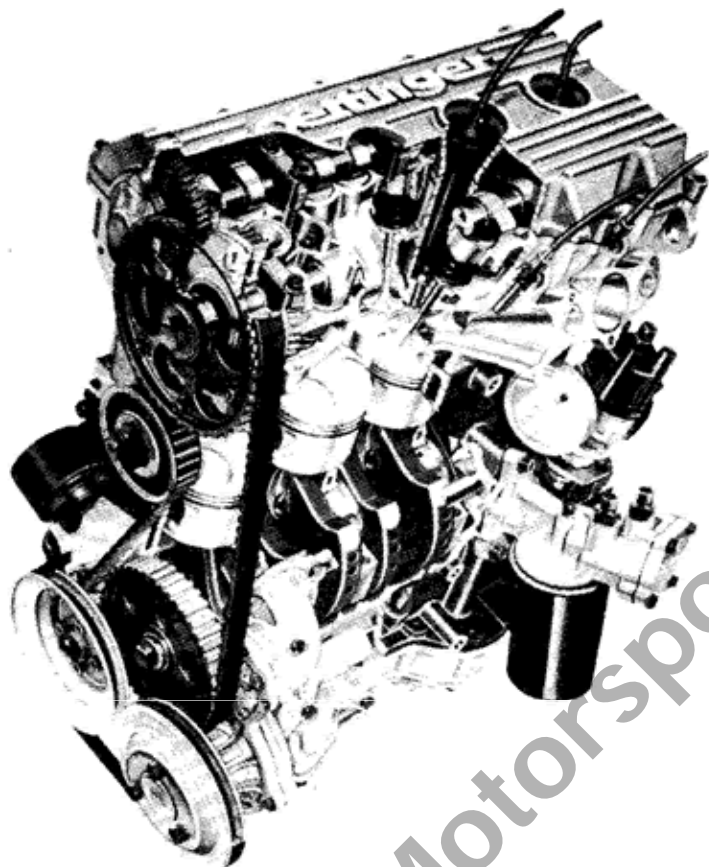


**DESCRIPTIF  
DES  
PIÈCES DE RECHANGE  
ET DES  
ÉQUIPEMENTS SPÉCIAUX  
GTI *16S***

VWMotorsport.info



# GOLF GTI 16S



## FICHE TECHNIQUE :

### CARROSSERIE

Conduite intérieure 2 portes avec hayon arrière, 5 places. Carrosserie type "bicorps" avec arrière transformable. Poids à vide en ordre de marche : 900 kg. Répartition à vide : 580 kg AV, 320 kg AR. Poids total autorisé en charge (P.T.A.C.) : 1280 kg. Charges maximales autorisées sur essieux : AV 690 kg, AR 610 kg. Poids total roulant autorisé (P.T.R.) : 2480 kg. Charges tractées autorisées : remorque freinée 1200 kg, remorque non freinée 400 kg.

### MOTEUR

Quatre cylindres en ligne, deux arbres à cames en tête, entraînement par courroie crantée pour l'admission par train d'engrenages hélicoïdaux pour l'échappement, soupapes en V, quatre soupapes par cylindre, vilebrequin à 5 paliers. Position transversale inclinée de 20° vers l'arrière. Alésage : 79,5 mm. Course : 80 mm. Cylindrée exacte : 1588 cm<sup>3</sup>. Rapport volumétrique : 10,5/l. Alimentation : par injection indirecte. Allumage : transistorisé à effet Hall. Puissance maximale : 136 ch Din (100 kW) à 6500 tr/mn. Couple maximum : 16 mkg Din (157 mN) à 5500 tr/mn. Puissance fiscale en France : 9 CV. Roues en alliage léger : 6 J 14. Pneumatiques : 185/60 HR 14.

### CHASSIS-SUSPENSIONS

Coque autoporteuse en tôles d'acier embouties et soudées. Suspension avant : à roues indépendantes, jambes élastiques (combinés ressorts amortisseurs) sur leviers transversaux et barre antiroulis. Déport négatif de plan de roue, faisant office d'autostabilisateur. Barre antiroulis. Barre de liaison inférieure entre les deux longerons. Suspension arrière : à roues indépendantes. Jambes élastiques (combinés ressorts amortisseurs) sur bras longitudinaux, reliés par une traverse déformable. Barre antiroulis.

### DIRECTION

A crémaillère. Diamètre de braquage hors tout : 10,50 m.

### FREINS

Disques ventilés à l'avant avec étriers fixes (Ø 239 mm). Tambours à l'arrière (Ø 180 mm). Commande hydraulique par double circuit en diagonale. Régulateur asservi à la charge pour régler la pression sur les roues arrière.

### DIMENSIONS

Longueur HT : 3,815 m. Largeur HT : 1,630 m. Empattement : 2,400 m. Voie avant : 1,404 m. Voie arrière : 1,372 m. Garde au sol : 0,117 m. Contenance réservoir : 45 litres. Contenance carter d'huile : 4,5 litres. Volume coffre à bagages : 370 litres et 1100 litres banquette arrière rabattue.

### COULEURS DISPONIBLES

Blanc. Noir métallisé.

### PERFORMANCES-CONSOUMATIONS

9 CV. Vitesse maximale : 195 km/h.  
Accélération de 0 à 100 km/h : 7"6.  
Consommations UTAC : 6,3 l à 90 km/h.  
8,1 l à 120 km/h. 12 l en ville.

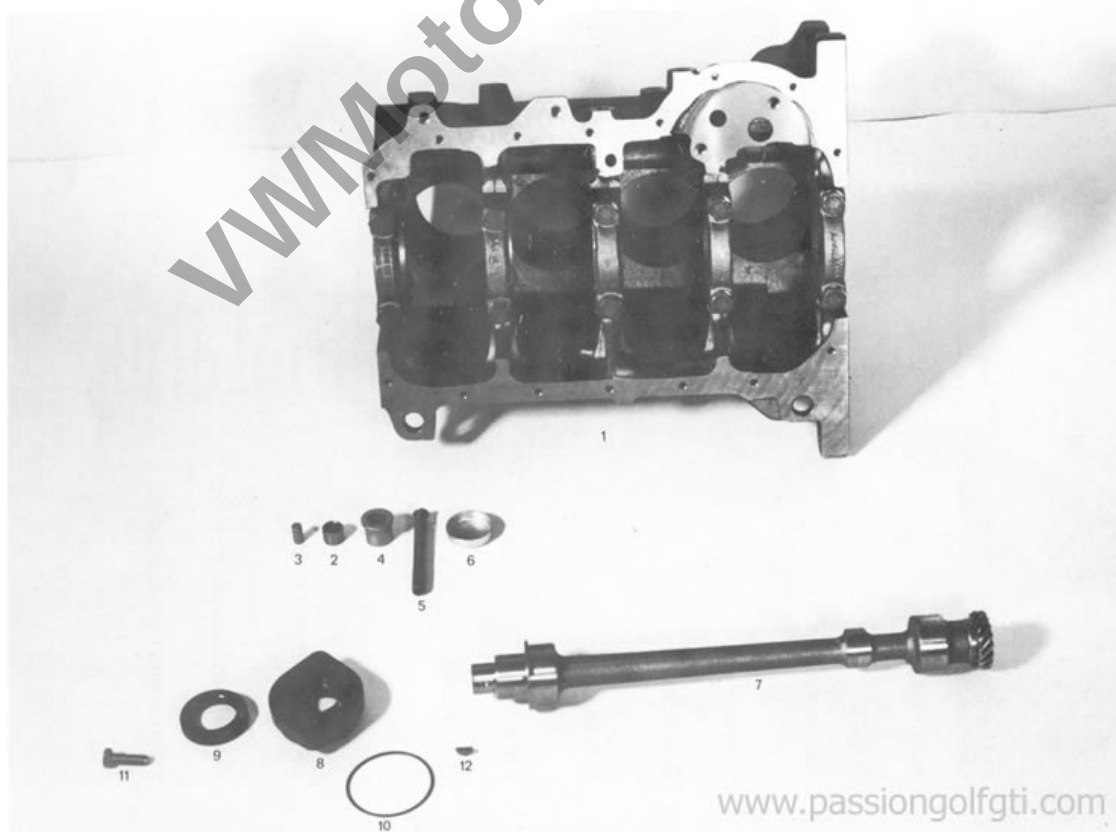


### GARANTIE

Garantie de 1 an pièces et main-d'œuvre, kilométrage illimité, de 6 ans pour la carrosserie et de 3 mois pour le prix de vente H.T.

## BLOC-CYLINDRE - ARBRE INTERMÉDIAIRE

REP.	RÉFÉRENCE	DÉSIGNATION	QUANTITÉ
1	OE 101 006 00	Bloc cylindre	1
2	014 301 153	Douille d'ajustage	2
3	N 043 2072	Goupille cylindrique	4
4	056 103 541	Douille	1
5	049 103 635	Tuyau pour jauge d'huile	1
6	059 103 113	Couvercle d'obturation	1
7	049 115 017	Arbre intermédiaire	1
8	056 115 033 A	Bague de guidage	1
9	056 103 085	Bague-joint	1
10	056 115 037	Joint torique	1
11	N 010 24212	Boulon M 8 x 25	2
12	N 012 2418	Clavette	2



## BLOC-CYLINDRE - FLASQUES

REP.	RÉFÉRENCE	DÉSIGNATION	Qté	REP.	RÉFÉRENCE	DÉSIGNATION	Qté
1	055 103 173 B	Flasque d'étanchéité	1	19	055 103 645	Blindage	1
2	056 103 051 D	Bague-joint 105 x 85	1	20	N 900 082 03	Goujon M 8 x 20	2
3	052 103 181	Joint de flasque	1	21	—	Rondelle S 8	2
4	N 090 245 2	Vis et rondelle M 6 x 18	10	22	—	Écrou M 8, SW 11	2
5	056 103 153	Flasque d'étanchéité	1				
6	056 103 085	Bague-joint	1				
7	056 103 161	Joint de flasque	1				
8	N 010 240 11	Boulon M 8 x 20	1				
9	N 012 241 8	Rondelle B 8 x 15	1				
10	OE 101 006 00	Bloc cylindre	1				
11	049 127 311	Bague-joint	1				
12	OE 101 005 00	Corps de reniflard	1				
13	056 115 037	Bague-joint de reniflard	1				
14	—	Vis M 6 x 10, 8 x 8, DIN 933	2				
15	—	Rondelle 6,4 x 20	2				
16	036 103 129	Reniflard	1				
17	055 103 650 A	Joint	1				
18	N 014 3401	Boulon M 6 x 10	3				

