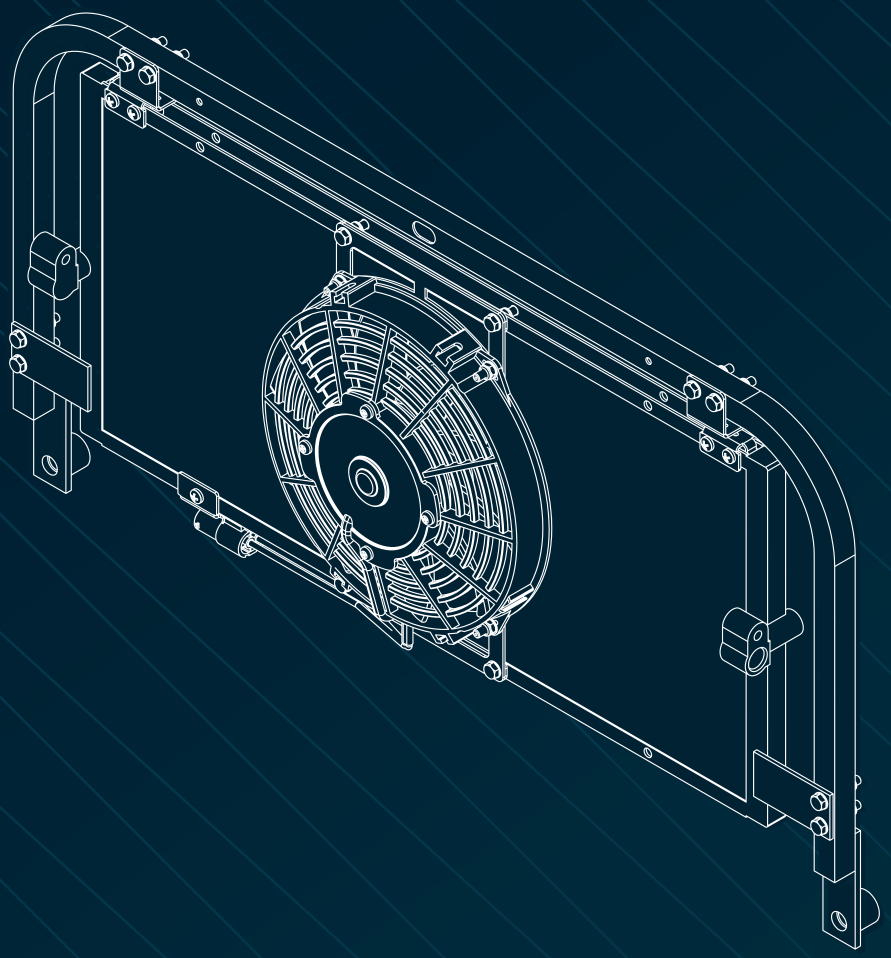
STAUNCH

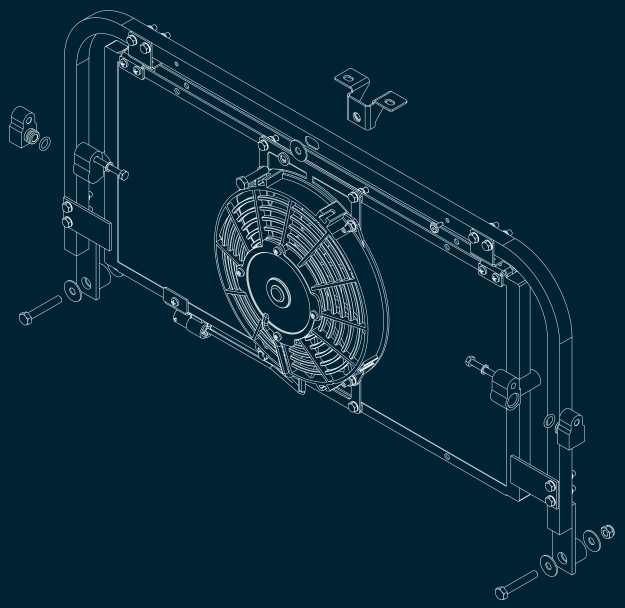


FITTING GUIDE

HIGH-PERFORMANCE CONDENSER

HIGH-PERFORMANCE CONDENSER

Our High-Performance Condenser is a drop-in replacement for Td5 and TDCi vehicles with factory fitted A/C. For vehicles with aftermarket systems, it's possible that you may need to source further Air Conditioning components to replicate the OEM layout.



