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Unit 2, West , Northumberland Avenue , Hull , East Riding of  
Yorkshire , HU2 0LN

# Technical specifications

**Audi A1 citycarver/allstreet**  
DKLA/1 (GBH) (19-)

## Vehicle identification

No. of cylinders	Type	3/DOHC
Capacity (Fiscal)	cc	999
Compression ratio	:1	10,5
Suitable for unleaded petrol		Yes
Minimum octane rating	RON	95
Ignition system	Description	Map-DI
Trigger location		Cam/Crankshaft
Fuel system	Description	MFI-s(d)
Air metering	Type	MAP
Combined ignition and fuel ECM		Yes
Diagnostic socket		Yes

## Ignition system

### Ignition system

Ignition coil	Type	
<b>Ignition coil - type</b> <ul style="list-style-type: none"> <li>Eldor (→15.03.2021) = 77300010</li> <li>Eldor (15.03.2021→) = 77300014</li> </ul>		
Ignition coil supply voltage	+ with ballast V	12,0
Firing order		1-2-3

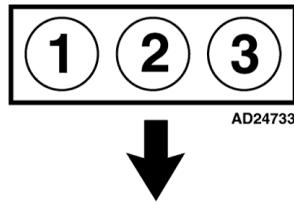


Fig24733

## Tuning and emissions

### Tuning and emissions

Ignition timing - basic BTDC	°Engine/rpm	Not adjustable
Ignition advance checks	°Engine/rpm	ECM Controlled
Idle speed	rpm	950±100 Not adjustable
Oil temperature	°C	80
CO level at idle speed - tailpipe	Vol. % CO	0,1 Max Not adjustable
CO level at idle speed - sample pipe	Vol. % CO	Not adjustable
HC level at idle speed	ppm	100
Increased idle speed for CO test	rpm	2400-2600
CO content at increased idle speed	Vol. %	0,1 Max
Lambda at increased idle	λ	0,95-1,05

## Spark plugs

### Spark plugs

Spark plugs	Original equipment	Audi
Spark plug	Type	04E 905 602
Spark plugs	Make	Bosch
Spark plug	Type	0 241 145 523
Electrode gap	mm	0,7
Spark plugs	Make	Champion
Spark plug	Type	KA6ZPHPB-1
Electrode gap	mm	0,8
Spark plugs	Make	NGK

Spark plug	Type IKER7A8EGS
Electrode gap	mm 0,8

## Fuel system

### Fuel system

Fuel feed/lift pump delivery pressure	bar 6,0
Fuel main pump delivery pressure	bar 250 Max

## Service checks and adjustments

### Service checks and adjustments

Valve clearance - INLET	mm Hydraulic
Valve clearance - EXHAUST	mm Hydraulic
Compression pressure	bar 7,0-15,0
Oil pressure	bar/rpm

#### Oil pressure

- Oil pressure can only be checked using diagnostic equipment.

Radiator cap	bar 1,6-1,8
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## Lubricants and capacities

### Engine oil options

Ambient temperature range	All temperatures
Engine oil grade	SAE 0W-20
Engine oil classification	OEM VW 508.00
Engine with filter(s)	litres 4,0

### Other lubricants and capacities

Manual transmission oil grade	SAE G 055 512
Manual transmission	litres 2,1
Coolant	Type G12 evo
Coolant	Colour Pink/Violet
Cooling system - total capacity	litres