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## CULASSE Complète

REP.	RÉFÉRENCE	DÉSIGNATION	Qté	REP.	RÉFÉRENCE	DÉSIGNATION	Qté
1	OE 104 013 00	Culasse complète	1	17	049 109 629 B	Coupelle expansible inf.	16
2	OE 104 022 00	Couvercle	1	18	056 109 641 A	Coupelle expansible sup.	16
3	056 103 485 A	Couvercle de remplissage d'huile	1	19	056 109 651	Clavette	32
4	OE 107 013 00	Joint Ø 2 x 1070 m/m	1	20	OE 104 015 00	Guide de soupape	16
5	OE 104 027 00	Couvercle	1	21	OE 104 017 00	Bague	16
6	OE 104 028 00	Bague-joint 51-2	1	22	035 109 675	Étanchement tige de soupape	16
7	OE 104 025 00	Couvercle	1	23	OE 108 006 00	Bague-joint 42-2	4
8	OE 104 026 00	Bague-joint 91-2	1	24	OE 104 024 00	Bague-joint 30-2	4
9	056 103 085	Bague-joint	1	25	N 011 9142	Capuchon	1
10	—	Vis M 6 x 55, DIN 912	1	26	N 011 1332	Écrou M 10	2
11	—	Vis M 6 x 30, DIN 912	1	27	N 012 2311	Rondelle B,6 DIN 137	2
12	—	Vis M 6 x 20, DIN 912	10	28	056 103 399	Goujon M 10 x 48	1
13	OE 104 018 00	Soupape d'admission	8	29	OE 104 029 00	Joint de culasse	1
14	OE 104 019 00	Soupape d'échappement	8	30	056 103 377	Rondelle 11,5 x 20	10
15	OE 104 020 00	Ressort de soupape int.	16	31	OE 104 030 01	Vis cylindrique de culasse	10
16	OE 104 021 00	Ressort de soupape ext.	16	32	063 133 555	Élément pour injecteur	4

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## POMPE A HUILE - CARTER D'HUILE - POMPE A EAU

REP.	RÉFÉRENCE	DÉSIGNATION	Qté	REP.	RÉFÉRENCE	DÉSIGNATION	Qté
1	OE 107 001 00	Carter d'huile inférieur	1	18	—	Vis M 8 x 20, DIN 933	3
2	OE 107 004 00	Carter d'huile supérieur	1	19	N 012 2418	Rondelle A 8	4
3	OE 107 026 00	Couvercle pompe à huile	1	20	OE 107 005 00	Vis M 6 x 75, DIN 912	15
4	056 115 107	Boitier pompe à huile	1	21	—	Vis M 6 x 30, DIN 912	5
5	OE 107 008 00	Arbre de commande	1	22	OE 107 006 00	Vis M 6 x 25, DIN 912	2
6	056 115 123 A	Pignon de pompe	2	23	—	Rondelle S 6	22
7	OE 107 012 00	Guidage arbre de commande	1	24	055 121 011 F	Pompe à eau	1
8	OE 107 009 00	Douille d'ajustage	2	25	059 121 119	Bague-joint	1
9	N 010 222 8	Vis M 6 x 22	2	26	OE 106 003 00	Entretoise	1
10	N 012 226 5	Rondelle B 6	2	27	056 121 031	Poulie pompe à eau	1
11	OE 107 010 00	Vis M 8 x 95, DIN 931	2	28	056 121 053 B	Durite	1
12	OE 107 002 00	Bague M 8 x 1,5	1	29	N 024 511 3	Collier	2
13	OE 107 003 00	Joint Ø 18 x 24 x 1,4	1	30	056 121 149	Joint	1
14	OE 107 013 00	Joint rond Ø 2 x 1070 <sup>m</sup> /m	1	31	067 115 405 B	Support filtre à huile	1
15	OE 107 011 00	Joint de carter d'huile	1	32	049 115 441	Joint	1
16	N 010 350 6	Vis M 8 x 50	2	33	N 014 726 1	Vis M 8 x 30	3
17	N 010 244 9	Vis M 8 x 30	2	34	056 115 561 G	Filtre à huile	1
				35	055 115 611 F	Jauge niveau d'huile	1

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## COLLECTEURS - ÉCHAPPEMENT - ADMISSION

REP.	RÉFÉRENCE	DÉSIGNATION	Qté	REP.	RÉFÉRENCE	DÉSIGNATION	Qté
1	OE 108 001 00	Collecteur d'admission	1	20	—	Vis M 8 x 35, 8.8, DIN 912	2
2	OE 108 002 00	Flasque	1	21	—	Rondelle S 6	9
3	049 133 073 A	Joint	2	22	—	Rondelle S 6	2
4	OE 108 010 00	Entretoise	1	23	OE 108 004 00	Manchon	1
5	—	Vis M 8 x 20, 8.8	3	24	OE 111 003 00	Collecteur d'échappement	1
6	—	Rondelle S 8	3	25	055 253 115	Joint	1
7	—	Vis M 8 x 18 DIN 938	4	26	OE 111 004 00	Joint	4
8	—	Écrou M 8, S W 11	4	27	059 129 601	Écrou 6 pans M 8	8
9	OE 108 003 00	Joint	1	28	N 011 558 2	Rondelle Ø 8,4	8
10	067 133 063 A	Ajutage de papillon	1	29	N 900 146 01	Goujon M 10 x 42	6
11	OE 423 003 00	Support	1	30	OE 111 005 00	Goujon M 8 x 27	8
12	021 119 769 A	Roulette câble régulation d'air	1	31	OE 112 005 00	Collier Ø 20 <sup>m</sup> /m	1
13	N 012 326 2	Circlips	1	32	OE 112 002 00	Collier Ø 19 <sup>m</sup> /m	3
14	OE 108 007 00	Joint 19-2	5	33	OE 112 004 00	Collier Ø 20 <sup>m</sup> /m	1
15	OE 108 006 00	Joint 42-2	4	34	OE 108 009 00	Tube raccord	1
16	—	Vis M 6 x 20, 8.8, DIN 912	9	35	OE 108 005 00	Conduit d'aération	1
17	N 014 542 1	Goujon	2	36	OE 108 008 00	Conduit d'aération	1
18	—	Écrou M 6, DIN 555	2	37	049 133 453 B	Registre d'air additionnel	1
19	—	Vis M 8 x 30, 8.8, DIN 912	2	38	063 906 179	Joint soupape de lancement	1

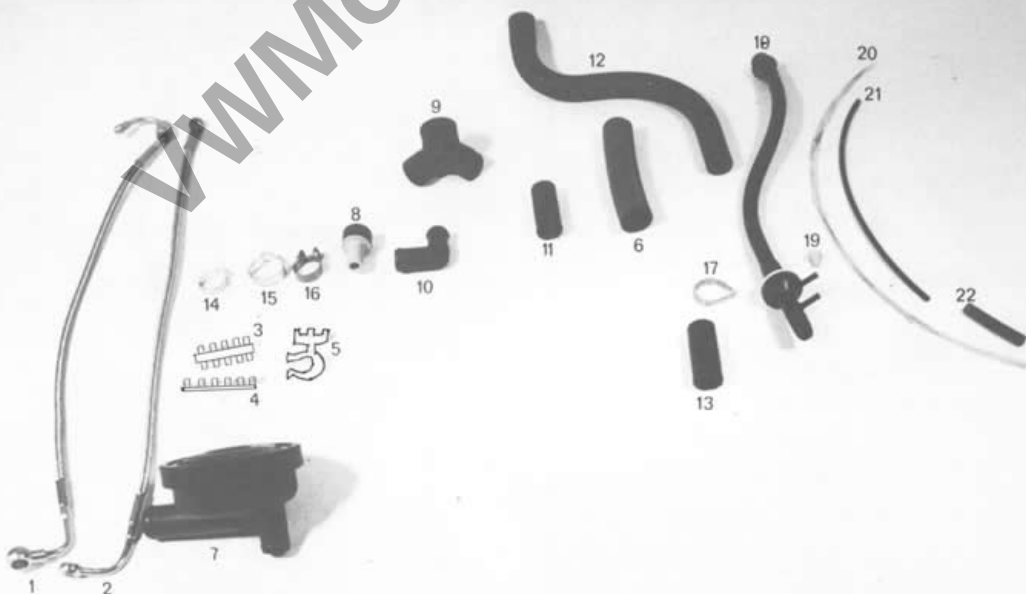
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## TUYAU DE CARBURANT FLEXIBLES DE DÉPRESSION ET D'AÉRATION

REP.	RÉFÉRENCE	DÉSIGNATION	Qté	REP.	RÉFÉRENCE	DÉSIGNATION	Qté
1	OE 356 001 00	Tuyau de carburant	1	19	056 129 777	Bouchon 6	1
2	OE 356 002 00	Tuyau de carburant	1	20	OE 127 002 00	Tuyau 4 x 1 lg 500 m/m	1
3	035 133 689	Support	1	21	OE 127 003 00	Tuyau 4 x 1 lg 300 m/m	1
4	063 133 689 B	Support	2	22	OE 127 004 00	Tuyau 3,5 x 2 lg 200 m/m	1
5	049 133 687	Support	1				
6	OE 112 001 00	Flexible	1				
7	076 129 101	Soupape de régulation	1				
8	035 103 245 A	Pointeau de purge	1				
9	035 103 247	Boitier Ø 25 x 3,5 x 115	1				
10	035 103 229	Ajutage	2				
11	171 611 939 A	Flexible de dépression	1				
12	067 103 223	Flexible d'aération	1				
13	171 611 939 A	Flexible de dépression	1				
14	OE 112 004 00	Collier Ø 20 m/m	1				
15	OE 112 003 00	Collier Ø 26 m/m	4				
16	OE 112 002 00	Vis collier Ø 19 m/m	1				
17	OE 112 003 00	Collier Ø 26 m/m	1				
18	OE 127 001 00	Conduit avec soupape anti-retour	1				

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## EMBRAYAGE - VOLANT-MOTEUR

REP.	RÉFÉRENCE	DÉSIGNATION	Qté	REP.	RÉFÉRENCE	DÉSIGNATION	Qté
1	OE 116 003 00	Mécanisme d'embrayage	1				
2	055 141 069 A	Tôle entretoise	1				
3	OE 116 007 00	Vis M 10 x 1 x 20	6				
4	055 141 031 Q	Disque d'embrayage	1				
5	055 141 124 E	Coupelle de pression	1				
6	055 141 130 E	Bague d'arrêt	1				
7	OE 116 004 00	Volant moteur 200 mm	1				
8	N 014 712 3	Vis tête cylindrique M 8 x 18	2				
9	N 012 241 8	Rondelle 8,4 x 15 x 1,6	4				
10	—	Vis M 8 x 25, 8.8, DIN 912	2				
11	055 199 301 K	Support moteur	1				