Note: All vehicles fitted with the STAUNCH High-Performance condenser will need to use the extended grille surround as per factory A/C requirements. If you have bumper mounted components, ensure they do not restrict the face area of the condenser coil as this will reduce your system performance.

The following detail is based on a factory replacement. Note if you have a custom configuration, you may need to tailor your own work instruction by extracting information from each section.

FITTING KIT

(Both Single & Twin Fan Variants)

PRODUCT CODE	ITEM	QTY
SEAL006	#8 Pad HNBR O-Ring 10.77 x 2.62mm (IDxCS)	4
FABR022	STAUNCH Defender Td5 & TDCi Condenser Frame Top Bracket	1
HEX-SET-MET-M6-045-A2S	M6 x 45mm - Hex Head Setscrew - DIN 933 - A2 Stainless	2
SPWE-MET-M6-A2S	M6 - Shakeproof Washer External - DIN 6797A - A2 Stainless	2
HEX-SET-MET-M8-035-A2S	M8 x 35mm - Hex Head Setscrew - DIN 933 - A2 Stainless	1
SPRW-MET-M8-A2S	M8 - Rectangular Spring Washer - DIN 127 - A2 Stainless	1
HEX-SET-MET-M8-050-A2S	M8 x 50mm - Hex Head Setscrew - DIN 933 - A2 Stainless	2
MUDW-MET-M8-M025-A2S	M8 (x 25mm) - Mudguard Washer - DIN 440 - A2 Stainless	5
NYL-NUT-MET-M8-A2S	M8 Hex Nyloc Nut - DIN 982 - A2 Stainless	2
HEX-SET-MET-M6-060-A2S	M6 x 60mm - Hex Head Setscrew - DIN 933 - A2 Stainless	2
NYL-NUT-MET-M6-A2S	M6 Hex Nyloc Nut - DIN 982 - A2 Stainless	2
FLTA-MET-M6-A2S	M6 Flat Washer Form A - DIN 125 A - A2 Stainless	4
FAST009	Aluminium Blind Flanged Pop Rivet 4.0mm Diameter, 12mm Dia. Flange, 12mm Length	1
FAST006	Cable Tie 200 x 4.8mm Black	5

SECTION 1

Tear Down

Before you start, it's important to understand the current A/C functionality and performance. Failure to do so can cause confusion if troubleshooting post installation. We always recommend that you perform a system health check before tear down and any faults are documented in advance.

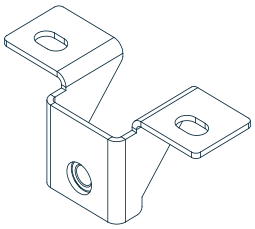
1. Have a qualified professional recover the system refrigerant.
2. Remove the extended A/C surround from the vehicle, depending on the type of front grille fitted you may need to remove this also.
3. Whilst the existing assembly is secured to the vehicle, remove the A/C connections on either side of the core. For rigid pipework, you may need to remove both ends and any fixings along the length to allow clearance.
4. Disconnect the existing fan from the vehicle harness, ensure the harness routing will not interfere with condenser removal.
5. Remove the lower (left & right) condenser fixings and discard, your kit includes a fresh set of stainless-steel setscrews for maximum durability.
6. Remove the centre fixing at the top of the mounting frame and discard, extract the condenser assembly from the car.
7. Remove existing O-rings from the A/C connections and discard, we've included a new pair (and spares) to keep you cool under pressure.

