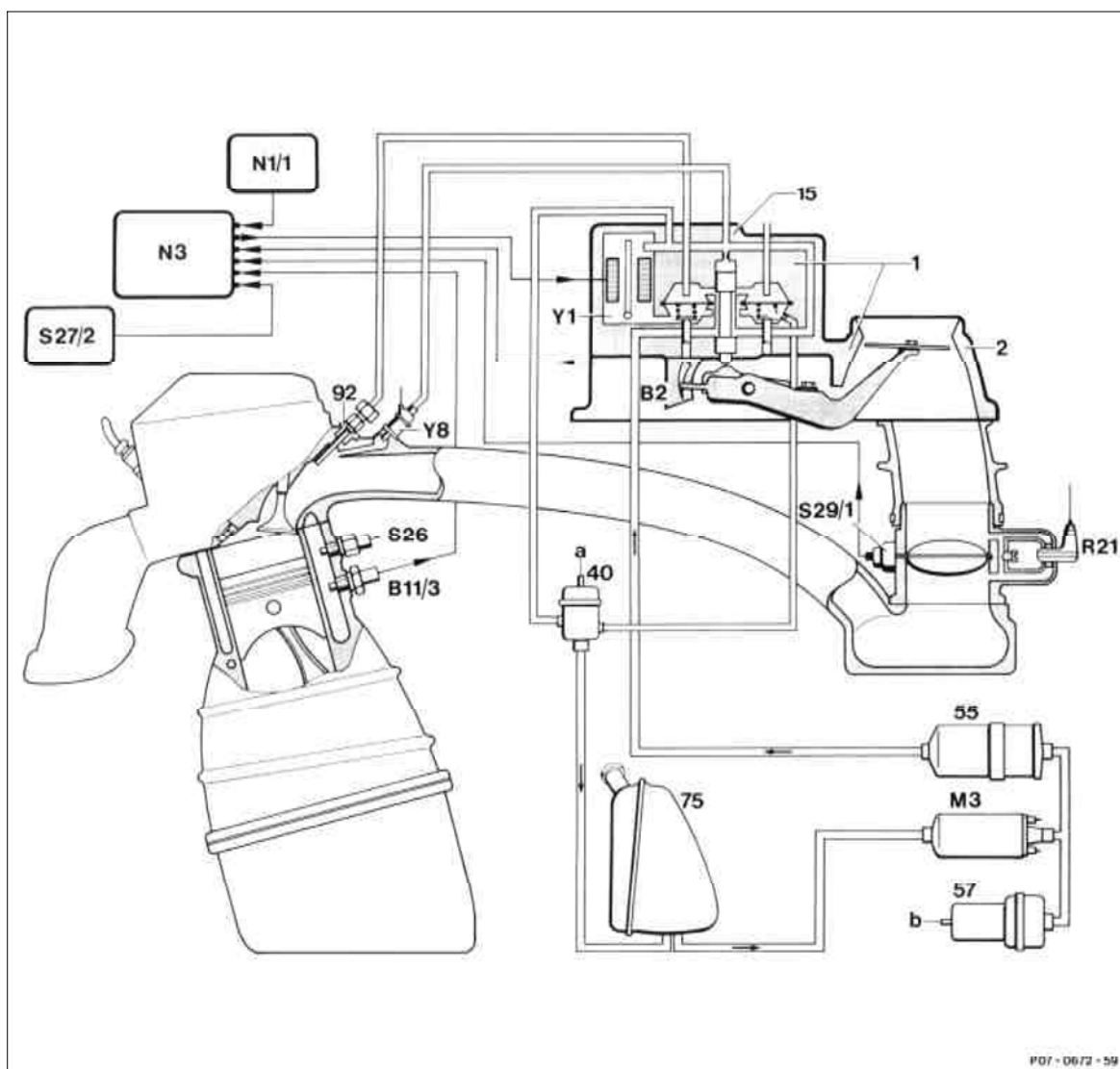


## 07.3-0010 Function diagram KE injection system

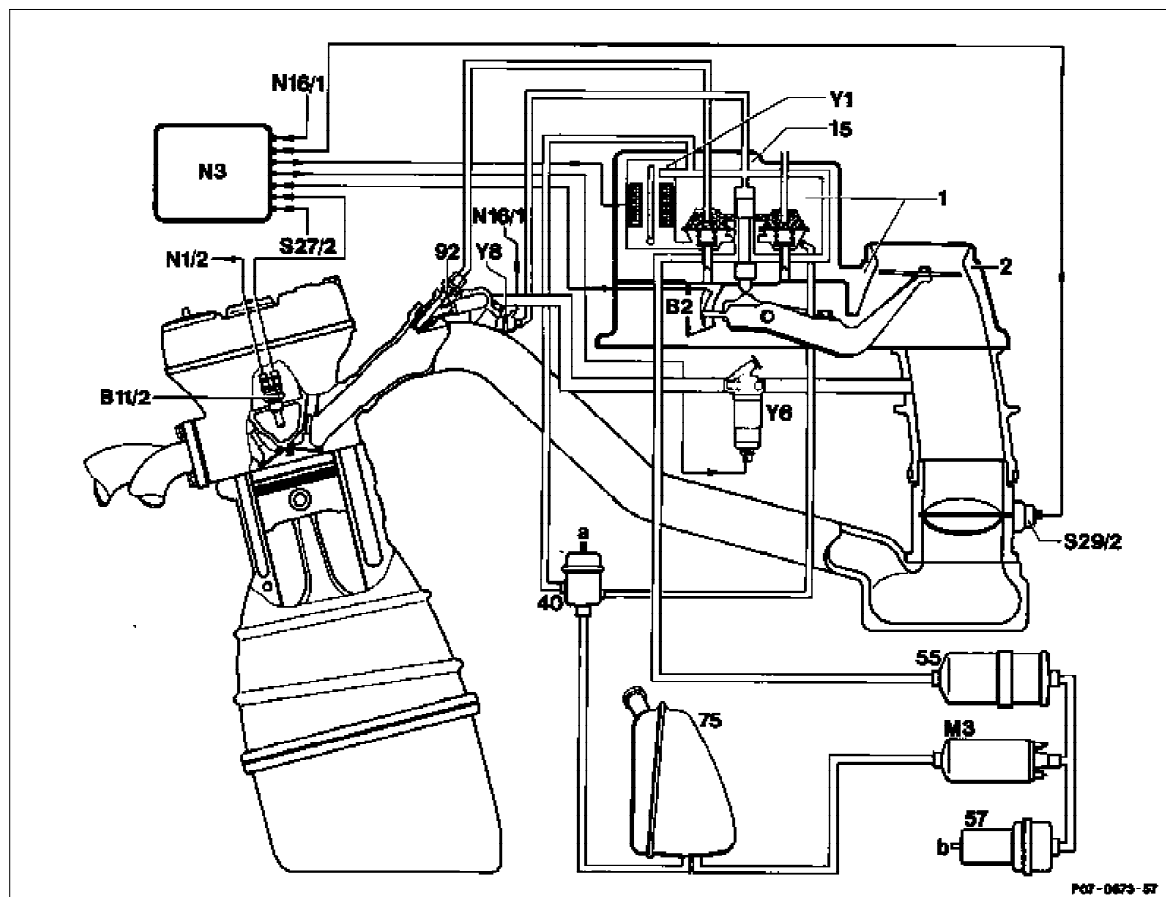
### A. Engine 102.961 Standard



B2 Air flow sensor position indicator  
 B11/3 Coolant temperature sensor  
 M3 Fuel pump  
 N1/1 Transistorized ignition control unit (TSZ)  
 N3 KE injection system control unit  
 R21 Auxiliary air valve heating coil  
 S26 Thermo time switch  
 S27/2 Decel fuel cutoff microswitch  
 S29/1 Throttle valve switch, full load recognition  
 Y1 Electrohydraulic actuator  
 Y8 Start valve

1 Mixture control unit  
 2 Air flow sensor  
 15 Fuel distributor  
 40 Diaphragm pressure regulator  
 55 Fuel filter  
 57 Fuel accumulator  
 75 Fuel tank  
 92 Injection valve  
 a Vent  
 b Leak line connection