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## ÉLECTRICITÉ

REP.	RÉFÉRENCE	DÉSIGNATION	Qté	REP.	RÉFÉRENCE	DÉSIGNATION	Qté
1	OE 602 013 00	Ensemble câbles allumage	1	20	056 971 233 A	Câblage masse alternateur	1
2	OE 602 005 00	Tête d'allumeur	1	21	052 905 471 B	Support câblage	1
3	OE 602 012 00	Capuchon protection	4	22	047 905 477	Support distributeur	1
4	311 035 281 A	Fiche antiparasitée	5	23	OE 600 005 00	Compte tours	1
5	OE 600 004 00	Câblage complet	1	24	OE 600 008 00	Tachymètre	1
6	OE 602 003 00	Distributeur	1	25	OE 600 003 00	Double engrenage d'angle	1
7	OE 602 004 00	Rotor	1	26	OE 600 007 00	Contacteur pression d'huile	1
8	056 905 261	Bague-joint	1	27	OE 600 001 00	Manomètre pression huile	1
9	035 905 251 A	Support distributeur	1	28	043 906 163 A	Thermocontacteur	1
10	N 010 242 12	Vis M 8 x 25	1	29	049 919 563 A	Sonde température d'huile	1
11	OE 603 005 00	Support d'alternateur	1	30	N 013 806 2	Bague-joint A 10 x 14	1
12	OE 600 006 00	Pignon de tachymètre	1	31	N 010 239 5	Vis M 8 x 16	2
13	049 903 105 A	Support d'alternateur	1	32	N 014 706 2	Vis tête cylindrique 8 x 12	4
14	049 903 103	Support d'alternateur	1	33	N 012 241 8	Rondelle B 8 x 15	2
15	OE 603 004 00	Vis M 8 x 40, 8.8	1	34	N 011 558 2	Rondelle 8,4 x 15 x 1,6	1
16	OE 603 003 00	Bague-tasseau lg 9,5 m/m	1	35	056 105 255	Poulie de vilebrequin	1
17	OE 603 002 00	Bague-tasseau lg 17 m/m	1	36	OE 603 001 00	Poulie d'alternateur	1
18	—	Rondelle 8,4 DIN 125	1	37	OE 721 001 00	Clé à bougie	1
19	—	Écrou M 8 DIN 985	1	38	YY 036 016	Bougie "Champion G 63"	4

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# ÉQUIPEMENT D'ORIGINE G.T.I. 16 S

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**Calandre** double-phare Cibié : Réf. YY 087 001

**Optique** de rechange : Réf. YY 087 002

**Spoiler BBS** complet : Réf. YY 056 040

- joint noir : YY 056 038

- joint blanc : YY 056 039

**Kit jantes** ATS 6 x 14 : Réf. YY 075 010

**Monogramme Av.** GTI 16 S : Réf. YY 086 001

**Monogramme Ar. Droit** : Golf GTI 16 S : Réf. YY 086 002

**Monogramme Ar. Gauche** : VOLKSWAGEN : Réf. YY 086 003

**Décor latéral** 16 soupapes : Réf. YY 081 001 : blanc

Réf. YY 081 002 : noir

**Partie centrale de volant** : GTI 16 S : Réf. YY 084 001

**Plaquettes de frein AV :**

Extérieur : Réf. YY 066 001

Intérieur : Réf. YY 066 002

**Liquide de frein Bendix New lock 2000 :**

Réf. YY 114 002 (1 litre)

Réf. YY 114 003 (0,5 litre)

## GAMME D'ACCESSOIRES G.T.I. 16 S

**JANTE ATS 5,5 x 15**  
Pneumatique Pirelli P 7 - 195-50 VR 15  
Réf. YY 078 010

**JANTE SERAL 6 x 13**  
Pneumatique Pirelli P 7 Rallye - Type 205-60 VR 13  
Réf. YY 078 011

**JANTE BBS 6 x 14**  
Pneumatique Pirelli P 6 - 195-60 HR 14  
Réf. YY 078 012 : argent  
YY 078 013 : argent et or

**JANTE STILAUTO 6 x 14**  
Pneumatique Pirelli P 6 - 185-60 HR 14  
Réf. YY 078 015

**ENSEMBLE BILSTEIN** comprenant :  
2 amortisseurs AV.  
2 amortisseurs AR.  
(à utiliser avec les ressorts hélicoïdaux d'origine).  
Réf. 171 071 670

**ENSEMBLE DE SUSPENSION BILSTEIN**  
comprenant :  
2 amortisseurs AV. avec ressorts hélicoïdaux spéciaux  
2 amortisseurs AR. avec ressorts hélicoïdaux spéciaux  
Réf. 171 071 671

**DÉFLECTEUR AR.** (inférieur)  
Réf. 171 071 640

**DÉFLECTEUR AR.** (supérieur)  
Réf. 171 071 645

## Les GTI<sup>ssimes</sup> de VOLKSWAGEN

**HOUSSES** de sièges "Dézarnaud" :  
(jeu complet AV. et AR.)  
Réf. YY 039 040

**BLOUSON** assorti aux housses "DEZARNAUD" :  
Réf. : (le groupe de chiffres qui termine la référence  
correspond à la taille du vêtement)

YY 039 050 038 ..... (taille 38/40)

YY 039 050 042 ..... (taille 42/44)

YY 039 050 046 ..... (taille 46/48)

YY 039 050 050 ..... (taille 50/52)

**BLOUSON réversible :**

YY 039 050 R28

YY 039 050 R42

YY 039 050 R46

YY 039 050 R50

**PARAPLUIE :**

Réf. YY 108 001

**MONTRE :**

Réf. YY 106 001

**PORTE-CLÉ :**

Réf. YY 107 001

**BLOUSON GTI<sup>ssime</sup> :** YY 039 053 038  
(avec texte au dos) YY 039 053 042  
YY 039 053 046  
YY 039 053 050

**BLOUSON GTI<sup>ssime</sup> :** YY 039 054 038  
(sans texte dos) YY 039 054 042  
YY 039 054 046  
YY 039 054 050

**BLOUSON à zipper :** YY 039 056 038  
(avec manche) YY 039 056 042  
YY 039 056 046  
YY 039 056 050

**BLOUSON à zipper :** YY 039 057 038  
(sans manche) YY 039 057 042  
YY 039 057 046  
YY 039 057 050

# V.A.G Relations extérieures.

## Information Presse

PUBLIABLE A PARTIR DU LUNDI 27 JUILLET 1981

V W G O L F G T I 1 6 S

n° 16  
18 juin 1981

RODAGE ET NOTICE D'ENTRETIEN  
DE LA GOLF OETTINGER , 2,0 l / 16 SOUPAPES

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A - 021/RNE-83

0 - 1.000 km

Le régime maxi autorisé au cours des 1.000 premiers kilomètres est de 3.000/min. N'accélérez pas plein gaz par principe. Une variation fréquente des régimes est recommandée.

1.000 - 3.000 km

Le régime maxi autorisé est de 4.000/min.; une variation fréquente des régimes est recommandée.

3.000 - ....km

Il est possible d'augmenter peu à peu l'allure jusqu'au régime maxi autorisé de 6.300/min.

- régime toléré en permanence en 5ème: 6.000/min.
- température d'huile: max. 125°C
- pression d'huile: au moins 0,5 bar à 1.000/min. (ralenti)  
au moins 4 bar à 5.000/min. (à la base  
d'une température d'huile de 100°C)

Remarques importantes

1. Ne poussez jamais le moteur froid aux régimes au-dessus de 3.000/min. avant que la température d'huile ne soit au moins de 60°C.
2. Respectez les indicateurs et les témoins d'alerte.
3. Lors du ravitaillement, vérifiez-vous du niveau d'huile correcte et également du niveau du liquide de refroidissement. Lorsque le témoin de pression d'huile moteur s'allume ou bien clignote, arrêtez immédiatement le moteur. Avant de contrôler le niveau, attendez quelques minutes afin que l'huile puisse refluer dans le carter.



- 2 -

4. La capacité d'huile moteur est 4,5 l, avec changement du filtre.  
La différence de quantité entre les repères min. et maxi sur la jauge d'huile est de 0,5 l. Le repère maxi ne doit pas être dépassé.
5. N'utilisez que des huiles HD de marque; nous vous recommandons l'usage de CASTROL RS ou bien GTX 2, 15 W 40, turbo-tested.
6. N'utilisez que du supercarburant de haute qualité (98 RON mini).
7. Lors du lavage moteur, vérifiez-vous de l'état sec des orifices de bougies afin d'éviter des rupteurs.
8. N'utilisez que les bougies Champion G 65. Une bougie supplémentaire ainsi que la clé correspondante appartiennent à la totalité de la transformation.

#### Notice d'Entretien

Hors de l'entretien régulier VAG, le moteur Oettinger demande un service supplémentaire à 3.000 km, qui comprend les points suivants:

1. contrôle du jeu d'embrayage ( environ 25 mm au pédale)
2. contrôle étanchéité de la boîte de vitesse et du rapport de pont.
3. vidange huile moteur et changement du filtre: capacité : 4,5 l
4. contrôle étanchéité du moteur
5. contrôle étanchéité du radiateur d'huile et des tuyaux flexibles
6. contrôle des vis et des écrous
- 6.1 Suspension moteur et boîte de vitesse ( M 10 : 45 Nm; M 12 : 75 Nm )
- 6.2 Assemblage moteur-boîte de vitesse ( M 10 : 45 Nm; M 12 : 75 Nm )
- 6.3 Cardans ( côté inférieur : 45 Nm; côté extérieur : 230 Nm )

...

- 3 -

6.4 culasse et tubulure d'aspiration ( 10 Nm )

6.5 barre de rigidité inférieure ( M 12 : 100 Nm )

6.6 barre de rigidité supérieure ( M 8 : 20 Nm )

7. contrôle du jeu de soupape

7.1 côté d'admission: 0,25 mm - 0,05 mm

7.2 côté d'échappement: 0,35 mm - 0,05 mm

8. contrôle du point d'allumage

8.1 arbres à cames standard

29° avant point mort haut à 5000/min. (tuyau à dépression démonté),  
correspondant à 0° (p.m.h.)  $\pm$  2° à 950/min. (tuyau à dépression monté)

8.2 arbres à cames spéciaux, 276°

29° avant p.m.h. à 5000/min. (tuyau à dépression démonté), correspondant  
à environ 6° avant p.m.h. à 950/min.

Le moteur OETTINGER 2000 E/16 dispose d'un distributeur modifié.  
(réseau de caractéristiques différent)

Au cas d'échange, l'usage du distributeur Oettinger (réf: OE 602 003 00),  
reconnu par repère blanc, est prescrit.