SECTION 2

The Rebuild

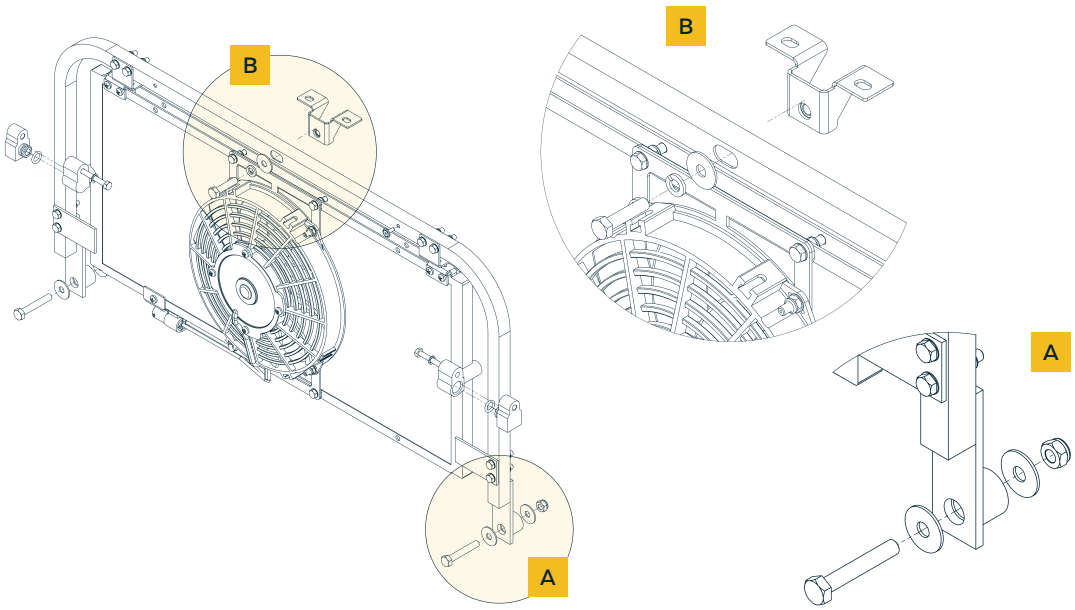
Our condenser kits are supplied with fixings and fasteners to cover all eventualities.

1 Although not essential, we recommend changing to the STAUNCH top condenser bracket to maximise strength in the slam panel assembly. This is located on the underside of the bonnet catch, utilising the existing vehicle fixing points and fasteners. Keep this component hand tight until the end, we advise a tightening torque of 10Nm when you're ready.

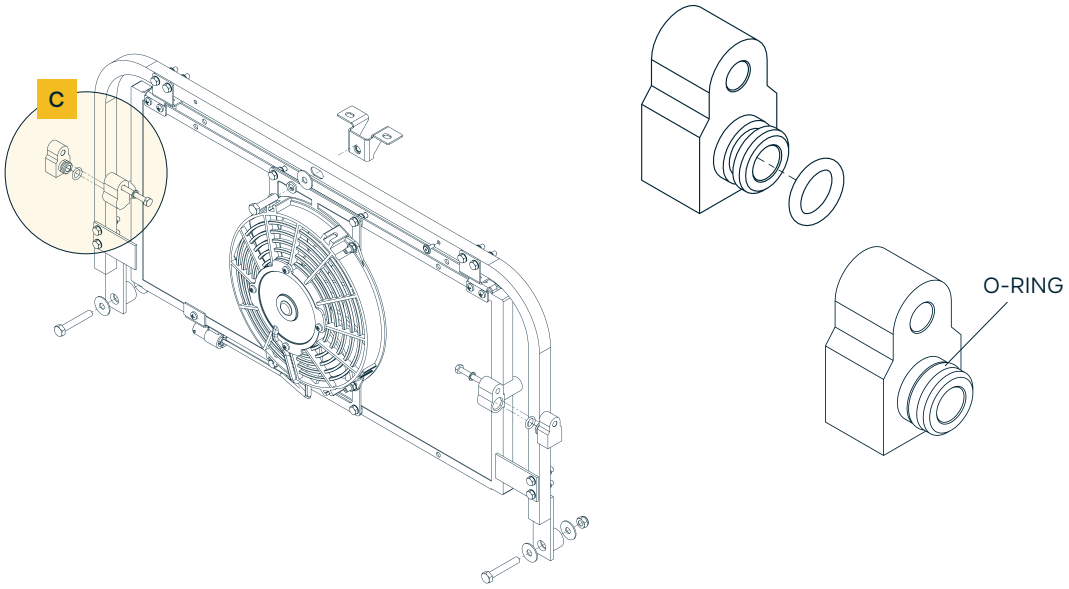


Note: *Whenever the slam panel geometry is affected, you'll need to adjust the catch pin and keep plate to retune the bonnet latching.*

2 Position the STAUNCH condenser assembly in the factory location. Use the M8x50 setscrews on the lower corners **(Detail A)**. These mounting points are through-hole and must have a mudguard washer on the front and back face, couple with the supplied locknuts. Use the supplied M8x35 setscrew for the top fixing **(Detail B)**, this routes through the framework into a captive nut on the condenser bracket. Ensure the remaining mudguard washer is used to cover the slotted hole in the frame, alongside the spring washer to keep things locked in. Check the condenser assembly is sitting parallel with the slam panel and secure the fixings in a left, right, top pattern. We advise a tightening torque of 25Nm for stainless steel.