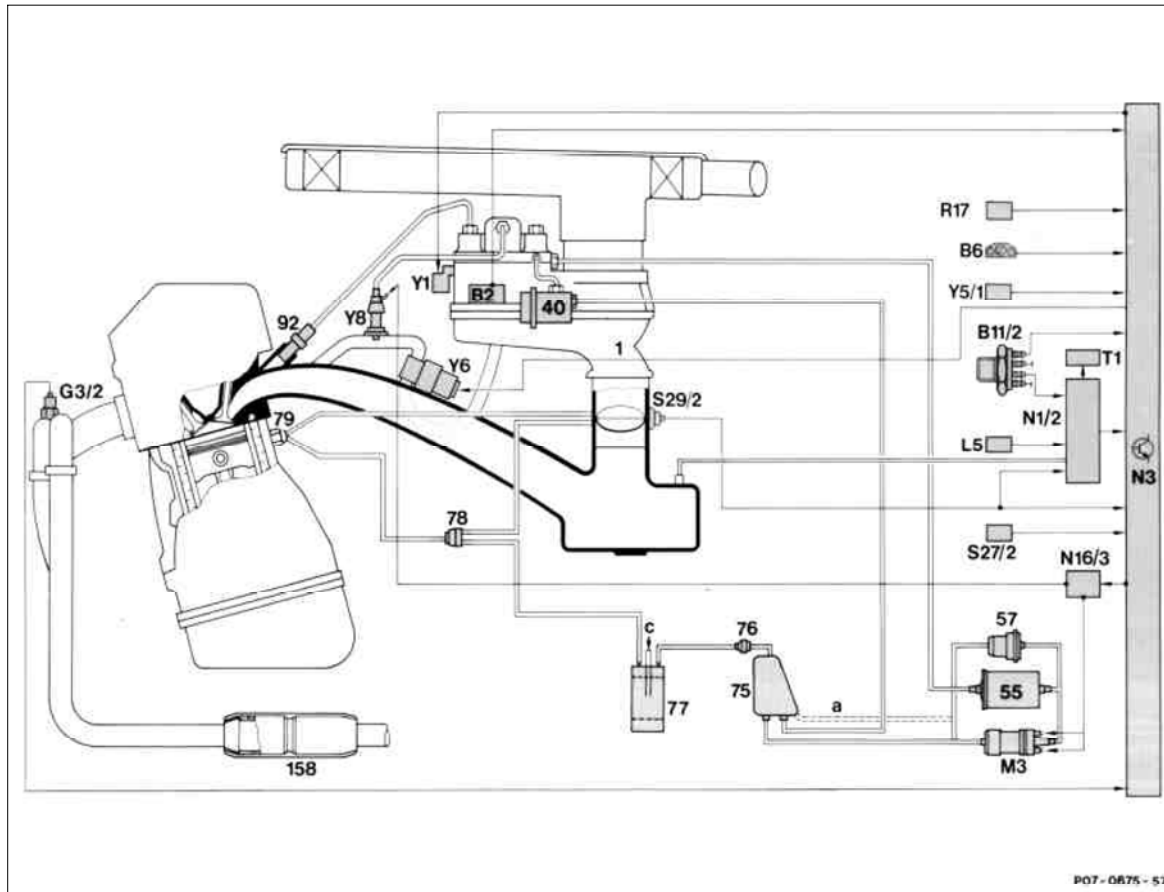
P07 - 06/72 - 59



B2	Air flow sensor position indicator	1	Mixture control unit
B11/2	Coolant temperature sensor	2	Air flow sensor
M3	Fuel pump	15	Fuel distributor
N1/2	Electronic ignition (EZL) control unit	40	Diaphragm pressure regulator
N3	KE injection system control unit	55	Fuel filter
N16/1	Fuel pump relay	57	Fuel accumulator
S27/2	Decel fuel cutoff microswitch	75	Fuel tank
S29/2	Throttle valve switch, full load/idle speed recognition	92	Injection valve
Y1	Electrohydraulic actuator	a	Vent
Y6	Idle speed adjuster	b	Leak line connection
Y8	Start valve		

### C. Engines 102.96/98 KAT/RÜF 09/88 - 09/89

CH KAT, S KAT 1989

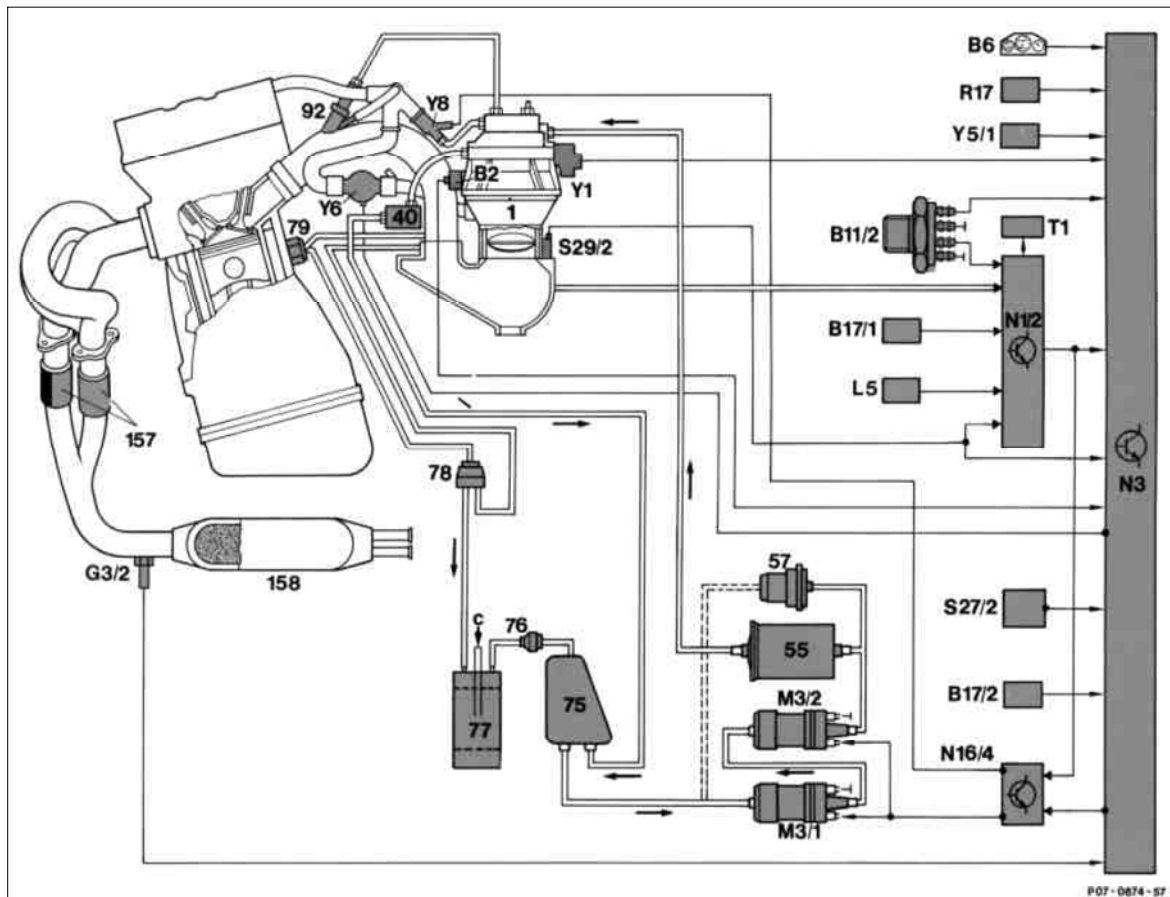


B2	Air flow sensor position indicator	Y5/1	AC compressor electromagnetic clutch
B6	Hall-effect speed sensor	Y6	Idle speed adjuster
B11/2	Coolant temperature sensor (EZL/KE)	Y8	Start valve
B17/2	Intake air temperature sensor (KE)	1	Mixture control unit
G3/2	Heated oxygen sensor	40	Diaphragm pressure regulator
L5	Crankshaft position indicator	55	Fuel filter
M3	Fuel pump (models 124.081/083 two fuel pumps)	57	Fuel accumulator
N1/2	Electronic ignition (EZL) control unit	75	Fuel tank
N3	KE control unit	76	Vent valve
N16/3	Fuel pump relay	77	Active charcoal filter
R17	KE resistance trimming plug	78	Regeneration valve
S27/2	Decel fuel cutoff microswitch	79	70 °C thermo valve
S29/2	Throttle valve switch, full load/idle speed recognition	92	Injection valve
T1	Ignition coil	157	Pre-catalytic converter
Y1	Electrohydraulic actuator	158	Underfloor catalytic converter
		a	Cable routing on T model
		c	Air admission

