

INTRODUKTION

"Autodata 74" är ett nytt sätt att se på uppläggnings av automobildata. Som kända utgivare av tekniska handböcker har vår erfarenhet visat, att förutom elektronisk finjusteringsdata, finns ett behov av tekniska specifikationer t.ex. hjulinställning och vridmomentvärden. "Autodata 74" uppfyller dessa krav genom att omfatta både elektronisk och teknisk data i samma bok.

I början av handboken finns en förteckning över fordon, vart och ett under sitt märke och beteckning och med hänvisning till relevanta sidor.

Överst på varje sida står respektive tillverkarens namn med stora bokstäver och modellbeteckningar omedelbart under. Data är upplagd i spalter, elektronisk finjustering på framsidan och allmän teknisk data på baksidan. Där så är lämpligt, står alternativ att finna i de angränsande spalterna.

På framsidan ger punkterna 1-6 bestämd identifiering av modell och omfattar år och allmänna motorspecifikationer. De följande punkterna, 7-38 inklusive, sörjer för nödvändig data av elektronisk testning av tändsystemets komponenter, medan de sista punkterna, 39-53 omfattar start- och laddningssystem. Skissen, som är inkluderad längst ner på sidan, visar var tändningsinställningens markeringar är belägna samt lägen av cylindrar och fördelare. I det sistnämnda fallet är nr 1 tändstiftskabel märkt med en svart prick och riktningen av rotorns rotation med en böjd pil. Cylinderblockets riktningsläge är också märkt med en stor pilspets, som pekar mot bilens framdel.

Modellrubriker och årtal är upprepade på baksidan och åtföljs av punkterna 55-75, vilka omfattar allmän teknisk data för motorn och tillhörande komponenter. Fyllningskapacitet av viktigare motor- och växelenheter finns under punkterna 76-82 på listan. De återstående punkterna omfattar däckstorlekar och lyfttryck (83-85), hjulinställning på fram och bakhjul och viktigare vridmoment (96-104). Illustrationerna visar detaljer av justeringsskruvar på förgasaren och ordningsföljden av cylinderhuvudets skruvåtdragningar. I det sistnämnda fallet är framsidan av cylinderhuvudet markerat med en pilspets.

Dessa data har sammanställts av Intereurope Ltd. och är baserade på upplysningar från tillverkare av bilar och bilaccessoarer.

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INTRODUKSJON

"Autodata 74" er en ny måte å presentere automobildata på. Vår erfaring som etablerende utgivere av tekniske håndbøker viser, at der i tillegg til et behov for elektroniske innstillingsdata også finnes et behov for mekaniske spesifikasjoner som f.eks. hjulinnstillingsdata og fastspenningsmomenter. "Autodata 74" tilfredstiller disse krav med både elektroniske og mekaniske data samlet på praktisk måte i et enkelt bind.

En indeks foran i boken lister kjøretøyene under merke og modellbetegnelse med tilhørende sidehenvisning.

Øverst på hver side finnes den respektive fabrikkens navn i store bokstaver, med modellbetegnelse rett under. Data finnes anført i kolonner, elektroniske data på forsiden og generelle mekaniske data på baksiden. I vedkommende tilfelle anføres alternativer eller valgfrie deler i kolonnen ved siden av.

På første side, viser punkter 1-6 positiv modellidentifikasjon med årrekke og alminnelig motor spesifikasjoner. Følgende punkter 7-38 inklusive viser de nødvendige data for elektronisk undersøkelse av tenningsystemets komponenter, mens de øvrige punkter 39-53 dekker starte og laddningssystemet. Tegningene nederst på siden illustrerer tennings taktinnstillingsmerker og sylindrens nummerering samt strømfordeler posisjonene. I sistnevnte tilfelle identifiseres tennplugg Nr. 1 med en sort flekk, og rotorens omdreiningens retning med en krummet pil. Sylindrerblokkens orientering anvises likeledes med en større pilspiss som peker mot forsiden av bilen.

Modelloverskriftene og datoer gjentas på bladets bakside og etterfølges av punkter 55-75 som dekker motorens alminnelige mekaniske spesifikasjoner med tilhørende komponenter. Påfyllningskapasiteter for de viktigste motor og transmisjonsenheter finnes anført under punkter 76-82. De øvrige punkter dekker dekkstørrelse og oppumpningstrykk (83-85), for og bakhjulsinnstillinger (86-95) samt de viktigste fastspenningsmomenter (96-104). Illustrasjonene viser detaljer angående karboratorers justerings skruer samt fastspenningssekvens for toppstykkers bolter eller møtrikker. I siste tilfelle vises toppstykkets forside igjen med en pil.

Hvor der mangler data, kan det bety at punktet ikke vedkommer saken eller at data ikke sto til rådighet på tidspunktet ved utgivelsen.

De forskjellige data er utarbeidet av Intereuropa Ltd. på basis av opplysninger stillet til rådighet av bil og tilbehørsfabrikker.

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TECKENFÖRKLARING

Rad	Tecken	Förklaring
9	(+)	ballastmotstånd
19	[]	vakuumkopplad
20-27	(*)	ETMP (efter toppmittpunkt)
67	(x2)	dubbelförgasare
86	(*)	lastad (130 kg fram, 65 kg bak, 30 kg bagagerum)

FÖRKORTNINGAR

EEC	avgaskontroll
HC	høgt tryck
LC	lågt tryck
Pos.	positiv
Neg.	negativ
h	varm
c	kall
O/D	överväxel
Min.	minimum
Max.	maximum
Pas.	kraftassisterad styrning
HD	hårt slitage
Saloon/Sedan/Berlina	Saloon/Sedan/Berlina
Estate	herrgårdsvagn
Convertible	convertible

ANVENDTE SYMBOLER

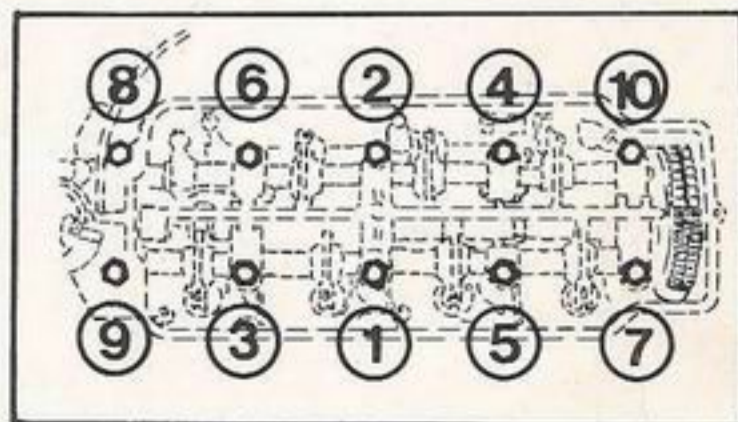
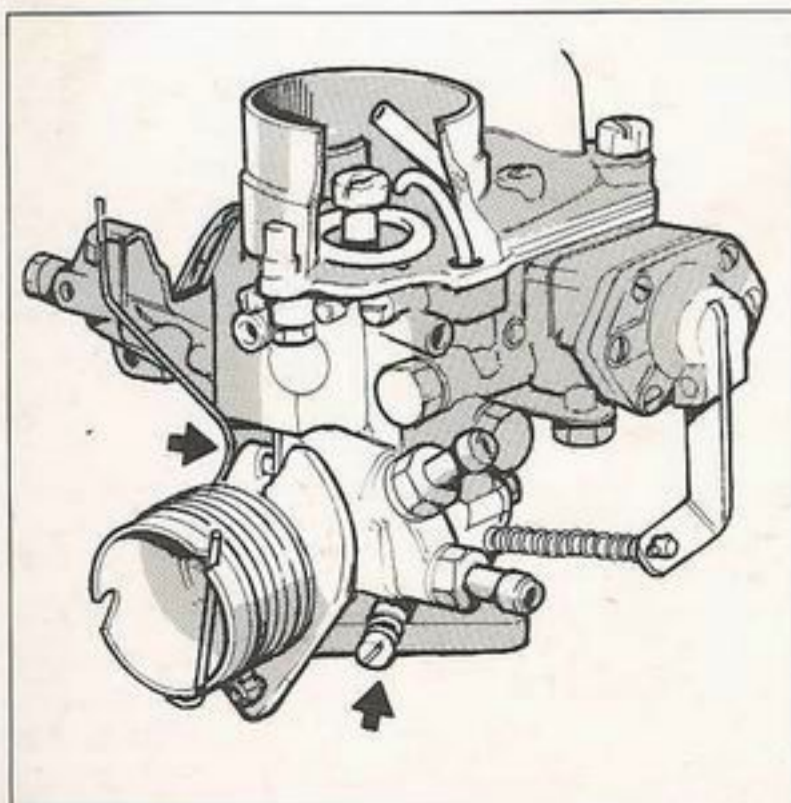
Linje	Symbol	Förklaring
9	(+)	med ballastmotstånd
19	[]	med vacuumforbindelse
20-27	(*)	etter øverste dødpunkt
67	(x2)	dobbeltkarborator
86	(*)	med last (130 kg foran, 65 kg bak 30 kg i bagasjerommet)

ANVENDTE FORKOTELSER

EEC	utstøtningskontroll for eksos
HC	høy kompresjon
LC	lav kompresjon
Pos.	positiv
Neg.	negativ
h	varm
c	kold
O/D	overgir
Min.	minimum
Max.	maksimum
Pas.	servostyring
HD	ekstra kraftig
Saloon/Sedan/Berlina	sedan
Estate	stasjonsbil
Convertible	convertible

MODELL		NORWEGIAN	
År			54
MOTOR			55
Ventilklaring – inntak	mm (in.)		56
ekshaust	mm (in.)		57
Kompresjonstrykk	kg/cm ² (psi)		58
Oljetrykk	kg/cm ² (psi)		59
Radiatorlokk	kg/cm ² (psi)		60
Termostat åpner ved	°C (°F)		61
Vifterremstørrelse	mm (in.)		62
Vifterremstramming/avbøyning	mm (in.)/kg (lb)		63
DYNAMOMETERPRØVE			64
Bremsehesterkrefter ved hjul	BHK (kp)		65
FORGASSER			66
	Merke		66
	Type		67
Oktantall			68
Tomgangshastighet – manuell	o/m		69
Auto./sel.pos.	o/m		70
Ekshaustgass	CO% o/m		71
BENSINPUMPE			72
	Merke		72
	Type		73
Tilførselshastighet	Liter (pint)/h		74
Tilførselstrykk	kg/cm ² (psi)		75
PÅFYLLINGSKAPASITETER			76
Motor	Liter (pint)		77
Filter	Liter (pint)		78
Gearkasse	Liter (pint)		79
Automatisk drev	Liter (pint)		80
Differensialdrev	Liter (pint)		81
Kjølesystem	Liter (pint)		82
DEKK			83
Trykk – Forhjul	kg/cm ² (psi)		84
Bakhjul	kg/cm ² (psi)		85
HJUL-INNSTILLINGSDATA			86
Spissing – Forhjul	mm (in.)		87
Spredning	mm (in.)		88
Camber	Grader		89
Kingbolthelning bakover	Grader		90
Stoppvinkler – innre/ytter hjul	Grader		91
Kingbolthelning innover	Grader		92
Spissing – Bakhjul	mm (in.)		93
Spredning	mm (in.)		94
Camber	Grader		95
FASTSPENNINGSMOMENTER			96
Sylinder-topp Trinn 1	kgm (lb.ft.)		97
Trinn 2	kgm (lb.ft.)		98
Trinn 3	kgm (lb.ft.)		99
Hovedlagre	kgm (lb.ft.)		100
Veivstanglagre	kgm (lb.ft.)		101
Svinghjul	kgm (lb.ft.)		102
Tennplugg	kgm (lb.ft.)		103
Hjul	kgm (lb.ft.)		104

MODEL		SWEDISH	
År			54
MOTOR			55
Ventilspel, insug	mm (tum)		56
Ventilspel, avgas	mm (tum)		57
Kompresjonstrykk	kg/cm ² (psi)		58
Oljetrykk	kg/cm ² (psi)		59
Kylarlock	kg/cm ² (psi)		60
Termostat åpner ved	°C (°F)		61
Storlek av flåktrem	mm (tum)		62
Remspåning/nedtrykning	mm (tum)/kg (lb)		63
RULLPROV			64
Broms-HK ved hjul	BHK		65
FÖRGASARE			66
	Märke		66
	Typ		67
Oktantall			68
Tomgäingsvarvtal – manuell	varv/min		69
Tomgäingsvarvtal – auto./selektor pos.	varv/min		70
Avgasavgivning	CO% varv/min		71
BRÄNSLEPUMP			72
	Märke		72
	Typ		73
Pumpkapacitet	liter (Imp Pts)/t		74
Pumptrykk	kg/cm ² (psi)		75
RYMDMÅTT			76
Motor	liter (Imp Pts)		77
Filter	liter (Imp Pts)		78
Växellåda	liter (Imp Pts)		79
Automatisk	liter (Imp Pts)		80
Differential	liter (Imp Pts)		81
Kylsystem	liter (Imp Pts)		82
DÄCK			83
Trykk – fram	kg/cm ² (psi)		84
Trykk – bak	kg/cm ² (psi)		85
STYRNING			86
Hjulskränkning (toe-in) – fram	mm (tum)		87
Hjulskränkning (toe-out)	mm (tum)		88
Hjullutning (camber)	grader		89
Axellutning (caster)	grader		90
Hjulutslag – inner/ytter hjul	grader		91
Spindeltappens lutning (KPI)	grader		92
Hjulskränkning (toe-in) – bak	mm (tum)		93
Hjulskränkning (toe-out)	mm (tum)		94
Hjullutning (camber)	grader		95
ÅTDRAGNINGSMOMENT			96
Cylinderlock 1. moment	kgm (lb.ft.)		97
2. moment	kgm (lb.ft.)		98
3. moment	kgm (lb.ft.)		99
Ramlager	kgm (lb.ft.)		100
Veivstaklager	kgm (lb.ft.)		101
Svinghjul	kgm (lb.ft.)		102
Tändstift	kgm (lb.ft.)		103
Hjulmuttrar	kgm (lb.ft.)		104



1 År

2 MOTOR	Typ
3 Cylindervolym/Antal cyl.	cm ³
4 Cylinderdiam/Slaglängd	mm
5 Kompressionsförhållande	:1
6 Motoreffekt	hk v. varv./min

7 TÄNDSPOLE	Märke
8	Typ
Spänning v. terminal 15 (jord)	
9 - m. stabil ström	V
10 Belastningsmotstånd	Ohm
11 Primärmotstånd v. 20°C	Ohm
12 Tändningsspänning v. belastning	Kv

13 FÖRDELARE	Märke
14	Typ
15 Kamvinkel	grader
16 Kontaktgap	mm (tum)
17 Kondensatorkapacitet	mfd
18 Tändföljd	

19 TÄNDNINGSPÅSTÄLLNING	
20 Statisk förtändning	Øf, Ød.
21 Stroboskopisk v. tomgång	Øf, Ød.
22 Stroboskopisk	Øf, Ød. v. varv/min

23 CENTRIFUGALREGLERING (Förtändning) utan vacuum	
24 Börjar	Øv, varv/min (M)
25 Fortsätter 1	Øv, varv/min (M)
26 Fortsätter 2	Øv, varv/min (M)
27 Slutar	Øv, varv/min (M)

28 VAKUUMREGLERING (Förtändning)	
29 Område	grader (vevaxel)
30 Börjar	Ømm (tum)/Hg
31 Slutar	Ømm (tum)/Hg

32 VAKUUMREGLERING (Retard. tändning)	
33 Område	grader (vevaxel)
34 Börjar	Ømm (tum)/Hg
35 Slutar	Ømm (tum)/Hg

36 TÄNDSTIFT	Märke
37	Typ
38 Gap	mm (tum)

39 BATTERI	Spänning/Kapacitet/Pol
40 STARTMOTOR	Märke
41	Typ
42 Startspänning	V
43 Ström v. läst startmotor	A/V

44 GENERATOR	Märke
45	Typ
46 Effekt	A/V v. gen. varv/min

47 REGULATOR	Märke
48	Typ
49 Öppen krets	V
50 Inkopplingspänning	V
51 Utkopplingspänning	V
52 Backström	A
53 Spänningsreglering - Alternator	V

1 År

2 MOTOR	Type
3 Kapasitet/sylinderantall	cm ³
4 Boring/slaglengde	mm
5 Kompresjonsforhold	:1
6 Ytelse	BHK/o/m

7 TENNSPOLE	Merke
8	Type
Spenning klemme 15 (Jord)	
9 - konstant ström	Volt
10 Ballastmotstand	Ohm
11 Primärmotstand 20°C	Ohm
12 Tennspenning belastning	kV

13 TENNINGSFORDELER	Merke
14	Type
15 Oppholdsvinkel	Grader
16 Kontaktbrytergap	mm (in.)
17 Kondensatorkapasitet	mF
18 Tenningsrekkefølge	

19 TENNINGSPÅSTILLING	
20 Statisk grunninnstilling	Grader f. Ø. d.
21 Stroboskopisk ved sveiving	Grader f. Ø. d.
22 Stroboskopisk	Grader f. Ø. d.

23 SENTRIFUGALFREMSKYVNING	Uten vakuum
24 Begynner	Veivakselgrader/o/m
25 Mellomstilling 1	Veivakselgrader/o/m
26 Mellomstilling 2	Veivakselgrader/o/m
27 Sluttes	Veivakselgrader/o/m

28 VAKUUMFREMSKYVNING	
29 Område	Veivakselgrader
30 Begynner	mm (in.) Hg
31 Sluttes	mm (in.) Hg

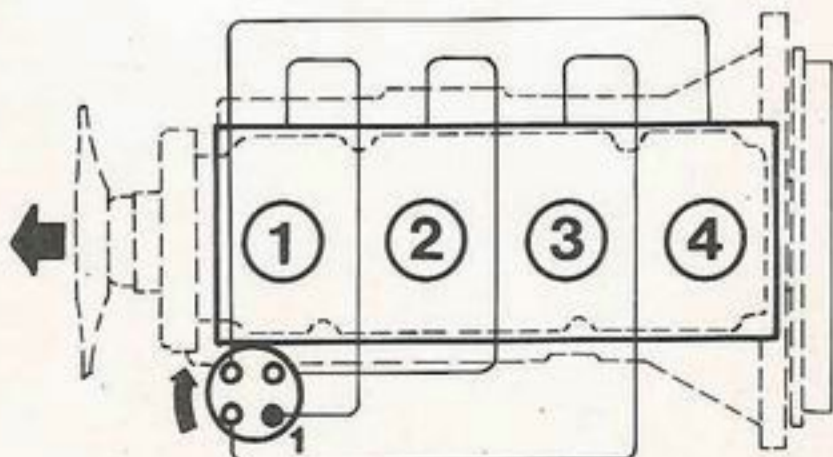
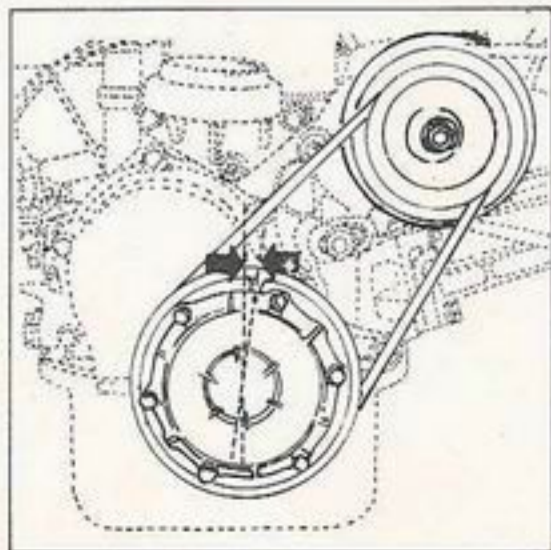
32 VAKUUMRETARDASJON	
33 Område	Veivakselgrader
34 Begynner	mm (in.) Hg
35 Sluttes	mm (in.) Hg

36 TENNPLUGGER	Merke
37	Type
38 Gnistgap	mm (in.)

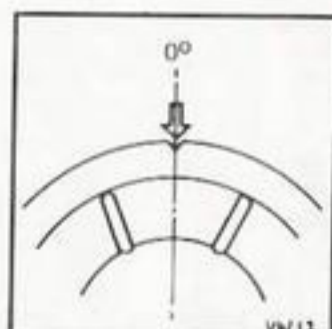
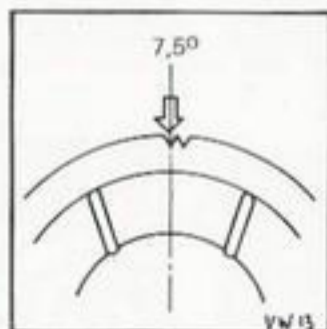
39 BATTERI	Spänning/Kapasitet/Pol
40 STARTER	Merke
41	Type
42 Startspänning	Volt
43 Kortslutningseffekt	Amp./volt