#### Cooling system

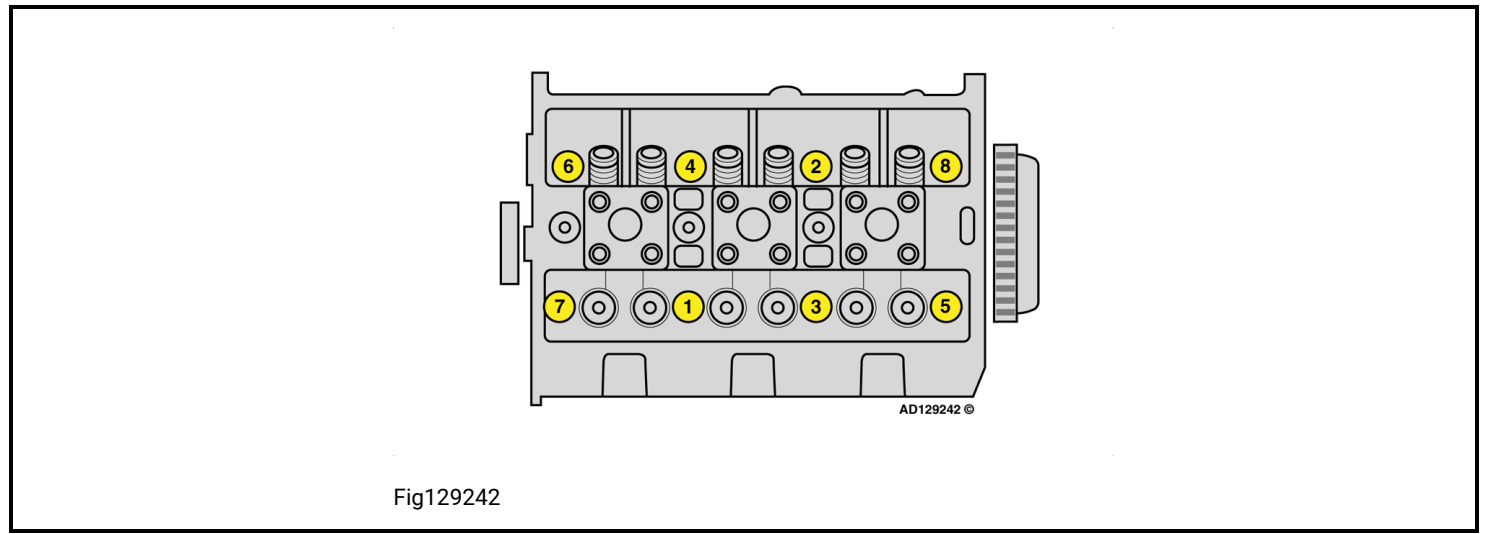
Cooling system must be filled using vacuum filling equipment.

Brake fluid	Type DOT 4
Brake fluid classification	VW 501.14
Brake fluid	litres 1,15
Clutch fluid	Type DOT 4
Clutch fluid classification	VW 501.14

## Tightening torques

### Tightening torques

Cylinder head instructions



### Cylinder head

Renew bolts	Yes
Tighten	40 Nm
Tighten	90°
Tighten	90°
Tighten	90°

### Other engine tightening torques

Main bearings	Stage 1
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**Main bearings**

Measurement of bearing clearance is not possible by normal methods and should not be attempted, as this will result in damage to the cylinder block and crankshaft. If the bearing bolts have been loosened the entire cylinder block and crankshaft must be replaced.

Big end bearings	Renew bolts/nuts	Yes
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Big end bearings	Stage 1	30 Nm
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**Big end bearings**

- Lubricate threads and mating surfaces of bolts.

Big end bearings

Stage 2 90°

Oil pump to cylinder block

### Oil pump to cylinder block

- Use new bolts and tighten in the following stages:
  1. All bolts = 8 Nm
  2. M6 = 90°
  3. M8 = 20 Nm

Sump bolts

### Oil pan bolts

- Use new bolts.
- Apply a 2,0-3,0 mm diameter bead of sealant [fig1181993.A](#) to oil pan.