#### D. Engines 102.91/96/98 KAT as of 09/89

(AUS) (CH) KAT (J) (S) KAT as of 1990

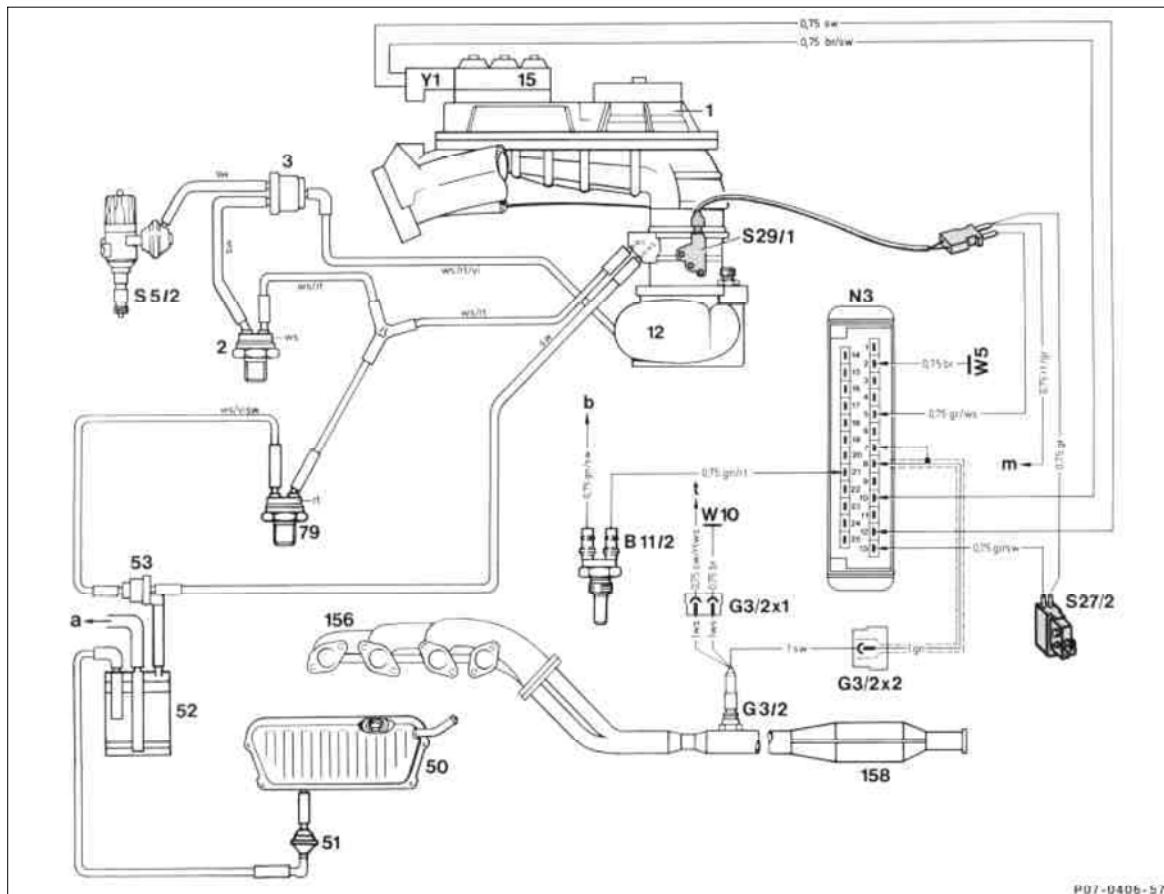




B2	Air flow sensor position indicator	Y1	Electrohydraulic actuator
B6	Hall-effect speed sensor	Y5/1	AC compressor electromagnetic clutch
B11/2	Coolant temperature sensor (EZL/KE)	Y6	Idle speed adjuster
B17/1	Intake air temperature sensor (EZL)	Y8	Start valve
B17/2	Intake air temperature sensor (KE)	1	Mixture control unit
G3/2	Heated oxygen sensor	40	Diaphragm pressure regulator
L5	Crankshaft position sensor	55	Fuel filter
M3/1	Fuel pump 1	57	Fuel accumulator
M3/2	Fuel pump 2	75	Fuel tank
N1/2	Electronic ignition control unit (EZL)	76	Vent valve
N3	KE control unit	77	Active charcoal filter
N16/4	Fuel pump relay and kickdown	78	Regeneration valve
R17	KE resistance trimming plug	79	70 °C thermo valve
S27/2	Decel fuel cutoff microswitch	92	Injection valve
S29/2	Throttle valve switch, full load/idle speed recognition	157	Pre-catalytic converter
T1	Ignition coil	158	Underfloor catalytic converter
		c	Air admission

## F. Engine 102.962 NV KAT/RÜF 09/83-09/85

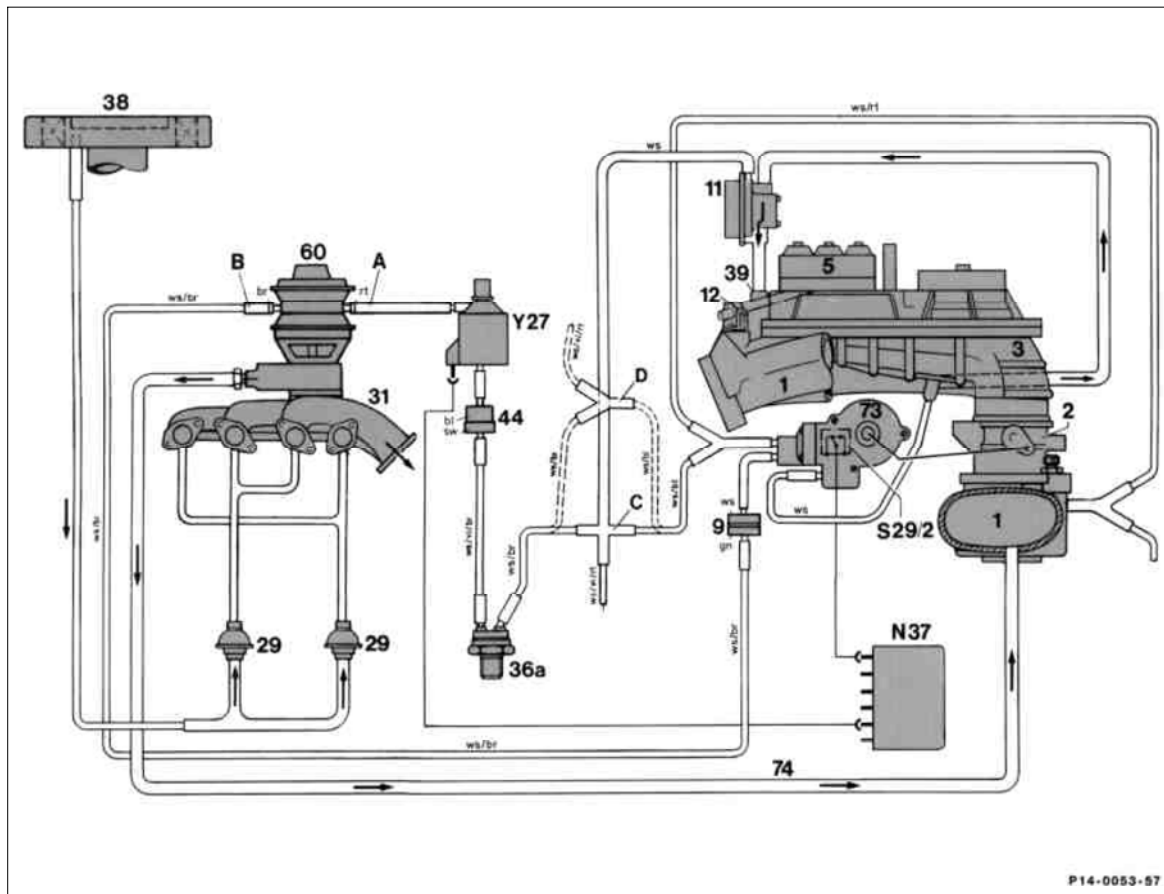
(J) 1985/86 (USA) 1984 Engine 102.961 (2.3), (USA) 1985/86 Engine 102.985