44 GENERATOR	Merke
45	Type
46 Ytelse	A/V/o/m - gen.

47 REGULATOR	Merke
48	Type
49 Tomgangs-spenning	Volt
50 Innkopplings-spenning	Volt
51 Utløsserspenning	Volt
52 Tilbakestrøm	Amp
53 Regulatorspenning - veksel-strøms-gen.	Volt



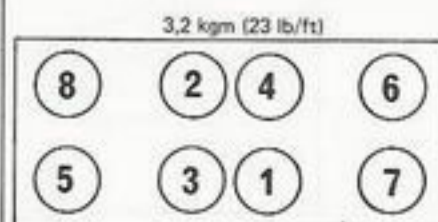
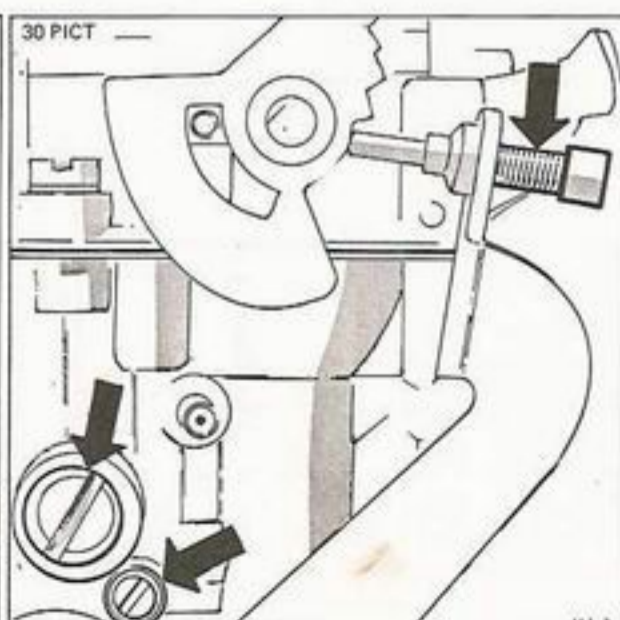
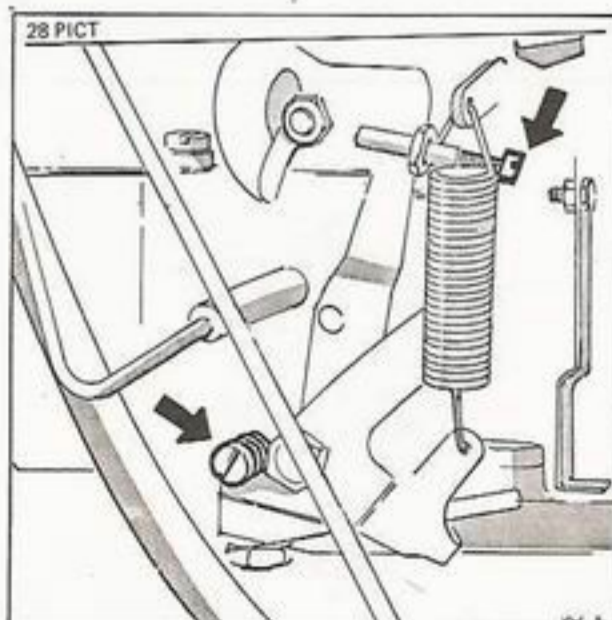
MODEL		VW 1200 (6 Volt)		VW 1200 (12 Volt)	
Year		1966-		1967-	
ENGINE	Type	1/1200 (D)		1/1200 (D)	
Capacity/No of cylinders	cc	1192/4		1192/4	
Bore/Stroke	mm	77/64		77/64	
Compression ratio	:1	7; 1972-7,3		7; 1972-7,3	
Output	bhp/rpm	34/3600 DIN			
IGNITION COIL	Make	Bosch	1970-	Bosch	
	Type	0 221 100 014	0 221 100 025	0 221 114 006/014	
Voltage at terminal 15 (Earth)					
- with steady current	Volts	5,5	5,5	11	
Ballast resistor	Ohms				
Primary resistance at 20°C (68°F)	Ohms	1-1,4	1-1,4	3,6-4,1	
Ignition voltage at load	Kv	8-11	8-11	8-11	
IGNITION DISTRIBUTOR	Make	Bosch		Bosch	1970-
	Type	0 231 137 009/029	0 231 137 039	0 231 137 009/029	0 231 137 039
Dwell angle	Degrees	44-50	44-50	44-50	44-50
Contact breaker gap	mm (in)	0,4 (0.015)	0,4 (0.015)	0,4 (0.015)	0,4 (0.015)
Condenser capacity	mfd	0,23-0,32	0,15-0,20	0,15-0,20	0,15-0,20
Firing order		1-4-3-2	1-4-3-2	1-4-3-2	1-4-3-2
IGNITION TIMING					
Basic setting static	Degrees BTDC	7,5	0	7,5	0
Stroboscopic at cranking	Degrees BTDC				
Stroboscopic	Degrees BTDC/rpm	7,5/800-900	0/800-900	7,5/800-900	0/800-900
CENTRIFUGAL ADVANCE	Without vacuum				
Starts	C/S Degrees/rpm				
Intermediate 1	C/S Degrees/rpm				
Intermediate 2	C/S Degrees/rpm				
Ends	C/S Degrees/rpm				
VACUUM ADVANCE					
Range	C/S Degrees	23-28	32-35	23-28	32-35
Starts	mm (in)/Hg	4-11 (0.15-0.4)	2-8 (0.08-0.3)	4-11 (0.15-0.4)	2-8 (0.08-0.3)
Ends	mm (in)/Hg	62-65 (2.4-2.5)	66-70 (2.6-2.7)	62-65 (2.4-2.5)	66-70 (2.6-2.7)
VACUUM RETARD					
Range	C/S Degrees				
Starts	mm (in)/Hg				
Ends	mm (in)/Hg				
SPARK PLUGS	Make	Bosch		Bosch	
	Type	W 145 T1		W 145 T1	
Gap	mm (in)	0,7 (0.027)		0,7 (0.027)	
BATTERY	Voltage/Capacity/Polarity	6/66/Neg.		12/36/Neg.	
STARTER MOTOR	Make	Bosch		Bosch	
	Type	EF (L) 6V 0.5 PS		EF (L) 12V 0,7 PS	
Starting voltage	Volts	4,5		9	
Lockdraw	Amps/Volts	440-500/3.5		250-350/6	
GENERATOR	Make	Bosch		Bosch	
	Type	EG (L) 7V 45A27		G (L) 14V 30A20	
Output	A/V/rpm - gen.	45/7/2700		30/14/2000	
REGULATOR	Make	Bosch		Bosch	
	Type	TA 7V 45A		VA 14V 30A	
Open circuit voltage	Volts	7,4-8,1		13,8-14,8	
Cut-in voltage	Volts	6,2-6,8		12,4-13,1	
Drop off voltage	Volts				
Reverse current	Amps			2,5-6,5	
Regulator voltage - Alternator	Volts				



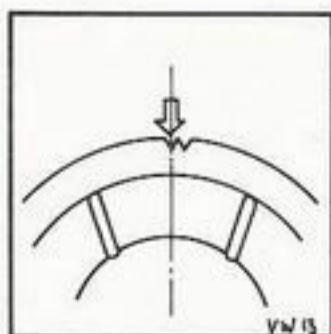
VW 1200

MODEL

54	1966--	Year	54
55	1/200 (D)	ENGINE	55
56	0,15 (0.006)	Valve clearance - Inlet	mm (in)
57	0,15 (0.006)	- Exhaust	mm (in)
58	6-9,9 (85-128)	Compression pressure	kg/cm ² (psi)
59	3 (42)	Oil pressure	kg/cm ² (psi)
60		Radiator cap	kg/cm ² (psi)
61	65-70 (149-167)	Thermostat opens at	°C (°F)
62	9.5x900	Fan belt size	mm (in)
63	15 (0.6)	Fan belt tension/deflection	mm (in)/kg (lb.)
64		ROLLER TEST	kmh (mph)/rpm/gear
65		Brake horsepower at wheels	bhp (kp)
66	Solex	CARBURETTOR	Make
67	28 PICT/-30 PICT		Type
68	91	Octane rating	
69	800-900	Idle speed - manual	rpm
70		Idle speed - automatic/selector pos.	rpm
71	2-4	Exhaust emission	CO%rpm
72	Pierburg	FUEL PUMP	Make
73	VW7		Type
74	24 (42.2)Min. @ 3400	Delivery rate	Ltr. (Imp Pt)/hr
75	0,24 (3.5)	Delivery pressure	kg/cm ² (psi)
76		FILLING CAPACITIES	
77	2,5 (4.4)	Engine	Ltr. (Imp Pints)
78		Filter	Ltr. (Imp Pints)
79	2,5 (4.4)	Gearbox	Ltr. (Imp Pints)
80		Automatic	Ltr. (Imp Pints)
81		Differential	Ltr. (Imp Pints)
82		Cooling system	Ltr. (Imp Pints)
83	5,60-15	TYRES	Standard size
84	1.1 (15)	Pressure - Front	kg/cm ² (psi)
85	1.7 (24)	- Rear	kg/cm ² (psi)
86		WHEEL ALIGNMENT DATA	
87	1,8-5,4 (0.07-0.21)	Toe-in - Front	mm (in)
88		Toe-out	mm (in)
89	0°30'±20'	Camber	Degrees
90	3°20'±1°	Castor	Degrees
91	34±2/28-1	Lock angles - inner/outer wheel	Degrees
92	5	King pin inclination	Degrees
93		Toe-in - Rear	mm (in)
94		Toe-out	mm (in)
95		Camber	Degrees
96		TIGHTENING TORQUE VALUES	
97		Cylinder head Stage 1	kgm (lb.ft.)
98	1,0 (7.2)	Stage 2	kgm (lb.ft.)
99	3,2 (23)	Stage 3	kgm (lb.ft.)
100		Main bearings	kgm (lb.ft.)
101	3,3 (23)	Big end bearings	kgm (lb.ft.)
102	30,0 (216)	Flywheel	kgm (lb.ft.)
103	3,5 (27)	Spark plugs	kgm (lb.ft.)
104	12-13 (87-94)	Road wheels	kgm (lb.ft.)



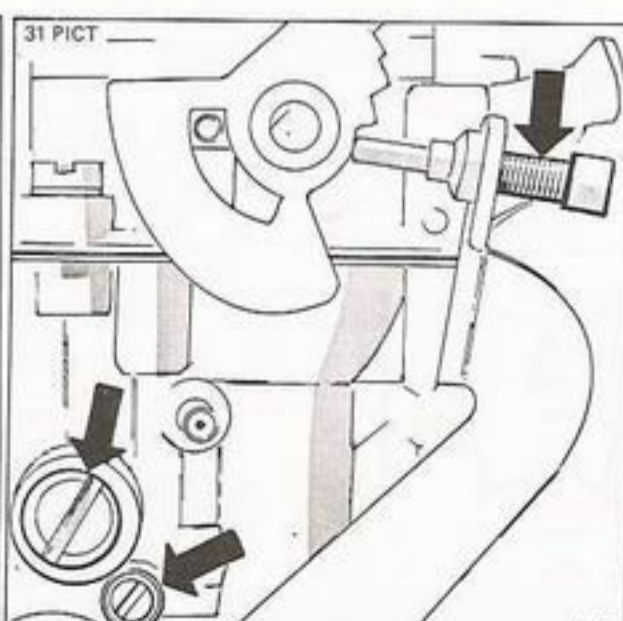
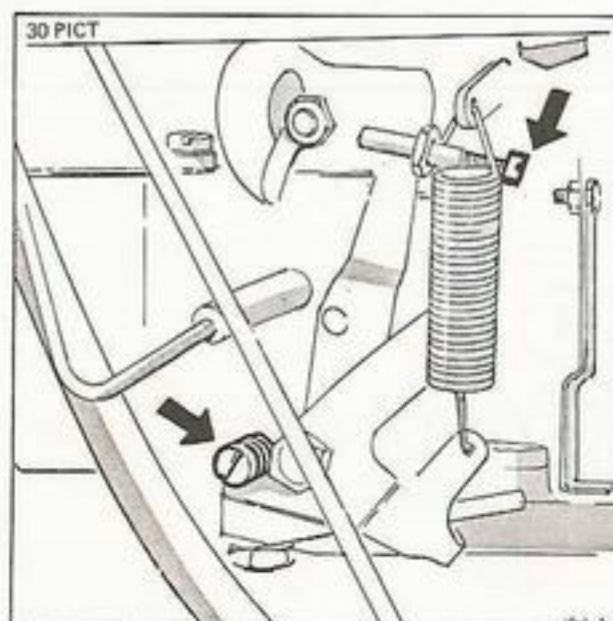
MODEL		VW 1300 (6 Volt)	VW 1300 (12 Volt)	VW 1300 Automatic (12 Volt)	
Year		1965-70	1967-70	1968-70	1
ENGINE	Type	1/1300 (F)	1/1300 (F)	1/1300 (F)	2
Capacity/No of cylinders	cc	1285/4	1285/4	1285/4	3
Bore/Stroke	mm	77/69	77/79	77/79	4
Compression ratio	:1	7,3	7,3	7,3	5
Output	bhp/rpm	40/4000 DIN	40/4000 DIN	40/4000 DIN	6
IGNITION COIL	Make	Bosch	Bosch	Bosch	7
	Type	0 221 100 012/014	0 221 114 006	0 221 114 006	8
Voltage at terminal 15 (Earth) - with steady current	Volts	5,5	11	11	9
Ballast resistor	Ohms				10
Primary resistance at 20°C (68°F)	Ohms	1-1,4	3,6-4,1	3,6-4,1	11
Ignition voltage at load	Kv	8-11	8-11	8-11	12
IGNITION DISTRIBUTOR	Make	Bosch	Bosch	Bosch	13
	Type	0 231 137 009	0 231 137 009/029	0 231 115 073/082	14
Dwell angle	Degrees	44-50	44-50	44-50	15
Contact breaker gap	mm (in)	0,4 (0.015)	0,4 (0.015)	0,4 (0.015)	16
Condenser capacity	mfd	0,23-0,32	0,15-0,20	0,15-0,20	17
Firing order		1-4-3-2	1-4-3-2	1-4-3-2	18
IGNITION TIMING					19
Basic setting static	Degrees BTDC	7,5	7,5	7,5	20
Stroboscopic at cranking	Degrees BTDC				21
Stroboscopic	Degrees BTDC/rpm	7,5/800-900	7,5/800-900	7,5/800-900	22
CENTRIFUGAL ADVANCE	Without vacuum				23
Starts	C/S Degrees/rpm			0/1000-1250	24
Intermediate 1	C/S Degrees/rpm			11-16/1600	25
Intermediate 2	C/S Degrees/rpm			11-16/2100	26
Ends	C/S Degrees/rpm			21-29/3900	27
VACUUM ADVANCE					28
Range	C/S Degrees	23-28	23-28	8-12	29
Starts	mm (in)/Hg	4-11 (0.15-0.4)	4-11 (0.15-0.4)	50-100 (1.9-3.9)	30
Ends	mm (in)/Hg	62-65 (2.4-2.7)	62-65 (2.4-2.7)	230 (9)	31
VACUUM RETARD					32
Range	C/S Degrees				33
Starts	mm (in)/Hg				34
Ends	mm (in)/Hg				35
SPARK PLUGS	Make	Bosch	Bosch	Bosch	36
	Type	W 145 T1	W 145 T1	W 145 T1	37
Gap	mm (in)	0,7 (0.027)	0,7 (0.027)	0,7 (0.027)	38
BATTERY	Voltage/Capacity/Polarity	6/66/Neg.	12/36/Neg.	12/36/Neg.	39
STARTER MOTOR	Make	Bosch	Bosch	Bosch	40
	Type	EF (L) 6V 0.5 PS	EF (L) 12V 0.7 PS	EF (L) 12V 0.8 PS	41
Starting voltage	Volts	4.5	9	9	42
Lockdraw	Amps/Volts	440-500/3.5	315-330/7	315-330/7	43
GENERATOR	Make	Bosch	Bosch	Bosch	44
	Type	G (L) 7V 4517	G (L) 14V 30A20	G (L) 14V 30V20	45
Output	A/V/rpm - gen.	45/7/1700	30/14/2000	30/14/2000	46
REGULATOR	Make	Bosch	Bosch	Bosch	47
	Type	TA 7V 45A	VA 14V 30A	VA 14V 30A	48
Open circuit voltage	Volts	7.3-8	13.5-14.5	13.5-14.5	49
Cut-in voltage	Volts	6,2-6,8	12,4-13,1	14,4-13,1	50
Drop off voltage	Volts				51
Reverse current	Amps	2,0-5,5	2,0-7,5	2,0-7,5	52
Regulator voltage - Alternator	Volts				53



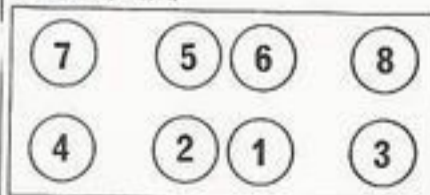
VW 1300
VW 1300 Automatic

MODEL

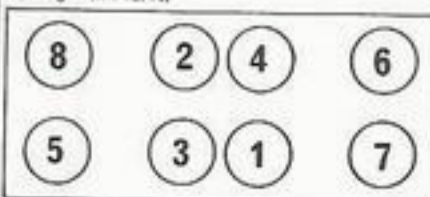
Year	Year	Year
54 1965-70	ENGINE	54
55 1/1300 (F)	Valve clearance - Inlet	55
56 0,15 (0.006)	- Exhaust	56
57 0,15 (0.006)	Compression pressure	57
58 6,5-9,5 (92-135)	Oil pressure	58
59 3 (42)	Radiator cap	59
60	Thermostat opens at	60
61 65-70 (149-167)	Fan belt size	61
62 9.5x900	Fan belt tension/deflection	62
63 15 (0.6)	ROLLER TEST	63
64	Brake horsepower at wheels	64
65	CARBURETTOR	65
66 Solex	Make	66
67 30 PICT	Type	67
68 1	Octane rating	68
69 800-900	Idle speed - manual	69
70	Idle speed - automatic-selector pos.	70
71 2-4 (1969-)	Exhaust emission	71
72 Pierburg	FUEL PUMP	72
73 VW7	Make	73
74 24 (42.2) Min. @ 3400	Delivery rate	74
75 0,24 (3.5)	Delivery pressure	75
76	FILLING CAPACITIES	76
77 2,5 (4.4)	Engine	77
78	Filter	78
79 2,5 (4.4)/3,0 (5.2) (Automatic)	Gearbox	79
80 3,6 (6.3)	Automatic	80
81	Differential	81
82	Cooling system	82
83 5,60-15	TYRES	83
84 1,1 (15)	Pressure - Front	84
85 1,7 (24)	- Rear	85
86	WHEEL ALIGNMENT DATA	86
87 1,8-5,4 (0.07-0.21)	Toe-in - Front	87
88	Toe-out	88
89 0°30'±20'	Camber	89
90 3°20'±1°	Castor	90
91 34±2/28-1	Lock angles - inner/outer wheel	91
92 5	King pin inclination	92
93	Toe-in - Rear	93
94	Toe-out	94
95	Camber	95
96	TIGHTENING TORQUE VALUES	96
97 1,0 (7.2)	Cylinder head Stage 1	97
98 3,2 (23)	Stage 2	98
99	Stage 3	99
100	Main bearings	100
101 3,3 (23)	Big end bearings	101
102 30,0 (216)	Flywheel	102
103 3,5 (27)	Spark plugs	103
104 12-13 (87-94)	Road wheels	104



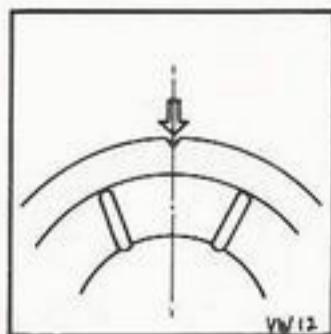
1,0 kgm (7,2 lb/ft)



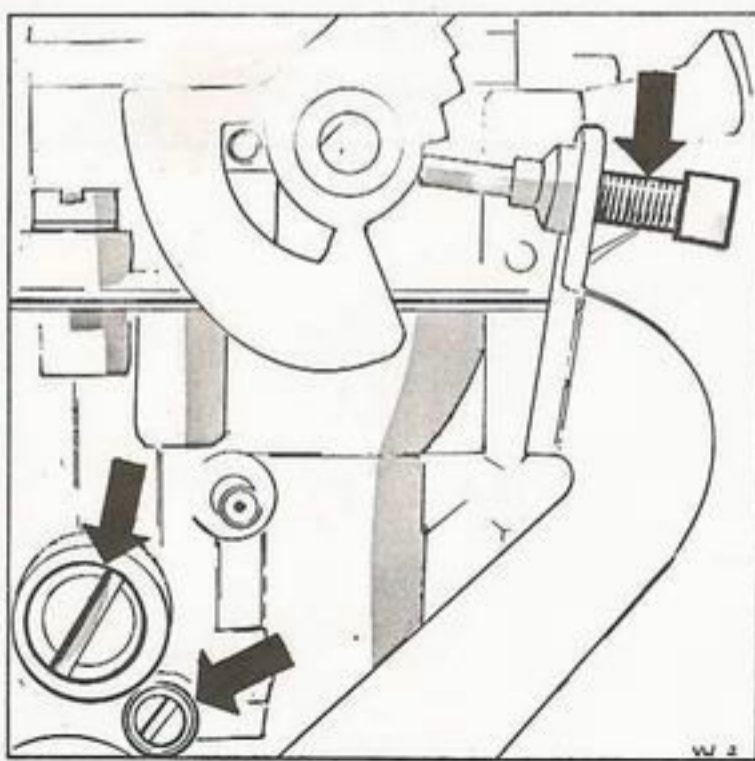
3,2 kgm (23 lb/ft)



