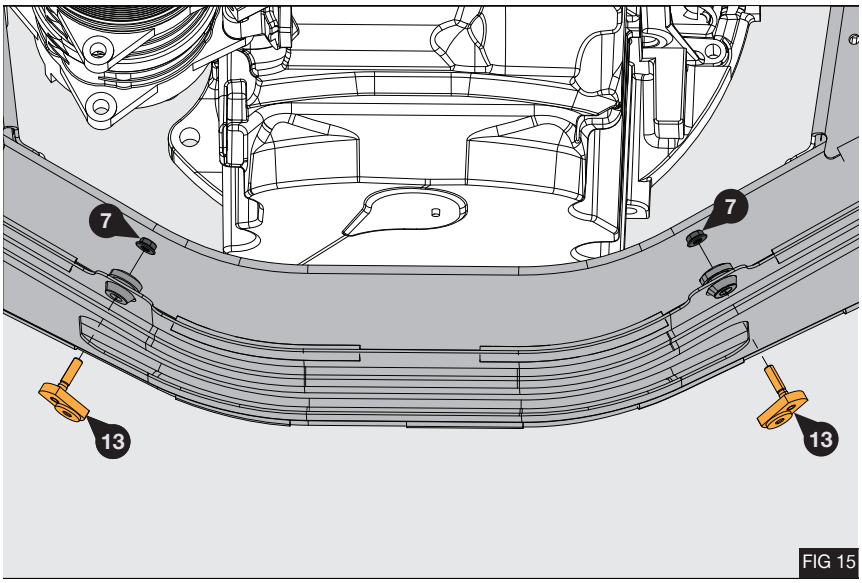


FIG 15

4. Re-fit the charge duct assembly Ⓒ and Ⓓ, connect the hoses and secure to the mounts (13) with M6 x 25 bolts (15) and washers (14) - Fig 16

5. Position the assembly for the optimum clearances then tighten nuts (7) and bolts (15) - Fig 16

6. Re-connect the EGR harness (not shown) and tighten all hose clamps - Fig 19

CAUTION: Check clearances around charge ducts and adjust as required

7. Re fit the plastic shield Ⓐ. Fig 1

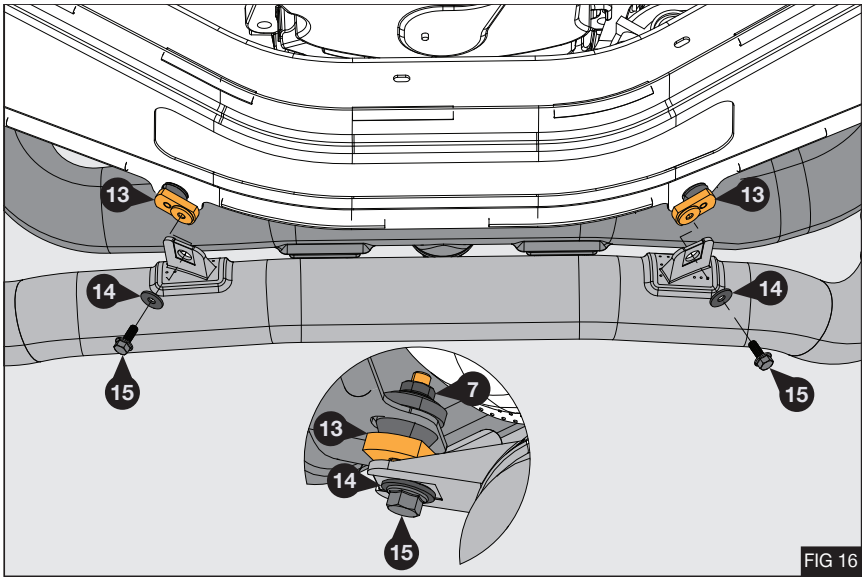


FIG 16

POST INSTALLATION

1. Before starting the engine check all the installed parts and ensure that the belts are installed correctly. Run the unit for at least ten minutes, then check the whole mounting assembly and previously removed parts.

2. Check clearances between hoses, wiring and kit components

(EN)
Techni focuses on constant upgrading of its products. The Manufacturer reserves the right to modify the models and components described in the present publication at any time for technical or commercial reasons and without prior notice. For further information, contact Techni technical services.

(ES)
Techni aspira a un constante mejoramiento de su producción. La Fábrica se reserva el derecho de aportar en cualquier momento y sin preaviso modificaciones a los modelos y los componentes descritos en esta publicación por razones técnicas o comerciales. Para ulteriores informaciones dirigirse al servicio asistencia Techni.

Techni
ENGINEERING SOLUTIONS

SALES AND SERVICE
VENTAS Y SERVICIO

Techni US LLC
6101 Guion Road
Indianapolis,Indiana,46254
Telephone: (+1) 317 672 3364
Fax: (+1) 317 755 0418
Email: sales@techni.us

Techni UK Ltd
Sundorne Trade Park, Henley Way,
Shrewsbury, United Kingdom, SY1 4NS
Telephone: (+44) (0) 1743 443176
Email: sales@techni.co.uk

Techni EU SL
Pol. Ind. Nueva Campana,
Nave 46a, Marbella, Malaga, 29660, Spain
Telephone: (+34) 952 789 142
Email: sales@technies.com