B11/3	Coolant temperature sensor	12	Intake manifold
G3/2	Heated oxygen sensor	15	Fuel distributor
G3/2x1	Plug connection, oxygen sensor heating coil	33b	Underfloor catalytic converter
G3/2x2	Plug connection, oxygen sensor signal	50	Fuel tank
N3	KE electronic control unit coupling	51	Vent valve
S5/2	Breakerless distributor	52	Active charcoal filter
S27/2	Decel fuel cutoff microswitch	53	Regeneration valve
S29/1	Throttle valve switch, full load recognition	79	50 °C thermo valve (red)
W5	Ground, engine	156	Exhaust manifold
W10	Ground, battery	158	Underfloor catalytic converter
Y1	Electrohydraulic actuator		Air admission line (engine compartment)
1	Mixture control unit	b	Fuel pump relay, contact 2
2	60 °C thermo valve (white)	m	Idle speed adjuster, contact 2
3	Non-return valve with integrated restriction	t	Fuel pump relay, contact 7, terminal 87

## G. 1984-86 Engine 102.961





#### Exhaust gas recirculation (ARF) components

A	Connection	3	Air guide housing
B	Connection	9	Vacuum damper
C/D	Distributor	31	Exhaust manifold
N37	ARF control unit	36a	40 °C thermo valve
S29/2	Throttle valve switch	44	Non-return valve
Y27	ARF switchover valve	60	ARF valve
1	Intake manifold	73	Vacuum control valve
2	Throttle valve body	74	Exhaust gas recirculation line

#### Self induction system components

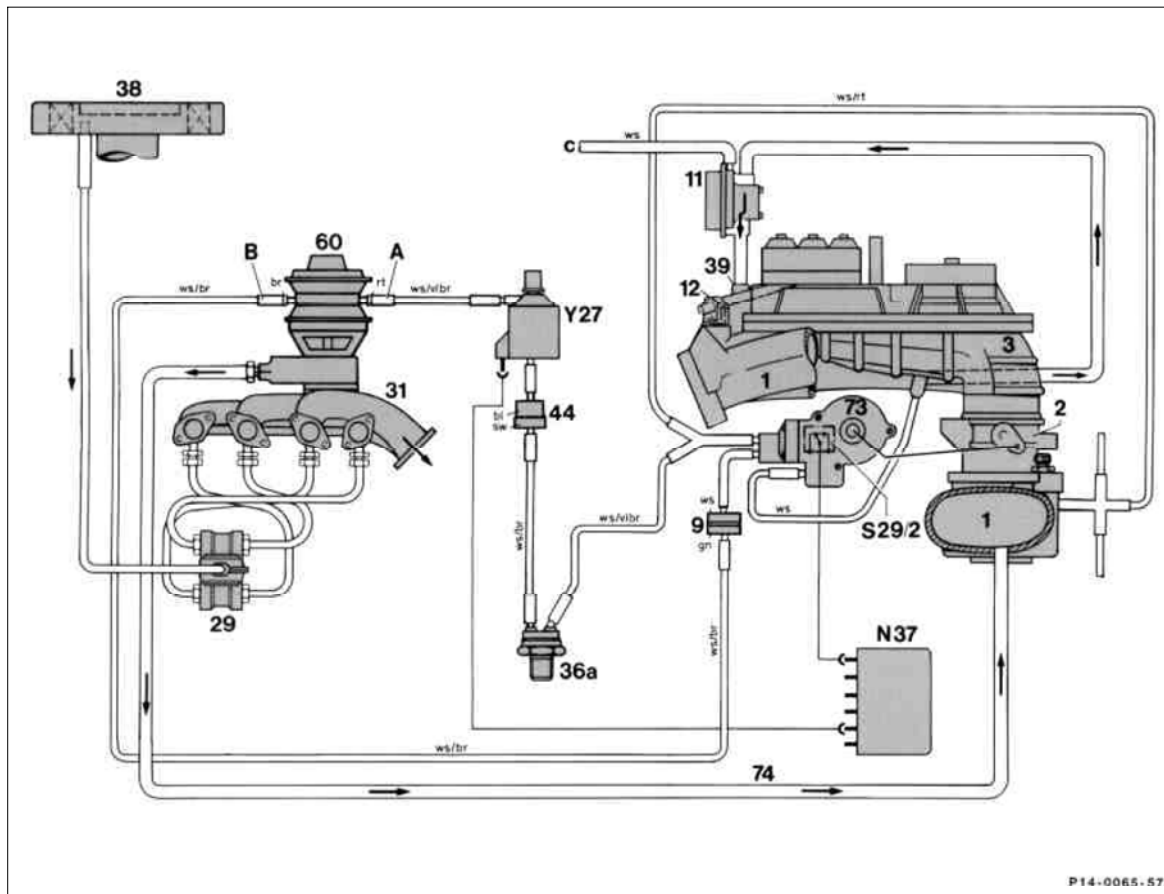
29	Non-return valve
31	Exhaust manifold
38	Air cleaner

#### Auxiliary air components after starting and in decel mode (with manual transmission)

11	Decel recirculating air valve
12	Idle air distributor
39	Shaped hose

### I. 1985/86 Engine 102.982





#### Exhaust gas recirculation (ARF) components

A	Connection	9	Vacuum damper
B	Connection	31	Exhaust manifold
N37	ARF control unit	36a	40 °C thermo valve
S29/2	Throttle valve switch	44	Non-return valve
Y27	Switchover valve	60	ARF valve
1	Intake manifold	73	Vacuum control valve
2	Throttle valve body	74	Exhaust gas recirculation line
3	Air guide housing		