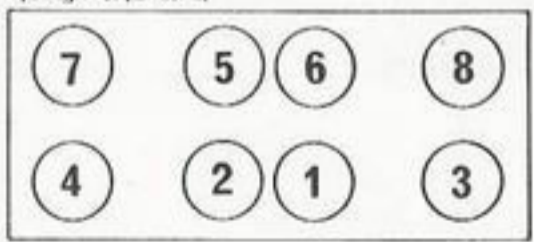
MODEL		VW 1300 VW 1302 VW 1303		VW 1300 Automatic VW 1302 Automatic VW 1303 Automatic	
Year		1	1970-		1
ENGINE	Type	2	1/1300 (AB)		2
Capacity/No of cylinders	cc	3	1285/4		3
Bore/Stroke	mm	4	77/69		4
Compression ratio	:1	5	7,5		5
Output	bhp/rpm	6	44/4100 DIN		6
IGNITION COIL	Make	7	Bosch		7
	Type	8	0 221 114 014		8
Voltage at terminal 15 (Earth) - with steady current	Volts	9	11		9
Ballast resistor	Ohms	10			10
Primary resistance at 20°C (68°F)	Ohms	11	3,6-4,1		11
Ignition voltage at load	Kv	12	8-11		12
IGNITION DISTRIBUTOR	Make	13	Bosch	1971-	Bosch
	Type	14	0 231 167 049	0 231 146 101	0 231 167 051 0 231 115 094
Dwell angle	Degrees	15	44-50	44-50	44-50 44-50
Contact breaker gap	mm (in)	16	0,4 (0.015)	0,4 (0.015)	0,4 (0.015) 0,4 (0.015)
Condenser capacity	mfd	17	0,15-0,20	0,15-0,20	0,15-0,20 0,15-0,20
Firing order		18	1-4-3-2	1-4-3-2	1-4-3-2 1-4-3-2
IGNITION TIMING		19			
Basic setting static	Degrees BTDC	20	[5 (*)]	7,5	[5 (*)] 7,5
Stroboscopic at cranking	Degrees BTDC	21			
Stroboscopic	Degrees BTDC/rpm	22	[5/800-900 (*)]	7,5/800-900	[5/800-900 (*)] 7,5/800-900
CENTRIFUGAL ADVANCE	Without vacuum	23			
Starts	C/S Degrees/rpm	24	0/1000-1250	0/1000-1250	0/1000-1250 0/1000-1250
Intermediate 1	C/S Degrees/rpm	25	6-12/1500	6-12/1500	12-15/1600 14-18/1800
Intermediate 2	C/S Degrees/rpm	26			12-16/2200
Ends	C/S Degrees/rpm	27	22-25/3800	22-25/3800	22-25/3800 24-28/4000
VACUUM ADVANCE		28			
Range	C/S Degrees	29	9-12	8-12	9-12 8-12
Starts	mm (in)/Hg	30	110-160 (4.3-6.2)	60-100 (2.3-4)	110-160 (4.3-6.2) 50-110 (1.9-4.3)
Ends	mm (in)/Hg	31	210-240 (8.2-9.4)	190-210 (7.4-7.8)	210-240 (7.4-7.8) 180-210 (7-8.2)
VACUUM RETARD		32			
Range	C/S Degrees	33	11-13		11-13
Starts	mm (in)/Hg	34	80-150 (3.1-5.9)		80-150 (3.1-5.9)
Ends	mm (in)/Hg	35	160-230 (6.2-9)		160-230 (6.2-9)
SPARK PLUGS	Make	36	Bosch		Bosch
	Type	37	W 145 T1		W 145 T1
Gap	mm (in)	38	0,7 (0.027)		0,7 (0.027)
BATTERY	Voltage/Capacity/Polarity	39	12/36/Neg.		12/36/Neg.
STARTER MOTOR	Make	40	Bosch		Bosch
	Type	41	EF (L) 12V 0,7 PS		EB (L) 12V 0,8 PS
Starting voltage	Volts	42	9		9
Lockdraw	Amps/Volts	43	250-350/6		320-365/7
GENERATOR	Make	44	Bosch		Bosch
	Type	45	G (L) 14V 30A20		G (L) 14V 30A20
Output	A/V/rpm - gen.	46	30/14/2000		30/14/2000
REGULATOR	Make	47	Bosch		Bosch
	Type	48	VA 14V30A		VA 14V30A
Open circuit voltage	Volts	49	13,8-14,8		13,8-14,8
Cut-in voltage	Volts	50	12,1-13,2		12,1-13,2
Drop off voltage	Volts	51			
Reverse current	Amps	52	2,6-6,5		2,6-6,5
Regulator voltage - Alternator	Volts	53			



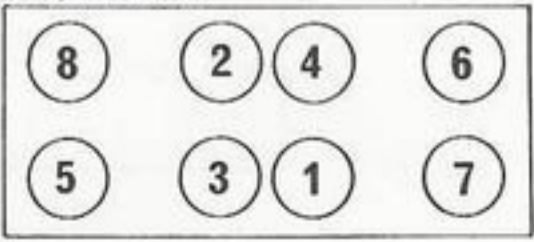
VW 1300 Automatic VW 1302 Automatic VW 1303 Automatic		MODEL	
54	1970-	Year	54
55	1/1300 (AB)	ENGINE	55
56	0,15 mm (0.006)	Valve clearance - Inlet	mm (in)
57	0,15 mm (0.006)	- Exhaust	mm (in)
58	6,5-9,5	Compression pressure	kg/cm ² (psi)
59	3 (42)	Oil pressure	kg/cm ² (psi)
60		Radiator cap	kg/cm ² (psi)
61	65-70 (149-167)	Thermostat opens at	°C (°F)
62	9,5x900	Fan belt size	mm (in)
63	15 (0.6)	Fan belt tension/deflection	mm (in)/kg (lb.)
64		ROLLER TEST	kmh (mph)/rpm/gear
65		Brake horsepower at wheels	bhp (kp)
66	Solex	CARBURETTOR	Make
67	31 PICT		Type
68	91°	Octane rating	
69	800-900	Idle speed - manual	rpm
70		Idle speed - automatic/selector pos.	rpm
71	2-4	Exhaust emission	CO%/rpm
72	Pierburg	FUEL PUMP	Make
73	VW15, 113 127 025		Type
74	24 (42.2) Min. @3400	Delivery rate	Ltr. (Imp Pt)/hr
75	0,24 (3.5)	Delivery pressure	kg/cm ² (psi)
76		FILLING CAPACITIES	
77	2,5 (4.4)	Engine	Ltr. (Imp Pints)
78		Filter	Ltr. (Imp Pints)
79	2,5 (4.4)/3.0 (5.2) (Automatic)	Gearbox	Ltr. (Imp Pints)
80	3,6 (6.3)	Automatic	Ltr. (Imp Pints)
81		Differential	Ltr. (Imp Pints)
82		Cooling system	Ltr. (Imp Pints)
83	5,60-15	TYRES	Standard size
84	1.1 (15)	Pressure - Front	kg/cm ² (psi)
85	1.7 (24)	- Rear	kg/cm ² (psi)
86		WHEEL ALIGNMENT DATA	
87	1,8-5,4 (0.07-0.21)	Toe-in - Front	mm (in)
88		Toe-out	mm (in)
89	0°30'±20'; 1302/1303-1°±20'-40'	Camber	Degrees
90	3°20'±1°	Castor	Degrees
91	34±2/28-1	Lock angles - inner/outer wheel	Degrees
92	5	King pin inclination	Degrees
93		Toe-in - Rear	mm (in)
94		Toe-out	mm (in)
95		Camber	Degrees
96		TIGHTENING TORQUE VALUES	
97		Cylinder head Stage 1	kgm (lb.ft.)
98	1,0 (7.2)	Stage 2	kgm (lb.ft.)
99	3,2 (23)	Stage 3	kgm (lb.ft.)
100		Main bearings	kgm (lb.ft.)
101	3,3 (23)	Big end bearings	kgm (lb.ft.)
102	30,0 (216)	Flywheel	kgm (lb.ft.)
103	3,5 (27)	Spark plugs	kgm (lb.ft.)
104	12-13 (87-94)	Road wheels	kgm (lb.ft.)



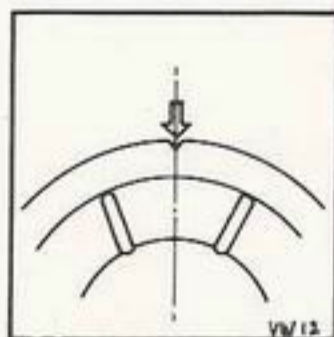
1,0 kgm (7,2 lb/ft)



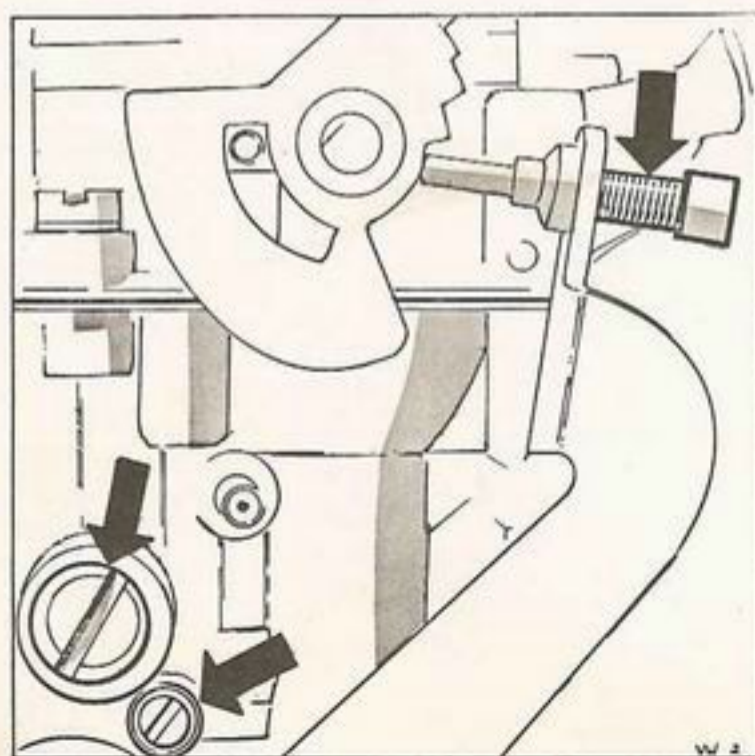
3,2 kgm (23 lb/ft)



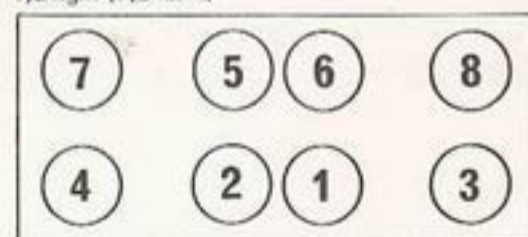
MODEL		VW 1300 S	VW 1302 S (1970-73)	VW 1303 S (1974-)	VW 1300 S Automatic	VW 1302 S Automatic (1970-73)	VW 1303 S Automatic (1974-)
Year		1	1970-	1970-	1970-	1970-	1970-
ENGINE	Type	2	1/1600 (AD/AS)	1/1600 (AD/AS)	1/1600 (AD/AS)	1/1600 (AD/AS)	1/1600 (AD/AS)
Capacity/No of cylinders	cc	3	1584/4	1584/4	1584/4	1584/4	1584/4
Bore/Stroke	mm	4	85,5/69	85,5/69	85,5/69	85,5/69	85,5/69
Compression ratio	:1	5	7,5	7,5	7,5	7,5	7,5
Output	bhp/rpm	6	50/4000 DIN	50/4000 DIN	50/4000 DIN	50/4000 DIN	50/4000 DIN
IGNITION COIL	Make	7	Bosch	Bosch	Bosch	Bosch	Bosch
	Type	8	0 221 114 014	0 221 114 014	0 221 114 014	0 221 114 014	0 221 114 014
Voltage at terminal 15 (Earth) with steady current	Volts	9	11	11	11	11	11
Ballast resistor	Ohms	10					
Primary resistance at 20°C (68°F)	Ohms	11	3,6-4,1	3,6-4,1	3,6-4,1	3,6-4,1	3,6-4,1
Ignition voltage at load	Kv	12	8-11	8-11	8-11	8-11	8-11
IGNITION DISTRIBUTOR	Make	13	Bosch	1971-	Bosch	1971-	1971-
	Type	14	0 231 167 049	0 231 146 101	0 231 167 051	0 231 115 094	0 231 115 094
Dwell angle	Degrees	15	44-50	44-50	44-50	44-50	44-50
Contact breaker gap	mm (in)	16	0,4 (0.015)	0,4 (0.015)	0,4 (0.015)	0,4 (0.015)	0,4 (0.015)
Condenser capacity	mfd	17	0,15-0,20	0,15-0,20	0,15-0,20	0,15-0,20	0,15-0,20
Firing order		18	1-4-3-2	1-4-3-2	1-4-3-2	1-4-3-2	1-4-3-2
IGNITION TIMING		19					
Basic setting static	Degrees BTDC	20	[5 (*)]	7.5	[5 (*)]	7.5	7.5
Stroboscopic at cranking	Degrees BTDC	21					
Stroboscopic	Degrees BTDC/rpm	22	[5/800-900 (*)]	7.5/800-900	[5/800-900 (*)]	7.5/800-900	7.5/800-900
CENTRIFUGAL ADVANCE	Without vacuum	23					
Starts	C/S Degrees/rpm	24	0/1000-1250	0/1050-1250	0/1000-1200	0/1000-1200	0/1000-1200
Intermediate 1	C/S Degrees/rpm	25	6-12/1500	6-12/1500	12-15/1600	12-15/1600	12-15/1600
Intermediate 2	C/S Degrees/rpm	26			12-16/2200	12-16/2200	12-16/2200
Ends	C/S Degrees/rpm	27	22-25/3800	22-25/3800	22-25/3800	22-25/3800	22-25/3800
VACUUM ADVANCE		28					
Range	C/S Degrees	29	9-12	8-12	9-12	8-12	8-12
Starts	mm (in)/Hg	30	110-160 (4.3-6.2)	60-100 (2.3-4)	110-160 (4.3-6.2)	60-100 (2.3-4)	60-100 (2.3-4)
Ends	mm (in)/Hg	31	210-240 (8.2-9.4)	200 (8)	210-140 (8.2-9.4)	200 (8)	200 (8)
VACUUM RETARD		32					
Range	C/S Degrees	33	11-13		11-13		
Starts	mm (in)/Hg	34	80-130 (3.1-5.9)		80-130 (3.1-5.1)		
Ends	mm (in)/Hg	35	160-230 (6.2-9)		160-230 (6.2-9)		
SPARK PLUGS	Make	36	Bosch	Bosch	Bosch	Bosch	Bosch
	Type	37	W 145 T1	W 145 T1	W 145 T1	W 145 T1	W 145 T1
Gap	mm (in)	38	0,7 (0.027)	0,7 (0.027)	0,7 (0.027)	0,7 (0.027)	0,7 (0.027)
BATTERY	Voltage/Capacity/Polarity	39	12/36/Neg.	12/36/Neg.	12/36/Neg.	12/36/Neg.	12/36/Neg.
STARTER MOTOR	Make	40	Bosch	Bosch	Bosch	Bosch	Bosch
	Type	41	EF (L) 12V 0,7 PS	EF (L) 12V 0,7 PS	EB (L) 12V 0,8 PS	EB (L) 12V 0,8 PS	EB (L) 12V 0,8 PS
Starting voltage	Volts	42	9	9	9	9	9
Lockdraw	Amps/Volts	43	250-350/6	250-350/6	320-365/7	320-365/7	320-365/7
GENERATOR	Make	44	Bosch	Bosch	Bosch	Bosch	Bosch
	Type	45	G (L) 14V 30A20	G (L) 14V 30A20	G (L) 14V 30A20	G (L) 14V 30A20	G (L) 14V 30A20
Output	A/V/rpm - gen.	46	30/14/2000	30/14/2000	30/14/2000	30/14/2000	30/14/2000
REGULATOR	Make	47	Bosch	Bosch	Bosch	Bosch	Bosch
	Type	48	VA 14V 30A	VA 14V 30A	VA 14V 30A	VA 14V 30A	VA 14V 30A
Open circuit voltage	Volts	49	13,8-14,8	13,8-14,8	13,8-14,8	13,8-14,8	13,8-14,8
Cut-in voltage	Volts	50	12,1-13,2	12,1-13,2	12,1-13,2	12,1-13,2	12,1-13,2
Drop off voltage	Volts	51					
Reverse current	Amps	52	2,5-6,5	2,5-6,5	2,5-6,5	2,5-6,5	2,5-6,5
Regulator voltage - Alternator	Volts	53					



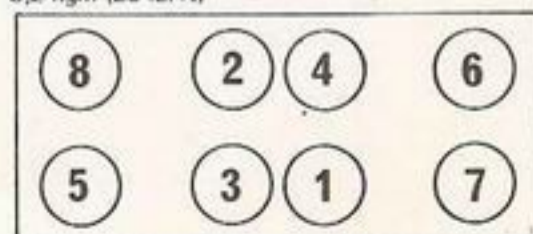
VW 1300 S Automatic VW 1302 S Automatic VW 1303 S Automatic		MODEL	Year	54
54	1970-			
55	1/1600 (AD/AS)	ENGINE		55
56	0,15 (0.006)	Valve clearance - Inlet	mm (in)	56
57	0,15 (0.006)	- Exhaust	mm (in)	57
58	6-10 (85-142)	Compression pressure	kg/cm ² (psi)	58
59	3 (42)	Oil pressure	kg/cm ² (psi)	59
60		Radiator cap	kg/cm ² (psi)	60
61	65-70 (149-167)	Thermostat opens at	°C (°F)	61
62	9,5x900	Fan belt size	mm (in)	62
63	15 (0.6)	Fan belt tension/deflection	mm (in)/kg (lb.)	63
64		ROLLER TEST	kmh (mph)/rpm/gear	64
65		Brake horsepower at wheels	bhp (kp)	65
66		CARBURETTOR	Make	66
67	34 PICT		Type	67
68	91	Octane rating		68
69	800-900	Idle speed - manual	rpm	69
70		Idle speed - automatic-selector pos.	rpm	70
71	2-4	Exhaust emission	CO%/rpm	71
72	Pferburg	FUEL PUMP	Make	72
73	113 127 025D		Type	73
74	24 (42.2) Min. @ 3400	Delivery rate	Ltr. (Imp Pt)/hr	74
75	0,24 (3.5)	Delivery pressure	kg/cm ² (psi)	75
76		FILLING CAPACITIES		76
77	2,5 (4.4)	Engine	Ltr. (Imp Pints)	77
78		Filter	Ltr. (Imp Pints)	78
79	2,5 (4.4)/3,0 (5.2) (Automatic)	Gearbox	Ltr. (Imp Pints)	79
80	3,6 (6.3)	Automatic	Ltr. (Imp Pints)	80
81		Differential	Ltr. (Imp Pints)	81
82		Cooling system	Ltr. (Imp Pints)	82
83	5,60-15	TYRES	Standard size	83
84	1,1 (15)	Pressure - Front	kg/cm ² (psi)	84
85	1,7 (24)	- Rear	kg/cm ² (psi)	85
86		WHEEL ALIGNMENT DATA		86
87	1,8 5,4 (0.07-0.21)	Toe-in - Front	mm (in)	87
88		Toe-out	mm (in)	88
89	0°30'±20'; 1302S/1303S - 1° + 20' - 40'	Camber	Degrees	89
90	3°20'±1° 2° ± 35'	Castor	Degrees	90
91	34±2/28-1 40/35	Lock angles - inner/outer wheel	Degrees	91
92	5 12°30'	King pin inclination	Degrees	92
93		Toe-in - Rear	mm (in)	93
94		Toe-out	mm (in)	94
95		Camber	Degrees	95
96		TIGHTENING TORQUE VALUES		96
97		Cylinder head Stage 1	kgm (lb.ft.)	97
98	1,0 (7.2)	Stage 2	kgm (lb.ft.)	98
99	3,2 (23)	Stage 3	kgm (lb.ft.)	99
100		Main bearings	kgm (lb.ft.)	100
101	3,3 (23)	Big end bearings	kgm (lb.ft.)	101
102	30,0 (216)	Flywheel	kgm (lb.ft.)	102
103	3,5 (27)	Spark plugs	kgm (lb.ft.)	103
104	12-13 (87-94)	Road wheels	kgm (lb.ft.)	104



