Volkswagen Cabriolet

K-Jetronic Fuel Pump Relay Guide

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Rev Limiters

Factory Relays:

- A. Relays 059D, E, F are functionally all the same; each letter simply superseded the previous version, with E appearing to have been a North America-only relay.
- B. There is conflicting information about whether relays 059D, E, F are high rev or no rev limit. Considering rev limit is a safety feature, and many (if not all) of those without a relay rev limiter had rev limit distributor rotors (which no fuel injected Cabriolet came with), this guide is erring on the side of all of these relays having a rev limiter, which ranges from around 6300 to 8000 rpm, depending on the relay.
- C. Relays 059G and H have lower rev limits than their predecessors, which coincides with the introduction of hydraulic lifter cylinder heads.
- D. You will find that the 059G and 059H relays (in aftermarket form) are what most parts stores are selling as replacements for D, E, F, because Volkswagen itself superseded F with G, potentially out of safety concerns.

Aftermarket Relays:

A. Rev limits are manufacturer-specific and are listed where available. If rev limits are not listed, the presumed rev limit would be between 6000 and 7000 RPM.

Notes

- 1. **All K-Jetronic fuel pump relays for 1983-1993 are interchangeable.** For example, if your original relay is 321906059D, you can replace it with 321906059G and vice versa. Therefore, replacement relays listed and shown on pages 3-4 are not year-specific. The VW suffix is listed under some aftermarket relays for cross-reference purposes only.
- 2. Factory relays on page 2 may differ slightly in their manufacturer markings from what your car has/had. All will have the white number stamped on top, from 1983-1993.
- 3. Equivalent Audi numbers: 443907385A, 443907385G, 443907385H
- 4. Discontinued aftermarket relays:
 - a. JP Group #1199207600
 - b. Topran #107259015 / Hella #4RP 008 189-061 (059H)
- 5. "Inrush current of a fuel pump is 5x 7x the run current." This means that a Cabriolet's inrush current can be upwards of 50 amps. Given that Kräcker has a published inrush max load of 70 amps, it is recommended that you find one of the Kräcker relays listed below. The other relays do not specify whether their max amp rating is for inductive line load or inrush load.
 - a. An inductive load needs a flyback diode.
- 6. Relay terminal designations:
 - a. 1, 31b = Ignition coil, ignition distributor low voltage RPM signal
 - b. 15 = Switched (+) downstream of battery (output of ignition switch)
 - c. 30 = Input from (+) battery terminal
 - d. 31 = Battery (-) terminal or ground
 - e. 87 = Output of (+)

Factory-installed Relays



Engines	Volkswagen Part Number	Cover Side	Circuit Board		Cover Top	Pin Layout
1979 - 1982						
1.6L EG 1.6L EJ 1.7L EN	321-906-059C Rev limit: 7000+ Line load: 10A inductive	321 906 059C 2 SHO 80 12 V max 10A, ind W-Germany 896321	Image Unavailable	lmage Unavailable	I	31 30 15 31b 87
1983 – 19	985					
1.7L EN 1.8L DX 1.8L JH 1.8L JJ 1.8L KT	321-906-059D Rev limit: 7000+ Line load: 10A inductive	© 321 906059D SHO 89 63 75 made in W-Germany 12Vmax10Aind	Image Unavailable	Image Unavailable	2	30 31 15 31b 87
1986 – 19	987					
1.8L JH	321-906-059E Rev limit: 7000+	321906059E SJR 12V Made in 24.3700.00		O/Wall at MA	2	30 31 15 31b 87
1.8L DX 1.8L JH 1.8L KT	321-906-059F Rev limit: 7000+	321 906 05 9F IF K GERARAY MFR-12V 27/5143 37/30 18 3131b			63	30 31 15 31b 87
1988 – 19	993					
1.8L DX 1.8L JH 1.8L KT	321-906-059G Rev limit: 6300	321906 059 G TFK GERMANY KER-12V 275 144 EV 30 15 31 35		lmage Unavailable	62	30 31 15 31b 87
1.8L JH	321-906-059H Scirocco Rev limit: 6500	© COOO 321 905 059 H IFK GERMANY KPR-12V 275 145	lmage Unavailable	Image Unavailable	65	30 31 15 31bl 87

Aftermarket Relays

1983-1993					
Brand	Part Number	Cover Side	Circui	t Board	Pin Layout
KRÄCKER	24.1400.20 (059D, E, F) RECOMMENDED Rev limit: 8220 Line load: 15A inductive Max inrush load: 70A	KRÄCKER AG & 24.1400.20 Kraftstoffpumpenrelals mit Drehzahlbegrenzung 12V Made in Germany >PA66-GF30<		25K (O)	30 31 15 31bl 87
KRÄCKER	24.1400.30 (059G, H) RECOMMENDED Rev limit: 6540 Line load: 15A inductive Max inrush load: 70A	KRÄCKER AG & 24.1400.30 Kraftstoffpumpenrelals mit Drehzahlbegrenzung 12V Made In Germany >PA66-GF30<	Image Unavailable	Image Unavailable	30 31 15 31b <u>87</u>
KRÄCKER	24.1400.40 (059G, H) RECOMMENDED Rev limit: 6300 Line load: 15A inductive Max inrush load: 70A	KRÄCKER AG AA. 24.1400.40 Kraftstoffpumpenrelals mit Drehzahlbegrenzung 12V Made in Germany >PA66-GF30<	Image Unavailable	lmage Unavailable	30 31 15 31b <u>87</u>
MTC Parts	4634 or 321906059F, 321906059H Rev limit: ? Max load: ?	RELAY 321 906 059H 12V	P5206		30 31 15 1 <u>87</u>
Also sold under Intermotor, BWD, NAPA & Carquest brands	RY197 RY-197 RECOMMENDED Rev limit: ? Max load: 30A	TU-12490-24 22242	C2 C3 R3 D1 R1 D1 R2 C3	R+ R6 32012898201 51-01389-12 2021-7-6 C1 CS1 RY1	30 31 15 1 <u>87</u>
Duralest Repackaged Standard Motors relay	19204 RLYA634 RECOMMENDED Rev limit: ? Max load: 30A	TU-12490-24 22334	01 R2 01 01 02 02 01 01 02 01 01 01 01 01 01 01 01 01 01 01 01 01	R4 R6 3201 2888201 \$T - 011898-12 2021-7-6 C1 R8	30 31 15 1 <u>87</u>