9. Test d'essai

9.1 contrôle étanchéité

9.2 Ajustage d'air de ralenti ( 950  $\pm$  25/min.) et du volume CO  
( 1,5  $\pm$  0,2 Vol.-% )

7.500 km identique au service VAG

- changement des bougies (avant de les dévisser, nettoyez les orifices)

- écartement des électrodes: 0,5 mm

- usure max.: 1,0 mm, couple 13 Nm

les intervalles suivantes sont identiques à la série.

vidange: tous les 7.500 km

Friedrichsdorf, Octobre 1983

pe-ke

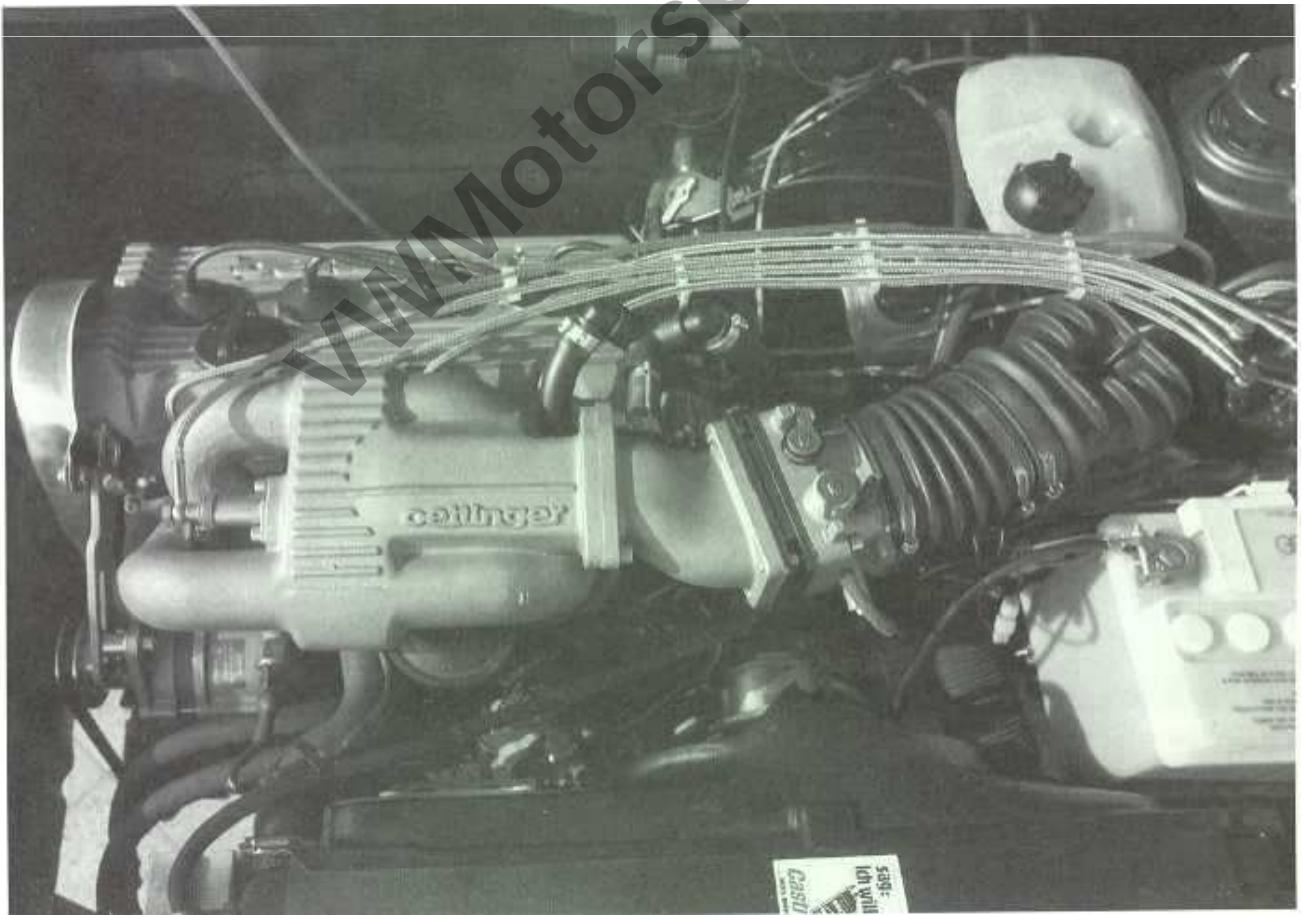
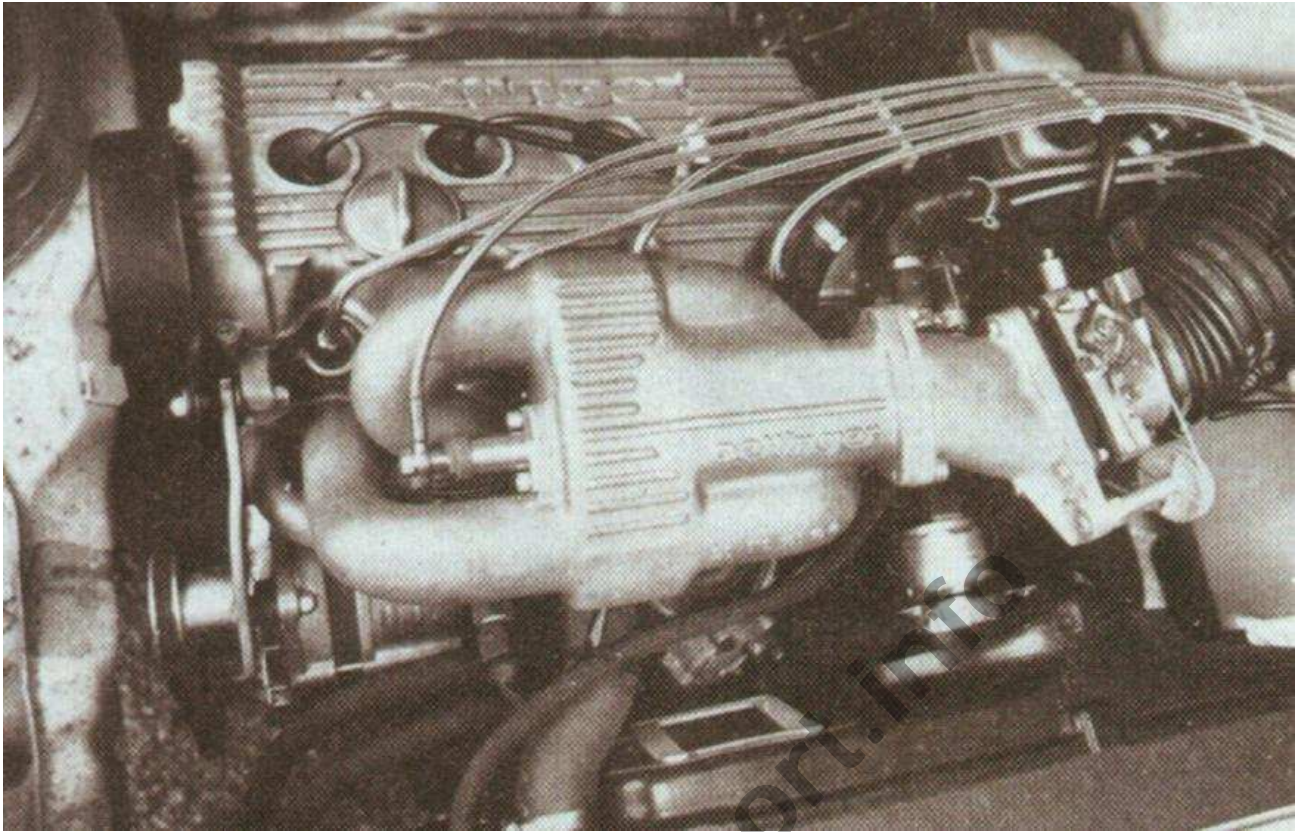
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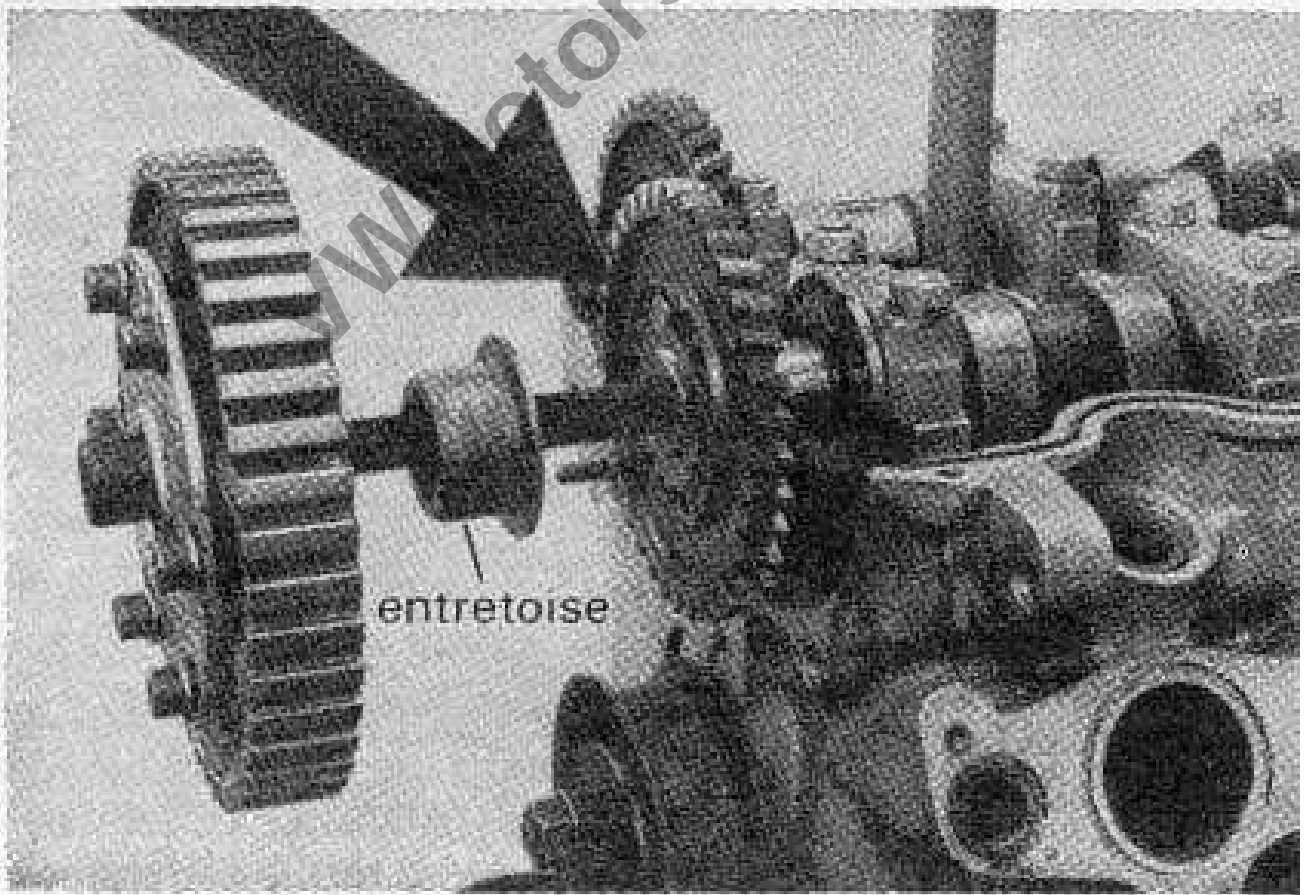
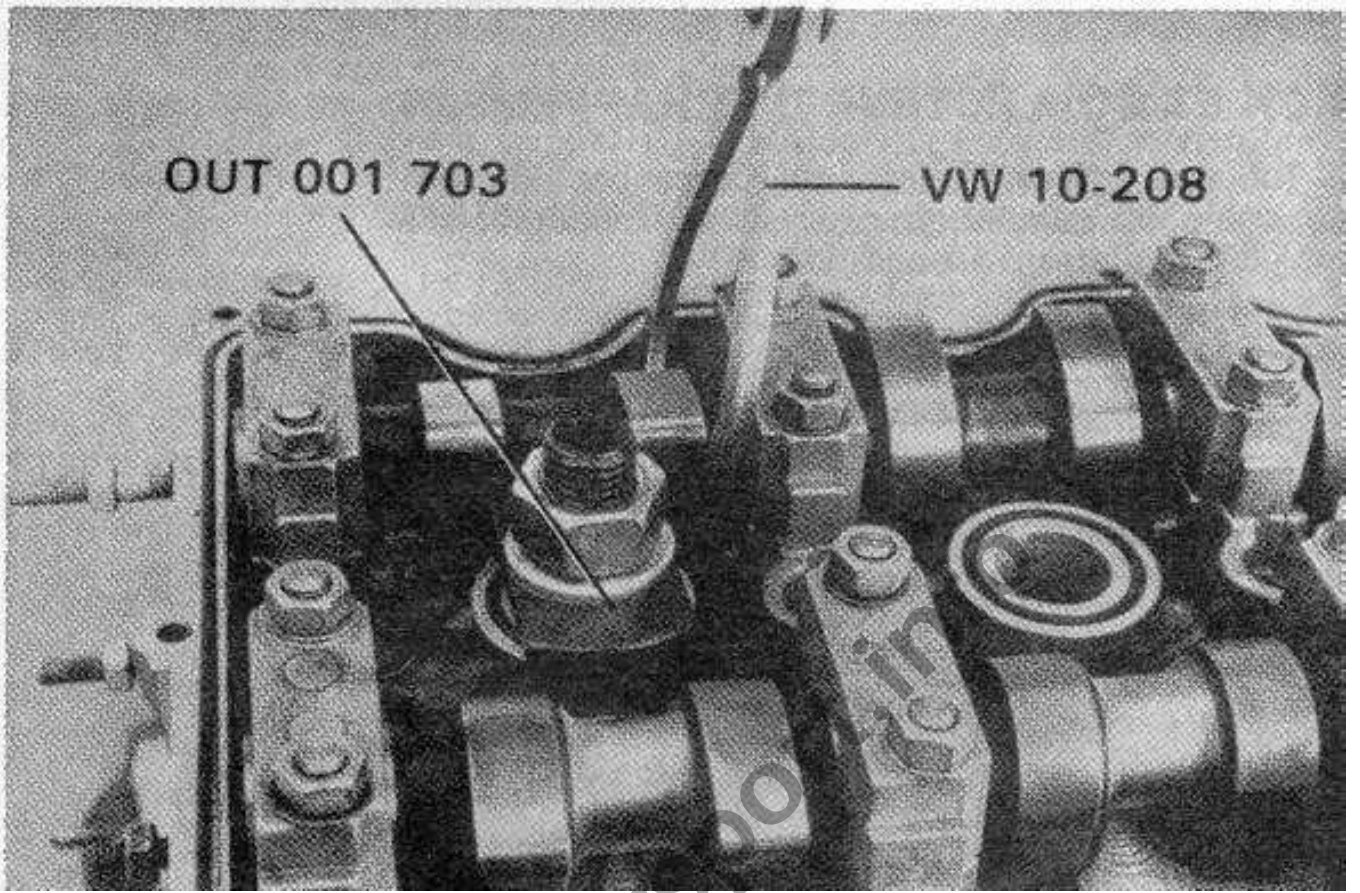
Dipl.-Ing. G. Oettinger  
GmbH & Co.KG