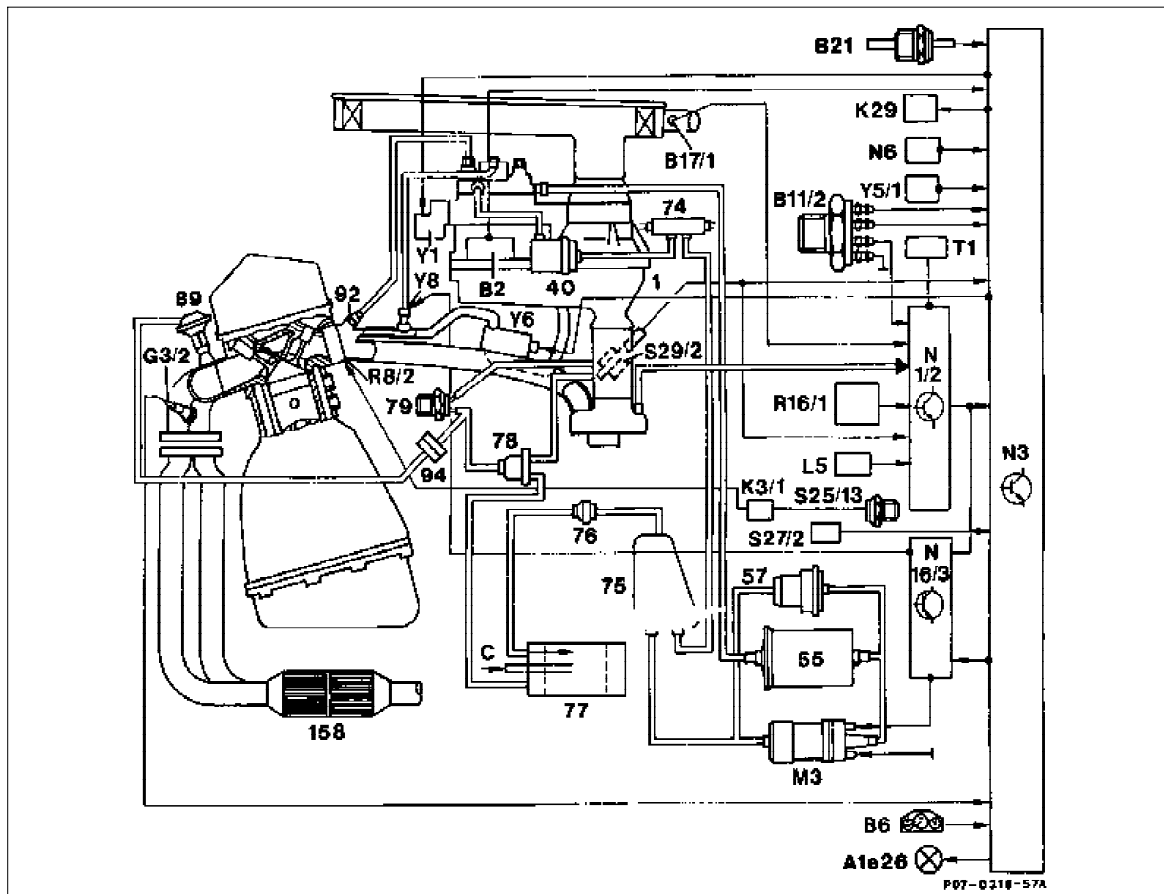
#### Self induction system components

29	Double non-return valve
31	Exhaust manifold
38	Air cleaner

#### Auxiliary air components after starting and in decel mode (with manual transmission)

11	Decel recirculating air valve
12	Idle air distributor
39	Shaped hose
c	Vacuum connection

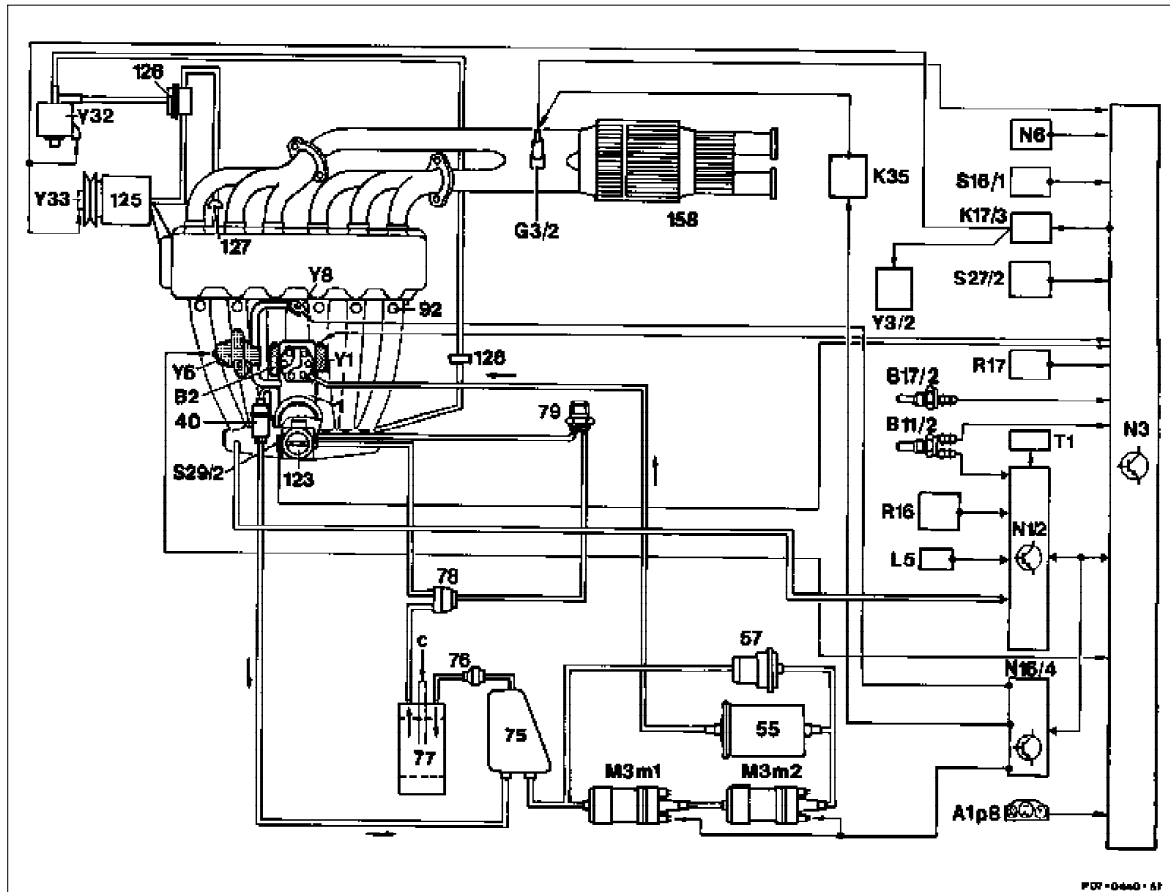
### J. 1991 Engine 102.985



A1e26	CHECK ENGINE indicator lamp	S29/2	Throttle valve switch, full load/idle speed recognition
B2	Air flow sensor position indicator	T1	Ignition coil
B6	Hall-effect speed sensor	Y1	Electrohydraulic actuator
B11/2	Coolant temperature sensor (EZL/KE/2 E-E) (4-pin)	Y5/1	AC compressor electromagnetic clutch
B17/1	Intake air temperature sensor (EZL)	Y6	Idle speed adjuster
B21	Exhaust gas recirculation (ARF) temperature sensor (California only)	Y8	Start valve
G3/2	Heated oxygen sensor	1	Mixture control unit
K3/1	Intake manifold preheater (PSV) relay	40	Diaphragm pressure regulator
K29	Transmission shift point retard relay	55	Fuel filter
L5	Crankshaft position sensor	57	Fuel accumulator
M3	Fuel pump	75	Fuel tank
N1/2	EZL ignition control unit	76	Vent valve
N3	KE injection system control unit	77	Active charcoal filter
N6	AC compressor cutoff control unit	78	Regeneration valve
N16/3	Fuel pump relay	79	70 °C thermo valve
R8/2	Intake manifold preheater (PSV)	89	Exhaust gas recirculation valve
R16/1	EZL reference resistor	92	Injection valve
S25/13	60 °C temperature switch (PSV)	94	Delay valve (only with manual transmission)
S27/2	Decel fuel cutoff microswitch	158	Underfloor catalytic converter
		c	Air admission

## K. Engine 103 KAT

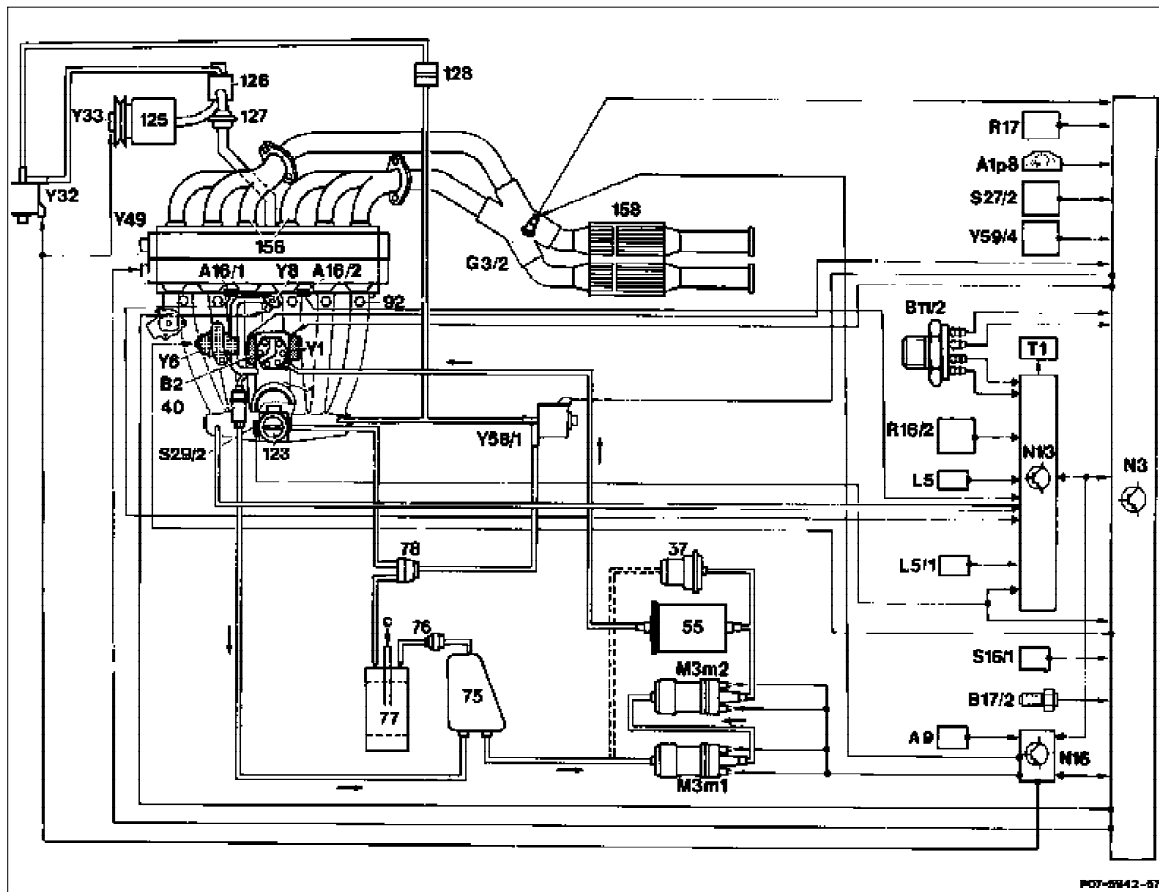
(CH) (N) (S) (DK) (FIN) with air injection as of 1991



