



Techni
ENGINEERING SOLUTIONS

RENAULT / OPEL / NISSAN

NUOVO MASTER 2.3 DCI / MOVANO 2.3 DCI EURO 6

NV400 2.3 DCI / INTERSTAR 2.3DCI (+/- AC) FWD EURO 6

CODE / CODICE: 0500.7932

**COMPRESSOR / COMPRESSEUR / KOMPRESSOR
/ COMPRESSORE / COMPRESOR :**

SELTEC: TM13 / TM15

QUE: QP13 / QP15

SANDEN: SD5H14 / SD7H15

FITTING INSTRUCTIONS

EINBAUANLEITUNGEN

INSTRUCTIONS POUR LE MONTAGE

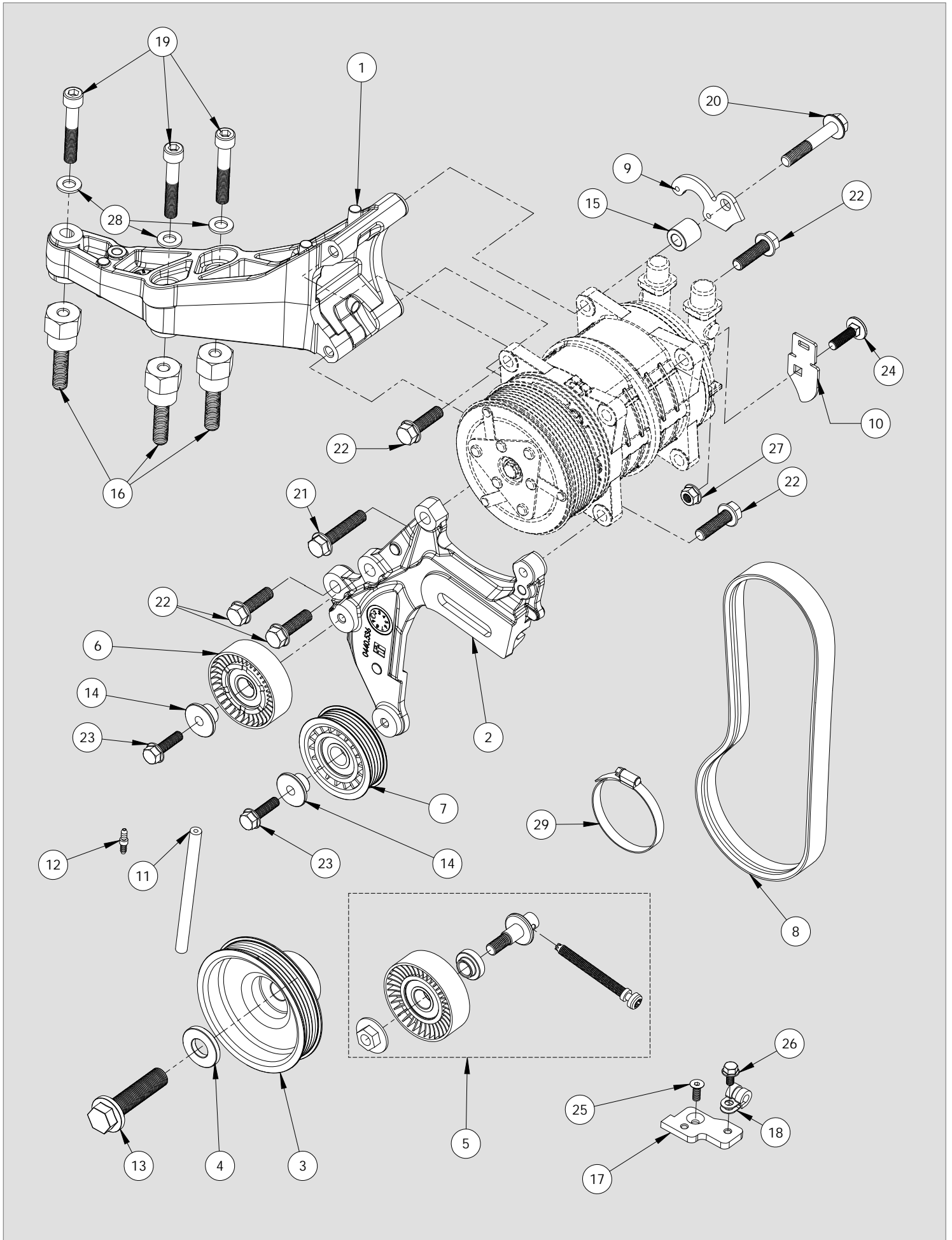
ISTRUZIONI DI MONTAGGIO

INSTRUCCIONES DE MONTAJE

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PARTS VIEW / VUE ÉCLATÉE / TEILEANSICHT / VISTA PARTA / IMÁGENES DE LAS PIEZAS



PARTS LIST / NOMENCLATURE / TEILELISTE / ELENCO DELLE PARTI / LISTA DE PIEZAS

ITEM	CODE / CODICE / KODE / CODIGO	DESCRIPTION / DESCRIZIONE / BESCHREIBUNG / DESCRIPCION	QTY.	COMMENTS
1	0441.5351	CMB - NV400 / Master / Movano 2.3 M9T FWD AC - A	1	
2	0440.5361	CMB - NV400 / Master / Movano 2.3 M9T FWD AC - B	1	
3	1701.5241	Crank Pulley - Renault 2.3 M9T FWD 109.5 Dia	1	
4	2803.5661	Crank Washer - M9T	1	
5	1705.5022	Belt Tensioner Assembly	1	
6	1700.5211	Back Idle Pulley 70x22 (5PK)	1	
7	1700.5221	5PK Idle Pulley	1	
8	0820.6721	Belt - Poly Groove 5PK 1453	1	
9	3020.6961	Fuel valve support bracket - M9T	1	
10	3020.6971	Jump start support bracket - M9T	1	
11	1420.0031	Fuel Hose - OD 9.5 X ID 3.5 X L130 mm	1	
12	1494.0031	Hose Connector (Ø4 hose)	1	
13	2711.0001	Hex Flange Screw M16x64:1.5 - 10.9	1	
14	2803.5611	Top hat spacer ID 8.3 OD 16.8 L14.5	2	
15	2803.6411	Spacer - 20.0 OD x 10.5 ID x 20L	1	
16	2803.5711	Threaded Pillar M12	3	
17	3020.5971	Hose Support Bracket	1	
18	2771.0541	P-Clip 10mm	1	
19	2705.5051	Hexagon socket head cap screw M10 x 60 1.50 - 12.9	3	
20	2705.5431	Hexagon flange Bolt M10 x 60 : 1.50 - 10.9	1	
21	2705.0341	Hexagon flange bolt Durlok - M10 x 50 :1.50 - 12.9	1	
22	2705.0241	Hexagon flange bolt Durlok - M10 x 35 : 1.50 - 12.9	5	
23	2704.0091	Hexagon flange bolt Durlok - M8 x 30 : 1.25 - 12.9	2	
24	2704.5771	Coach Bolt M8 x 25 - DIN 603	1	
25	2702.5001	Flat Countersunk Head Cap Screw M6 x 16: 1.00	1	
26	2702.0141	Hexagon flange bolt Durlok - M6 x 12 : 1.00 - 12.9	1	
27	2734.0021	Hexagon flange nut Durlok - M8 : 1.25	1	
28	2809.0011	Washer M10 Flat DIN 125 - A 10.5	3	
29	1537.1081	Hose Clamp 40-60	1	

**COMPATIBLE COMPRESSORS / COMPRESSEURS RECOMMANDÉS / EMPFOHLENE KOMPRESSOREN
RACCOMANDATO COMPRESSORI / RECOMENDADAS COMPRESORES**

SELTEC	TM-13 HS	TM15-HS	-
Comp No	0381.0202	0381.0002	-
Valeo No.	488-45120	488-55120	-
Mounting	EAR	EAR	-
Rotor	8PV	8PV	-
GL	46.55mm	46.55mm	-
Armature	3E	3E	-
Diameter	123	123	-
Voltage	12	12	-
Orientation	V	V	-
Fitting	3/4 x 7/8	3/4 x 7/8	-
Manifold	Bolt	Bolt	-

QUE	QP13-HD	QP15-HD	-
Comp No	0391.0202	0391.0002	-
Que No.	QP13-1302	QP15-1171	-
Mounting	EAR	EAR	-
Rotor	8PV	8PV	-
GL	46.55mm	46.55mm	-
Armature	3E	3E	-
Diameter	123	123	-
Voltage	12	12	-
Orientation	V	V	-
Fitting	3/4 x 7/8	3/4 x 7/8	-
Manifold	Bolt	Bolt	-

SANDEN	-	SD5H14	SD7H15
Comp No.	-	0370.0051	0370.0061
Sanden No.	-	6629	8103
Mounting	-	EAR	EAR
Rotor	-	7PV	8PV
GL	-	46.55mm	46.55mm
Armature	-	SL	SL
Diameter	-	119	119
Voltage	-	12	12
Orientation	-	V	V
Fitting	-	3/4 x 7/8	3/4 x 7/8

DELPHI	-	SP15	-
Comp No	-	0310.0021	-
Delphi No.	-	015203/1	-
Mounting	-	EAR	-
Rotor	-	8PV	-
GL	-	50.1mm	-
Armature	-	SL	-
Diameter	-	122.4	-
Voltage	-	12	-
Orientation	-	V	-
Fitting	-	1-14 UNF-2A	-

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.