**Assemble components within 5 minutes. Excess sealant can cause engine damage.**

- Tighten bolts in the following sequence [fig1272783](#):
  1. Hand tighten
  2. 1-18 = 12 Nm
  3. 19-21 (oil pan to transmission) = 40 Nm

**Wait 30 minutes before filling engine with oil to allow sealant to dry.**

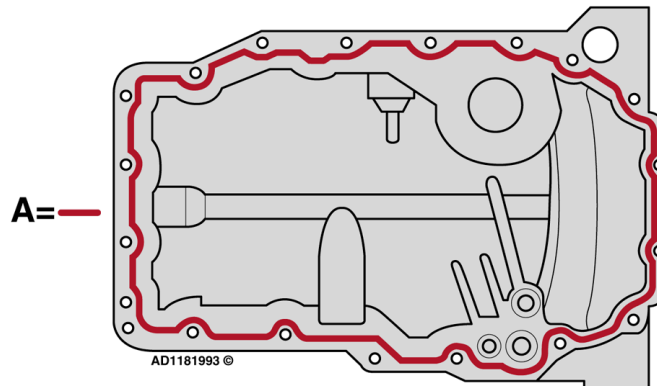


fig1181993

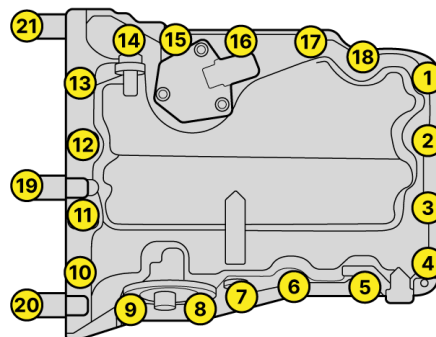


fig1272783

Sump drain bolt	30 Nm
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### Sump drain bolt

- Replace factory fitted sump drain bolt at first oil change with type with replaceable seal.

Flywheel/driveplate	60 Nm+90°/-
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- Use new bolts.

Clutch pressure plate	M6=13 Nm M7=20 Nm
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Crankshaft pulley/damper centre bolt	150 Nm+180°
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- Use new bolt.

Camshaft sprocket/gear	
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### Camshaft sprocket/gear

- Use new bolts.
- Inlet camshaft = 50 Nm + 135°
  - Blanking plug = 20 Nm
- Exhaust camshaft = 50 Nm + 135°
  - Sprocket cover = 8 Nm
- Water pump pulley = 20 Nm + 90°

Camshaft/rocker cover	10 Nm+180°
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- Use new bolts.

Inlet manifold to cylinder head	8 Nm
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Water pump	7 Nm
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### Engine coolant pump

- Renew belt.
- Tighten bolts in the following sequence [fig1264403](#).
- Electric coolant pump = 8 Nm

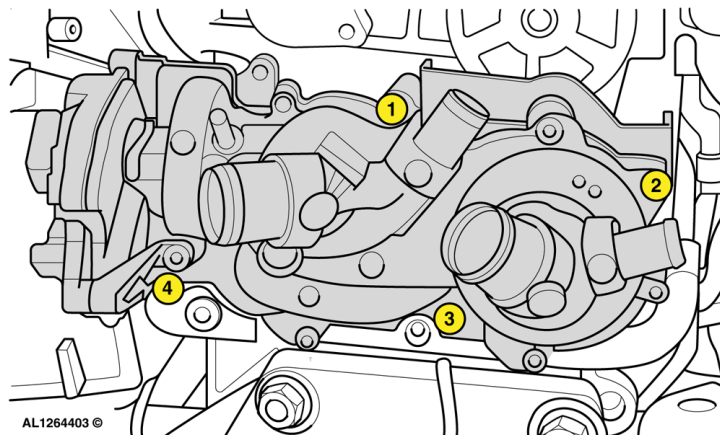


fig1264403

## Spark plugs

**Spark plugs**

- M12 = 23±3 Nm
- M14 = 28±3 Nm

Fuel rail

8 Nm+90°

- Use new bolts.

Crankshaft position (CKP) sensor/engine speed (RPM) sensor

5 Nm

Camshaft position (CMP) sensor

8 Nm

Engine coolant temperature (ECT) sensor

8 Nm

Lambda sensor (Oxygen)

55 Nm

**Lambda sensor (Oxygen)**

- Coat threads with high temperature lubricant G 052 112 A3.