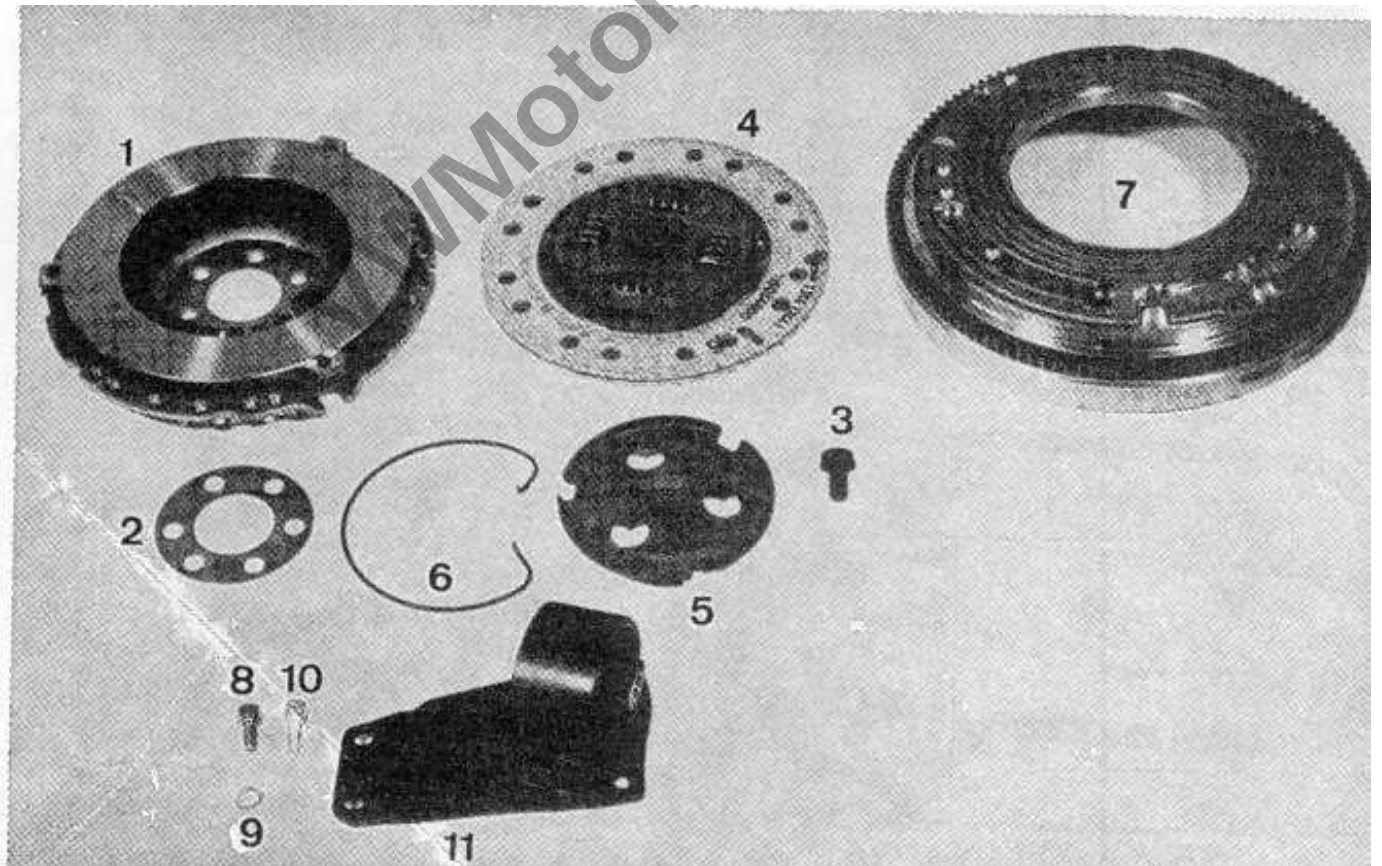
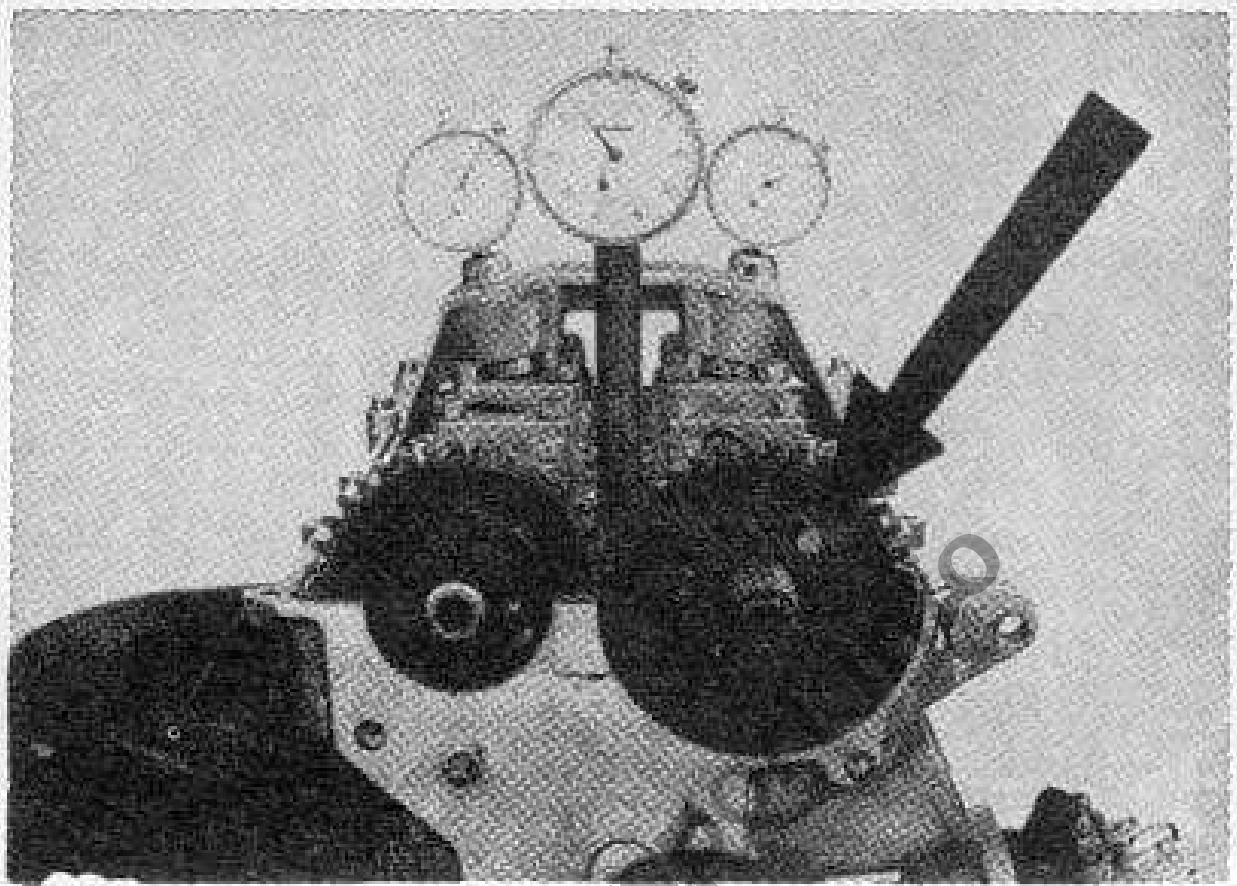
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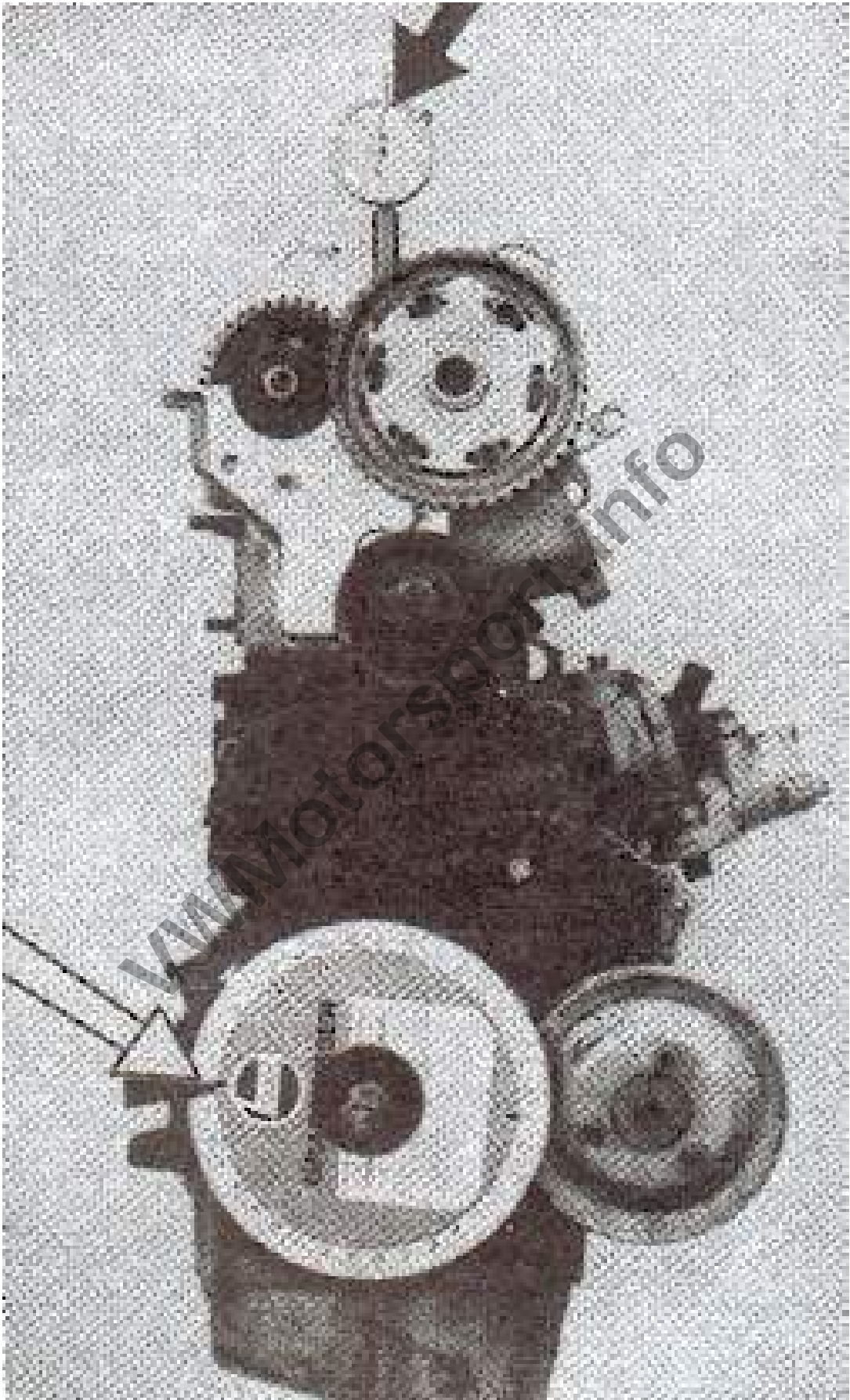