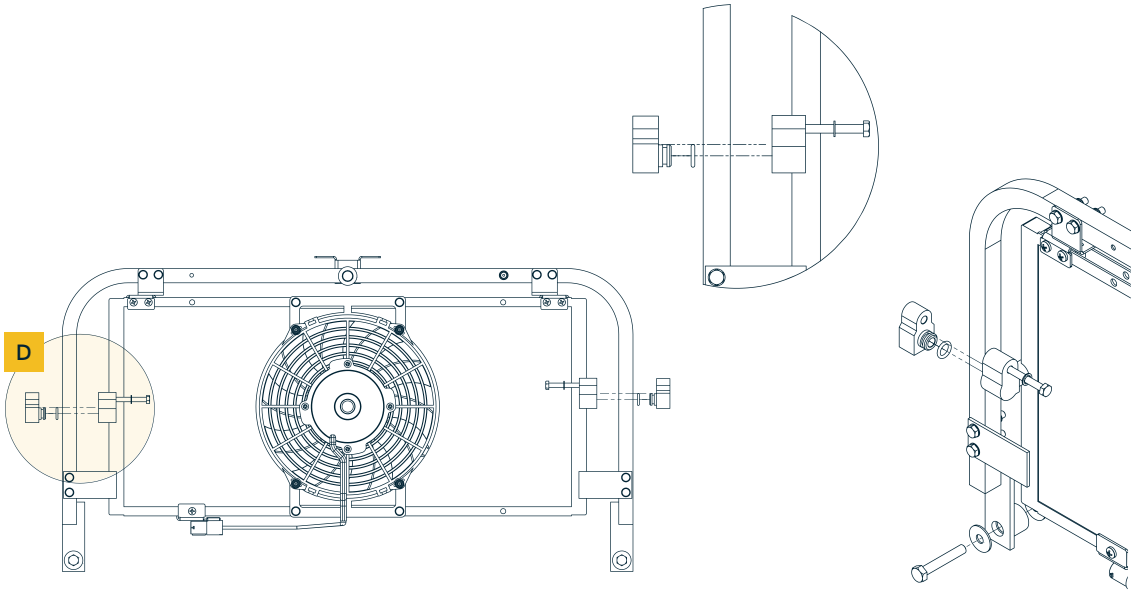


3 Fit the supplied O-rings to both A/C connections **(Detail C)**, ensure the rubber is clean, free from damage and check they are seated correctly in the groove without any twists.

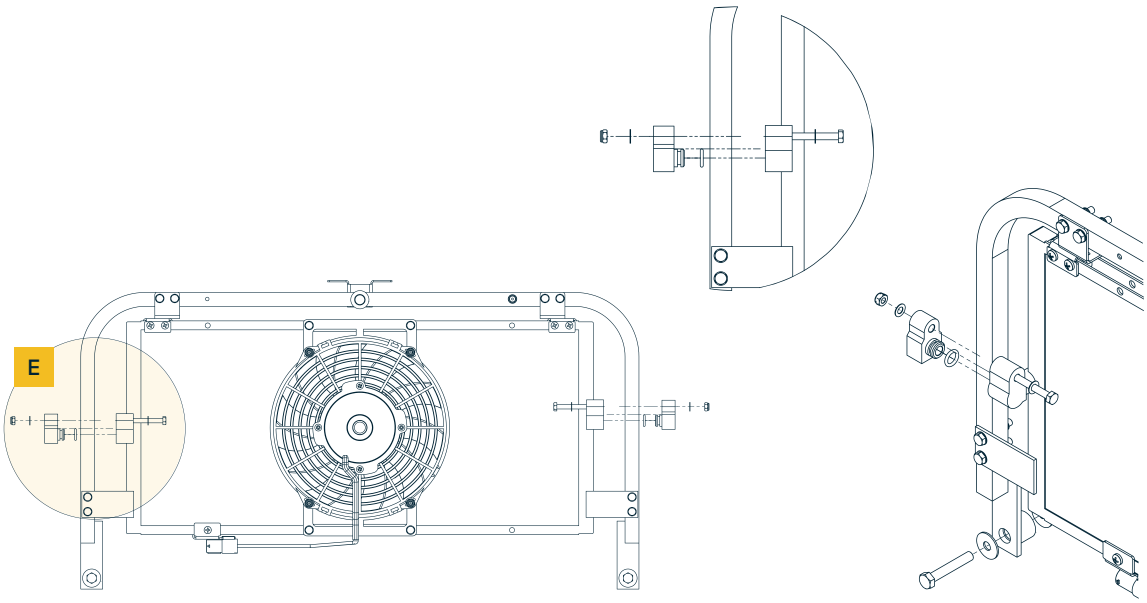


Tip: *Utilise some of the residual compressor oil from inside of the existing A/C lines, this will aid fitment and greatly reduce the risk of snagging an O-ring..*