COUPLES DE SERRAGE DES FIXATIONS STANDARDS

Si des chiffres de serrage au couple particuliers ne sont pas indiqués dans cette notice de montage, se référer au tableau suivant qui servira de guide pour le couple de sécurité maximum correspondant à une taille et un grade spécifiques de fixation.

ANZIEHMOMENTE FÜR STANDARDBEFESTIGUNGSMITTEL





Falls in dieser Einbauanleitung keine speziellen Anziehmomente angegeben sind, kann die folgende Tabelle als Richtlinie für das maximale sichere Anziehmoment für eine spezifische Größe oder Qualität von Befestigungsmitteln dienen.

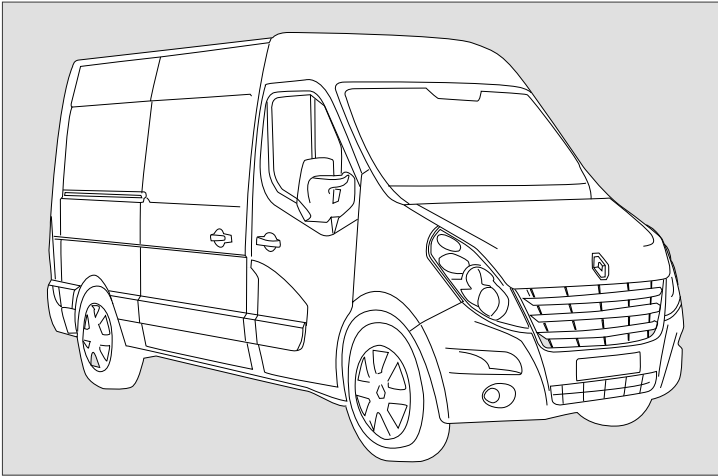
VALORI STANDARD DI SERRAGGIO PER DISPOSITIVI DI FISSAGGIO

In assenza di valori specifici di coppia nel presente manuale di istruzioni, si può utilizzare la seguente tabella come guida per conoscere la coppia massima sicura in base a dimensioni e grado del dispositivo di fissaggio.

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.

STRENGTH								
	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	Vauxhall / Opel, Renault , Nissan
Make	Movano, Master, NV400
Model	FWD 2.3 CDTI / dCi
Engine CC	2299
Engine Details	Euro 6, M9T 110/130/145/165/170
Year	2016>
Chassis Nos.	N/A
LHD	YES
RHD	YES
PAS	YES
A/C	YES
Voltage	12v

KIT DETAILS

Kit Part Number	0500.7932
Description	Speed Reduction Kit
Compressor RPM	3200 @ Max engine power output
Fitting Time	120 Minutes
Suction Fitting	90°
Discharge Fitting	90°
Belt Type	5PK 1453
Belt Part Number	0820.6721

Note: Fits vehicles with or without PTO.

Not compatible with Tecshift / Quickshift / Automatic / Robotised Gearbox Stop Start options. Vehicles with STOP/START options require the battery interface option CABADP/KPD

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

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.

PRE-INSTALLATION

N.B Prior to commencing work, please examine the instructions with care. The alphabetical symbols on the diagram relate to written instructions, numerical symbols relate to the parts listing.

INSTALLATION

1. Remove and retain the engine under panel and fasteners.
2. Turn the Automatic belt tensioner (A) fully clockwise. Insert a 3mm locking pin to hold in the fully open position. Remove and retain the original drive belt (B) – Fig 1

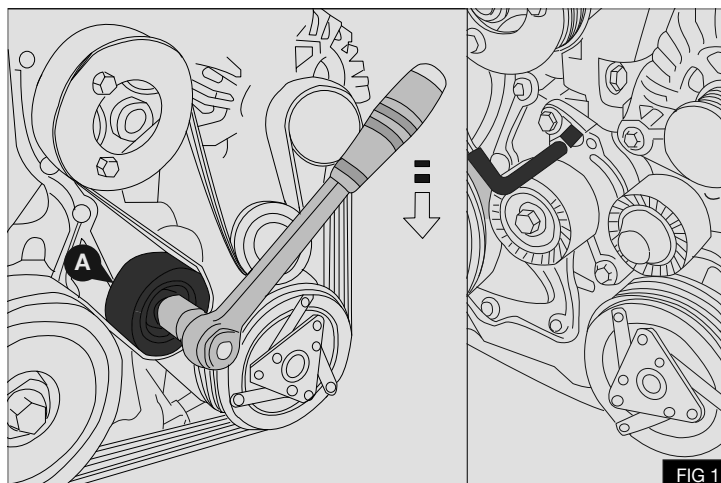


FIG 1

3. Remove and retain the M6 bolt (C) and flywheel protection plate (D) located at the rear of the engine behind the driveshaft – Fig 2

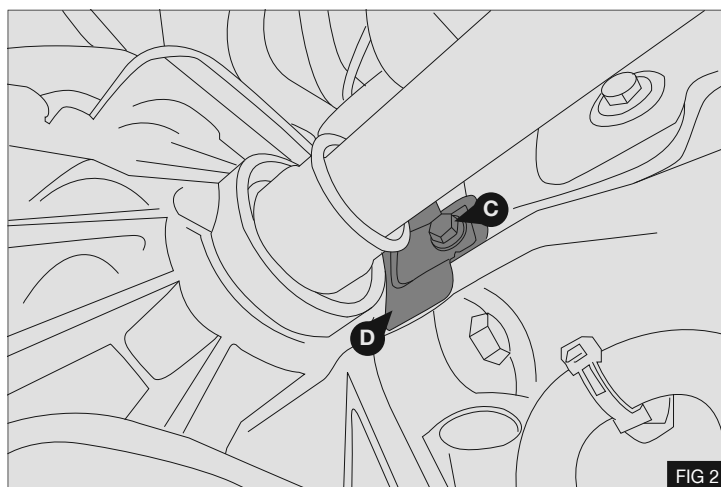


FIG 2

4. Lock the engine flywheel (E) using a large flat screwdriver – Fig 3

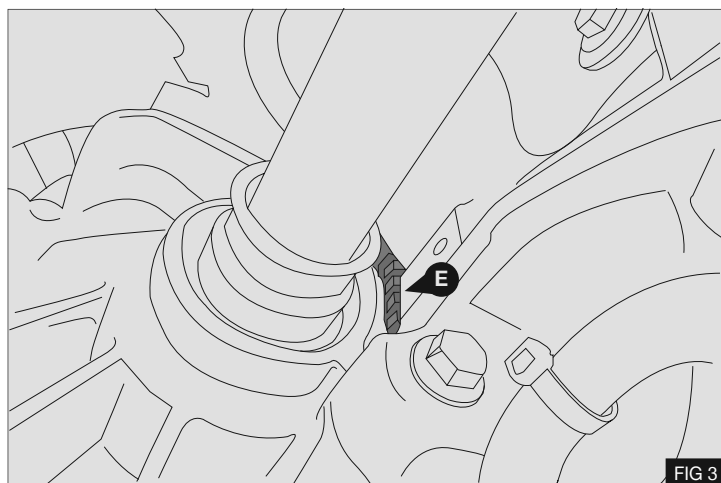


FIG 3

5. Remove the crank bolt (F). Discard crank bolt (F) and pulley spacer (G) – Fig 4

N.B If the Vehicle is equipped with a PTO pulley, remove and discard it.