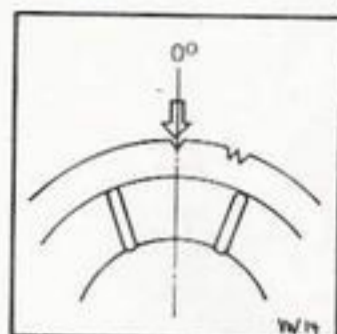
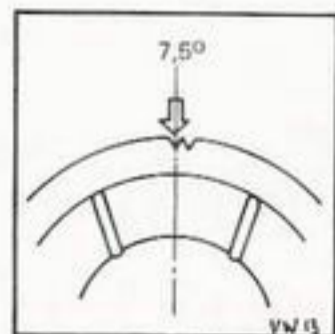
1,0 kgm (7,2 lb/ft)



3,2 kgm (23 lb/ft)



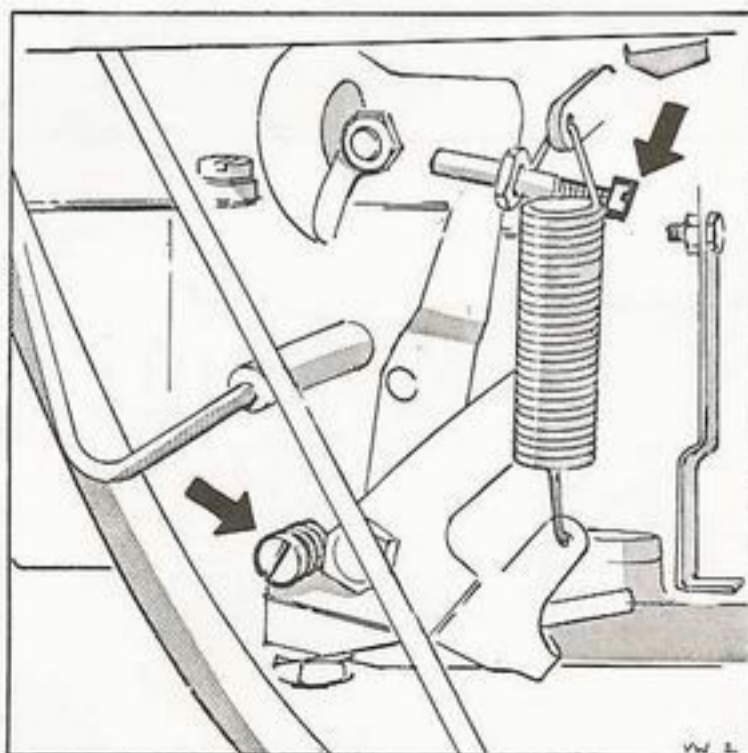
MODEL		VW 1500 (6 Volt)	VW 1500 (12 Volt)	VW 1500 Automatic (12 Volt)	
Year		1966-70	1966-70	1967-70	
ENGINE	Type	1/1500 (H)	1/1500 (H)	1/1500 (H)	
Capacity/No of cylinders	cc	1493/4	1493/4	1493/4	
Bore/Stroke	mm	83/69	83/69	83/69	
Compression ratio	:1	7,5	7,5	7,5	
Output	bhp/rpm	44/4400 DIN	44/4400 DIN	44/4400 DIN	
IGNITION COIL	Make	Bosch	Bosch	Bosch	
	Type	0 221 100 014	0 221 114 006	0 221 114 006	
Voltage at terminal 15 (Earth)					
- with steady current	Volts	5,5	11	11	
Ballast resistor	Ohms				
Primary resistance at 20°C (68°F)	Ohms	1-1,4	3,6-4,1	3,6-4,1	
Ignition voltage at load	Kv	8-11	8-11	8-11	
IGNITION DISTRIBUTOR	Make	Bosch	Bosch	Bosch	
	Type	0 231 137 009	0 231 137 009	0 231 115 056	
Dwell angle	Degrees	44-50	44-50	44-50	
Contact breaker gap	mm (in)	0,4 (0.015)	0,4 (0.015)	0,4 (0.015)	
Condenser capacity	mfd	0,23-0,32	0,23-0,32	0,23-0,32	
Firing order		1-4-3-2	1-4-3-2	1-4-3-2	
IGNITION TIMING					
Basic setting static	Degrees BTDC	7,5	7,5	0	1969- 7,5
Stroboscopic at cranking	Degrees BTDC				
Stroboscopic	Degrees BTDC/rpm	7,5/800-900	7,5/800-900	0/800-900	7,5/800-900
CENTRIFUGAL ADVANCE	Without vacuum				
Starts	C/S Degrees/rpm			0/1000-1200	0/1000-1200
Intermediate 1	C/S Degrees/rpm			19-23/1600	11-16/1600
Intermediate 2	C/S Degrees/rpm			19-23/2100	11-16/2100
Ends	C/S Degrees/rpm			30-33/3800	24-29/3900
VACUUM ADVANCE					
Range	C/S Degrees	23-28	23-28	9-12	8-13
Starts	mm (in)/Hg	3-12 (0.12-0.5);	4-11 (0.15-0.43)	50-100 (1.9-3.9)	40-110 (1.5-4.3)
Ends	mm (in)/Hg	62-65 (2.4-2.5)	62-65 (2.4-2.5)	230 (9)	250 (9.8)
VACUUM RETARD					
Range	C/S Degrees				
Starts	mm (in)/Hg				
Ends	mm (in)/Hg				
SPARK PLUGS	Make	Bosch	Bosch	Bosch	
	Type	W 145 T1	W 145 T1	W 145 T1	
Gap	mm (in)	0,7 (0.027)	0,7 (0.027)	0,7 (0.027)	
BATTERY	Voltage/Capacity/Polarity	6 /66/Neg.	12/36/Neg.	12/36/Neg.	
STARTER MOTOR	Make	Bosch	Bosch	Bosch	
	Type	EF (L) 6V 0.5PS	EF (L) 12V 0.7PS	EB (L) 12V 0,8 PS	
Starting voltage	Volts	4,5	9	9	
Lockdraw	Amps/Volts	440-500/3,5	315-330/7		
GENERATOR	Make	Bosch	Bosch	Bosch	
	Type	G (L) 7V 45A17	G (L) 14V 30A20	G (L) 14V 30A20	
Output	A/V/rpm - gen.	30/14/2000	30/14/2000	30/14/2000	
REGULATOR	Make	Bosch	Bosch	Bosch	
	Type	TA 7V 45A	V 14V 30A	VA 14V 30A	
Open circuit voltage	Volts	7,3-8	13,5-14,5	13,5-14,5	
Cut-in voltage	Volts	6,2-6,8	12,4-13,1	12,4-13,1	
Drop off voltage	Volts				
Reverse current	Amps	2-5,5	2,5-5,5	2-7,5	
Regulator voltage - Alternator	Volts				



VW 1500
VW 1500 Automatic

MODEL

Year	Year
54 1966-70	54
55 1/1500 (H)	ENGINE 55
56 0,15 (0.006)	Valve clearance - Inlet mm (in) 56
57 0,15 (0.006)	- Exhaust mm (in) 57
58 7-10 (99-142)	Compression pressure kg/cm ² (psi) 58
59 3 (42)	Oil pressure kg/cm ² (psi) 59
60	Radiator cap kg/cm ² (psi) 60
61 65-70 (149-167)	Thermostat opens at °C (°F) 61
62 9.5x900	Fan belt size mm (in) 62
63 15 (0.6)	Fan belt tension/deflection mm (in)/kg (lb.) 63
64	ROLLER TEST kmh (mph)/rpm/gear 64
65	Brake horsepower at wheels bhp (kp) 65
66 Solex	CARBURETTOR Make 66
67 30 PICT	Type 67
68 91	Octane rating 68
69 800-900	Idle speed - manual rpm 69
70	Idle speed - automatic-selector pos. rpm 70
71 2-4 (1969-)	Exhaust emission CO%rpm 71
72 Pierburg	FUEL PUMP Make 72
73 VW7	Type 73
74 24 (42.2) Min. @ 3400	Delivery rate Ltr. (Imp Pt)/hr 74
75 0,24 (3.5)	Delivery pressure kg/cm ² (psi) 75
76	FILLING CAPACITIES 76
77 2,5 (4.4)	Engine Ltr. (Imp Pints) 77
78	Filter Ltr. (Imp Pints) 78
79 2,5 (4.4)/3,0 (5.2) (Automatic)	Gearbox Ltr. (Imp Pints) 79
80 3,6 (6.3)	Automatic Ltr. (Imp Pints) 80
81	Differential Ltr. (Imp Pints) 81
82	Cooling system Ltr. (Imp Pints) 82
83 5,60-15	TYRES Standard size 83
84 1.1 (15)	Pressure - Front kg/cm ² (psi) 84
85 1,7 (24)	- Rear kg/cm ² (psi) 85
86	WHEEL ALIGNMENT DATA 86
87 1,8-5,4 (0.07-0.21)	Toe-in - Front mm (in) 87
88	Toe-out mm (in) 88
89 0°30'±20'	Camber Degrees 89
90 3°20'±1°	Castor Degrees 90
91 34±2/28-1	Lock angles - inner/outer wheel Degrees 91
92 5	King pin inclination Degrees 92
93	Toe-in - Rear mm (in) 93
94	Toe-out mm (in) 94
95	Camber Degrees 95
96	TIGHTENING TORQUE VALUES 96
97	Cylinder head Stage 1 kgm (lb.ft.) 97
98 1,0 (7.2)	Stage 2 kgm (lb.ft.) 98
99 3,2 (23)	Stage 3 kgm (lb.ft.) 99
100	Main bearings kgm (lb.ft.) 100
101 3,3 (23)	Big end bearings kgm (lb.ft.) 101
102 30,0 (216)	Flywheel kgm (lb.ft.) 102
103 3,5 (27)	Spark plugs kgm (lb.ft.) 103
104 12-13 (87-94)	Road wheels kgm (lb.ft.) 104



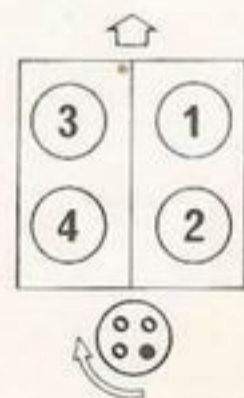
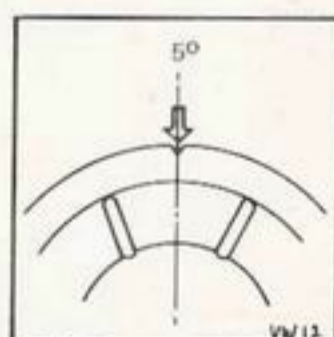
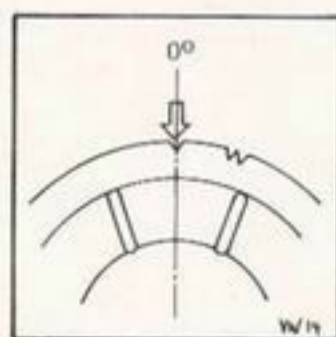
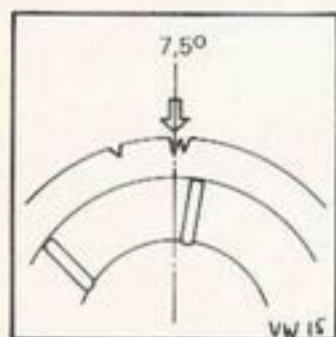
1,0 kgm (7,2 lb/ft)



3,2 kgm (23 lb/ft)



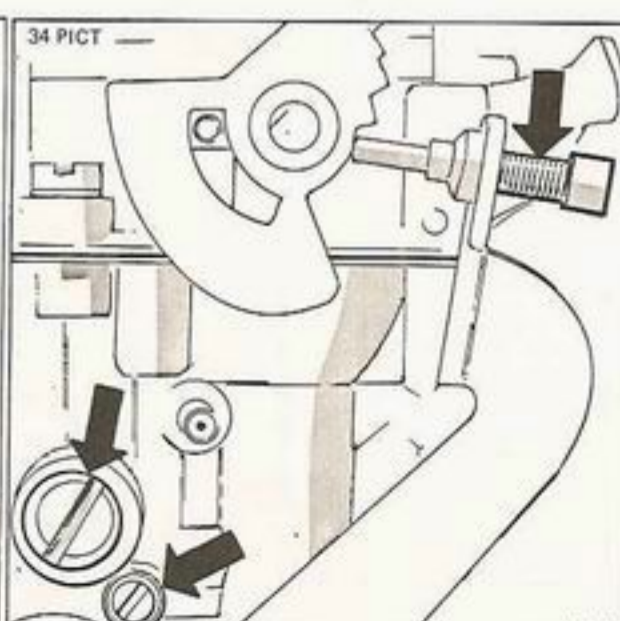
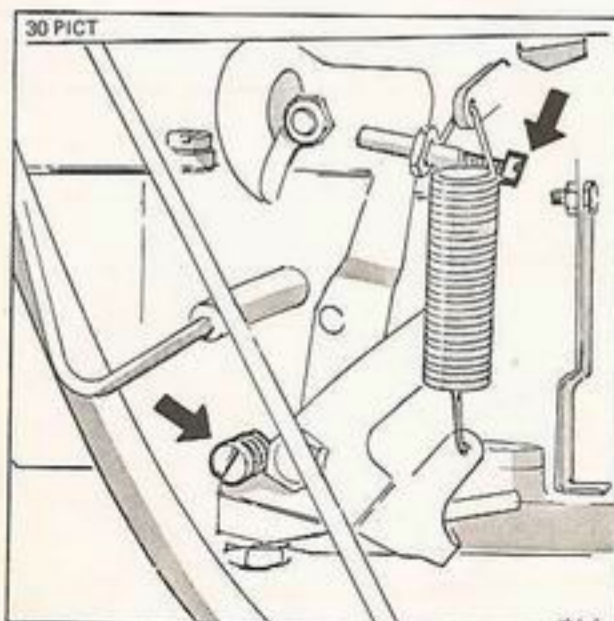
MODEL		VW Transporter 1500	VW Transporter 1600 (47 PS)	VW Transporter 1600 (50 PS)	
Year		1 1965-67	1967-69	1970-71	1
ENGINE	Type	2 2/1500 (H/L)	2/1600 (B)	2/1600 (AD)	2
Capacity/No of cylinders	cc	3 1493/4	1584/4	1584/4	3
Bore/Stroke	mm	4 83/69	85,5/69	85,5/69	4
Compression ratio	:1	5 7	7,7;1968-7,7	7,7	5
Output	bhp/rpm	6 44/4400 DIN	47/4000 DIN	50/4000 DIN	6
IGNITION COIL	Make	7 Bosch	Bosch	Bosch	7
	Type	8 0 221 114 006	0 221 114 008	0 221 114 014	8
Voltage at terminal 15 (Earth)					
- with steady current	Volts	9 11	11	11	9
Ballast resistor	Ohms	10			10
Primary resistance at 20°C (68°F)	Ohms	11 3,6-4,1	3,6-4,1	3,6-4,1	11
Ignition voltage at load	Kv	12 8-11	8-11	8-11	12
IGNITION DISTRIBUTOR	Make	13 Bosch	Bosch	Bosch	13
	Type	14 0 231 137 011	0 231 137 027	VW 113 905 205 AJ	14
Dwell angle	Degrees	15 44-50	44-50	44-50	15
Contact breaker gap	mm (in)	16 0,4 (0.015)	0,4 (0.015)	0,4 (0.015)	16
Condenser capacity	mfd	17 0,23-0,32	0,15-0,20	0,15-0,20	17
Firing order		18 1-4-3-2	1-4-3-2	1-4-3-2	18
IGNITION TIMING		19			19
Basic setting static	Degrees BTDC	20 7,5	0	[5 (*)]	20
Stroboscopic at cranking	Degrees BTDC	21			21
Stroboscopic	Degrees BTDC/rpm	22 7,5/800-900	0/800-900	[5/800-900 (*)]	22
CENTRIFUGAL ADVANCE	Without vacuum	23			23
Starts	C/S Degrees/rpm	24		[0/1000-1250]	24
Intermediate 1	C/S Degrees/rpm	25		[6-12/1500]	25
Intermediate 2	C/S Degrees/rpm	26			26
Ends	C/S Degrees/rpm	27		[22-25/3800]	27
VACUUM ADVANCE		28			28
Range	C/S Degrees	29 23-28	32-35	9-12	29
Starts	mm (in)/Hg	30 10-21 (0.39-0.82)	4-8 (0.15-0.31)	110-160 (4.3-6.2)	30
Ends	mm (in)/Hg	31 80-84 (3.1-3.3)	80 (3.1)	210-260 (8.2-10)	31
VACUUM RETARD		32			32
Range	C/S Degrees	33		11-13	33
Starts	mm (in)/Hg	34		80-130 (3.1-5.1)	34
Ends	mm (in)/Hg	35		160-230 (6.2-9)	35
SPARK PLUGS	Make	36 Bosch	Bosch	Bosch	36
	Type	37 W 145T1	W 145T1	W 145T1	37
Gap	mm (in)	38 0,7 (0.027)	0,7 (0.027)	0,7 (0.027)	38
BATTERY	Voltage/Capacity/Polarity	39 6/77/Neg.	12/45/Neg.	12/45/Neg.	39
STARTER MOTOR	Make	40 Bosch	Bosch	Bosch	40
	Type	41 GF(L)6V0,6PS	EF(L)12V0,7PS	EF(L)12V0,7PS	41
Starting voltage	Volts	42 4,5	9	9	42
Lockdraw	Amps/Volts	43 450-520/3,5	315-330/7	315-330/7	43
GENERATOR	Make	44 Bosch	Bosch	Bosch	44
	Type	45 G(L)7V45A17	G(L)14V30A20	G(L)14V30A20	45
Output	A/V/rpm - gen.	46 45/7/2000	30/14/2000	30/14/2000	46
REGULATOR	Make	47 Bosch	Bosch	Bosch	47
	Type	48 TA 7V 45A	VA 14V 30A	VA 14V 30A	48
Open circuit voltage	Volts	49 7,3-8,0	13,5-14,5	13,5-14,5	49
Cut-in voltage	Volts	50 6,2-6,8	12,4-13,1	12,4-13,1	50
Drop off voltage	Volts	51			51
Reverse current	Amps	52 2-5,5	2,5-5,5	2-7,5	52
Regulator voltage - Alternator	Volts	53			53



VW Transporter 1500
VW Transporter 1600

MODEL

54	1965-71	Year	54
55	2/1500 (H/L);2/1600 (B/AD)	ENGINE	55
56	0,15 (0.006)	Valve clearance - Inlet	mm (in)
57	0,15 (0.006)	- Exhaust	mm (in)
58	7-10 (99-142)	Compression pressure	kg/cm ² (psi)
59	3 (42)	Oil pressure	kg/cm ² (psi)
60		Radiator cap	kg/cm ² (psi)
61	65-70 (149-167)	Thermostat opens at	°C (°F)
62	9,5 x 900	Fan belt size	mm (in)
63	15 (0.6)	Fan belt tension/deflection	mm (in)/kg (lb.)
64		ROLLER TEST	kmh (mph)/rpm/gear
65		Brake horsepower at wheels	bhp (kp)
66	Solex	CARBURETTOR	Make
67	30 PICT/34PICT		Type
68	91	Octane rating	
69	800-900	Idle speed - manual	rpm
70		Idle speed - automatic/selector pos.	rpm
71	2-4	Exhaust emission	CO%/rpm
72	Pierburg	FUEL PUMP	Make
73	VW3		Type
74		Delivery rate	Ltr. (Imp Pt)/hr
75	0,24 (3.5)	Delivery pressure	kg/cm ² (psi)
76		FILLING CAPACITIES	
77	2,5 (4.4)	Engine	Ltr. (Imp Pints)
78		Filter	Ltr. (Imp Pints)
79	2,5 (4.4)	Gearbox	Ltr. (Imp Pints)
80		Automatic	Ltr. (Imp Pints)
81		Differential	Ltr. (Imp Pints)
82		Cooling system	Ltr. (Imp Pints)
83	700-14	TYRES	Standard size
84	2,0 (28)	Pressure - Front	kg/cm ² (psi)
85	2,5 (35)	- Rear	kg/cm ² (psi)
86		WHEEL ALIGNMENT DATA	
87	0-3,3 (0-0.12)	Toe-in - Front	mm (in)
88		Toe-out	mm (in)
89	0° 40' ± 20'	Camber	Degrees
90	3° ± 40'	Castor	Degrees
91	32/24	Lock angles - inner/outer wheel	Degrees
92	5	King pin inclination	Degrees
93		Toe-in - Rear	mm (in)
94		Toe-out	mm (in)
95		Camber	Degrees
96		TIGHTENING TORQUE VALUES	
97		Cylinder head Stage 1	kgm (lb.ft.)
98	1,0 (7.2)	Stage 2	kgm (lb.ft.)
99	3,2 (23)	Stage 3	kgm (lb.ft.)
100		Main bearings	kgm (lb.ft.)
101	3,3 (23)	Big end bearings	kgm (lb.ft.)
102	35 (243)	Flywheel	kgm (lb.ft.)
103	3,5 (27)	Spark plugs	kgm (lb.ft.)
104	12-13 (87-94)	Road wheels	kgm (lb.ft.)