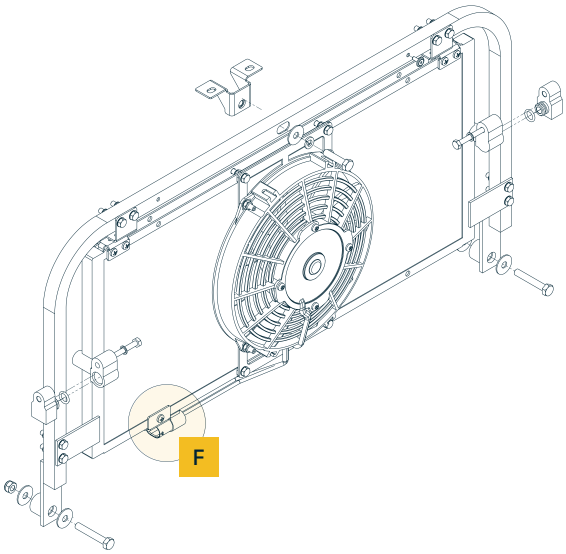
4 Secure the A/C connections to each side of the condenser core, we've included two fixing options to cover OEM and aftermarket connections. As the OEM arrangement has threaded connections, use the M6x45 setscrews with the shakeproof washers **(Detail D)**. For aftermarket connections, they are likely to have through-hole fastening and therefore we've included a pair of longer M6x60 setscrews which should be used with the supplied washers and locknuts **(Detail E)**. We advise a tightening torque of 10Nm for stainless steel.

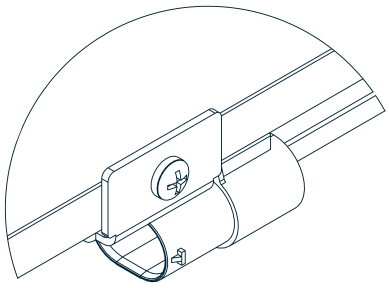


OR



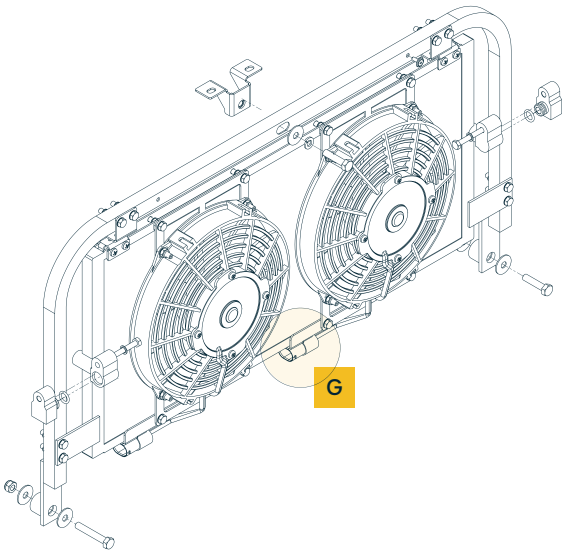
5 For Td5 and TDCi OEM applications, our product is plug and play with a pre-terminated fan connector **(Detail F)**. If you would like to integrate with an aftermarket system, you may need to re-terminate. The +Ve fan wire is positioned in Pin 1 from our factory.