A1p8	Electronic clock/tachometer	Y1	Electrohydraulic actuator
B2	Air flow sensor position indicator	Y3/2	Shift point retard solenoid valve
B11/2	Coolant temperature sensor (EZL/KE) (4-pin)	Y6	Idle speed adjuster
B17/2	KE injection system intake air temperature sensor	Y8	Start valve
G3/2	Heated oxygen sensor	Y32	Air pump switchover valve 1)
K17/3	Air injection/transmission shift point retard relay 1)	Y33	Air pump electromagnetic clutch 1)
K35	Oxygen sensor relay 1)	1	Mixture control unit
	(heating capacity increased to 18 watts)	40	Diaphragm pressure regulator
L5	Crankshaft position sensor	55	Fuel filter
M3m1	Fuel pump 1	57	Fuel accumulator
M3m2	Fuel pump 2	75	Fuel tank
N1/2	EZL ignition control unit	76	Vent valve
N3	KE injection system control unit	77	Active charcoal filter
N6	AC compressor cutoff control unit	78	Regeneration valve
N16/4	Fuel pump and kickdown cutoff relay	79	70/60 °C thermo valve
R16	EZL resistance trimming plug	92	Injection valve
R17	KE injection system resistance trimming plug	123	Throttle valve body
S16/1	Starter lockout and reversing lamp switch	125	Air pump 1)
S27/2	Decel fuel cutoff microswitch	126	Air cutoff valve 1)
S29/2	Throttle valve switch, full load/idle speed recognition	127	Non-return valve (injection air) 1)
T1	Ignition coil	128	Non-return valve (vacuum) 1)
		158	Catalytic converter
		c	Air admission

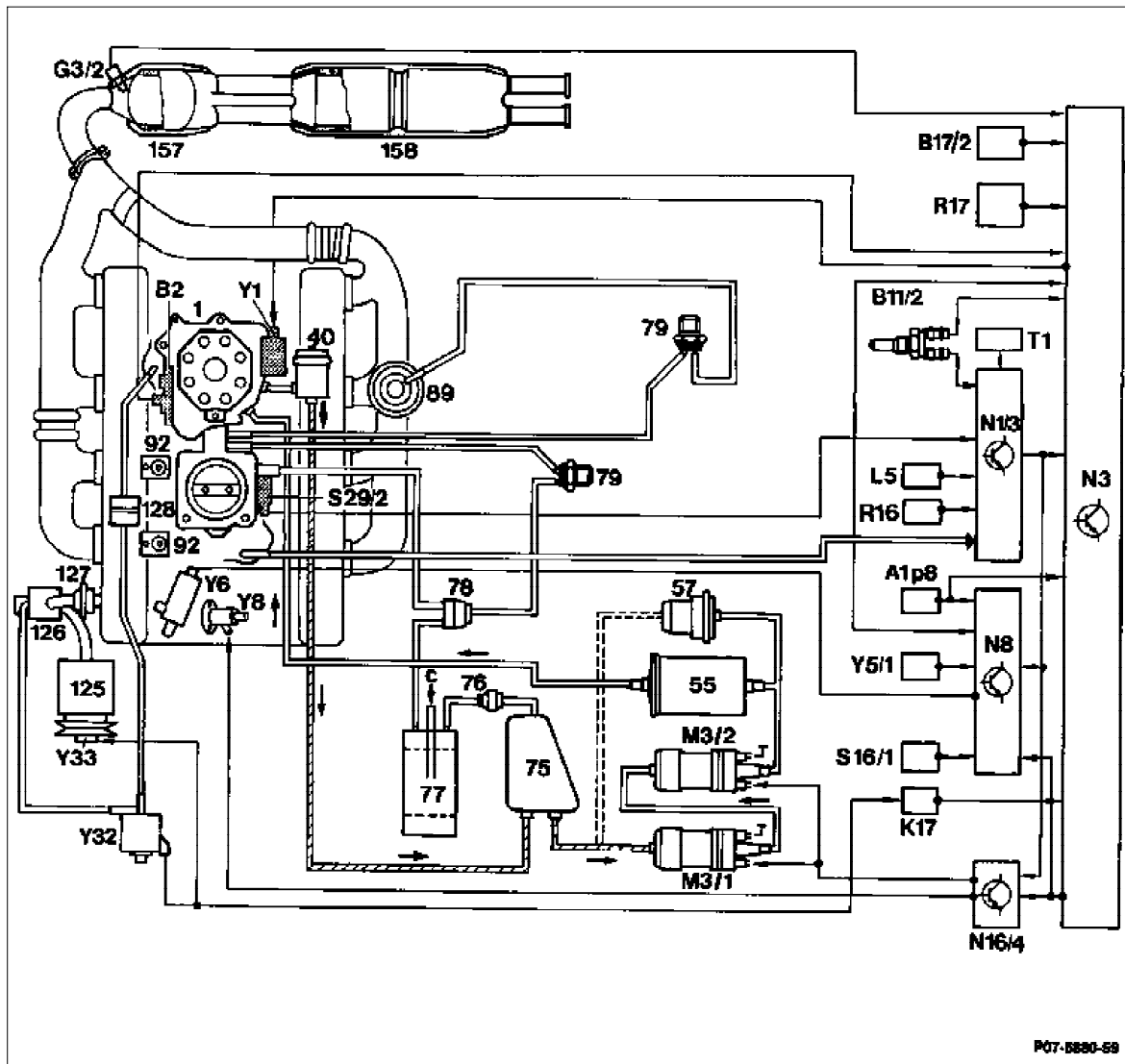
1) only (CH) (N) (S) (DK) (FIN) as of 1991