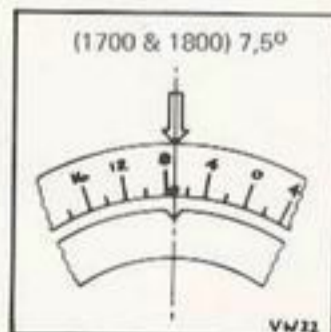
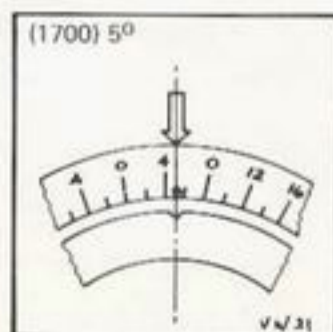
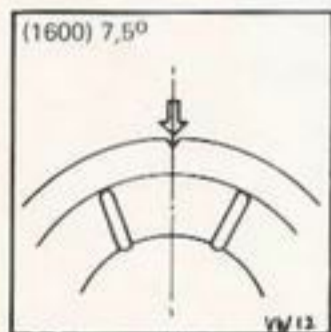
1,0 kgm (7,2 lb/ft)

7	5	6	8
4	2	1	3

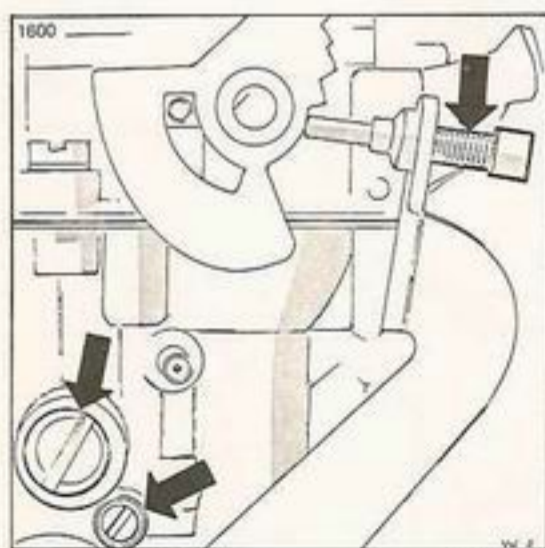
3,2 kgm (23 lb/ft)

8	2	4	6
5	3	1	7

MODEL		VW Transporter 1600 (50 PS)	VW Transporter 1700	VW Transporter 1700 & Automatic	VW Transporter 1800 & Automatic	
Year		1 1971-	1971-72	1972-74	1974-	1
ENGINE	Type	2 2/1600 (AD)	2/1700 (CA)	2/1700 (CA/CE)	2/1800 (AP)	2
Capacity/No of cylinders	cc	3 1584/4	1679/4	1679/4	1795/4	3
Bore/Stroke	mm	4 85,5/69	90/66	90/66	93/66	4
Compression ratio	:1	5 7,7	7,3	7,3	7,3	5
Output	bhp/rpm	6 50/4000 DIN	66/4800 DIN	Auto-62/4200 DIN	68/4200 DIN	6
IGNITION COIL	Make	7 Bosch	Bosch	Bosch	Bosch	7
	Type	8 0 221 114 014	0 221 102 076	0 221 102 076	0 221 102 076	8
Voltage at terminal 15 (Earth) - with steady current	Volts	9 11	11	11	11	9
Ballast resistor	Ohms	10				10
Primary resistance at 20°C (68°F)	Ohms	11 3,6-4,1	2,9-3,4	2,9-3,4	2,9-3,4	11
Ignition voltage at load	Kv	12 8-11	10-14	10-14	10-14	12
IGNITION DISTRIBUTOR	Make	13 Bosch	Bosch	Bosch	Bosch	13
	Type	14 VW 211 905 205 S	VW 021 905 205 E	VW 021 905 205 G	VW 021 905 205 G	14
Dwell angle	Degrees	15 44-50	44-50	44-50	44-50	15
Contact breaker gap	mm (in)	16 0,4 (0.015)	0,4 (0.015)	0,4 (0.015)	0,4 (0.015)	16
Condenser capacity	mfd	17 0,15-0,20	0,15-0,20	0,15-0,20	0,15-0,20	17
Firing order		18 1-4-3-2	1-4-3-2	1-4-3-2	1-4-3-2	18
IGNITION TIMING		19				19
Basic setting static	Degrees BTDC	20 7,5	[5 (*)]	7,5	7,5	20
Stroboscopic at cranking	Degrees BTDC	21				21
Stroboscopic	Degrees BTDC/rpm	22 7,5/800-900	[5/800-900 (*)]	7,5/800-900	7,5/800-900	22
CENTRIFUGAL ADVANCE	Without vacuum	23				23
Starts	C/S Degrees/rpm	24 0/1050-1250	[0/1050-1250]	0/1000-1200	0/1000-1200	24
Intermediate 1	C/S Degrees/rpm	25 6-12/1500	[13-16/2000]	9-14/1600	9-14/1600	25
Intermediate 2	C/S Degrees/rpm	26		16-19/2500	16-19/2500	26
Ends	C/S Degrees/rpm	27 22-25/3800	[23-26/3600]	21-25/3400	21-25/3400	27
VACUUM ADVANCE		28				28
Range	C/S Degrees	29 8-12	8-12	8-12	8-12	29
Starts	mm (in)/Hg	30 60-100 (2,3-4)	80-110 (3,1-4,3)	80-110 (3,1-4,3)	80-110 (3,1-4,3)	30
Ends	mm (in)/Hg	31 200 (7.9)	200 (7.9)	200 (7.9)	200 (7.9)	31
VACUUM RETARD		32				32
Range	C/S Degrees	33	11-15			33
Starts	mm (in)/Hg	34	80-110 (3,1-4,3)			34
Ends	mm (in)/Hg	35	150-170 (5,9-6,6)			35
SPARK PLUGS	Make	36 Bosch	Bosch	Bosch	Bosch	36
	Type	37 W 145 T1	W 145 T2	W 145 T2	W 145 T2	37
Gap	mm (in)	38 0,7 (0.027)	0,7 (0.027)	0,7 (0.027)	0,7 (0.027)	38
BATTERY	Voltage/Capacity/Polarity	39 12/45/Neg.	12/45/Neg.	12/45/Neg.	12/45/Neg.	39
STARTER MOTOR	Make	40 Bosch	Bosch	Bosch	Bosch	40
	Type	41 EF (L) 12V 0,7 PS	EF (L) 12V 0,7 PS	EF(L) 12V0,7/Auto.0,8PS	EF(L) 12V 0,7/Auto.0,8 PS	41
Starting voltage	Volts	42 9	9	9	9	42
Lockdraw	Amps/Volts	43 250-350/6	250-350/6	250-350/6	250-350/6	43
GENERATOR	Make	44 Bosch	Bosch	Bosch	Bosch	44
	Type	45 G (L) 14V 30A 20	K1 (RL) 14V 55A 22	K1 (RL) 14V 55A 22	K1 (RL) 14V 55A 22	45
Output	A/V/rpm - gen.	46 30/14/2000	55/14/6000	55/14/6000	55/14/6000	46
REGULATOR	Make	47 Bosch	Bosch	Bosch	Bosch	47
	Type	48 VA 14V 30A	AD1/14V	AD1/14V	AD1/14V	48
Open circuit voltage	Volts	49 13,8-14,8				49
Cut-in voltage	Volts	50 12,1-13,2				50
Drop off voltage	Volts	51				51
Reverse current	Amps	52 2,5-6,5				52
Regulator voltage - Alternator	Volts	53	13,9-14,8	13,9-14,8	13,9-14,8	53

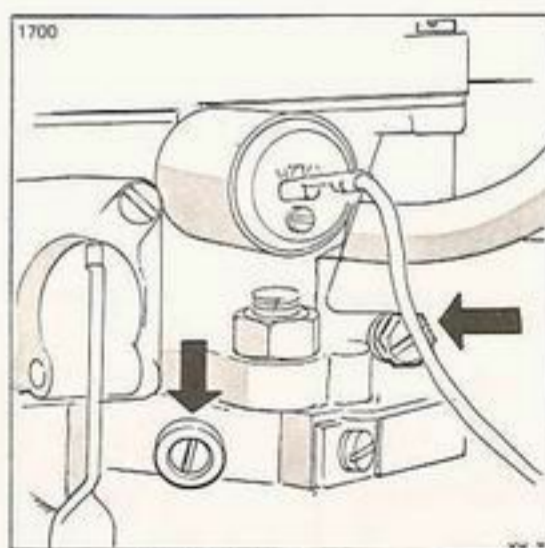


VW Transporter 1600		VW Transporter 1700 & 1800/Automatic		MODEL
54	1971-	1971-		Year
55	2/1600 (AD)	2/1700 (CA/CE); 2/1800 (AP)		ENGINE
56	0,15 (0.006)	0,15 (0.006)		Valve clearance - Inlet mm (in)
57	0,15 (0.006)	0,15 (0.006)		- Exhaust mm (in)
58	7-10 (99-142)	6-9,5 (85-135)		Compression pressure kg/cm ² (psi)
59	3 (42)	3 (42)		Oil pressure kg/cm ² (psi)
60				Radiator cap kg/cm ² (psi)
61	65-70 (149-167)	65-70 (149-167)		Thermostat opens at °C (°F)
62	9,5 x 900	9,5 x 965		Fan belt size mm (in)
63	15 (0.6)	15 (0.6)		Fan belt tension/deflection mm (in)/kg (lb.)
64				ROLLER TEST kmh (mph)/rpm/gear
65				Brake horsepower at wheels bhp (kp)
66	Solex	Solex		CARBURETTOR Make
67	34 PICT	34 PDSIT		Type
68	91	91		Octane rating
69	800-900	800-900		Idle speed - manual rpm
70		900-1000		Idle speed - automatic/selector pos. rpm
71	2-4	2-4		Exhaust emission CO%rpm
72	Pierburg	Pierburg		FUEL PUMP Make
73	113 127 025D (1972)			Type
74				Delivery rate Ltr. (Imp Pt)/hr
75	0,24 (3.5)	0,24 (3.5)		Delivery pressure kg/cm ² (psi)
76				FILLING CAPACITIES
77	2,5 (4.4)	3,0 (5.2)		Engine Ltr. (Imp Pints)
78		0,5 (0.8)		Filter Ltr. (Imp Pints)
79	2,5 (4.4)	2,0 (3.5)		Gearbox Ltr. (Imp Pints)
80		3,0 (5.2)		Automatic Ltr. (Imp Pints)
81		1,0 (1.75) (Automatic)		Differential Ltr. (Imp Pints)
82				Cooling system Ltr. (Imp Pints)
83	700-14	700-14		TYRES Standard size
84	2,0 (28)	2,0 (28)		Pressure - Front kg/cm ² (psi)
85	2,5 (35)	2,5 (35)		- Rear kg/cm ² (psi)
86				WHEEL ALIGNMENT DATA
87	0-3,3 (0-0.12)	0-3,3 (0-0.12)		Toe-in - Front mm (in)
88				Toe-out mm (in)
89	0°40' ± 20'	0°40' ± 20'		Camber Degrees
90	3° ± 40'	3° ± 40'		Castor Degrees
91	32/24	32/34		Lock angles - inner/outer wheel Degrees
92	5	5		King pin inclination Degrees
93				Toe-in - Rear mm (in)
94				Toe-out mm (in)
95				Camber Degrees
96				TIGHTENING TORQUE VALUES
97				Cylinder head Stage 1 kgm (lb.ft.)
98	1,0 (7.2)	1,0 (7.2)		Stage 2 kgm (lb.ft.)
99	3,2 (23)	3,2 (23)		Stage 3 kgm (lb.ft.)
100				Main bearings kgm (lb.ft.)
101	3,3 (23)	3,3 (23)		Big end bearings kgm (lb.ft.)
102	35 (243)	11 (79)		Flywheel kgm (lb.ft.)
103	3,5 (27)	3,6 (27)		Spark plugs kgm (lb.ft.)
104	12-13 (87-94)	12-13 (87-94)		Road wheels kgm (lb.ft.)



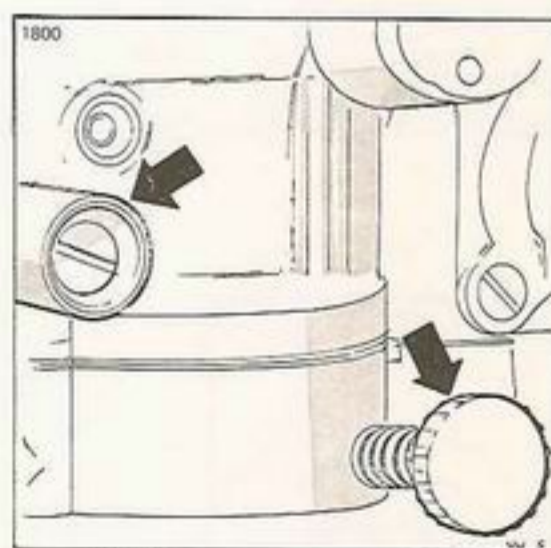
1,0 kgm (7.2 lb/ft)

1600

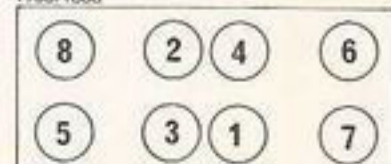


3,2 kgm (23 lb/ft)

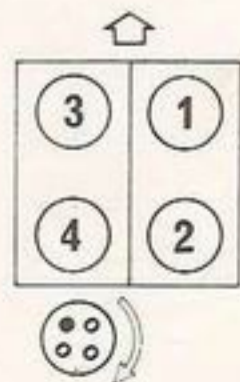
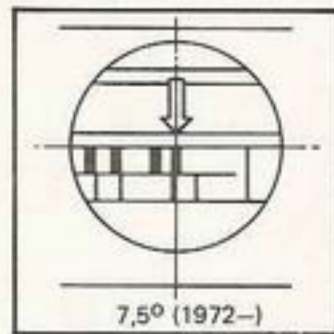
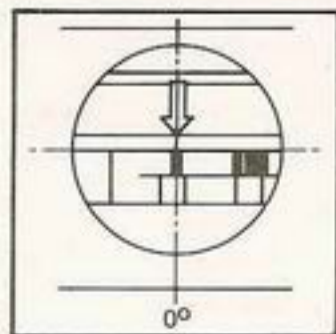
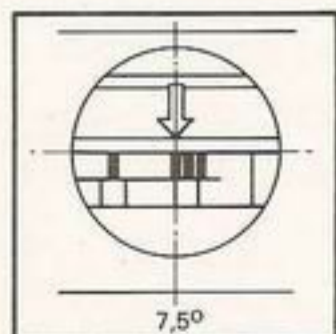
1600



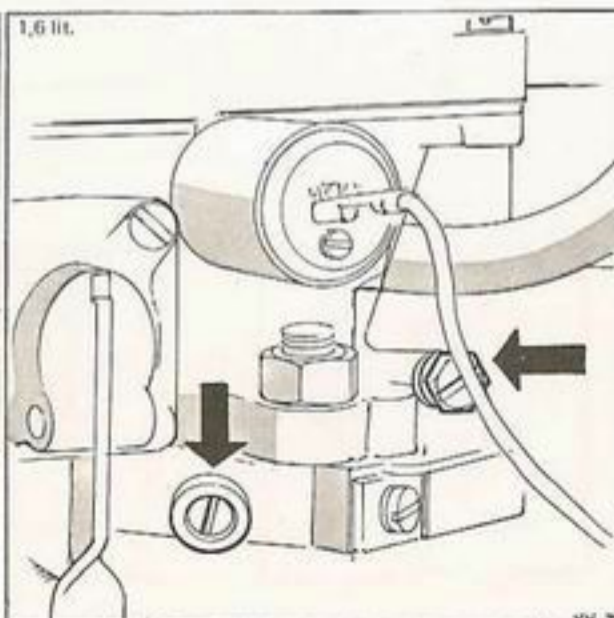
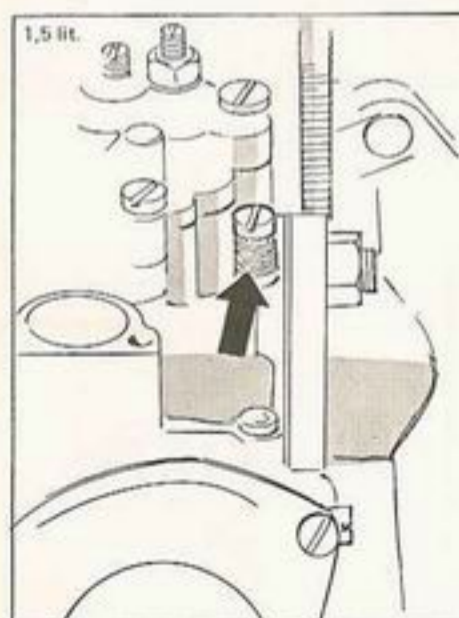
1700/1800



MODEL		VW 1600 (1.5)	VW 1600 (1.6)	
Year		1966-74	1965-74	1
ENGINE	Type	3/1600 (K)	3/1600 (T)	2
Capacity/No of cylinders	cc	1493/4	1584/4	3
Bore/Stroke	mm	83/69	85,5/69	4
Compression ratio	:1	7,5	7,7	5
Output	bhp/rpm	45/3800 DIN	54/4000 DIN	6
IGNITION COIL	Make	Bosch	Bosch	7
	Type	0 221 114 008/014	0 221 114 008/014	8
Voltage at terminal 15 (Earth) - with steady current	Volts	11	11	9
Ballast resistor	Ohms			10
Primary resistance at 20°C (68°F)	Ohms	3,6-4,1	3,6-4,1	11
Ignition voltage at load	Kv	8-11	8-11	12
IGNITION DISTRIBUTOR	Make	Bosch	Bosch	13
	Type	0 231 137 031	0 231 137 033	14
Dwell angle	Degrees	44-50	44-50	15
Contact breaker gap	mm (in)	0,4 (0.015)	0,4 (0.015)	16
Condenser capacity	mfd	0,15-0,20	0,15-0,20	17
Firing order		1-4-3-2	1-4-3-2	18
IGNITION TIMING				19
Basic setting static	Degrees BTDC			20
Stroboscopic at cranking	Degrees BTDC			21
Stroboscopic	Degrees BTDC/rpm	7,5/800-900	7,5/800-900	22
CENTRIFUGAL ADVANCE	Without vacuum			23
Starts	C/S Degrees/rpm			24
Intermediate 1	C/S Degrees/rpm			25
Intermediate 2	C/S Degrees/rpm			26
Ends	C/S Degrees/rpm			27
VACUUM ADVANCE				28
Range	C/S Degrees	23-28	23-28	29
Starts	mm (in)/Hg	4-11 (0.15-0.43)	1-7 (0.04-0.27)	30
Ends	mm (in)/Hg	62-65 (2.4-2.5)	31-34 (1.2-1.4)	31
VACUUM RETARD				32
Range	C/S Degrees		6-8	33
Starts	mm (in)/Hg		50-80 (1.9-3.1)	34
Ends	mm (in)/Hg		120-130 (4.7-5.1)	35
SPARK PLUGS	Make	Bosch	Bosch	36
	Type	W 145 T1	W 145 T1	37
Gap	mm (in)	0,7 (0.027)	0,7 (0.027)	38
BATTERY	Voltage/Capacity/Polarity	12/36/Neg.	12/36/Neg.	39
STARTER MOTOR	Make	Bosch	Bosch	40
	Type	EF (L) 12V 0,7 PS	EF (L) 12V 0,7 PS	41
Starting voltage	Volts	9	9	42
Lockdraw	Amps/Volts	250-350/6	250-350/6	43
GENERATOR	Make	Bosch	Bosch	44
	Type	G (L) 14V 30A20	G (L) 14V 30A20	45
Output	A/V/rpm - gen.	30/14/2000	30/14/2000	46
REGULATOR	Make	Bosch	Bosch	47
	Type	VA 14V 30A	VA 14V 30A	48
Open circuit voltage	Volts	13,8-14,8	13,8-14,8	49
Cut-in voltage	Volts	12,4-13,1	12,4-13,1	50
Drop off voltage	Volts			51
Reverse current	Amps	2,5-6,5	2,5-6,5	52
Regulator voltage - Alternator	Volts			53