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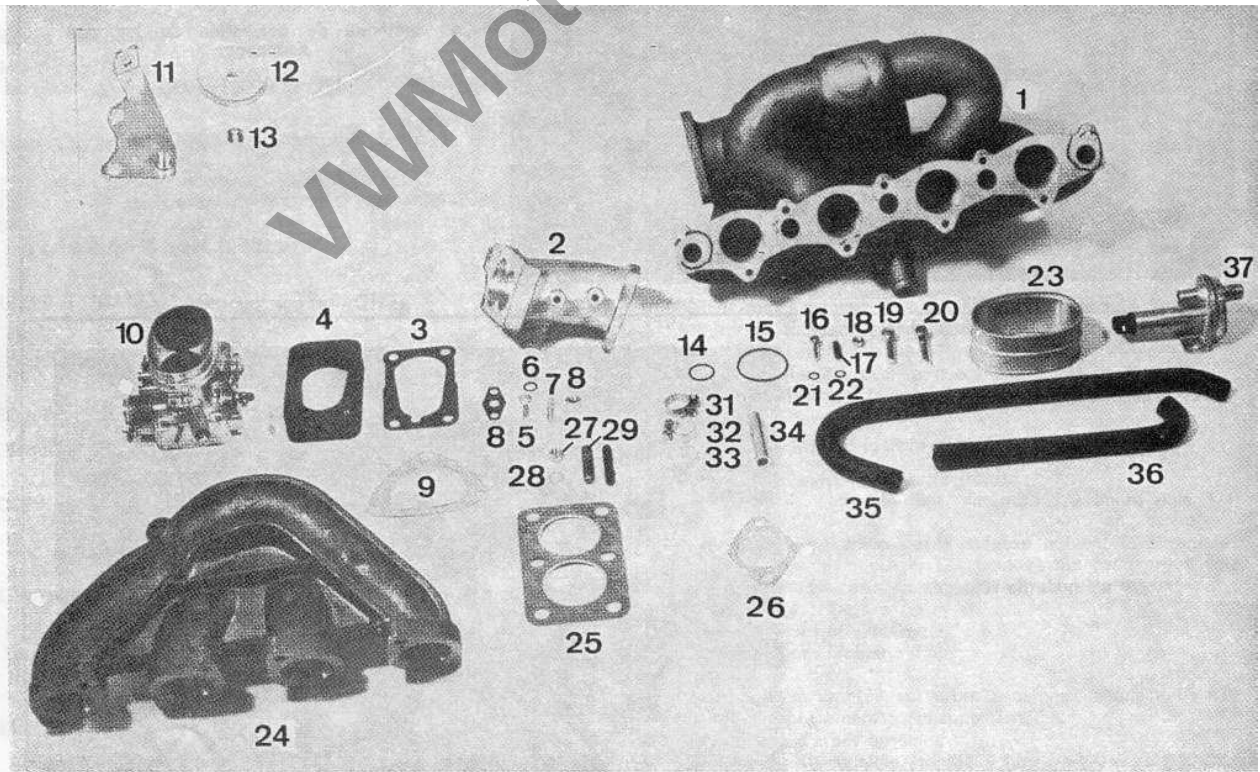
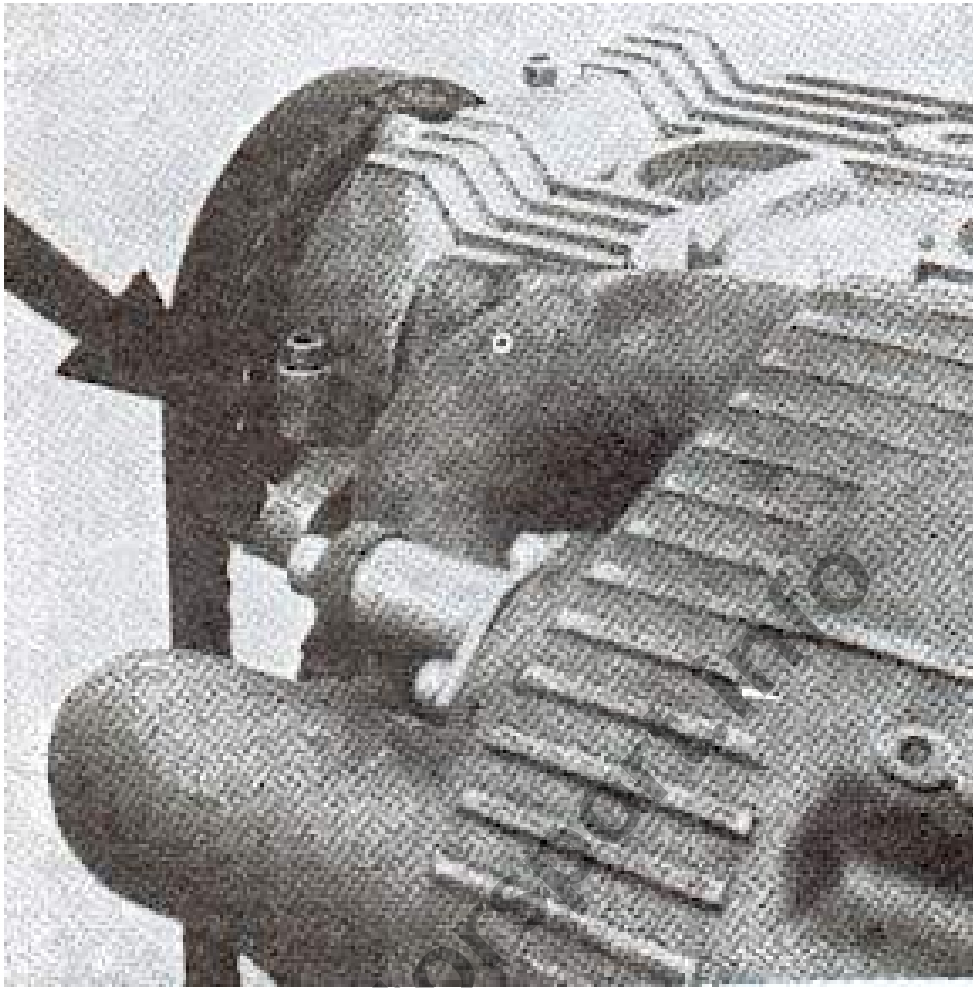
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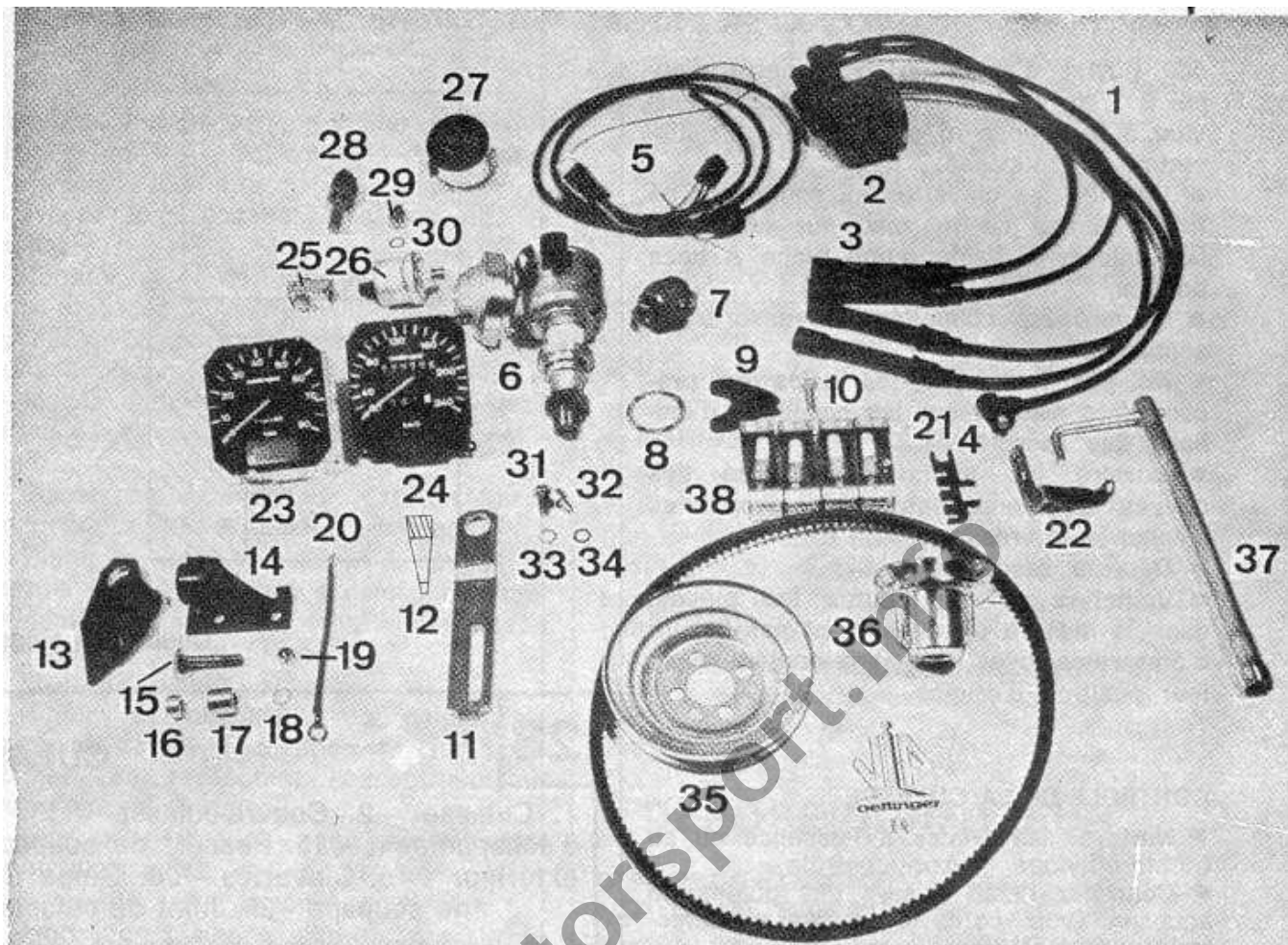