## L. Engine 104 KAT



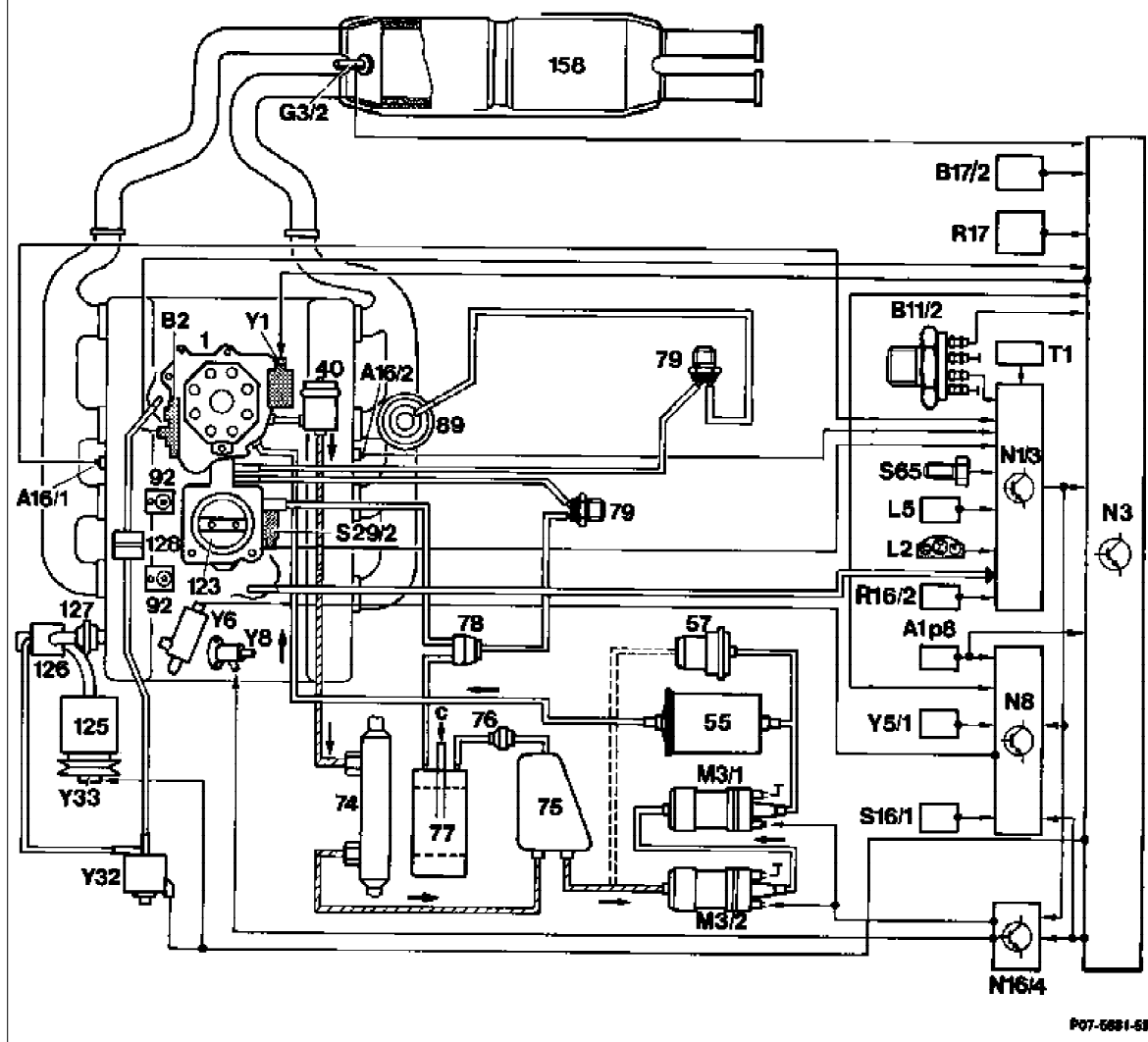
A1p8	Electronic speedometer	Y32	Air pump vacuum valve
A16g1	Knock sensor 1	Y33	Air pump electromagnetic clutch
A16g2	Knock sensor 2	Y49	Adjustable camshaft timing electromagnetic actuator
B2	Air flow sensor position indicator	Y58/1	Regeneration switchover valve
B11/2	Coolant temperature sensor (EZL/KE/2 E-E)	Y59/4	was modified to K29, transmission shift point retard relay
B17/2	KE injection system intake air temperature sensor		
G3/2	Heated oxygen sensor	1	Mixture control unit
L5	Crankshaft position sensor	40	Diaphragm pressure regulator
L5/1	Camshaft position sensor	55	Fuel filter
M3m1	Fuel pump 1	57	Fuel accumulator
M3m2	Fuel pump 2	75	Fuel tank
N1/3	EZL/AKR ignition control unit	76	Vent valve
N3	KE control unit	77	Active charcoal filter
N16	Engine systems control unit (MAS)	78	Regeneration valve
R16/2	EZL/AKR resistance trimming coupling	92	Injection valve
R17	KE resistance trimming plug	123	Throttle valve body
S16/1	Starter lockout and reversing lamp switch	125	Air pump
S27/2	Decel fuel cutoff microswitch, n. a. with ASR	126	Air cutoff valve
S29/2	Throttle valve switch, full load/idle speed recognition	127	Non-return valve (injection air)
T1	Ignition coil	128	Non-return valve (vacuum)
Y1	Electrohydraulic actuator	156	Exhaust manifold
Y6	Idle speed adjuster	158	Catalytic converter
Y8	Start valve	c	Air admission

## M. Engine 116.964/965 KAT with exhaust gas recirculation and air injection



A1p8	Electronic speedometer	Y32	Air pump switchover valve
B2	Air flow sensor position indicator	Y33	Air pump electromagnetic clutch
B11/2	Coolant temperature sensor (EZL/KE)	1	Mixture control unit
G3/2	Heated oxygen sensor	40	Diaphragm pressure regulator
L5	Crankshaft position sensor	55	Fuel filter
M3	Fuel pump	57	Fuel accumulator
N1/2	EZL ignition control unit	75	Fuel tank
N3	KE injection system control unit	76	Vent valve
N8	ELR control unit	77	Active charcoal filter
N16/4	Fuel pump and kickdown cutoff relay	78	Regeneration valve
R16	EZL resistance trimming plug	79	50 °C thermo valve
R17	KE injection system resistance trimming plug	89	Exhaust gas recirculation valve
S16/1	Starter lockout and reversing lamp switch	90	Control valve
S29/2	Throttle valve switch, full load/idle speed recognition	92	Injection valve
T1	Ignition coil	125	Air pump
Y1	Electrohydraulic actuator	126	Air cutoff valve
Y5/1	AC compressor electromagnetic clutch	127	Non-return valve (injection air)
Y6	Idle speed adjuster	128	Non-return valve (vacuum)
Y8	Start valve	157	Firewall catalytic converter
		158	Underfloor catalytic converter

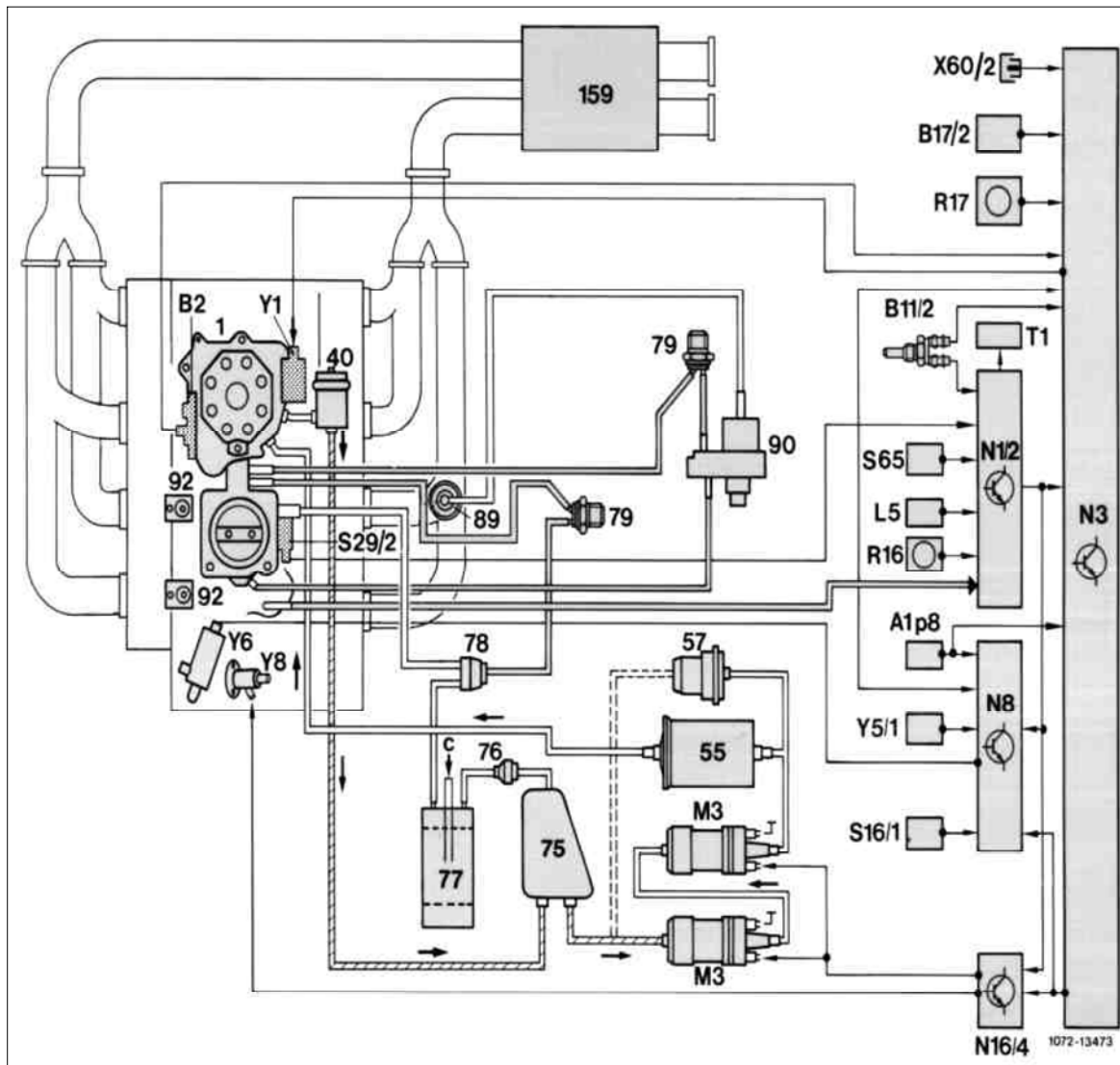
## N. Engine 117.964/965/968 KAT with exhaust gas recirculation and air injection