VW 1600 (1.5) VW 1600 (1.6)		MODEL	
54	1965-74	Year	54
55	3/1600 (K/T)	ENGINE	55
56	0,15 (0.006)	Valve clearance - Inlet	56
57	0,5 (0.006)	- Exhaust	57
58	7-10 (99-142)	Compression pressure	58
59	3 (42)	Oil pressure	59
60		Radiator cap	60
61	65-70 (149-167)	Thermostat opens at	61
62	9,5x1000	Fan belt size	62
63	15 (0.6)	Fan belt tension/deflection	63
64		ROLLER TEST	64
65		Brake horsepower at wheels	65
66	Solex	CARBURETTOR	66
67	32 PHN (1.5); 32 PDSIT (1.6)	Make	67
68	91	Type	68
69	800-900	Octane rating	69
70		Idle speed - manual	70
71	2.4 (1969-)	Idle speed - automatic/selector pos.	71
72	Pierburg	Exhaust emission	72
73	VW 15, 113 127 025D (1972)	FUEL PUMP	73
74	24 (42.2) Min. @ 3800	Make	74
75	0,35 (5)	Type	75
76		Delivery rate	76
77	2,5 (4.4)	Delivery pressure	77
78		FILLING CAPACITIES	78
79	2,5 (4.4)	Engine	79
80		Filter	80
81		Gearbox	81
82		Automatic	82
83	600-15	Differential	83
84	1,3 (18)	Cooling system	84
85	1,9 (27)	TYRES	85
86		Standard size	86
87	3-6,6 (0.12-0.26)	Pressure - Front	87
88		- Rear	88
89	1°20'±20'	WHEEL ALIGNMENT DATA	89
90	4°±40'	Toe-in - Front	90
91	30/27±1	Toe-out	91
92	5°10'	Camber	92
93		Castor	93
94		Lock angles - inner/outer wheel	94
95		King pin inclination	95
96		Toe-in - Rear	96
97		Toe-out	97
98	1,0 (7.2)	Camber	98
99	3,2 (23)	TIGHTENING TORQUE VALUES	99
100		Cylinder head Stage 1	100
101	3,3 (23)	Stage 2	101
102	35 (243)	Stage 3	102
103	3,5 (24)	Main bearings	103
104	12-13 (87-94)	Big end bearings	104
		Flywheel	
		Spark plugs	
		Road wheels	



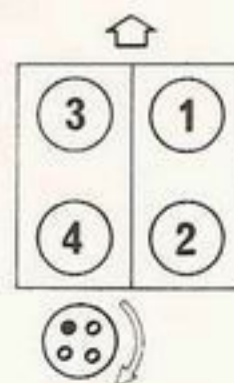
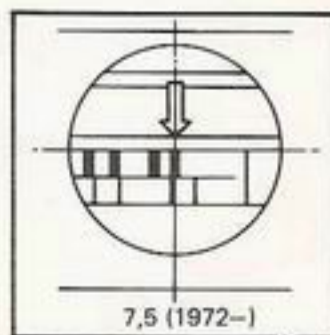
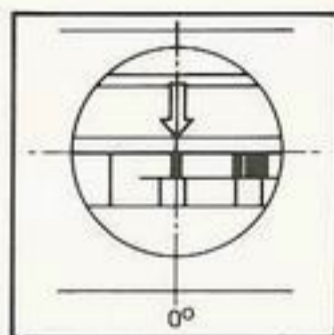
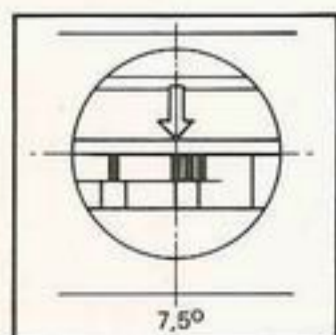
1.0 kgm (7.2 lb/ft)

7	5	6	8
4	2	1	3

3.2 kgm (23 lb/ft)

8	2	4	6
5	3	1	7

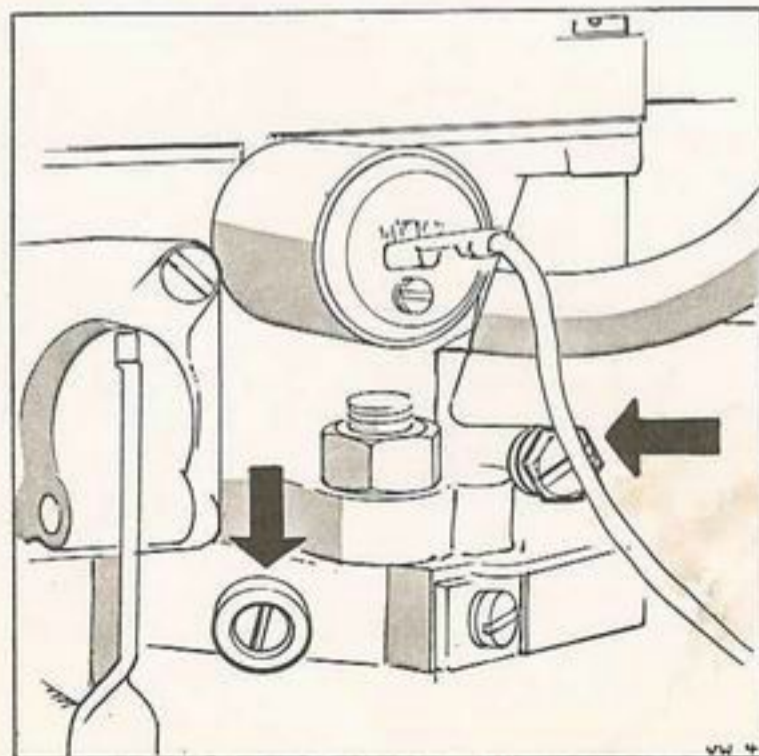
MODEL		VW 1600 Automatic					
Year		1	1967-74			1	
ENGINE	Type	2	3/1600 (T)			2	
Capacity/No of cylinders	cc	3	1584/4			3	
Bore/Stroke	mm	4	85.5/69			4	
Compression ratio	:1	5	7,7			5	
Output	bhp/rpm	6	54/4000			6	
IGNITION COIL	Make	7	Bosch			7	
	Type	8	0 221 114 008/014			8	
Voltage at terminal 15 (Earth) - with steady current	Volts	9	11			9	
Ballast resistor	Ohms	10				10	
Primary resistance at 20°C (68°F)	Ohms	11	3,6-4,1			11	
Ignition voltage at load	Kv	12	8-11			12	
IGNITION DISTRIBUTOR	Make	13	Bosch	11. 3. 1969—	11. 8. 1969—	13	
	Type	14	0 231 115 058	0 231 115 084	0 231 167 016	14	
Dwell angle	Degrees	15	44-50	44-50	44-50	15	
Contact breaker gap	mm (in)	16	0,4 (0.015)	0,4 (0.015)	0,4 (0.015)	16	
Condenser capacity	mfd	17	0,15-0,20	0,15-0,20	0,15-0,20	17	
Firing order		18	1-4-3-2	1-4-3-2	1-4-3-2	18	
IGNITION TIMING		19			1972—	19	
Basic setting static	Degrees BTDC	20				20	
Stroboscopic at cranking	Degrees BTDC	21				21	
Stroboscopic	Degrees BTDC/rpm	22	7,5/800-900	7,5/800-900	[0/800-900]	7,5/800-900	22
CENTRIFUGAL ADVANCE	Without vacuum	23					23
Starts	C/S Degrees/rpm	24	0/1000-1250	0/1000-1250	[0/1050-1200]	0/1050-1200	24
Intermediate 1	C/S Degrees/rpm	25	11-16/1600	11-16/1600	[13-15/1700]	12-15/1600	25
Intermediate 2	C/S Degrees/rpm	26	11-16/2100	11-16/2100	[13-16/2300]	13-16/2200	26
Ends	C/S Degrees/rpm	27	21-26/3900	24-29/3900	[25-28/3900]	24-28/3800	27
VACUUM ADVANCE		28					28
Range	C/S Degrees	29	8-13	8-13	9-12	8-12	29
Starts	mm (in)/Hg	30	20-30 (0.8-1.2)	20-70 (0.8-2.7)	50-80 (1.9-3.1)	30-60 (1.2-2.4)	30
Ends	mm (in)/Hg	31	120-130 (4.7-5.1)	100-130 (4-5.1)	150-160 (5.9-6.2)	120-130 (4.7-5.1)	31
VACUUM RETARD		32					32
Range	C/S Degrees	33			6-8		33
Starts	mm (in)/Hg	34			50-80 (1.9-3.1)		34
Ends	mm (in)/Hg	35			120-130 (4.7-5.1)		35
SPARK PLUGS	Make	36	Bosch			36	
	Type	37	W 145 T1			37	
Gap	mm (in)	38	0,7 (0.027)			38	
BATTERY	Voltage/Capacity/Polarity	39	12/36/Neg.			39	
STARTER MOTOR	Make	40	Bosch			40	
	Type	41	EB (L) 12V 0.8 PS			41	
Starting voltage	Volts	42	9			42	
Lockdraw	Amps/Volts	43				43	
GENERATOR	Make	44	Bosch			44	
	Type	45	G (L) 14V 30A20			45	
Output	A/V/rpm - gen.	46	30/14/2000			46	
REGULATOR	Make	47	Bosch			47	
	Type	48	VA 14V30A			48	
Open circuit voltage	Volts	49	13,8-14,8			49	
Cut-in voltage	Volts	50	12,1-13,2			50	
Drop off voltage	Volts	51				51	
Reverse current	Amps	52	2,5-6,5			52	
Regulator voltage - Alternator	Volts	53				53	



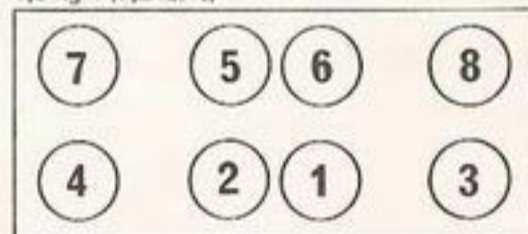
VW 1600 Automatic

MODEL

54	1967-74	Year	54
55	3/1600 (T)	ENGINE	55
56	0,15 (0.006)	Valve clearance - Inlet	mm (in) 56
57	0,15 (0.006)	- Exhaust	mm (in) 57
58	7-10 (99-142)	Compression pressure	kg/cm ² (psi) 58
59	3 (42)	Oil pressure	kg/cm ² (psi) 59
60		Radiator cap	kg/cm ² (psi) 60
61	65-70 (149-167)	Thermostat opens at	°C (°F) 61
62	9.5x1000	Fan belt size	mm (in) 62
63	15 (0.6)	Fan belt tension/deflection	mm (in)/kg (lb.) 63
64		ROLLER TEST	kmh (mph)/rpm/gear 64
65		Brake horsepower at wheels	bhp (kp) 65
66	Solex	CARBURETTOR	Make 66
67	32 PDSIT		Type 67
68		Octane rating	68
69		Idle speed - manual	rpm 69
70	900-1000	Idle speed - automatic/selector pos.	rpm 70
71		Exhaust emission	CO%rpm 71
72	Pierburg	FUEL PUMP	Make 72
73	VW6/15, 113 127 025D		Type 73
74	24 (42.2) Min. @ 3800	Delivery rate	Ltr. (Imp Pt)/hr 74
75	0.35 (5)	Delivery pressure	kg/cm ² (psi) 75
76		FILLING CAPACITIES	76
77	2,5 (4.4)	Engine	Ltr. (Imp Pints) 77
78		Filter	Ltr. (Imp Pints) 78
79		Gearbox	Ltr. (Imp Pints) 79
80	3.0 (5.2)	Automatic	Ltr. (Imp Pints) 80
81	1 (1.75)	Differential	Ltr. (Imp Pints) 81
82		Cooling system	Ltr. (Imp Pints) 82
83	600-15	TYRES	Standard size 83
84	1,3 (18)	Pressure - Front	kg/cm ² (psi) 84
85	1,9 (27)	- Rear	kg/cm ² (psi) 85
86		WHEEL ALIGNMENT DATA	86
87	3-6,6 (0.12-0.26)	Toe-in - Front	mm (in) 87
88		Toe-out	mm (in) 88
89	1°20'±20'	Camber	Degrees 89
90	4°±40'	Castor	Degrees 90
91	30/27±1	Lock angles - inner/outer wheel	Degrees 91
92	5°10'	King pin inclination	Degrees 92
93		Toe-in - Rear	mm (in) 93
94		Toe-out	mm (in) 94
95		Camber	Degrees 95
96		TIGHTENING TORQUE VALUES	96
97		Cylinder head Stage 1	kgm (lb.ft.) 97
98	1,0 (7.2)	Stage 2	kgm (lb.ft.) 98
99	3,2 (23)	Stage 3	kgm (lb.ft.) 99
100		Main bearings	kgm (lb.ft.) 100
101	3,3 (23)	Big end bearings	kgm (lb.ft.) 101
102	35 (243)	Flywheel	kgm (lb.ft.) 102
103	3,5 (24)	Spark plugs	kgm (lb.ft.) 103
104	12-13 (87-94)	Road wheels	kgm (lb.ft.) 104



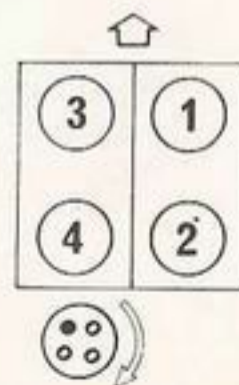
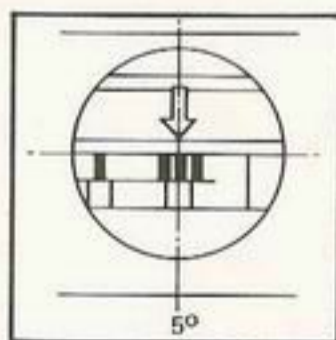
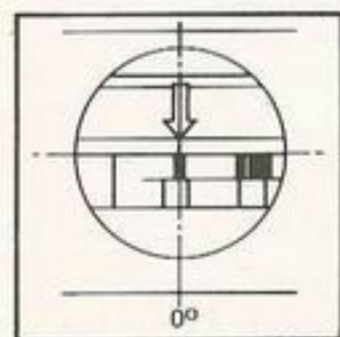
1,0 kgm (7,2 lb/ft)



3,2 kgm (23 lb/ft)



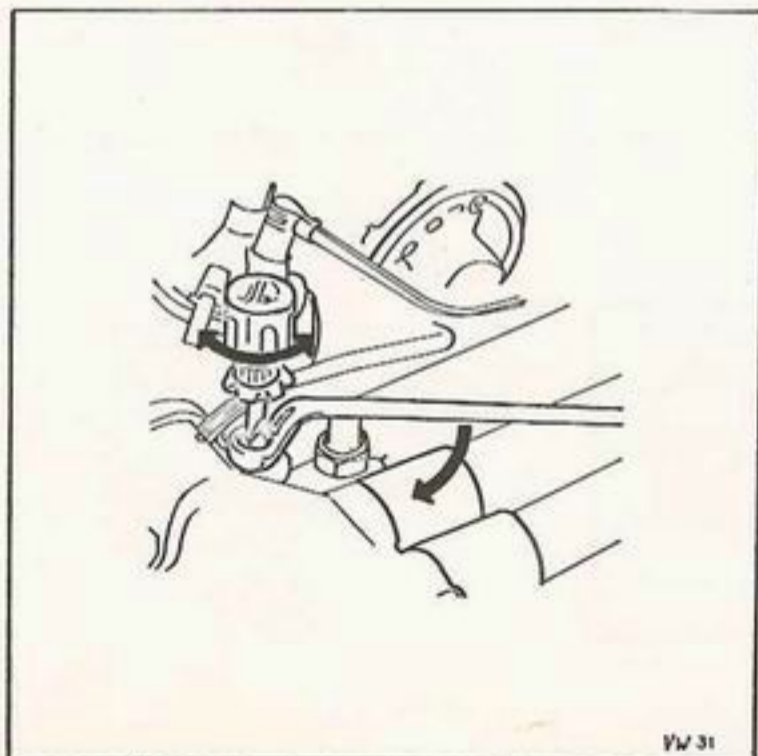
MODEL		VW 1600 E					
Year		1	1967-74				1
ENGINE	Type	2	3/1600 (U)				2
Capacity/No of cylinders	cc	3	1584/4				3
Bore/Stroke	mm	4	85,5/69				4
Compression ratio	:1	5	7,7				5
Output	bhp/rpm	6	54/4000 DIN				6
IGNITION COIL	Make	7	Bosch 1969-				7
	Type	8	0 221 114 008 0 221 102 056/074				8
Voltage at terminal 15 (Earth)							
- with steady current	Volts	9	11 11				9
Ballast resistor	Ohms	10					10
Primary resistance at 20°C (68°F)	Ohms	11	3,6-4,1 2,9-3,4				11
Ignition voltage at load	Kv	12	8-11 10-14				12
IGNITION DISTRIBUTOR	Make	13	Bosch Bosch 1970- 1971-				13
	Type	14	0 231 163 001 0 231 163 008 0 231 163 018 0 231 172 009				14
Dwell angle	Degrees	15	44-50 44-50 44-50 44-50				15
Contact breaker gap	mm (in)	16	0,4 (0.015) 0,4 (0.015) 0,4 (0.015) 0,4 (0.015)				16
Condenser capacity	mfd	17	0,15-0,20 0,15-0,20 0,15-0,20 0,15-0,20				17
Firing order		18	1-4-3-2 1-4-3-2 1-4-3-2 1-4-3-2				18
IGNITION TIMING		19					19
Basic setting static	Degrees BTDC	20					20
Stroboscopic at cranking	Degrees BTDC	21					21
Stroboscopic	Degrees BTDC/rpm	22	0/800-900 0/800-900 0/800-900 5/800-900 5/800-900				22
CENTRIFUGAL ADVANCE	Without vacuum	23					23
Starts	C/S Degrees/rpm	24	0/900-1100 0/900-1100 0/900-1100 0/950-1200 0/1000-1200				24
Intermediate 1	C/S Degrees/rpm	25	6-12/1350 10-14/1500 15-20/1800 11-16/1800 11-16/1800				25
Intermediate 2	C/S Degrees/rpm	26	10-14/2000 20-23/2300 20-24/3000				26
Ends	C/S Degrees/rpm	27	26-30/2600 27-30/2800 24-27/4000 19-23/4000 18-23/3800				27
VACUUM ADVANCE		28					28
Range	C/S Degrees	29	8-12 8-12 8-12 8-12 8-12				29
Starts	mm (in)/Hg	30	60-100(2.4-4) 60-100 (2.4-4) 60-100 (2.4-4) 90-120 (3.5-4.7) 90-120 (3.5-4.7)				30
Ends	mm (in)/Hg	31	150-200 (7.9-5.8) 150-200 (5.9-7.8) 150-200 (5.9-7.8) 150-170 (5.9-6.6) 170-180 (6.6-7)				31
VACUUM RETARD		32					32
Range	C/S Degrees	33					33
Starts	mm (in)/Hg	34					34
Ends	mm (in)/Hg	35					35
SPARK PLUGS	Make	36	Bosch				36
	Type	37	W 145 T1				37
Gap	mm (in)	38	0,7 (0.027)				38
BATTERY	Voltage/Capacity/Polarity	39	12/36/Neg.				39
STARTER MOTOR	Make	40	Bosch				40
	Type	41	EF (L) 12V 0,7 PS				41
Starting voltage	Volts	42	9				42
Lockdraw	Amps/Volts	43	250-350/6				43
GENERATOR	Make	44	Bosch				44
	Type	45	G (L) 14V 30A20				45
Output	A/V/rpm - gen.	46	30/14/2000				46
REGULATOR	Make	47	Bosch				47
	Type	48	VA 14V 30A				48
Open circuit voltage	Volts	49	13,8-14,8				49
Cut-in voltage	Volts	50	12,4-13,1 12,1-13,2				50
Drop off voltage	Volts	51					51
Reverse current	Amps	52	2,5-6,5				52
Regulator voltage - Alternator	Volts	53					53