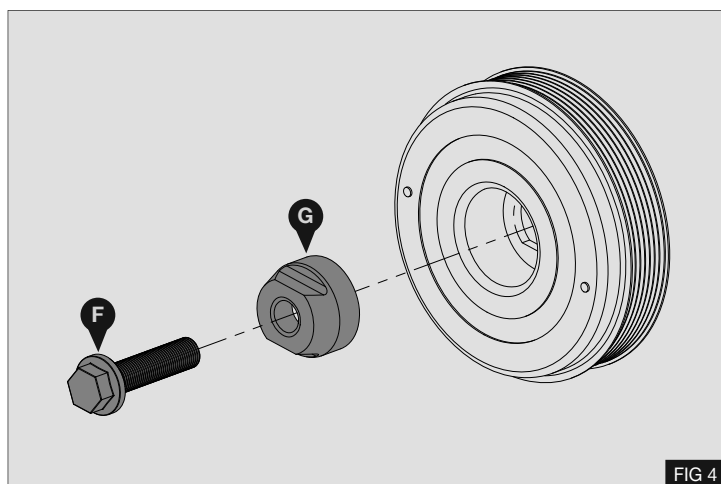
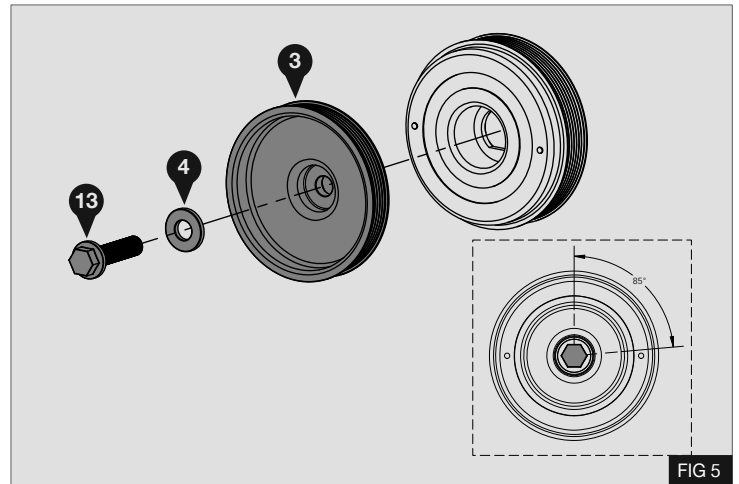


FIG 4

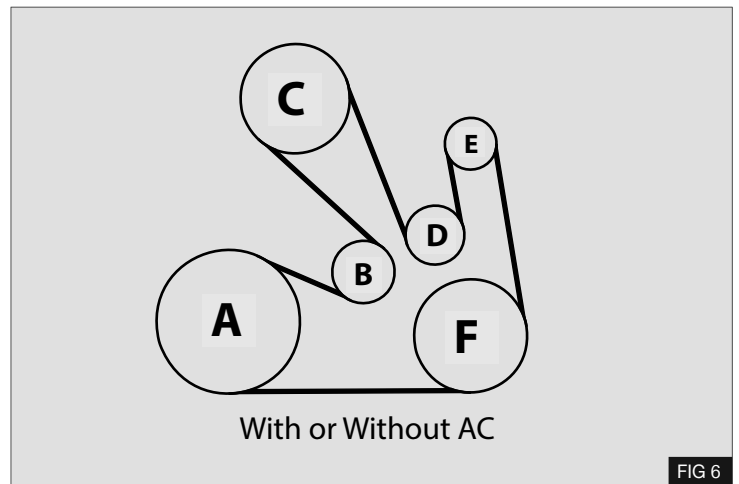
6. Fit the supplied pulley (3) with crank washer (4) and supplied bolt (13). Torque bolt (13) to 50Nm plus an angular tightening of 85 +/- 6 degrees - Fig 5
7. Replace the flywheel protection plate (D).

CAUTION!: FAILURE TO FOLLOW THE TIGHTENING PROCEDURE ABOVE RISKS CAUSING SERIOUS ENGINE DAMAGE. **DO NOT** USE AN AIR GUN TO TIGHTEN THE BOLT

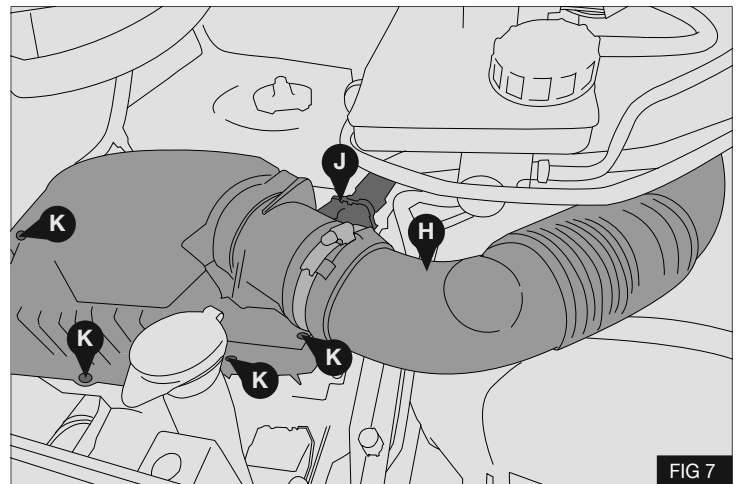


8. Refit the original drive belt (B) - Fig 6

A – Crank Pulley
 B – Tensioner Pulley
 C – Water Pump
 D – Idle Pulley
 E – Alternator
 F – AC compressor / Foolish Pulley

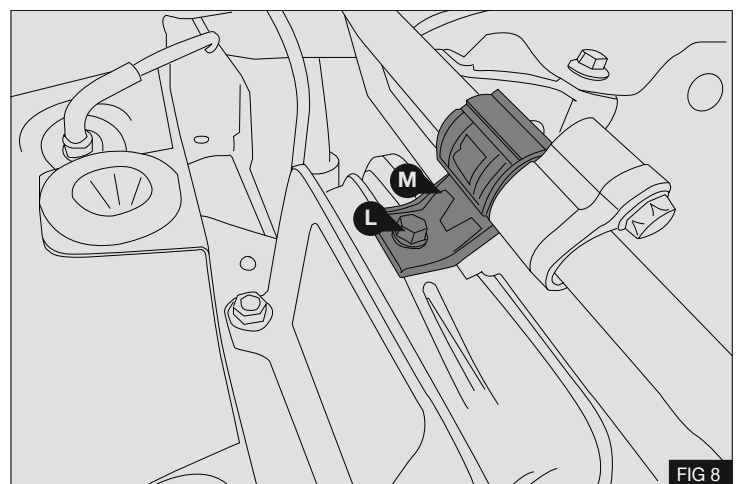


9. Remove the air intake hose (H), disconnect the wiring (J) to the air filter. Loosen the 4x screws (K) and remove the top half of the air filter. Remove the remaining lower section of the air filter - Fig 7

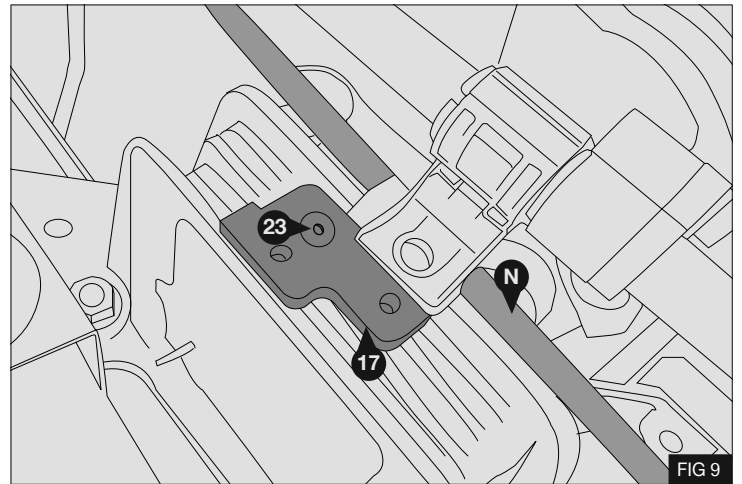


ALL VEHICLES

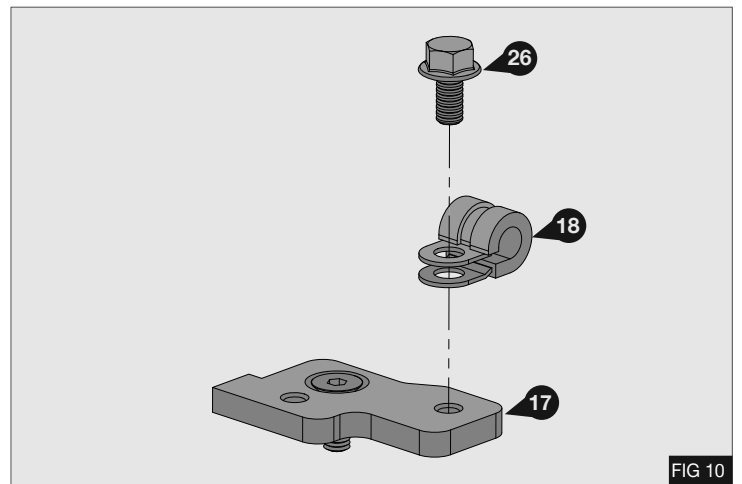
1. Remove the bolt (L) securing the AC pipe bracket (M) to the engine mount - Fig 8



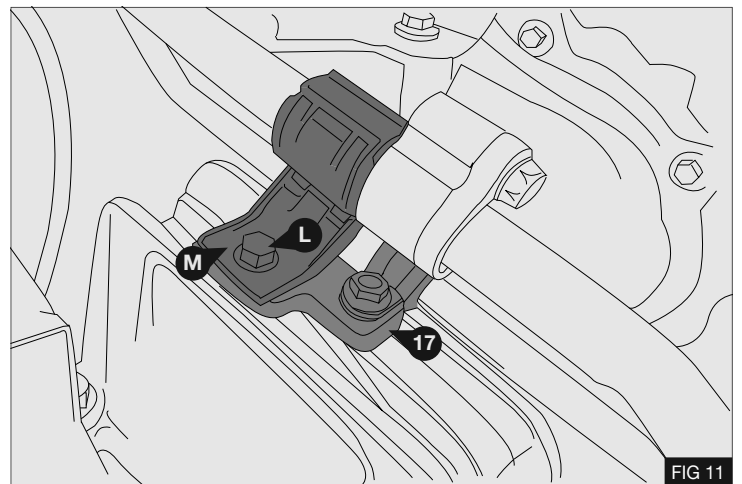
2. Install the supplied hose support bracket (17) to the engine mount bracket using countersunk bolt (25) - Fig 9