P07-5881-59

A1p8	Electronic speedometer	Y5/1	AC compressor electromagnetic clutch
A16/1	Knock sensor 1	Y5/1	AC compressor electromagnetic clutch
A16/2	Knock sensor 2	Y6	Idle speed adjuster
B2	Air flow sensor position indicator	Y8	Start valve
B11/2	Coolant temperature sensor (EZL/KE)	Y32	Air pump switchover valve
B17/2	KE injection system intake air temperature sensor	Y33	Air pump electromagnetic clutch
G3/2	Heated oxygen sensor	1	Mixture control unit
L2	Inductive road speed sensor	40	Diaphragm pressure regulator
L5	Crankshaft position sensor	55	Fuel filter
M3/1	Fuel pump 1	57	Fuel accumulator
M3/2	Fuel pump 2	75	Fuel tank
N1/3	EZL/AKR ignition control unit	76	Vent valve
N3	KE injection system control unit	77	Active charcoal filter
N8	ELR control unit	78	Regeneration valve
N16/4	Fuel pump and kickdown cutoff relay	79	50/70 °C thermo valve
R16/2	EZL/AKR resistance trimming coupling	89	Exhaust gas recirculation valve
R17	KE injection system resistance trimming plug	92	Injection valve
S16/1	Starter lockout and reversing lamp switch	123	Throttle valve body
S29/2	Throttle valve switch, full load/idle speed recognition	125	Air pump
S65	Transmission overload protection switch	126	Air cutoff valve
T1	Ignition coil	127	Non-return valve (injection air)
Y1	Electrohydraulic actuator	128	Non-return valve (vacuum)
		158	Underfloor catalytic converter

## O. Engine 116/117 Standard and RUF version



A1p8	Electronic speedometer
B2	Air flow sensor position indicator
B11/2	Coolant temperature sensor (injection system/ignition system)
B17/2	Intake air temperature sensor
L5	Crankshaft position sensor
M3	Fuel pump
N1/2	EZL ignition control unit
N3	KE control unit
N8	ELR control unit
N16/4	Fuel pump relay with start valve actuation, kickdown cutoff and engine speed limiting
R16	EZL resistance trimming plug
R17	KE injection system resistance trimming plug
S16/1	Starter lockout and reversing lamp switch
S29/2	Throttle valve switch for idle speed and full load recognition
S65	Transmission overload protection switch
T1	Ignition coil

X60/2	Plug connection, oxygen sensor signal
Y1	Electrohydraulic actuator
Y5/1	AC compressor electromagnetic clutch
Y6	Idle speed adjuster
Y8	Start valve
1	Mixture control unit
40	Diaphragm pressure regulator
55	Fuel filter
57	Fuel accumulator
75	Fuel tank
76	Vent valve
77	Active charcoal filter
78	Regeneration valve
79	50 °C thermo valve
89	Exhaust gas recirculation valve
90	Control valve
92	Injection valve
159	Front muffler

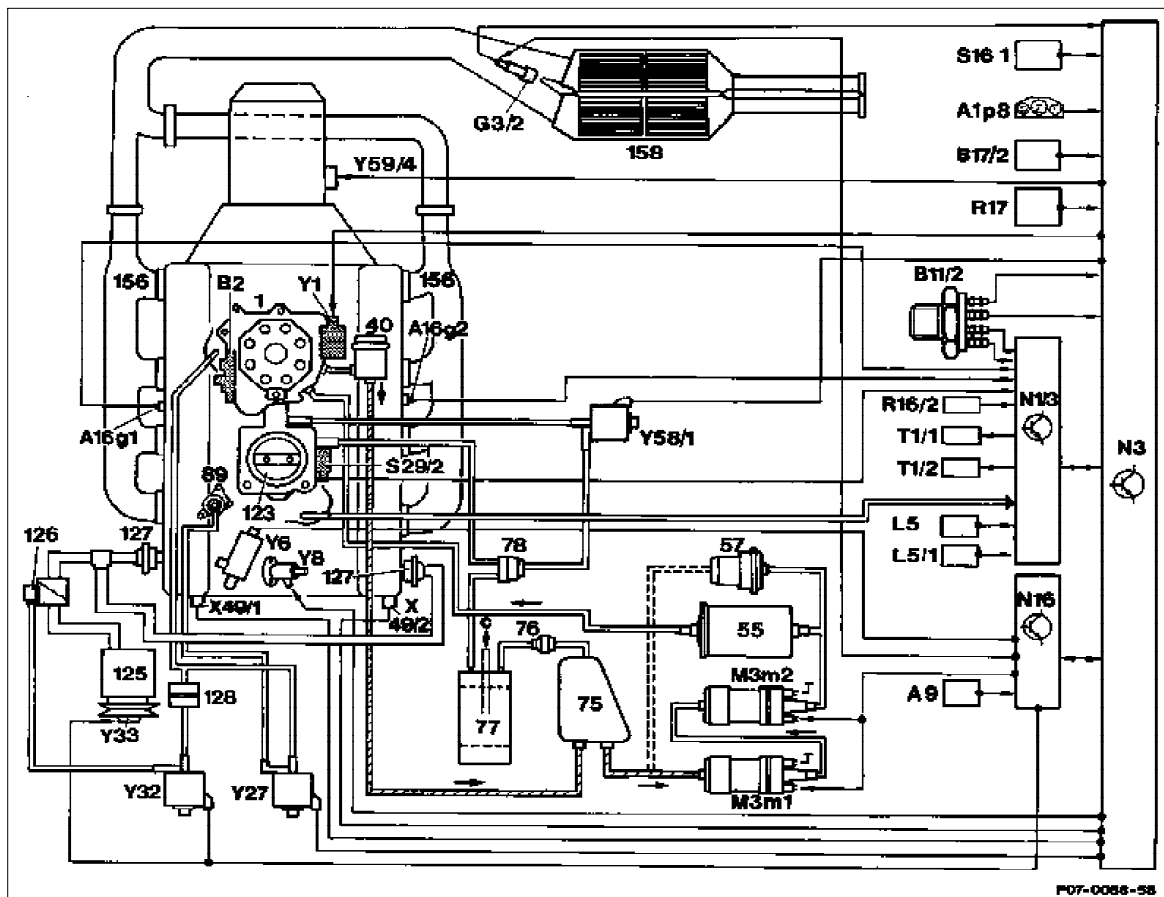
#### Note

Engines 116.964 and 117.964 with double-pipe exhaust system.

Engine 116.965 with single-pipe exhaust system.

Ⓢ Ⓢ Engines 116.964/965 with air injection and without fuel evaporation system. 40 °C thermo valve for exhaust gas recirculation.

## P. Engine 119 KAT



A1p8	Electronic speedometer	Y27	Exhaust gas recirculation switchover valve
A9	AC compressor	Y32	Air pump vacuum valve
A16g1	Knock sensor 1	Y33	Air pump electromagnetic clutch
A16g2	Knock sensor 2	Y49/1	Electromagnetic actuator 1, left adjustable camshaft timing
B2	Air flow sensor position indicator	Y49/2	Electromagnetic actuator 2, right adjustable camshaft timing
B11/2	Coolant temperature sensor (EZL/KE/2 E-E)	Y58/1	Regeneration switchover valve
B17/2	KE injection system intake air temperature sensor	Y59/4	was modified to K29, transmission shift point retard relay
G3/2	Heated oxygen sensor	1	Mixture control unit
L5	Crankshaft position sensor	40	Diaphragm pressure regulator
L5/1	Camshaft position sensor	55	Fuel filter
M3m1	Fuel pump 1	57	Fuel accumulator
M3m2	Fuel pump 2	75	Fuel tank
N1/3	EZL/AKR ignition control unit	76	Vent valve
N3	KE control unit	77	Active charcoal filter
N16	Engine systems control unit (MAS)	78	Regeneration valve
R16/2	EZL/AKR resistance trimming coupling	89	Exhaust gas recirculation valve
R17	KE resistance trimming plug	123	Throttle valve body
S16/1	Starter lockout and reversing lamp switch	125	Air pump
S29/2	Throttle valve switch, full load/idle speed recognition	126	Air cutoff valve
T1/1	Ignition coil 1	127	Non-return valve (injection air)
T1/2	Ignition coil 2	128	Non-return valve (vacuum)
Y1	Electrohydraulic actuator	156	Exhaust manifold
Y6	Idle speed adjuster	158	Catalytic converter
Y8	Start valve	c	Air admission