VW 1600 E

MODEL

54	1967-74	Year	54
55	3/1600 (U)	ENGINE	55
56	0,15 (0.006)	Valve clearance - Inlet	mm (in) 56
57	0,15 (0.006)	- Exhaust	mm (in) 57
58	7-10 (99-142)	Compression pressure	kg/cm ² (psi) 58
59	3 (42)	Oil pressure	kg/cm ² (psi) 59
60		Radiator cap	kg/cm ² (psi) 60
61	65-70 (149-167)	Thermostat opens at	°C (°F) 61
62	9.5x1000	Fan belt size	mm (in) 62
63	15 (0.6)	Fan belt tension/deflection	mm (in)/kg (lb.) 63
64		ROLLER TEST	kmh (mph)/rpm/gear 64
65		Brake horsepower at wheels	bhp (kp) 65
66	Bosch Injection	CARBURETTOR	Make 66
67			Type 67
68	9	Octane rating	68
69	800-900	Idle speed - manual	rpm 69
70		Idle speed - automatic/selecter pos.	rpm 70
71	2-4 1969-	Exhaust emission	CO%rpm 71
72	Pierburg	FUEL PUMP	Make 72
73			Type 73
74		Delivery rate	Ltr. (Imp Pt)/hr 74
75		Delivery pressure	kg/cm ² (psi) 75
76		FILLING CAPACITIES	76
77	2,5 (4.4)	Engine	Ltr. (Imp Pints) 77
78		Filter	Ltr. (Imp Pints) 78
79	2,5 (4.4)	Gearbox	Ltr. (Imp Pints) 79
80		Automatic	Ltr. (Imp Pints) 80
81		Differential	Ltr. (Imp Pints) 81
82		Cooling system	Ltr. (Imp Pints) 82
83	600-15	TYRES	Standard size 83
84	1,3 (18)	Pressure - Front	kg/cm ² (psi) 84
85	1,9 (27)	- Rear	kg/cm ² (psi) 85
86		WHEEL ALIGNMENT DATA	86
87	3 6,6 (0.12-0.26)	Toe-in - Front	mm (in) 87
88		Toe-out	mm (in) 88
89	1°20'±20'	Camber	Degrees 89
90	4°±40'	Castor	Degrees 90
91	30/27±1	Lock angles - inner/outer wheel	Degrees 91
92	5°10'	King pin inclination	Degrees 92
93		Toe-in - Rear	mm (in) 93
94		Toe-out	mm (in) 94
95		Camber	Degrees 95
96		TIGHTENING TORQUE VALUES	96
97		Cylinder head Stage 1	kgm (lb.ft.) 97
98	1,0 (7.2)	Stage 2	kgm (lb.ft.) 98
99	3,2 (23)	Stage 3	kgm (lb.ft.) 99
100		Main bearings	kgm (lb.ft.) 100
101	3,3 (23)	Big end bearings	kgm (lb.ft.) 101
102	35 (243)	Flywheel	kgm (lb.ft.) 102
103	3,5 (27)	Spark plugs	kgm (lb.ft.) 103
104	12-13 (87-94)	Road wheels	kgm (lb.ft.) 104

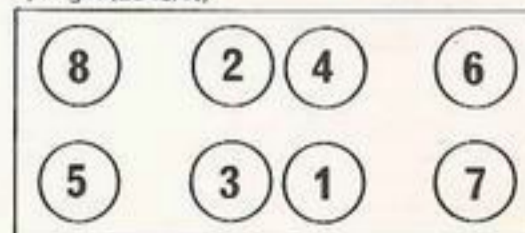


VW 31

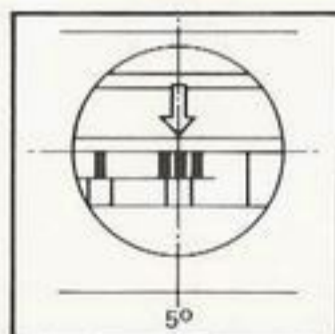
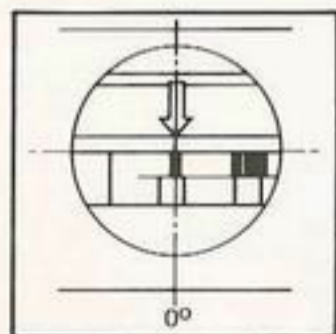
1,0 kgm (7,2 lb/ft)



3,2 kgm (23 lb/ft)



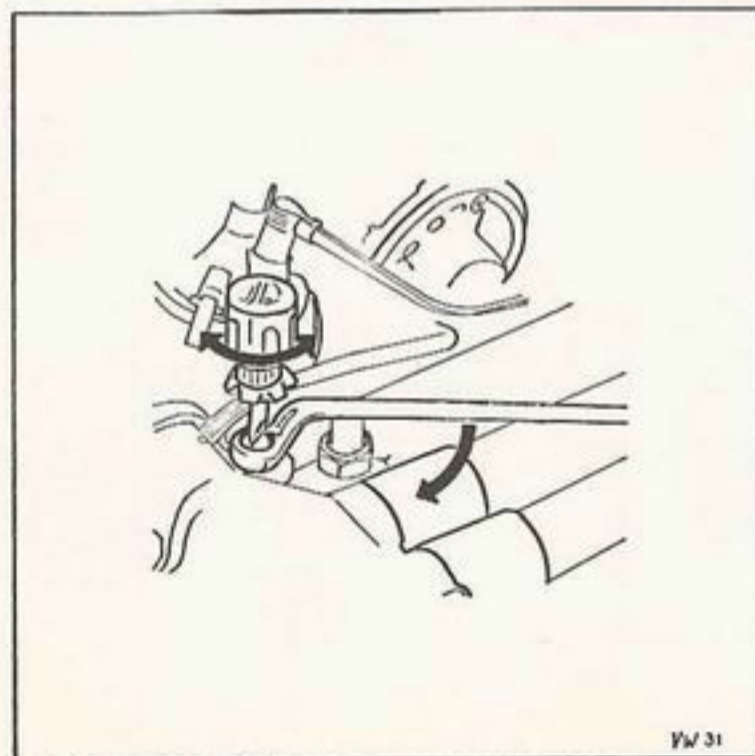
MODEL		VW 1600 E Automatic				
Year		1	1968-74			1
ENGINE	Type	2	3/1600 (U)			2
Capacity/No of cylinders	cc	3	1584/4			3
Bore/Stroke	mm	4	85,5/69			4
Compression ratio	:1	5	7,7			5
Output	bhp/rpm	6	54/4000 DIN			6
IGNITION COIL	Make	7	Bosch			7
	Type	8	0 221 102 056/074			8
Voltage at terminal 15 (Earth)						
- with steady current	Volts	9	11			9
Ballast resistor	Ohms	10				10
Primary resistance at 20°C (68°F)	Ohms	11	2,9-3,4			11
Ignition voltage at load	Kv	12	10-14			12
IGNITION DISTRIBUTOR	Make	13	Bosch		1970-	1971-
	Type	14	0 231 163 008		0 231 163 016	0 231 172 011
Dwell angle	Degrees	15	44-50		44-50	44-50
Contact breaker gap	mm (in)	16	0,4 (0.015)		0,4 (0.015)	0,4 (0.015)
Condenser capacity	mfd	17	0,15-0,20		0,15-0,20	0,15-0,20
Firing order		18	1-4-3-2		1-4-3-2	1-4-3-2
IGNITION TIMING		19				19
Basic setting static	Degrees BTDC	20				20
Stroboscopic at cranking	Degrees BTDC	21				21
Stroboscopic	Degrees BTDC/rpm	22	0/800-900		0/800-900	5/800-900
CENTRIFUGAL ADVANCE	Without vacuum	23	1969-			1972-
Starts	C/S Degrees/rpm	24	0/1000-1250		0/900-1050	0/900-1100
Intermediate 1	C/S Degrees/rpm	25	11-16/1600		19-22/1600	17-22/1600
Intermediate 2	C/S Degrees/rpm	26	11-16/2100		19-22/2100	22-25/2100
Ends	C/S Degrees/rpm	27	21-26/3900		27-30/2700	24-27/4000
VACUUM ADVANCE		28				28
Range	C/S Degrees	29	8-13		8-12	1-5
Starts	mm (in)/Hg	30	20-70 (0.8-2.7)		60-100 (2.3-4)	60-100 (2.6-4)
Ends	mm (in)/Hg	31	100-130 (4-5.1)		150-200 (5.9-7.8)	120 (4.7)
VACUUM RETARD		32				32
Range	C/S Degrees	33			9-10	
Starts	mm (in)/Hg	34			150-210(5.9-8.2)	
Ends	mm (in)/Hg	35			240-280(9.4-11)	
SPARK PLUGS	Make	36	Bosch			36
	Type	37	W145T1			37
Gap	mm (in)	38	0,7 (0.027)			38
BATTERY	Voltage/Capacity/Polarity	39	12/36/Neg.			39
STARTER MOTOR	Make	40	Bosch			40
	Type	41	EB (L) 12V 0,8PS			41
Starting voltage	Volts	42	9			42
Lockdraw	Amps/Volts	43	360-380/7			43
GENERATOR	Make	44	Bosch			44
	Type	45	G (L) 14V30A20			45
Output	A/V/rpm - gen.	46	30/14/2000			46
REGULATOR	Make	47	Bosch			47
	Type	48	VA14V30A			48
Open circuit voltage	Volts	49	13,8-14,8			49
Cut-in voltage	Volts	50	12,1-13,2			50
Drop off voltage	Volts	51				51
Reverse current	Amps	52	2,5-6,5			52
Regulator voltage - Alternator	Volts	53				53



VW 1600 E Automatic

MODEL

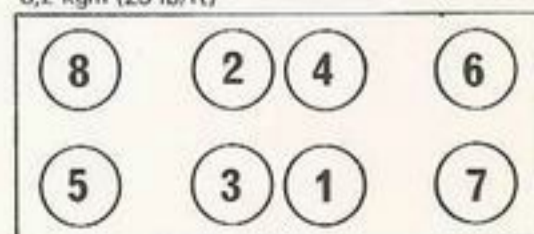
54	1968-74	Year	54
55	3/1600 (U)	ENGINE	55
56	0,15 (0.006)	Valve clearance - Inlet	mm (in) 56
57	0,15 (0.006)	- Exhaust	mm (in) 57
58	7-10 (99-142)	Compression pressure	kg/cm ² (psi) 58
59	3 (42)	Oil pressure	kg/cm ² (psi) 59
60		Radiator cap	kg/cm ² (psi) 60
61	65-70 (149-167)	Thermostat opens at	°C (°F) 61
62	9,5 x 1000	Fan belt size	mm (in) 62
63	15 (0.6)	Fan belt tension/deflection	mm (in)/kg (lb.) 63
64		ROLLER TEST	kmh (mph)/rpm/gear 64
65		Brake horsepower at wheels	bhp (kp) 65
66	Bosch Injection	CARBURETTOR	Make 66
67			Type 67
68		Octane rating	68
69		Idle speed - manual	rpm 69
70	900-1000	Idle speed - automatic-selector pos.	rpm 70
71		Exhaust emission	CO%/rpm 71
72	Pierburg	FUEL PUMP	Make 72
73			Type 73
74		Delivery rate	Ltr. (Imp Pt)/hr 74
75		Delivery pressure	kg/cm ² (psi) 75
76		FILLING CAPACITIES	76
77	2,5 (4.4)	Engine	Ltr. (Imp Pints) 77
78		Filter	Ltr. (Imp Pints) 78
79		Gearbox	Ltr. (Imp Pints) 79
80	3 (5.2)	Automatic	Ltr. (Imp Pints) 80
81	1 (1.75)	Differential	Ltr. (Imp Pints) 81
82		Cooling system	Ltr. (Imp Pints) 82
83	600-15	TYRES	Standard size 83
84	1,3 (18)	Pressure - Front	kg/cm ² (psi) 84
85	1,9 (27)	- Rear	kg/cm ² (psi) 85
86		WHEEL ALIGNMENT DATA	86
87	3-6,6 (0.12-0,26)	Toe-in - Front	mm (in) 87
88		Toe-out	mm (in) 88
89	1° 20' ± 20'	Camber	Degrees 89
90	4° ± 40'	Castor	Degrees 90
91	30/27 ± 1	Lock angles - inner/outer wheel	Degrees 91
92	5° 10'	King pin inclination	Degrees 92
93		Toe-in - Rear	mm (in) 93
94		Toe-out	mm (in) 94
95		Camber	Degrees 95
96		TIGHTENING TORQUE VALUES	96
97		Cylinder head Stage 1	kgm (lb.ft.) 97
98	1,0 (7.2)	Stage 2	kgm (lb.ft.) 98
99	3,2 (23)	Stage 3	kgm (lb.ft.) 99
100		Main bearings	kgm (lb.ft.) 100
101	3,3 (23)	Big end bearings	kgm (lb.ft.) 101
102	35 (243)	Flywheel	kgm (lb.ft.) 102
103	3,5 (27)	Spark plugs	kgm (lb.ft.) 103
104	12-13 (87-94)	Road wheels	kgm (lb.ft.) 104



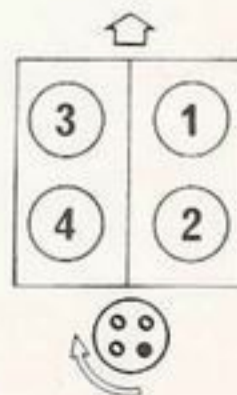
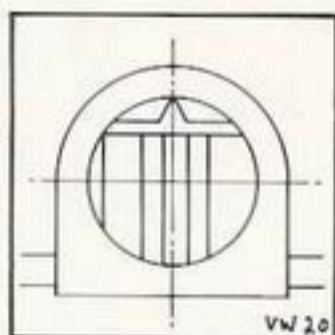
1.0 kgm (7,2 lb/ft)



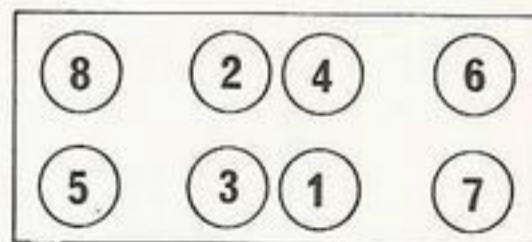
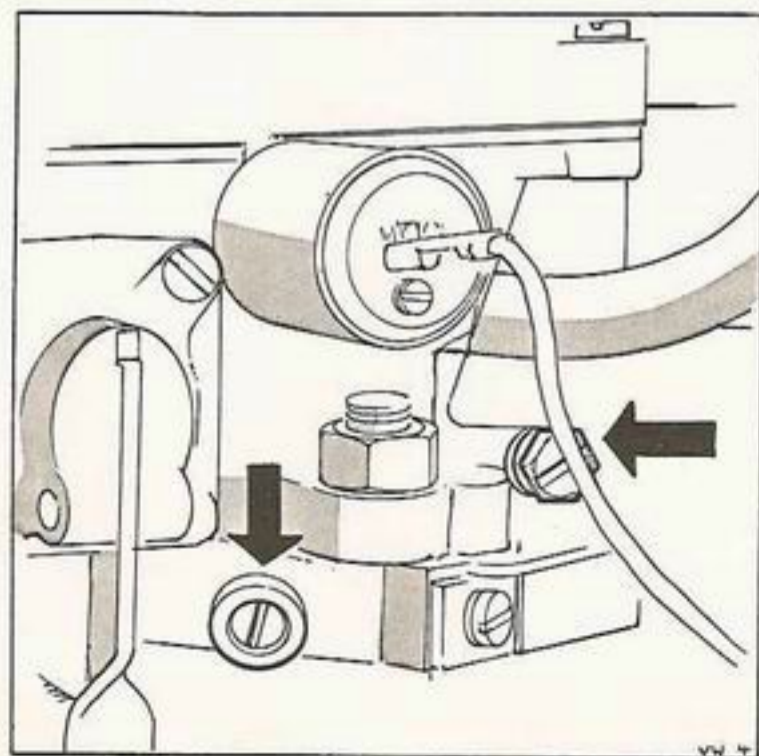
3,2 kgm (23 lb/ft)



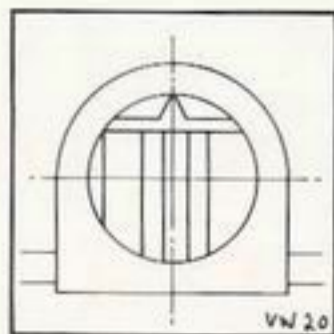
MODEL		VW 411		VW 411 Automatic	
Year		1 1968-70		1968-70	1
ENGINE	Type	2 4/1700 (V/Z)		4/1700 (V/Z)	2
Capacity/No of cylinders	cc	3 1679/4		1679/4	3
Bore/Stroke	mm	4 90/66		90/66	4
Compression ratio	:1	5 7,8		7,8	5
Output	bhp/rpm	6 68/4500 DIN		68/4500 DIN	6
IGNITION COIL	Make	7 Bosch		Bosch	7
	Type	8 0 221 114 011		0 221 114 011	8
Voltage at terminal 15 (Earth) - with steady current	Volts	9 11		11	9
Ballast resistor	Ohms	10			10
Primary resistance at 20°C (68°F)	Ohms	11 3,6-4,1		3,6-4,1	11
Ignition voltage at load	Kv	12 8-11		8-11	12
IGNITION DISTRIBUTOR	Make	13 Bosch	1969	Bosch	1969
	Type	14 0 231 146 081	0 231 167 018	0 231 115 076	0 231 167 020
Dwell angle	Degrees	15 44-50	44-50	44-50	44-50
Contact breaker gap	mm (in)	16 0,4 (0.015)	0,4 (0.015)	0,4 (0.015)	0,4 (0.015)
Condenser capacity	mfd	17 0,15-0,20	0,15-0,20	0,15-0,20	0,15-0,20
Firing order		18 1-4-3-2	1-4-3-2	1-4-3-2	1-4-3-2
IGNITION TIMING		19			19
Basic setting static	Degrees BTDC	20 5	5	5	5
Stroboscopic at cranking	Degrees BTDC	21			21
Stroboscopic	Degrees BTDC/rpm	22 32/3500	32/3500	32/3500	32/3500
CENTRIFUGAL ADVANCE	Without vacuum	23			23
Starts	C/S Degrees/rpm	24 0/1050-1250	0/1000-1200	0/1050-1200	0/1000-1200
Intermediate 1	C/S Degrees/rpm	25 7-11/1500	10-13/1500	13-16/1600	16-18/1600
Intermediate 2	C/S Degrees/rpm	26 19-23/2500	17-21/2200	13-17/2000	16-19/2000
Ends	C/S Degrees/rpm	27 25-28/3000	27-30/3000	25-28/3000	27-30/3000
VACUUM ADVANCE		28			28
Range	C/S Degrees	29 9-12	9-12	9-12	9-12
Starts	mm (in)/Hg	30 50-80 (1.9-3.1)	50-80 (1.9-3.1)	50-80 (1.9-3.1)	50-80 (1.9-3.1)
Ends	mm (in)/Hg	31 100-160 (4-6.2)	150 (5.9)	100-160 (4-6.2)	150 (5.9)
VACUUM RETARD		32			32
Range	C/S Degrees	33	4-8		4-8
Starts	mm (in)/Hg	34	50-80 (1.9-3.1)		50-80 (1.9-3.1)
Ends	mm (in)/Hg	35	100 (4)		100 (4)
SPARK PLUGS	Make	36 Bosch		Bosch	36
	Type	37 W145T2		W145T2	37
Gap	mm (in)	38 0,7 (0.027)		0,7 (0.027)	38
BATTERY	Voltage/Capacity/Polarity	39 12/45/Neg.		12/45/Neg.	39
STARTER MOTOR	Make	40 Bosch		Bosch	40
	Type	41 EF(L)12V0,7PS		EB(L)12V0,8PS	41
Starting voltage	Volts	42 9		9	42
Lockdraw	Amps/Volts	43 250-350/6			43
GENERATOR	Make	44 Bosch		Bosch	44
	Type	45 K1(RL)14V35A22	K1(RL)14V55A22	K1(RL)14V35A22	K1(RL)14V55A22
Output	A/V/rpm - gen.	46 35/14/6000	55/14/6000	35/14/6000	55/14/6000
REGULATOR	Make	47 Bosch		Bosch	47
	Type	48 AD1/14V		AD1/14V	48
Open circuit voltage	Volts	49			49
Cut-in voltage	Volts	50			50
Drop off voltage	Volts	51			51
Reverse current	Amps	52			52
Regulator voltage - Alternator	Volts	53 13,9-14,8		13,9-14,8	53



VW 411 VW 411 Automatic		MODEL	
54	1968-70	Year	54
55	4/1700 (V/2)	ENGINE	55
56	0,15 (0.006)	Valve clearance - Inlet	mm (in) 56
57	0,15 (0.006)	- Exhaust	mm (in) 57
58	7-9 (99-128)	Compression pressure	kg/cm ² (psi) 58
59	3 (42)	Oil pressure	kg/cm ² (psi) 59
60		Radiator cap	kg/cm ² (psi) 60
61	65-70 (149-167)	Thermostat opens at	°C (°F) 61
62	9,5 x 965	Fan belt size	mm (in) 62
63	15 (0.6)	Fan belt tension/deflection	mm (in)/kg (lb.) 63
64		ROLLER TEST	kmh (mph)/rpm/gear 64
65		Brake horsepower at wheels	bhp (kp) 65
66	Solex	CARBURETTOR	Make 66
67	34 PDSIT		Type 67
68	91	Octane rating	
69	800-900	Idle speed - manual	rpm 69
70	900-1000	Idle speed - automatic-selector pos.	rpm 70
71	2-4	Exhaust emission	CO%/rpm 71
72	Pierburg	FUEL PUMP	Make 72
73			Type 73
74		Delivery rate	Ltr. (Imp Pt)/hr 74
75	0,35 (5)	Delivery pressure	kg/cm ² (psi) 75
76		FILLING CAPACITIES	
77	3,0 (5.2)	Engine	Ltr. (Imp Pints) 77
78	0,5 (0.8)	Filter	Ltr. (Imp Pints) 78
79	2,0 (3.5)	Gearbox	Ltr. (Imp Pints) 79
80	3,0 (5.2)	Automatic	Ltr. (Imp Pints) 80
81	1 (1.75) (Automatic)	Differential	Ltr. (Imp Pints) 81
82		Cooling system	Ltr. (Imp Pints) 82
83	155SR x 15; Variant-165SR x 15	TYRES	Standard size 83
84	1,3 (18)	Pressure - Front	kg/cm ² (psi) 84
85	2,0 (28)	- Rear	kg/cm ² (psi) 85
86		WHEEL ALIGNMENT DATA	
87	0,6-4,2 (0.02-0.16)	Toe-in - Front	mm (in) 87
88		Toe-out	mm (in) 88
89	1°10'±25'-30'	Camber	Degrees 89
90	1°45'±35'	Castor	Degrees 90
91	38°30'/33°20'	Lock angles - inner/outer wheel	Degrees 91
92	8°15'	King pin inclination	Degrees 92
93		Toe-in - Rear	mm (in) 93
94		Toe-out	mm (in) 94
95		Camber	Degrees 95
96		TIGHTENING TORQUE VALUES	
97		Cylinder head Stage 1	kgm (lb.ft.) 97
98	1,0 (7.2)	Stage 2	kgm (lb.ft.) 98
99	3,2 (23)	Stage 3	kgm (lb.ft.) 99
100		Main bearings	kgm (lb.ft.) 100
101	3,3 (23)	Big end bearings	kgm (lb.ft.) 101
102	11 (79)	Flywheel	kgm (lb.ft.) 102
103	3,5 (27)	Spark plugs	kgm (lb.ft.) 103
104	12-13 (87-94)	Road wheels	kgm (lb.ft.) 104