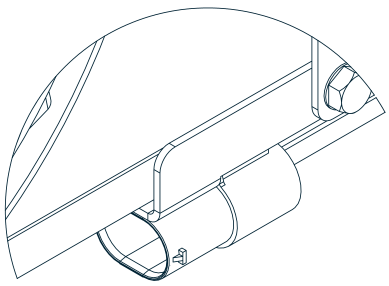




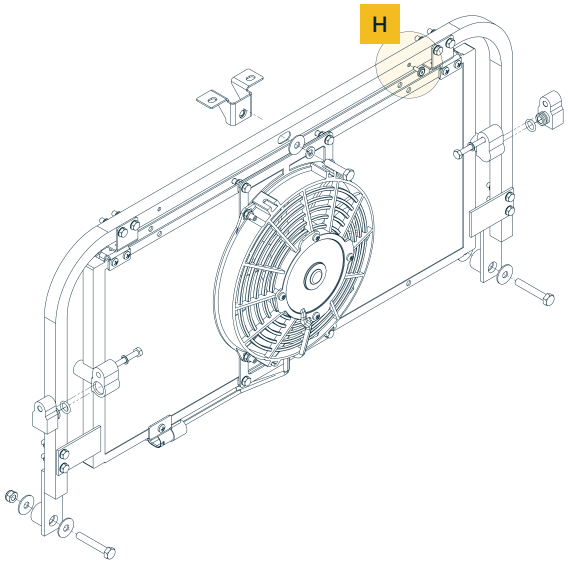
Note: *If you have purchased the Twin-Fan High Performance Condenser, you will need to take care of the second fan control (Detail G). For high ambient regions you should run both condenser fans together for maximum A/C performance, this control must be triggered with the existing vehicle +Ve fan wire. When configuring in this way, we recommend that you use two additional relays and cabling for ease of installation. Alternatively for vehicles in less challenging climates, the second fan can be used independently (not linked to the A/C). Some customers use it to regulate coolant temperature on demand, especially useful during low speed climbs!*

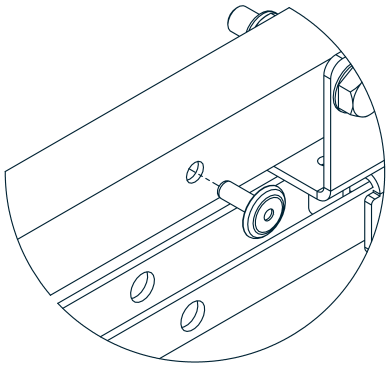
It's important that you understand electrical safety and current draw. Ensure that each fan has a dedicated 10A fuse and all conductors must be correctly sized based on the position in the circuit.





Some vehicles may have an A/C pipe running across the top of the condenser assembly, such as RHD Td5. In that case we've included a rivet which you can use to re-attach the existing pipe clamp to the hole in our frame **(Detail H)**.





SECTION 3

Recharging & Testing

1. Have a qualified professional recharge the A/C system with virgin R134a. This process should consist of a tightness test, evacuation and charging to the vehicles OEM specification.
2. With the pressure gauges connected, run the A/C system to verify functionality and performance. The qualified professional will advise if the system is operating as expected.

> ***Note:*** *If the system has been modified or extended to increase cooling capacity, the refrigerant charge will differ. The exact weight can only be determined by the qualified professional, reviewing system measurements against current environmental conditions. For our STAUNCH Dash-Mounted A/C and Centre Console A/C, you can refer to the applicable fitting guides for recommended charging weights..*

SECTION 4

Troubleshooting

In this section, we refer to Discharge and Suction pressures to differentiate between troubleshooting symptoms.

Example 1

The Discharge pressure is too high.

Possible Solutions:

- Check condenser Air ON path is clear and not restricted.
- Check system has the correct refrigerant charge.
- Check that the vehicles viscous fan is performing well and drawing enough air over the condenser.
- Ensure the condenser fan is connected at the plug and operating correctly, this will activate when the discharge pressure reaches 15 bar (approx.) and cut out when the pressure drops to 12 bar (approx.).
- Check the condenser fan rotation is correct, you'll know it's good if air is being blown towards the condenser surface. A quick check can be performed with a sheet of paper, the fan should suck this onto the blade guard.

Example 2

The Discharge pressure is too low.

Possible Solutions:

- Check that the condenser fan isn't running continuously.
- Check that the system isn't undercharged.

Example 3

The Suction pressure is too high.

Possible Solutions:

- On TDCi models, check that the cabin blower air intake is sealed so that hot air from the engine bay cannot enter the ducts.
- On TDCi models, check that the heater valve returns to the fully closed position. When the dial is set to max cold, you can push the arm on the valve to see if there's additional travel. If so, you may need to adjust the cable clamp as the outer sleeve can slip over time and prevent the cable from applying enough force.

Example 4

The Suction pressure is too low.

Possible Solutions:

- Check that the cabin blower is performing on all speeds.
- Check to see if the receiver drier is blocked. For systems that have been open to atmosphere for extended periods it may have caused the desiccant to break down and clog the strainer. You can check the inlet and outlet pipes with a surface probe, if you see a temperature drop ≥1°C it indicates a restriction and the drier needs to be replaced.
- Check that the system isn't undercharged.

> ***Note:*** *Only qualified professionals should install and remove A/C gauges from the car, suitable PPE must always be worn.*

Require further support?

Contact our technical team technical@staunchauto.com

STAUNCH

sales@staunchauto.com
staunchauto.com