3. Fit the supplied pipe clip (18) to the AC hose (N) and secure to the support bracket (17) using bolt (26) - Fig 10

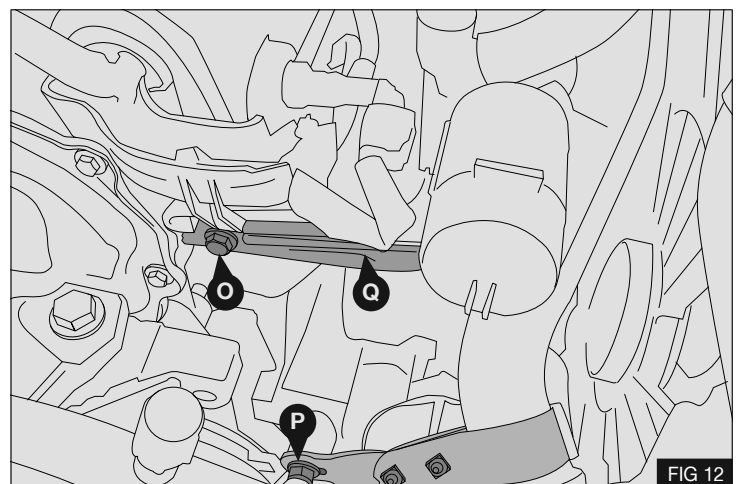


4. Secure the original AC pipe bracket (M) to the support bracket (17) using original bolt (L) - Fig 11



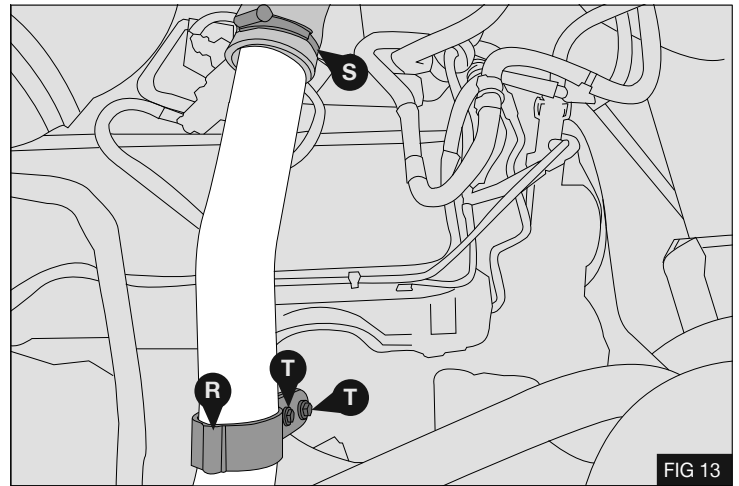
COVER MODIFICATION

1. Undo bolts (O) and (P). Remove and discard bracket (Q) together with bolt (O) - Fig 12

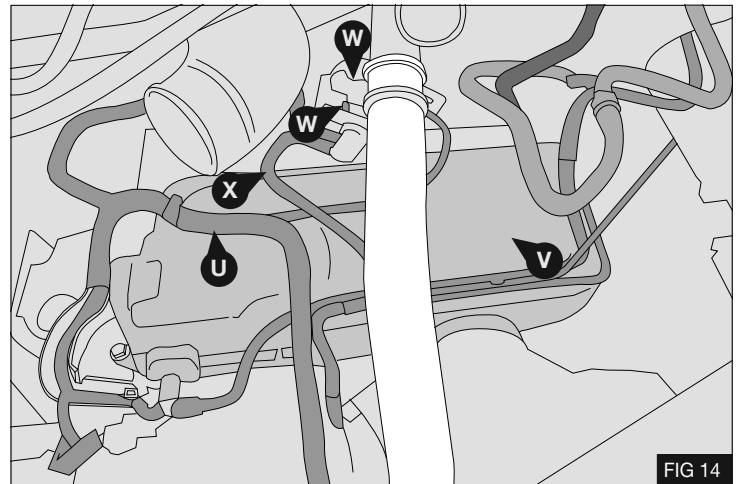


2. Mark the top intercooler pipe bracket **(R)** position, undo and discard intercooler silicone hose clamp **(S)** and remove 2 bolts **(T)** clamping the intercooler pipe. - Fig 13

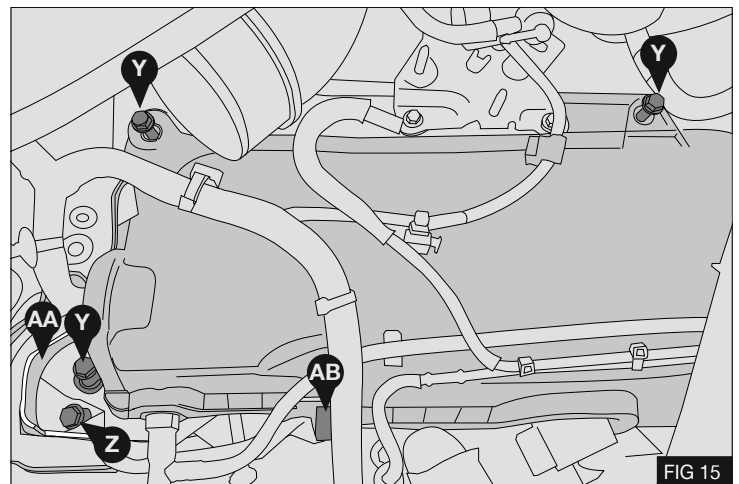
Note: Pliers can be used to undo the hose clamp(s)



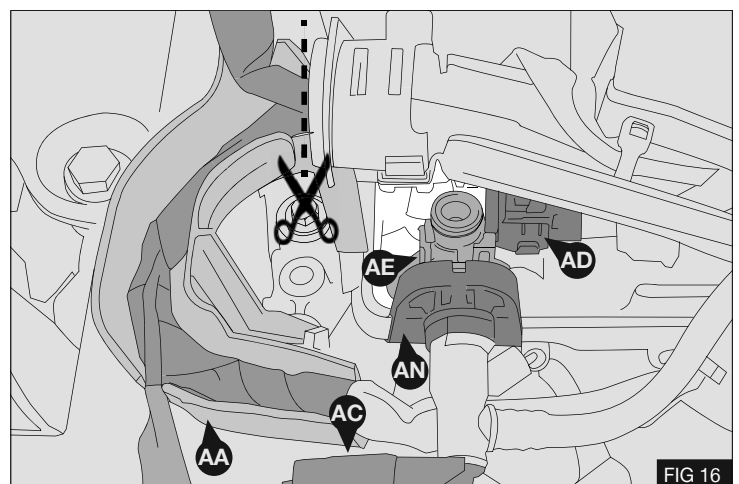
3. Remove clips holding the wiring and hoses **(U)** to the injector cover **(V)**. Undo 2 nuts **(W)** holding the Solenoid Valve and remove the lower vacuum hose **(X)** - Fig 14



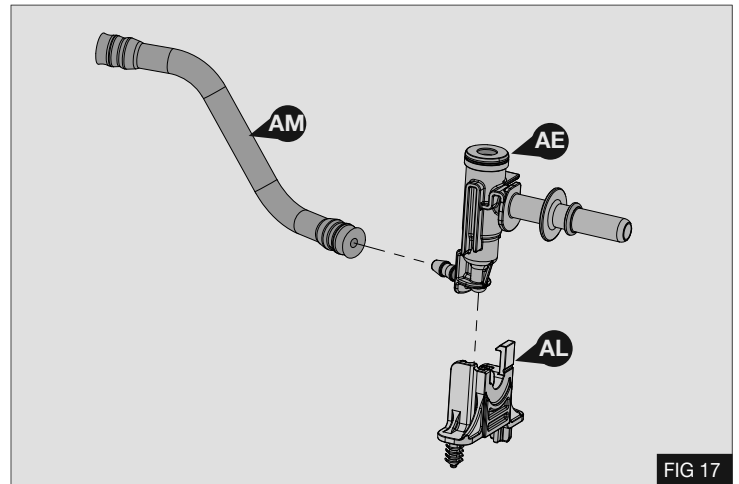
4. Undo 3 bolts **(Y)** holding injector cover. Undo and discard bolt **(Z)** holding the wiring loom support **(AA)**. Lift 2 clips **(AB)** and remove the cover. - Fig 15