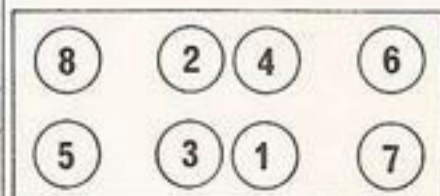
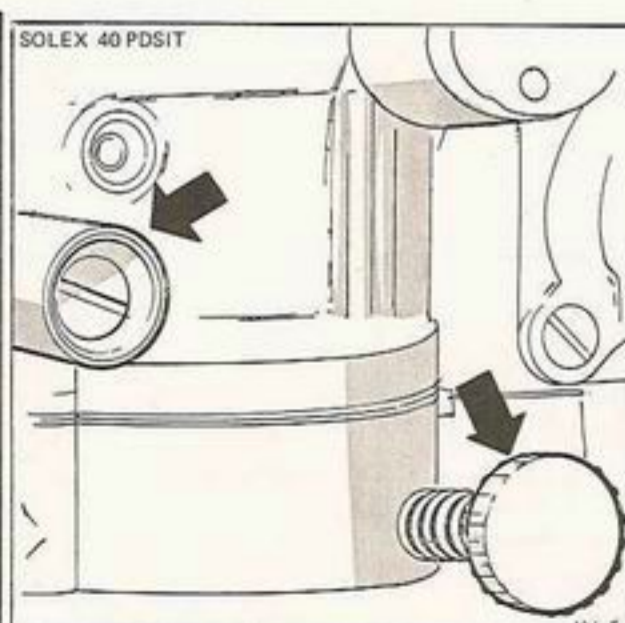
MODEL		VW 411 E	VW 411 E VW 411 E Automatic VW 412 E (1972-)	VW 412 (1800)	
Year		1969-70	1970-73	1973-74	
ENGINE	Type	4/1700 (W)	4/1700 (W)	4/1800 (AN/AT)	
Capacity/No of cylinders	cc	1679/4	1679/4	1795/4	
Bore/Stroke	mm	90/66	90/66	93/66	
Compression ratio	:1	8,2	8,2	8,6; LC-7,3	
Output	bhp/rpm	80/4900 DIN	80/4900 DIN	85/5000 DIN; LC-75/5000 DIN	
IGNITION COIL	Make	Bosch	Bosch	Bosch	
	Type	0 221 114 011	0 221 102 076	0 221 102 076	
Voltage at terminal 15 (Earth) - with steady current	Volts	11	11	11	
Ballast resistor	Ohms				
Primary resistance at 20°C (68°F)	Ohms	3,6-4,1	2,9-3,4	2,9-3,4	
Ignition voltage at load	Kv	8-11	10-14	10-14	
IGNITION DISTRIBUTOR	Make	Bosch	Bosch	Bosch	
	Type	0 231 172 007	0 231 172 007		
Dwell angle	Degrees	44-50	44-50	44-50	
Contact breaker gap	mm (in)	0,4 (0.015)	0,4 (0.015)	0,4 (0.015)	
Condenser capacity	mfd	0,15-0,20	0,15-0,20	0,15-0,20	
Firing order		1-4-3-2	1-4-3-2	1-4-3-2	
IGNITION TIMING					
Basic setting static	Degrees BTDC	5	5		
Stroboscopic at cranking	Degrees BTDC				
Stroboscopic	Degrees BTDC/rpm	27/3500	27/3500	7,5/800-900	
CENTRIFUGAL ADVANCE	Without vacuum				
Starts	C/S Degrees/rpm	0/700-1050	0/700-1050	0/1000-1200	
Intermediate 1	C/S Degrees/rpm	10-15/1500	10-15/1500	9-14/1600	
Intermediate 2	C/S Degrees/rpm	14-19/2000			
Ends	C/S Degrees/rpm	22-27/3000	22-27/3000	21-25/3400	
VACUUM ADVANCE					
Range	C/S Degrees	11-14	11-13	8-12	
Starts	mm (in)/Hg	100-130 (4-5.1)	100-130 (4-5.1)	80-110 (3.1-4.3)	
Ends	mm (in)/Hg	200 (7.8)	180-200 (7-7.8)	200 (7.8)	
VACUUM RETARD					
Range	C/S Degrees	8-12			
Starts	mm (in)/Hg	60-100 (2.3-4)			
Ends	mm (in)/Hg	150 (5.9)			
SPARK PLUGS	Make	Bosch	Bosch	Bosch	
	Type	W 175 T2	W 175 T2	W 175 T2	
Gap	mm (in)	0,7 (0.027)	0,7 (0.027)	0,7 (0.027)	
BATTERY	Voltage/Capacity/Polarity	12/45/Neg.	12/45/Neg.	12/45/Neg.	
STARTER MOTOR	Make	Bosch	Bosch	Bosch	
	Type	EF (L) 12V 0,7 PS	EB (L) 12V 0,8 PS	EF (L) 12V 0,7 PS	
Starting voltage	Volts	9	9	9	
Lockdraw	Amps/Volts	250-350/6		250-350/6	
GENERATOR	Make	Bosch	Bosch	Bosch	
	Type	K1 (RL) 14V 55A22	K1 (RL) 14V 55A22	K1 (RL) 14V 55A22	
Output	A/V/rpm - gen.	55/14/6000	55/14/6000	55/14/6000	
REGULATOR	Make	Bosch	Bosch	Bosch	
	Type	AD 1/14V	AD 1/14V	AD 1/14V	
Open circuit voltage	Volts				
Cut-in voltage	Volts				
Drop off voltage	Volts				
Reverse current	Amps				
Regulator voltage - Alternator	Volts	13,9-14,8	13,9-14,8	13,9	



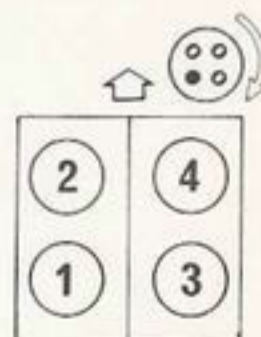
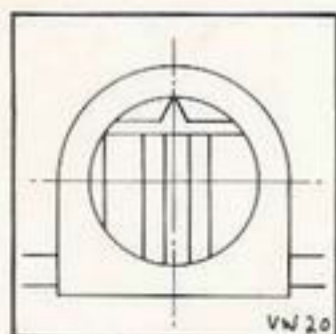
VW 411/412/E/Automatic
VW 412/Automatic

MODEL

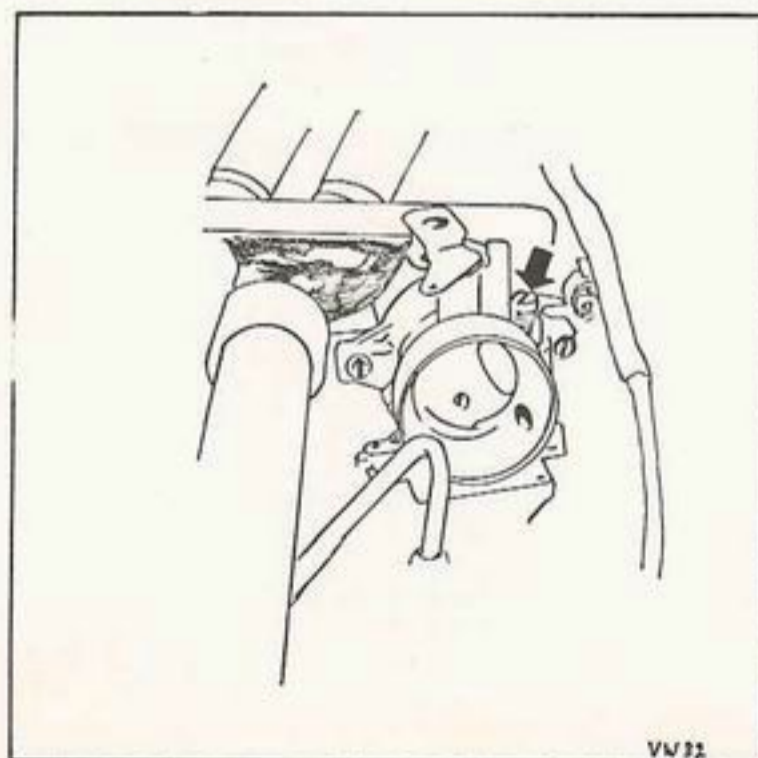
54	1969-74	Year	54
55	4/1800 (AN/AT)	ENGINE	55
56	0,15 (0.006)	Valve clearance - Inlet	mm (in)
57	0,15 (0.006)	- Exhaust	mm (in)
58	7-11 (99-156)	Compression pressure	kg/cm ² (psi)
59	3 (42)	Oil pressure	kg/cm ² (psi)
60		Radiator cap	kg/cm ² (psi)
61	65-70 (149-167)	Thermostat opens at	°C (°F)
62	9.5x965	Fan belt size	mm (in)
63	15 (0.6)	Fan belt tension/deflection	mm (in)/kg (lb.)
64		ROLLER TEST	kmh (mph)/rpm/gear
65		Brake horsepower at wheels	bhp (kp)
66	Bosch Injection; 412 - Solex	CARBURETTOR	Make
67	40 PDSIT	Type	
68	98	Octane rating	
69		Idle speed - manual	rpm
70	900-1000	Idle speed - automatic/selector pos.	rpm
71	2-4 2-4	Exhaust emission	CO%rpm
72	Pierburg	FUEL PUMP	Make
73		Type	
74		Delivery rate	Ltr. (Imp Pt)/hr
75		Delivery pressure	kg/cm ² (psi)
76		FILLING CAPACITIES	
77	3,0 (5.2)	Engine	Ltr. (Imp Pints)
78	0,5 (0.8)	Filter	Ltr. (Imp Pints)
79	2,0 (3.5)	Gearbox	Ltr. (Imp Pints)
80	3,0 (5.2)	Automatic	Ltr. (Imp Pints)
81	1 (1.75) (Automatic)	Differential	Ltr. (Imp Pints)
82		Cooling system	Ltr. (Imp Pints)
83	155SR11x15; Variant 165SRx15	TYRES	Standard size
84	1,3 (18)	Pressure - Front	kg/cm ² (psi)
85	2,0 (28)	- Rear	kg/cm ² (psi)
86		WHEEL ALIGNMENT DATA	
87	0,6-4,2 (0.02-0.16)	Toe-in - Front	mm (in)
88		Toe-out	mm (in)
89	1°10'+25'-30'	Camber	Degrees
90	1°45'±35'	Castor	Degrees
91	38°30'/33°20'	Lock angles - inner/outer wheel	Degrees
92	8°15'	King pin inclination	Degrees
93		Toe-in - Rear	mm (in)
94		Toe-out	mm (in)
95		Camber	Degrees
96		TIGHTENING TORQUE VALUES	
97		Cylinder head Stage 1	kgm (lb.ft.)
98	1,0 (7.2)	Stage 2	kgm (lb.ft.)
99	3,2 (23)	Stage 3	kgm (lb.ft.)
100		Main bearings	kgm (lb.ft.)
101	3,3 (23)	Big end bearings	kgm (lb.ft.)
102	11 (79)	Flywheel	kgm (lb.ft.)
103	3,5 (27)	Spark plugs	kgm (lb.ft.)
104	12-13 (87-94)	Road wheels	kgm (lb.ft.)



MODEL		VW Porsche 914 (1,7)	VW Porsche 914 (2,0)	VW Porsche 914 (2,0)	
Year		1 1969-	1973-	1973-	1
ENGINE	Type	2 473/02	95 HP (GA)	100 HP (GB)	2
Capacity/No of cylinders	cc	3 1679/4	1971/4	1971/4	3
Bore/Stroke	mm	4 90/66	94/71	94/71	4
Compression ratio	:1	5 8,2	7,6	8,0	5
Output	bhp/rpm	6 80/4900 DIN	95/4900 DIN	100/5000 DIN	6
IGNITION COIL	Make	7 Bosch	Bosch	Bosch	7
	Type	8 022 905 115	0221 107 076	0221 107 076	8
Voltage at terminal 15 (Earth) with steady current	Volts	9 11	11	11	9
Ballast resistor	Ohms	10			10
Primary resistance at 20°C (68°F)	Ohms	11 2,9-3,4	2,9-3,4	2,9-3,4	11
Ignition voltage at load	Kv	12 10-14	8-12	8-12	12
IGNITION DISTRIBUTOR	Make	13 Bosch	Bosch	Bosch	13
	Type	14 022 905 205/205B	0 231 174 009	0 231 174 009	14
Dwell angle	Degrees	15 44-50	44-50	44-50	15
Contact breaker gap	mm (in)	16 0,4 (0.015)	0,4 (0.016)	0,4 (0.016)	16
Condenser capacity	mfd	17	0,15-0,20	0,15-0,20	17
Firing order		18 1-4-3-2	1-4-3-2	1-4-3-2	18
IGNITION TIMING		19			19
Basic setting static	Degrees BTDC	20 5	5	5	20
Stroboscopic at cranking	Degrees BTDC	21			21
Stroboscopic	Degrees BTDC/rpm	22 27/3500	27/3500	27/3500	22
CENTRIFUGAL ADVANCE	Without vacuum	23			23
Starts	C/S Degrees/rpm	24 1000/1200	1000/1200	900-1000	24
Intermediate 1	C/S Degrees/rpm	25 9-12/1500	14-17/1500		25
Intermediate 2	C/S Degrees/rpm	26 15-18/2200	14-17/2100	6-10/1500	26
Ends	C/S Degrees/rpm	27 22-25/2900	22-25/2900	20-24/3000	27
VACUUM ADVANCE		28			28
Range	C/S Degrees	29 12-15	6-8	6-8	29
Starts	mm (in)/Hg	30 100-130 (3.9-5.1)	100-130 (3.9-5.1)	100-130 (3.9-5.1)	30
Ends	mm (in)/Hg	31 190 (7.4)	145-165 (5.7-6.4)	145-165 (5.7-6.4)	31
VACUUM RETARD		32			32
Range	C/S Degrees	33 8-10	8-12	8-12	33
Starts	mm (in)/Hg	34 60-100 (2.3-3.9)	60-100 (2.3-3.9)	60-100 (2.3-3.9)	34
Ends	mm (in)/Hg	35 150 (5.9)	148-158 (5.8-6.2)	148-158 (5.8-6.2)	35
SPARK PLUGS	Make	36 Bosch	Bosch	Bosch	36
	Type	37 W175T2	W175T2	W175T2	37
Gap	mm (in)	38 0,7 (0.027)	0,7 (0.027)	0,7 (0.027)	38
BATTERY	Voltage/Capacity/Polarity	39 12/45/Neg.	12/45/Neg.	12/45/Neg.	39
STARTER MOTOR	Make	40 Bosch	Bosch	Bosch	40
	Type	41 EF (L) 12V-0,7 PS	EF (L) 12V-0,7 PS	EF (L) 12V-0,7 PS	41
Starting voltage	Volts	42 9	9	9	42
Lockdraw	Amps/Volts	43 250-350/6	250-350/6	250-350/6	43
GENERATOR	Make	44 Bosch	Bosch	Bosch	44
	Type	45 K1 (RL) 14V 55A 22	K1 (RL) 14V 55A 22	K1 (R) 14V 55A 22	45
Output	A/V/rpm - gen.	46 50/14/6000	50/14/6000	55/14/6000	46
REGULATOR	Make	47 Bosch	Bosch	Bosch	47
	Type	48 0 190 600 011	0 190 601 006	0 190 601 006	48
Open circuit voltage	Volts	49			49
Cut-in voltage	Volts	50			50
Drop off voltage	Volts	51			51
Reverse current	Amps	52			52
Regulator voltage - Alternator	Volts	53 13,9-14,8	13,9-14,8	13,9-14,8	53



VW Porsche 914(1,7)	VW Porsche 914(2,0)	VW Porsche 914(2,0)	MODEL
54 1969-	1973-	1973-	Year
55 473/02	95HP (GA)	100 HP (GB)	ENGINE
56 0,1 (0.003)	0,15 (0.006)	0,15 (0.006)	Valve clearance - Inlet mm (in)
57 0,1 (0.003)	0,20 (0.008)	0,20 (0.008)	- Exhaust mm (in)
58 9-11 (128-156)		9-11 (128-156)	Compression pressure kg/cm ² (psi)
59 3 (42.6)		2 (28)	Oil pressure kg/cm ² (psi)
60			Radiator cap kg/cm ² (psi)
61 65-70 (149-158)			Thermostat opens at °C (°F)
62			Fan belt size mm (in)
63			Fan belt tension/deflection mm (in)/kg (lb.)
64			ROLLER TEST kmh (mph)/rpm/gear
65			Brake horsepower at wheels bhp (kp)
66 Bosch	Bosch	Bosch	CARBURETTOR Make
67 Injection	Injection	Injection	Type
68 95	91	95	Octane rating
69	850-950	850-950	Idle speed - manual rpm
70			Idle speed - automatic-selector pos. rpm
71	1,5/900	2,1/900	Exhaust emission CO%rpm
72			FUEL PUMP Make
73			Type
74			Delivery rate Ltr. (Imp Pt)/hr
75 2,0 (28.4)	2,0 (28.4)	2,0 (28.4)	Delivery pressure kg/cm ² (psi)
76			FILLING CAPACITIES
77 3,5 (6.2)	3,5 (6.2)	3,5 (6.2)	Engine Ltr. (Imp Pints)
78			Filter Ltr. (Imp Pints)
79 2,5 (4.4)	2,5 (4.4)	2,5 (4.4)	Gearbox Ltr. (Imp Pints)
80			Automatic Ltr. (Imp Pints)
81			Differential Ltr. (Imp Pints)
82			Cooling system Ltr. (Imp Pints)
83 165 HR15	165SR15	165HR15	TYRES Standard size
84 1,8 (26)	1,8 (26)	1,8 (26)	Pressure - Front kg/cm ² (psi)
85 2,0 (29)	2,0 (29)	2,0 (29)	- Rear kg/cm ² (psi)
86			WHEEL ALIGNMENT DATA
87 0° 20' ± 10'	0° 20' ± 10'	0° 20' ± 10'	Toe-in - Front mm (in)
88			Toe-out mm (in)
89 0° ± 20'	0° ± 20'	0° ± 20'	Camber Degrees
90 6° ± 30'	6° ± 30'	6° ± 30'	Castor Degrees
91 20°/19°30'	20°/19°30'	20°/19°30'	Lock angles - inner/outer wheel Degrees
92 10° 56'	10° 56'	10° 56'	King pin inclination Degrees
93 0° ± 15'	0° ± 15'	0° ± 15'	Toe-in - Rear mm (in)
94			Toe-out mm (in)
95 0°30' Neg ± 20°	0°30' Neg. ± 20°	0°30' Neg. ± 20°	Camber Degrees
96			TIGHTENING TORQUE VALUES
97 3,2 (23)	3,2 (23)	3,2 (23)	Cylinder head Stage 1 kgm (lb.ft.)
98			Stage 2 kgm (lb.ft.)
99			Stage 3 kgm (lb.ft.)
100 3,3 (23.9)	3,3 (23.9)	3,3 (23.9)	Main bearings kgm (lb.ft.)
101 3,3 (23.9)	3,3 (23.9)	3,3 (23.9)	Big end bearings kgm (lb.ft.)
102 11 (79.6)	11 (79.6)	11 (79.6)	Flywheel kgm (lb.ft.)
103 3,5 (25.3)	3,5 (25.3)	3,5 (25.3)	Spark plugs kgm (lb.ft.)
104			Road wheels kgm (lb.ft.)



VW31