**High temperature lubricant must not enter slots on lambda sensor.**

Knock sensor (KS)

20 Nm

Engine oil pressure switch

10 Nm+45°

**Engine oil pressure switch**

- Use new switch.

Oil filter

20 Nm

**Chassis tightening torques**

Front hub

50 Nm+45°

- Use new nut.

Rear hub

150 Nm+90°

- Use new bolt.

Rear hub - wheel bearing housing bolts

50 Nm+90°

- Use new bolts.

Steering wheel

30 Nm+90°

- Use new bolt.

Steering rack/box mounting	70 Nm+180°
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- Use new bolts.

Steering track rod end	20 Nm+90°
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- Use new nut.

Brake disc to hub	Front 8 Nm
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Brake caliper to carrier	Front
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#### Brake caliper to carrier - front

- Pr No. 1ZE/1ZG/1ZM/1ZQ/1ZR/1ZS = 30 Nm
- Pr No. 1ZA/1ZK = 35 Nm

Brake caliper/carrier to hub	Front
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#### Brake carrier/caliper to hub

- Pr No. 1ZA/1ZK = 200 Nm

Brake disc to hub	Rear 8 Nm
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Brake caliper to carrier	Rear 35 Nm
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- Use new bolts.

Brake caliper/carrier to hub	Rear 90 Nm+90°
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- Use new bolts.

ABS sensor	Front 8 Nm
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#### ABS wheel speed sensor

- Coat ABS wheel speed sensor with high temperature lubricant G 000 650.

ABS sensor	Rear 8 Nm
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#### ABS wheel speed sensor

- Coat ABS wheel speed sensor with high temperature lubricant G 000 650.

Road wheels	120 Nm
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#### Road wheels

- Do NOT lubricate bolts.
- Lightly coat mating surfaces between wheel centre hole and hub (use spray wax).



## Starting and charging

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### Starting and charging

Battery	V/RC(Ah) 12
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## Brake disc and drum dimensions

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### Brake disc and drum dimensions

Minimum disc thickness for replacement - ventilated	Front 19 mm
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#### Minimum disc thickness for replacement - ventilated

- PR No. 1ZE/1ZM/1ZQ/1ZS = 21 mm
- PR No. 1ZA = 23 mm

Minimum disc thickness for replacement	Rear 7 mm
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#### Minimum disc thickness for replacement

- PR No. 1ZE = 8 mm

Disc runout	Front 0,06 mm
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Disc runout	Rear 0,06 mm
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Maximum drum diameter for replacement	Rear 229,8 mm
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Minimum pad thickness	Front 10 mm
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#### Minimum pad/shoe thickness

- Measurement includes lining and pad/shoe backing plate.

Minimum pad thickness	Rear 9 mm
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#### Minimum pad/shoe thickness

- Measurement includes lining and pad/shoe backing plate.

## Air conditioning

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### Air conditioning

No. of AC service connectors	2
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Air conditioning restrictor type	Expansion valve
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Compressor clutch/magnetic coupling	Yes
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Compressor variable displacement solenoid	Yes
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Air conditioning refrigerant	Type
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### Refrigerant type

R134a or R1234yf.

Refer to label under bonnet or on compressor.

**Do not mix R134a with R1234yf.**

Air conditioning refrigerant quantity	grams	R134a=460±15 R1234yf=430±15 grams
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Air conditioning oil group	PAG
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Air conditioning oil	Type
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### Air conditioning oil type

- Denso compressor = G 055 535
- Sanden compressor = G 052 535

Air conditioning oil quantity	cm <sup>3</sup>
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### Air conditioning oil quantity

- Denso compressor (07.2018-07.2019) = 110±10 cm<sup>3</sup>
- Denso compressor (07.2019→) = 80±10 cm<sup>3</sup>
- Sanden compressor = 75±10 cm<sup>3</sup>

Air conditioning oil viscosity	ISO 46
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