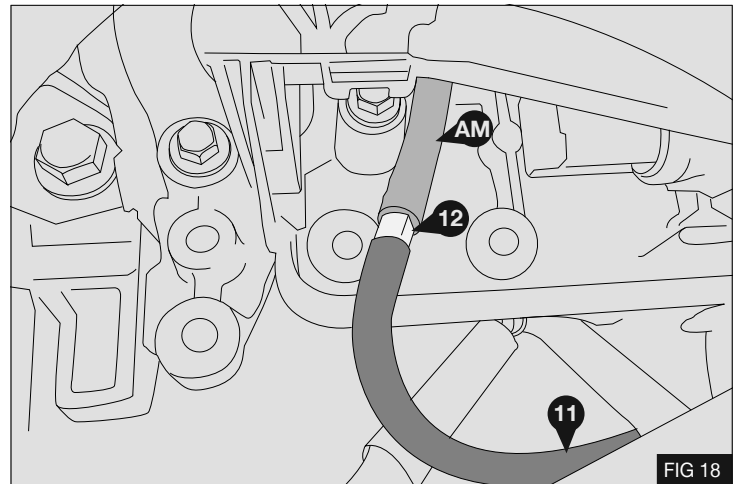
5. Disconnect the wiring connectors **(AC)** and **(AD)** and lift the wiring out of the holder **(AA)**.
6. Cut off and discard the plastic holder **(AA)** at the line marked. - Fig 16



7. Remove the fuel return valve (AE) and bracket (AL) - Fig 16 / 17

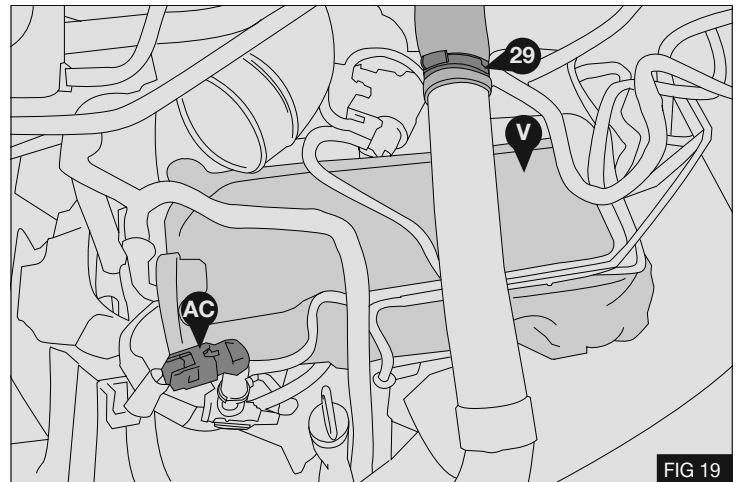


8. Extend the original fuel hose using hose (AM) connector (12) and fuel hose (11). - Fig 18



9. Refit the return valve (AE) to extend the hose using the original grommet (AM) and keep the plastic bracket (AL) separate. - Fig 18

10. Reconnect connectors (AC) and (AD) (Fig 16), reassemble the injector cover (V) (Fig 14 / 15), and intercooler piping (Fig 13) in reverse order.

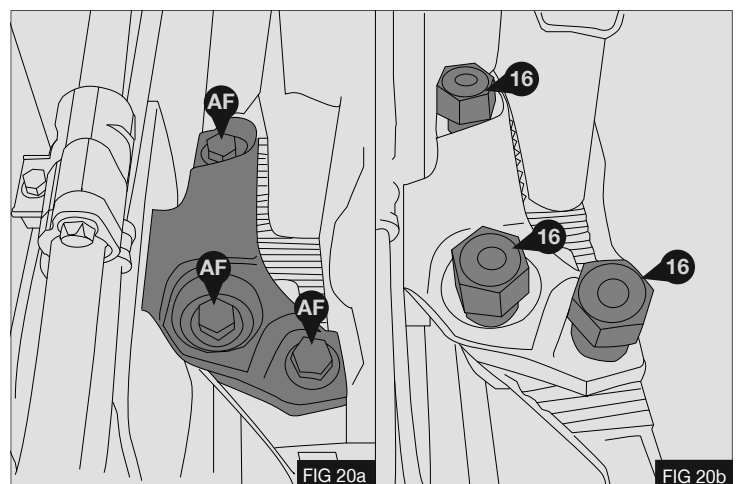


11. Use the supplied hose clamp (29) to reconnect the hose to the pipe. - Fig 19

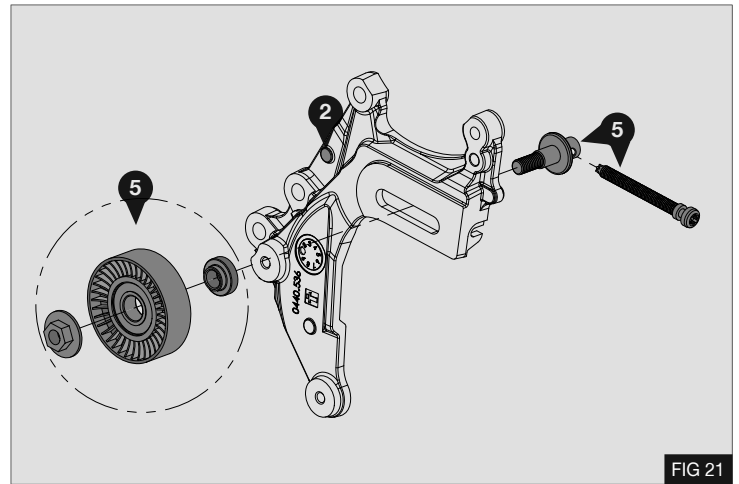
ALL VEHICLES

1. Remove and replace the engine mount bolts (AF) **one at a time** and replace with threaded pillars (16).

Torque the 3x threaded pillars (16) to 65 Nm / 48Lb. ft.
- Fig 20a / b



- Assemble the tensioner assembly as shown opposite using bracket (2) and tensioner assembly (5) - Fig 21

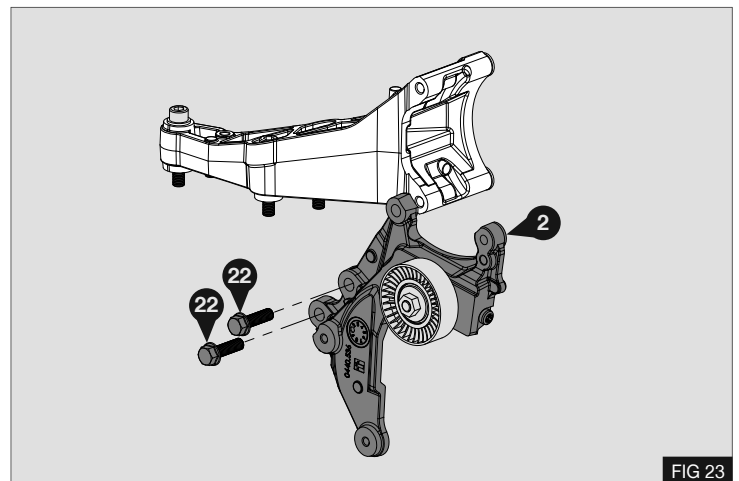
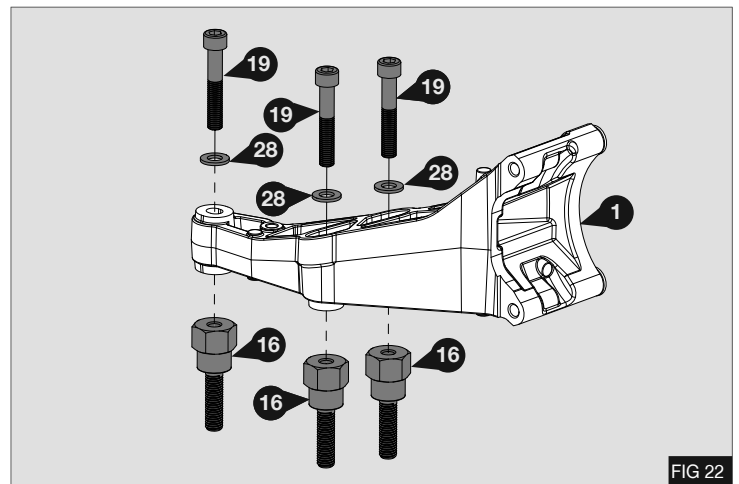


MOUNT BRACKET INSTALLATION

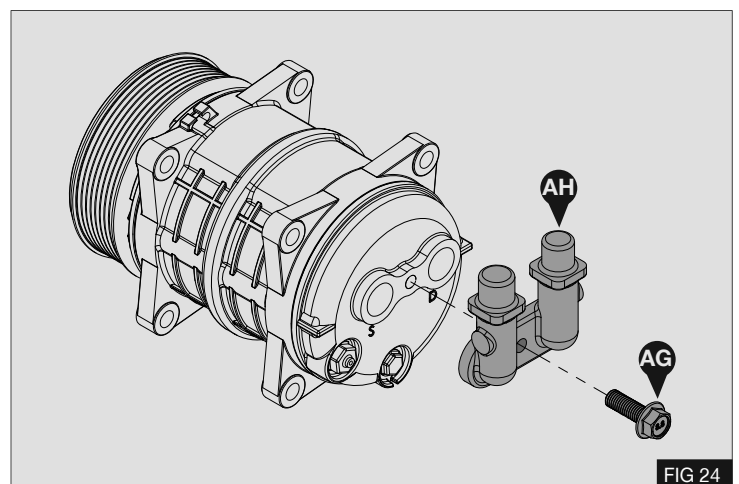
IMPORTANT: The following installation and tightening sequence must be carefully followed to ensure correct belt and bracket alignment.