1983-1993 continued						
Brand	Part Number	Cover Side	Circui	t Board	Pin Layout	
KELLP	4RP 008 189-081 (059D, E, F) Rev limit: ? Max load: 30A	4RP 008 189-081 Made in Germany 87 1 15 31	Image Unavailable	lmage Unavailable	30 31 15 11 87	
HELLP	4RP 008 189-091 (059G) Rev limit: ? Max load: 40A	4RP 008 18 -091 Made in Germany 87 1 15 31		Image Unavailable	30 31 15 1 <u>87</u>	
toprand Manufactured by Hella	103420755 (059D, E, F) Rev limit: ? Max load: 30A	<i>topran</i> 103 420 2100111	Image Unavailable	Image Unavailable	30 31 15 11 87	
KAEHLER Automotive-Equipment	3.300.230 (059H) NOT RECOMMENDED See page 7 Rev limit: 6600 Max load: 30A	3.300.230 1 31 15 30 87 Kraftstoffpumpenrelais Fuel Pump Relay 12 V/30 A Made in Germany		8	30 31 15 1 87	
KAEHLER Automotive-Equipment	3.300.220 (059G) NOT RECOMMENDED See page 7 Rev limit: ? Max load: 30A	3.300.220 1 31 15 30 87 Kraftstoftpumpenrelais Fuel Pump Relay 12 V/30 A Made in Germany		3	30 31 15 1 <u>87</u>	
KAEHLER Automotive-Equipment	3.300.210 (059D, E, F) NOT RECOMMENDED See page 7 Rev limit: ? Max load: 30A	3.300.210 31h 31 15 30 87 Kraftstoffpumpenrelals Fuel Pump Relay 12 V/30 A Made in Germany	SSED A		30 31 15 1 <u>87</u>	

1983-1993 continued					
Brand	Part Number	Cover Side	Circui	t Board	Pin Layout
Manufactured by Hitachi	132022 or 132023 Rev limit: ? Max load: ?	13 2022 ②1 036064 Germany 87 11 15 30 31 30 0218	Image Unavailable	Image Unavailable	30 31 15 1 87
Also sold under Airtex brand	1R1003 (repackaged KAE) (059D, E, F) NOT RECOMMENDED See page 7 Rev limit: ? Max load: 30A	3.300.210 31k 31 15 30 87 Kraftstoffpumpenrelals Fuel Pump Relay 12 V/30 A Made in Germany			30 31 15 31b 87
Also sold under Airtex brand	1R1243 (stamped with 65) (059H) Rev limit: ? Max load: 30A		Image Unavailable	lmage Unavailable	30 31 15 1 <u>87</u>
GSF CAR PARTS	935VG0090	Repackaged Hella relay			
VEMO ® electronic parts by 1959(x)	V15-71-0014	Repackaged KAE and Kräcker relays; which one you get depends on supplier			
HERTH-BUSS ELPARTS	75614033	Repackaged Kräcker relay			

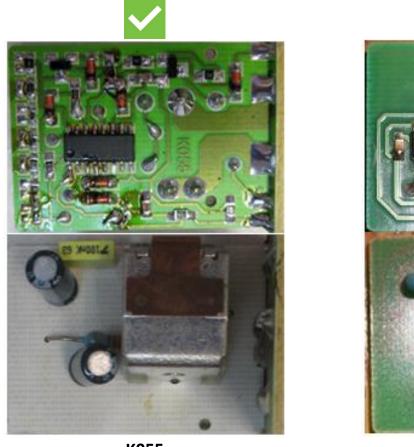
Relay 059G & Hella 091 circuit board images courtesy of Jon C.

Aftermarket Relays

1979 - 1982						
Brand	Part Number	Details	Image			
KAEHLER Automotive-Equipment	3.300.100 (059C)	Rev limit: ? Inductive load: 10A	3.300.100 3.300.100 **Semantiful Pointy Rolly Fuel Pours In Communy Made in Communy			
KRÄCKER	JP Group 89 6321 000 (059C)	Rev limit: ? Inductive load: 10A	©1 540 ©1 621 000 12 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10			
KELLP	4RP 009 118-011 (059C)	Rev limit: ? Inductive load: ?				

WARNING

All KAE (Kaehler) relays for 1983-1993 K-Jetronic cars are being manufactured with the incorrect circuit board. For North American owners, it is highly recommended that you not waste your money and time buying KAE relays. If you bought and/or recently installed a KAE relay and your car doesn't start, or will not stay running after start-up, or has issues at speed, remove your KAE relay and check the circuit board:





K055 K056

If the car is having running issues, also closely check the circuit board for damage: cracked solder, melted solder, burn marks, broken copper tracks, etc., all of which can be seen on the next page.

Example of an internally burned-up relay

KAE 3.300.230