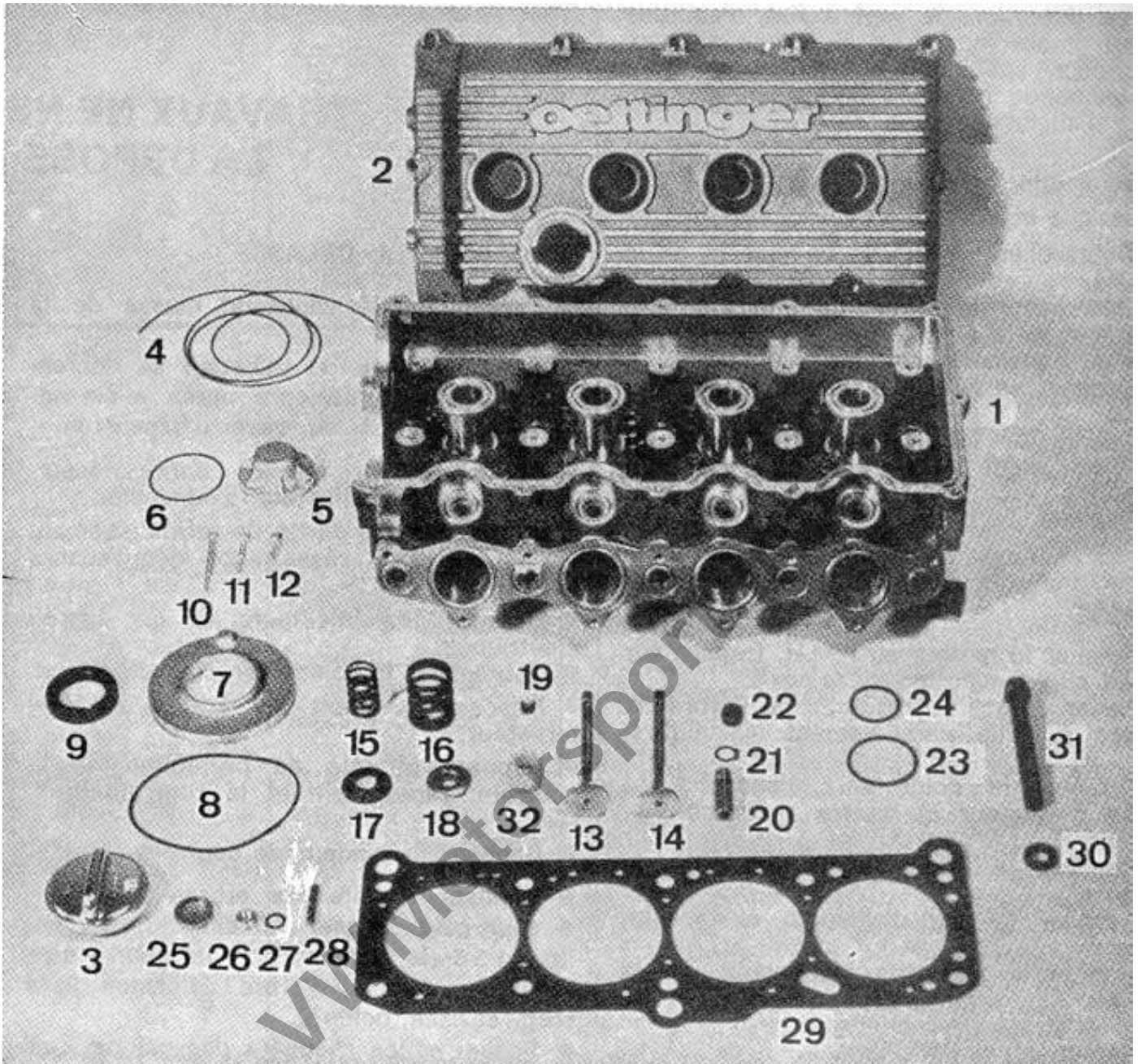


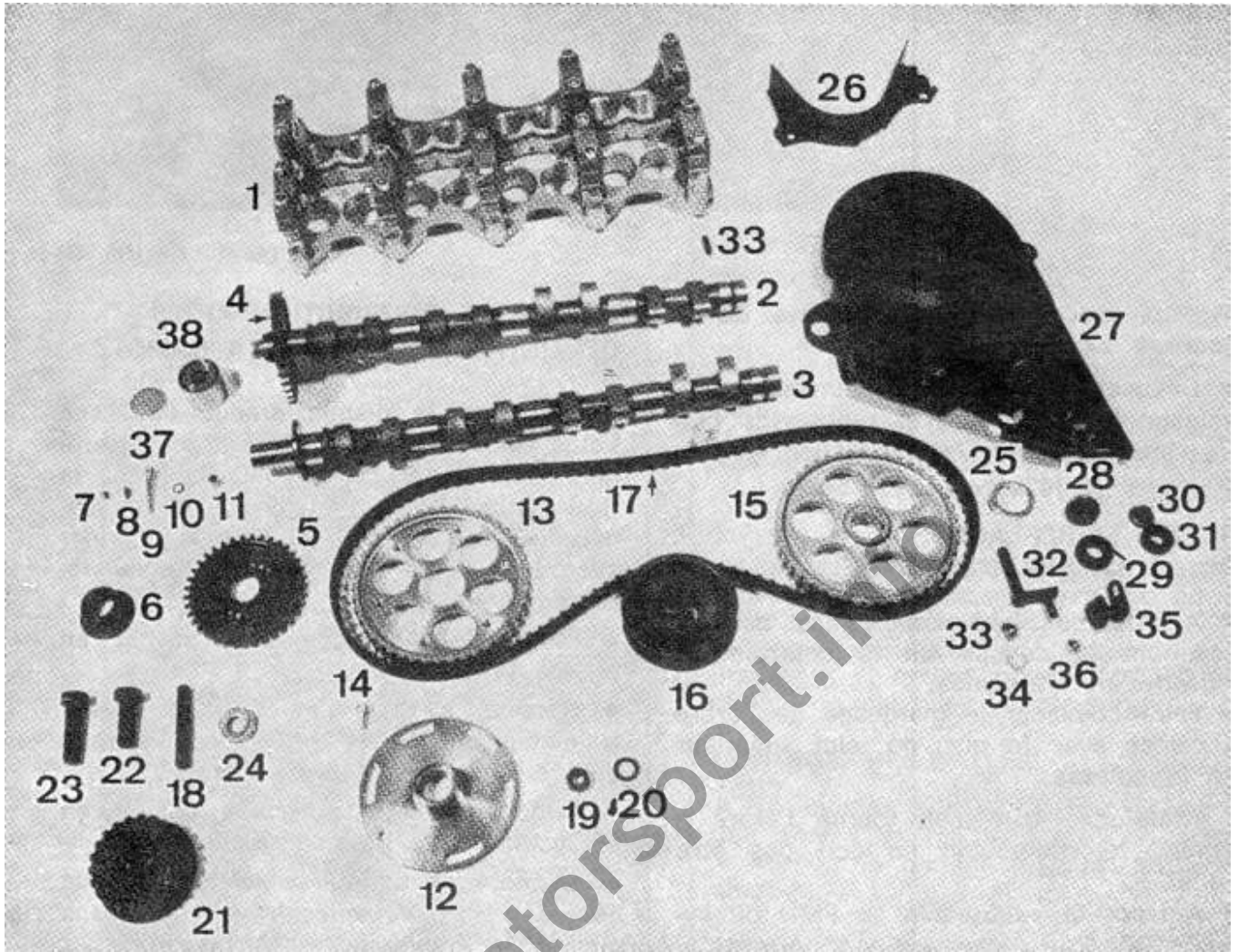