NB: Please refrain from using “Loctite” unless otherwise notified

- Install the mount bracket (1) to the threaded pillars (16) using bolts (19) with washers (28). Tighten the 3x bolts hand tight so that they only allow **side to side** movement of the bracket (1) - Fig 22
- Install the adjuster bracket (2) to the side of the engine using 2x M10x35 bolts (22). Tighten the 2x bolts hand tight so that they only allow **up and down** movement of the bracket - Fig 23



- Before fitting the compressor undo bolt (AG) and remove the suction/discharge manifold (AH) - Fig 24



4. Secure the compressor using 2x M10x35 (22) bolts and 1x bolt M10x60 (20).
5. Attach fuel valve holder (AI) to bracket (9) and use spacer (15)
6. Attach the fuel return valve (AE) to its holder and torque 3x M10 bolts to 58 Nm / 43lb. ft. in the following sequence: - Fig 25

Bolt tightening sequence :

- 1 - (22) A
- 2 - (20) B
- 3 - (22) C

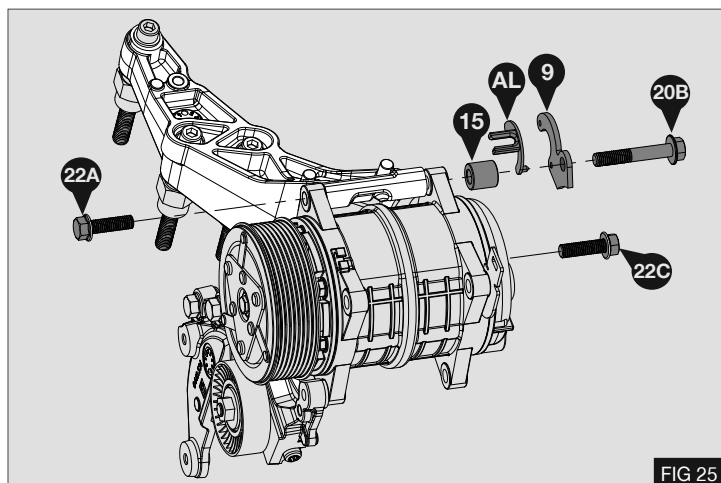


FIG 25

7. Insert M10x50 bolt (21) and M10x35 bolt (22) through the lower front compressor ears as shown opposite. Torque bolts (21) and (22) to 58Nm / 43lb. ft. - Fig 26
8. Torque bolts (22a) securing the adjuster bracket to 58Nm / 43lb. ft. - Fig 26

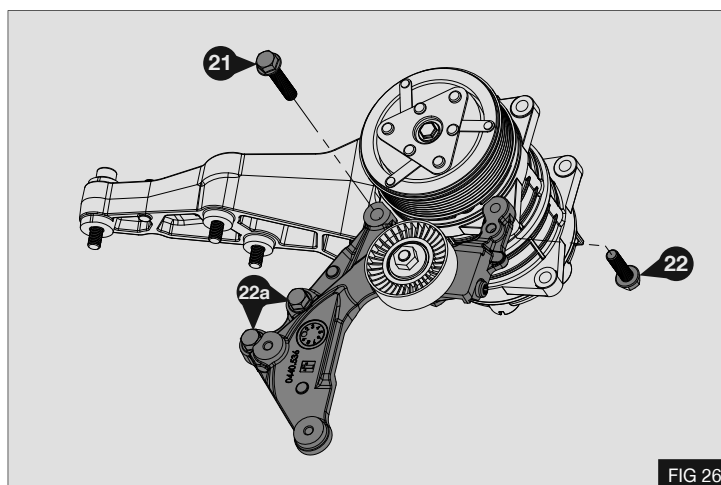


FIG 26

9. Refit the suction/discharge manifold (AH) and torque bolt (AG) to 25 Nm / 18 lb. ft. Slide the battery cable bracket (10) together with bolt (24) already installed into the cable holder and fasten it to the compressor as shown. - Fig 27

Torque bolts (19) to 58Nm / 43lb. ft. - Fig 27

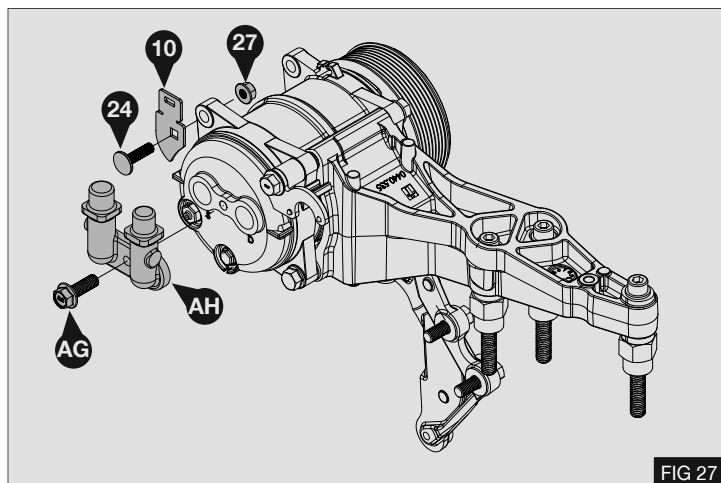


FIG 27

10. Install idle pulleys (6) and (7) to bracket (2) using bolts (23) with spacers (14) as shown opposite. Torque bolts (23) to 29Nm / 22lb. ft. - Fig 28

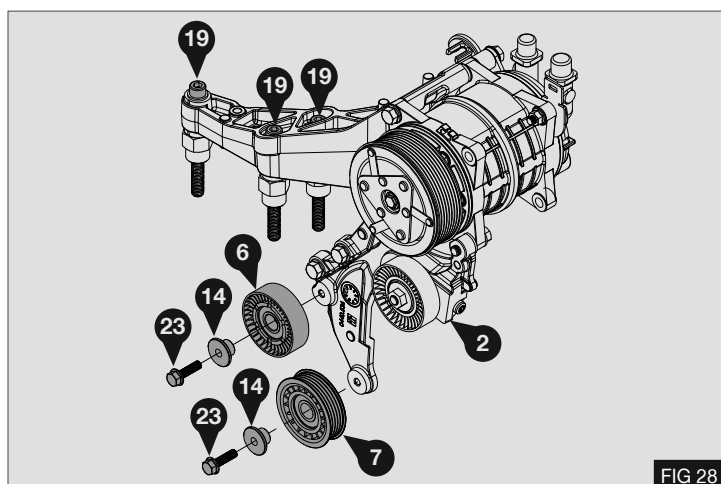


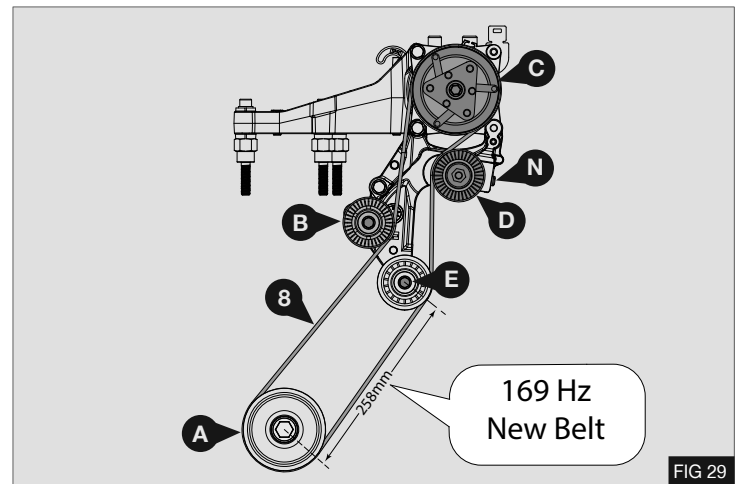
FIG 28

DRIVE BELT

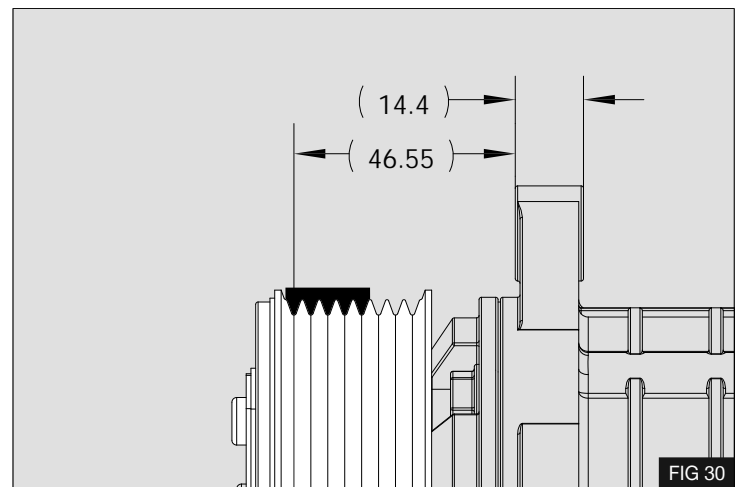
1. Install the supplied drive belt (8) as shown opposite - Fig 29

A – Crankshaft Pulley
 B – Idle Pulley
 C – Compressor
 D – Adjuster Pulley
 E – Grooved Idle pulley

2. Place the belt in the correct groove of the compressor - Fig 29

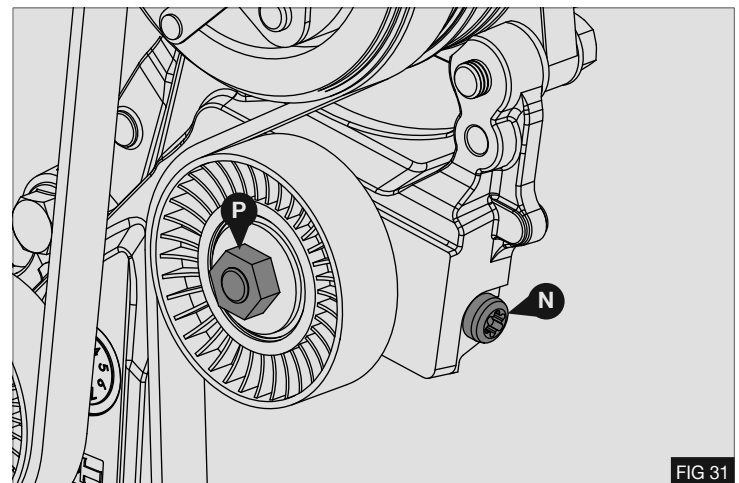


3. Tension the drive belt (8) using a T-40 Torx on the adjuster bolt (N). If the tension is being checked using a frequency meter, ensure that it is checked on the span shown - Fig 30



4. When the correct tension (new belt level) has been achieved (see table). Torque tensioner lock nut (P) to 25Nm / 18lb. ft. using a calibrated torque wrench - Fig 31

Note: A new drive belt must be tensioned to the “new belt level” in order to mesh correctly into the pulley grooves. The belt tension will then fall after a running in period.



BELT TENSION TABLE

Belt	Belt Age	Belt Tension Using Belt Tension Gauge	Belt Tension (Hz)
5PK	New Belt	60 - 72 kg	169 Hz
5PK	Used/ re-tension Belt	45 - 50 kg	143 Hz

ELECTRICAL INTERFACE

1. Vehicles fitted with Stop / Start technology must have the fast idle activated when combined with this compressor mount kit.
2. Full details of how to complete this operation are contained within the Renault / Vauxhall / GM conversion guidelines for this vehicle in the following locations :-

Renault - 4.11 "CABADP" option / fast idle "RALENT" option

Vauxhall – 4.11 wiring loom for conversions option "KPD" / fast idle option "UF3"

3. The fast idle is activated by connecting pin 1 of the 6 way connector to earth – Fig 31
4. Location of the 6 way connector - The connector is located on the left-hand side of the dashboard, near to the panel feed-through ring, the passenger compartment fuse and relay box and the bonnet opening lever. It is secured on the dashboard wiring by a tie. Extra length is provided for the connection. The connector is in the same position for both left-hand and right-hand drive vehicles.
5. Manufacturers recommend that this connection is activated whenever the refrigeration / additional AC system is active
6. Manufacturers also provide a +12v battery power supply for use with auxiliary component wiring. This is a 2 way connector located behind the B-pillar trim.

Note: This power supply is connected directly to the battery (via fuse F6) and is therefore not protected by the energy management system. Therefore there is a risk of battery discharge.

POST INSTALLATION

1. Run the engine with compressor engaged for five minutes. Check all components.
2. Check the belt tension when the belt is hot. It is important that the belt is allowed to cool before re-tensioning. **Always re-tension new belts if the tension is less than the used belt amount.** Install the supplied belt label in the engine bay.

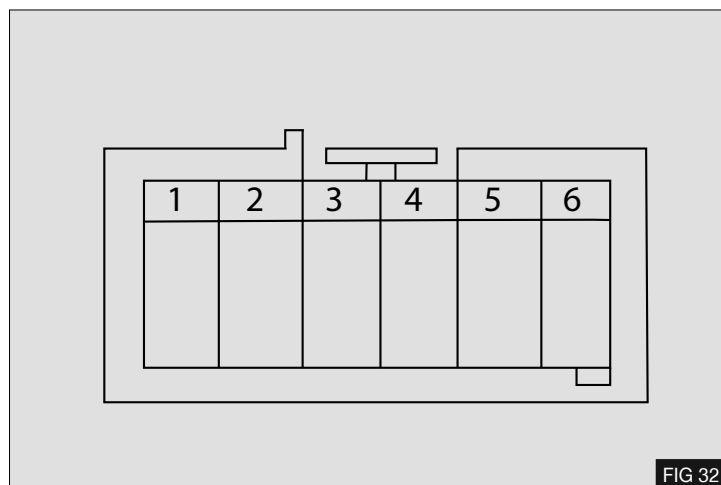


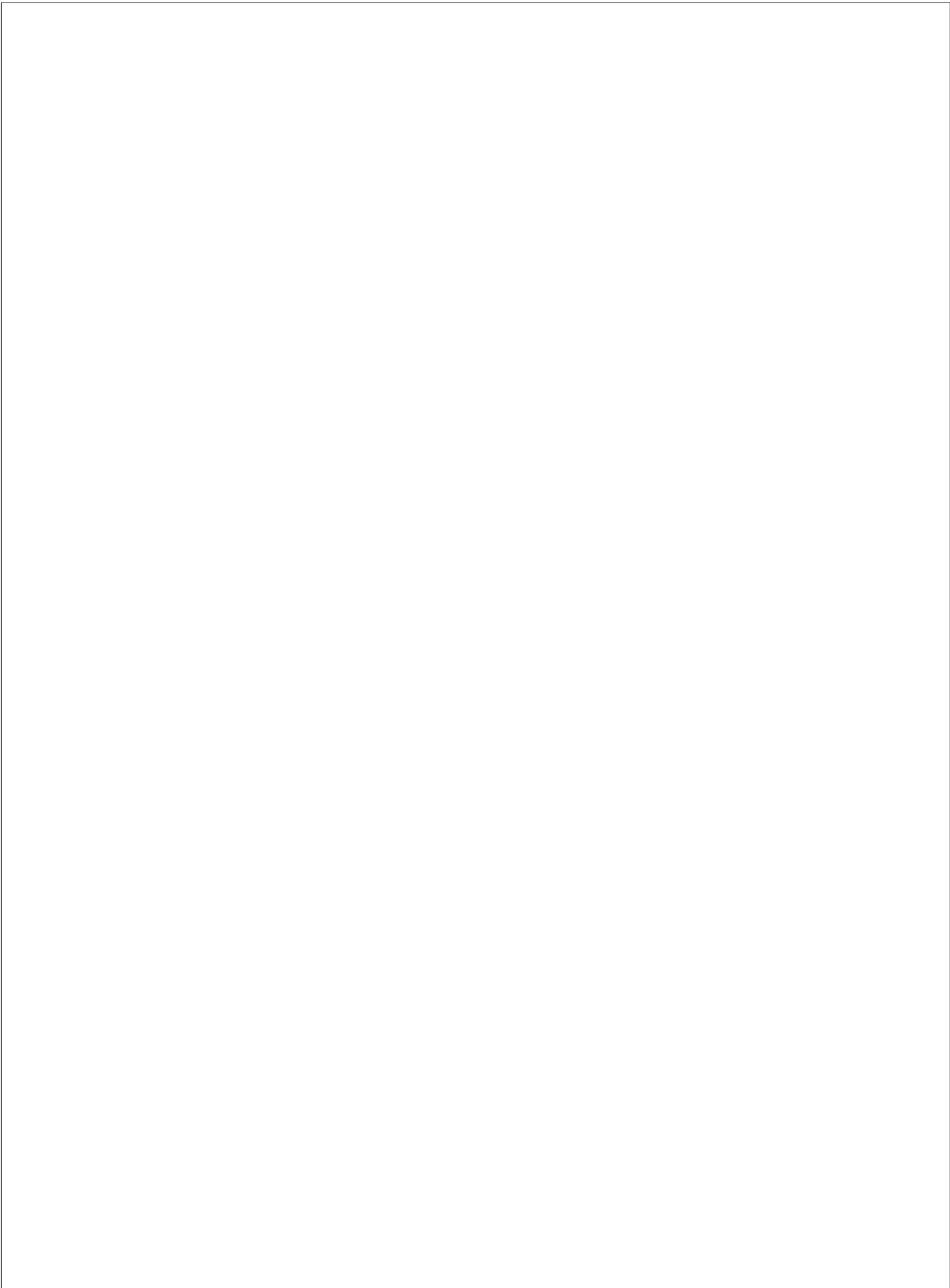
FIG 32

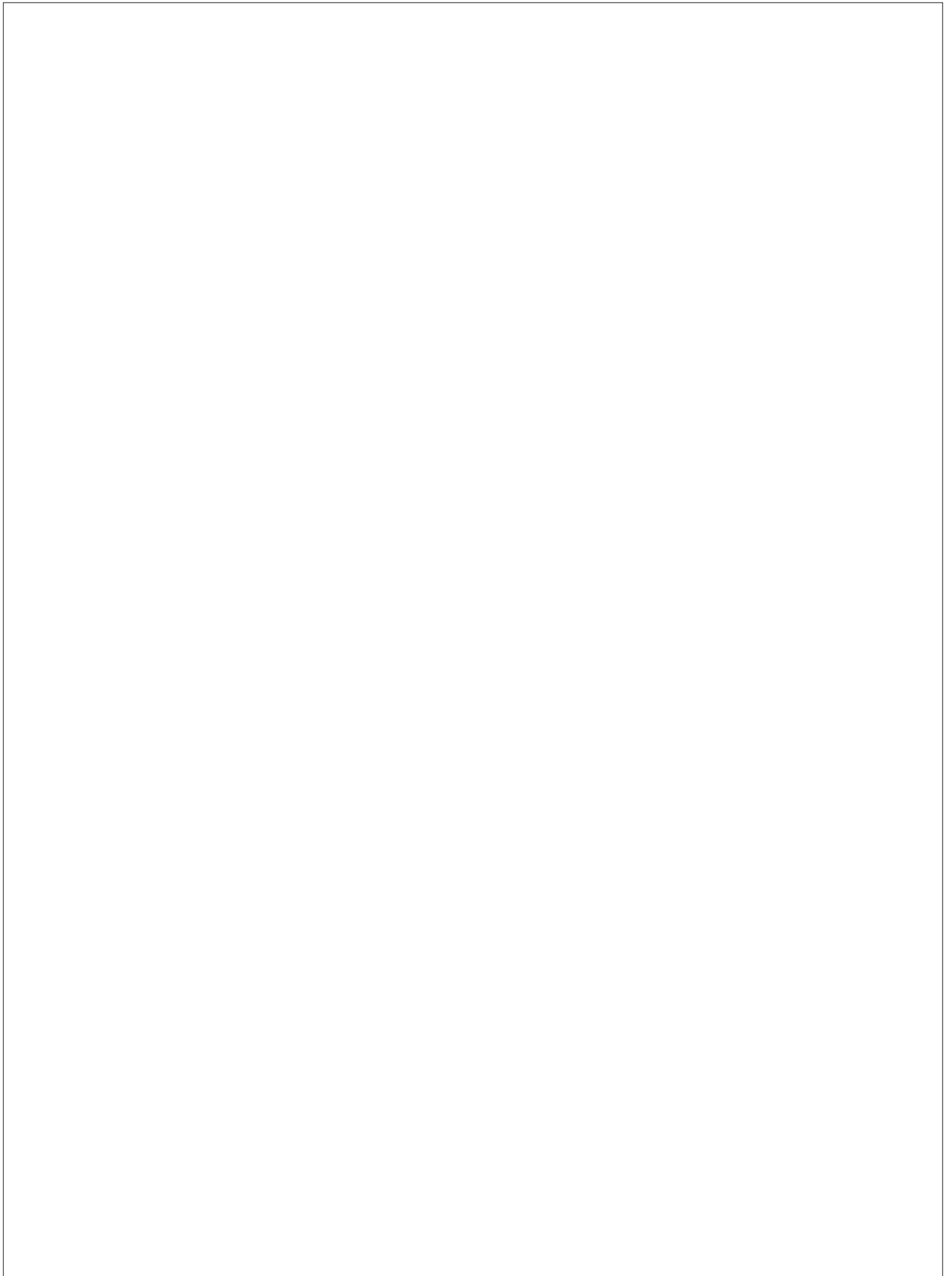
6 Way connector

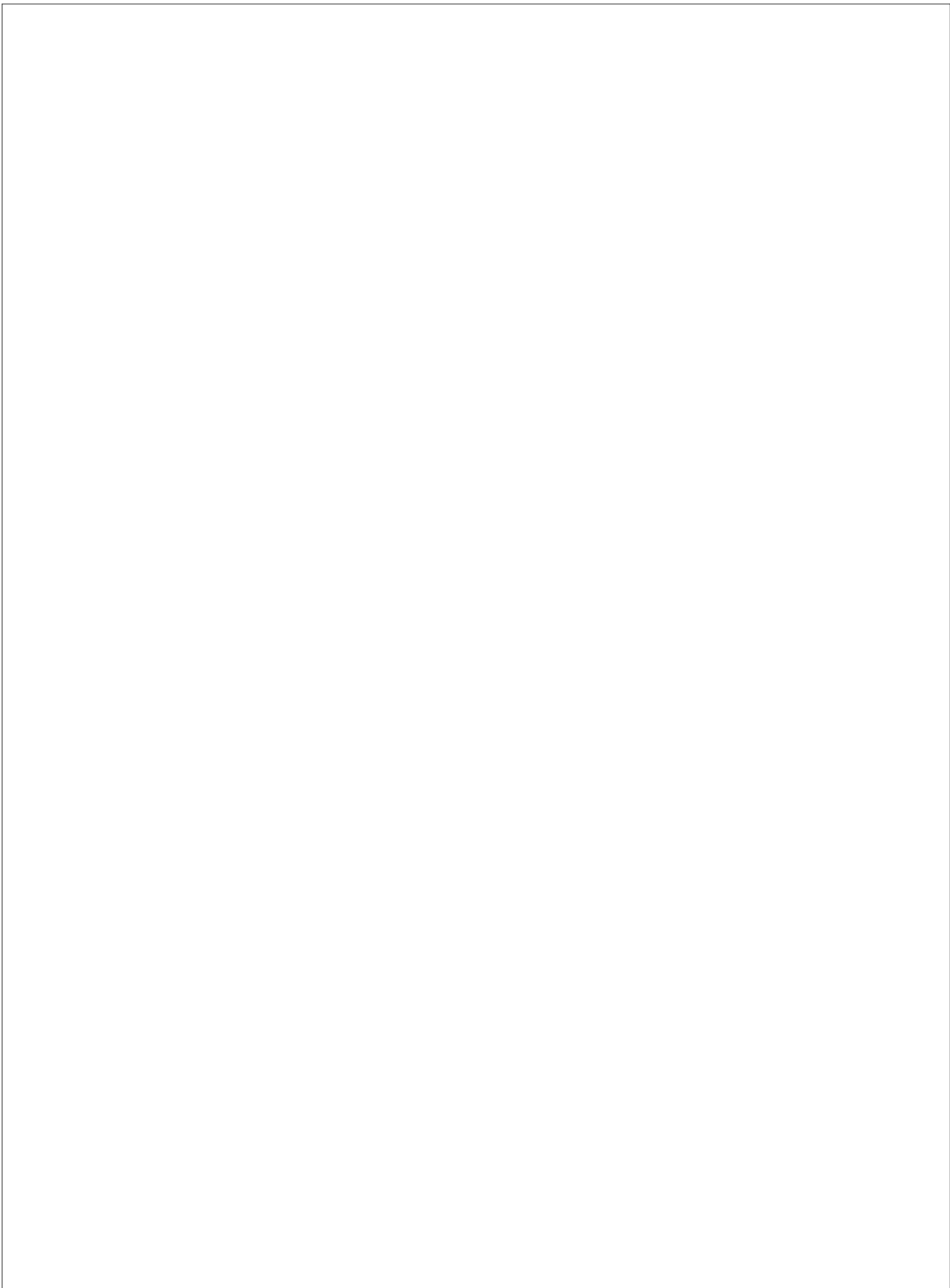
Ways	Connections	Allocation	
1	3ADJ	Accelerated idle control (wire cross-section 0.5mm ²)	
2	BMT1	'Engine running' Information	Shared 10A Fuse (wire cross-section 1mm ²)
3	SBP4	+ 12V Load shedding current distribution power supply	
4	MAN32	Earth (wire cross-section 1.5mm ²)	
5		Reserve	
6		Reserve	

2 Way connector

Ways	Connections	Allocation
1	BP23	+12V Direct battery power supply for maximum consumption of a 40A (wire cross-section 7mm ²) 50A fuse F6 protection
2	MAN32	Ground (wire cross-section 7mm ²) large enough to adapt to the battery +12V current







(EN)

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