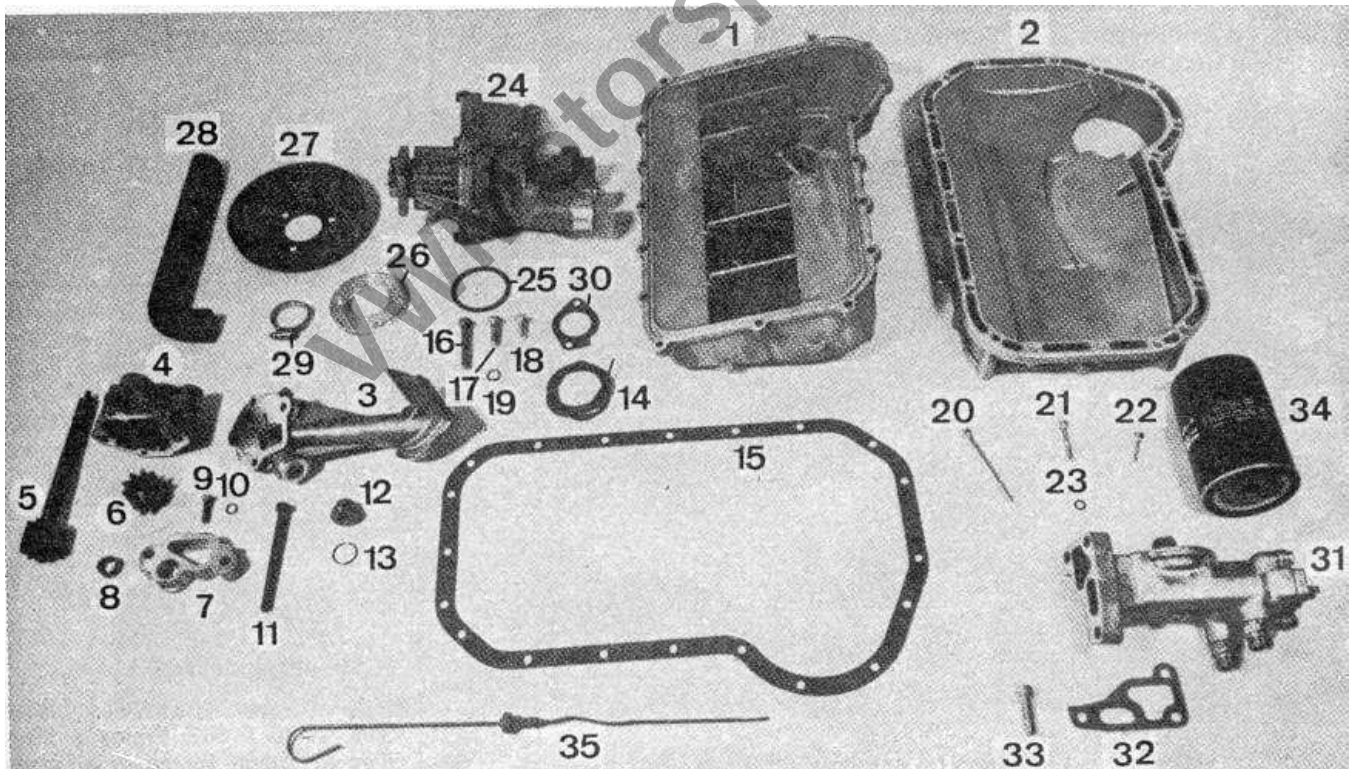
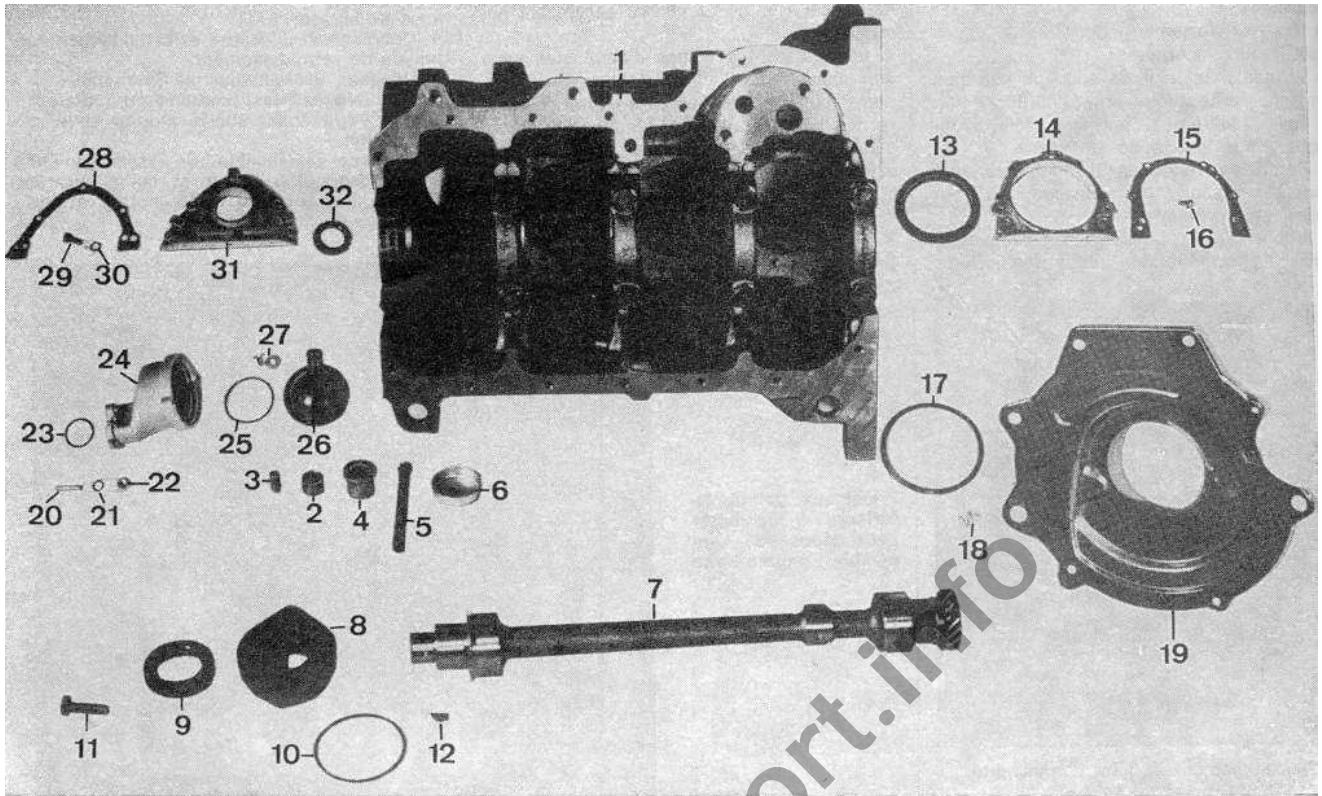


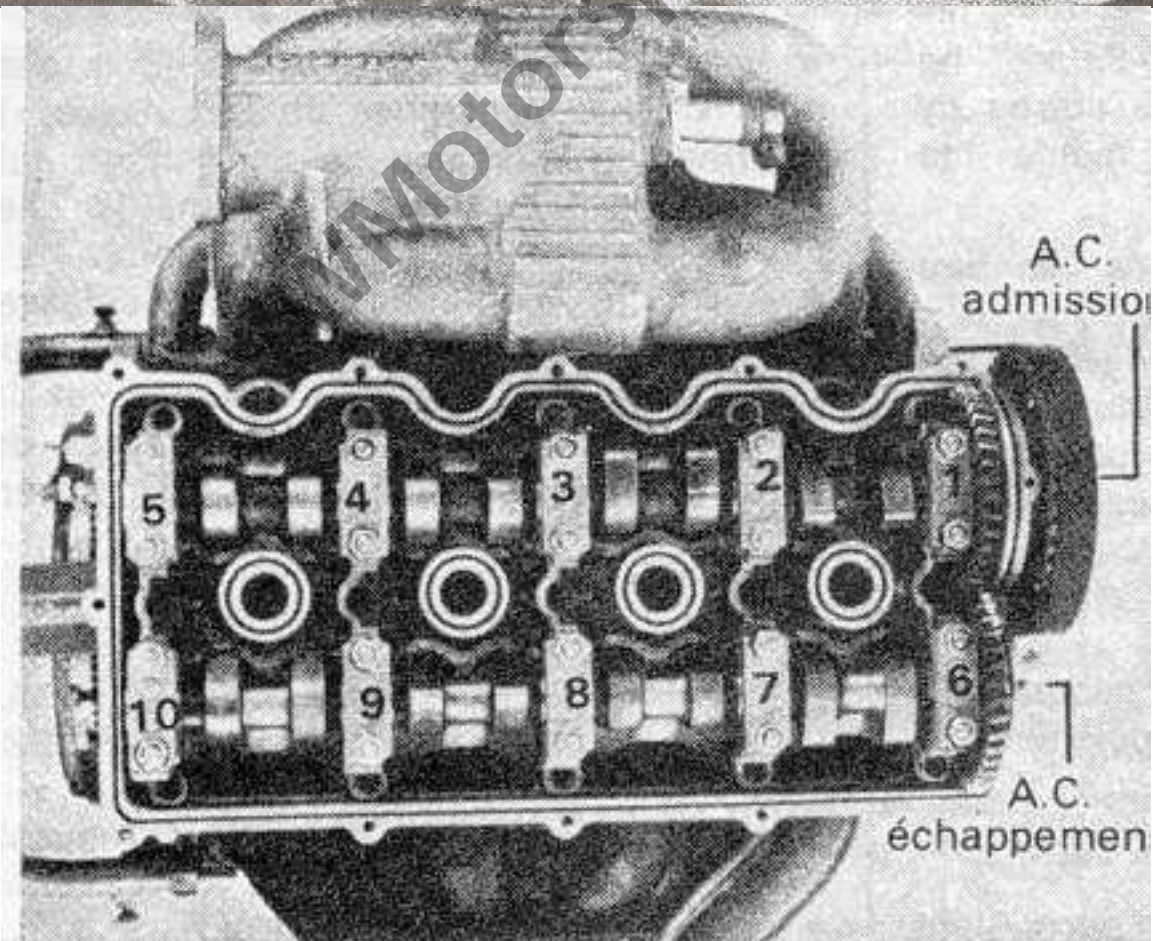
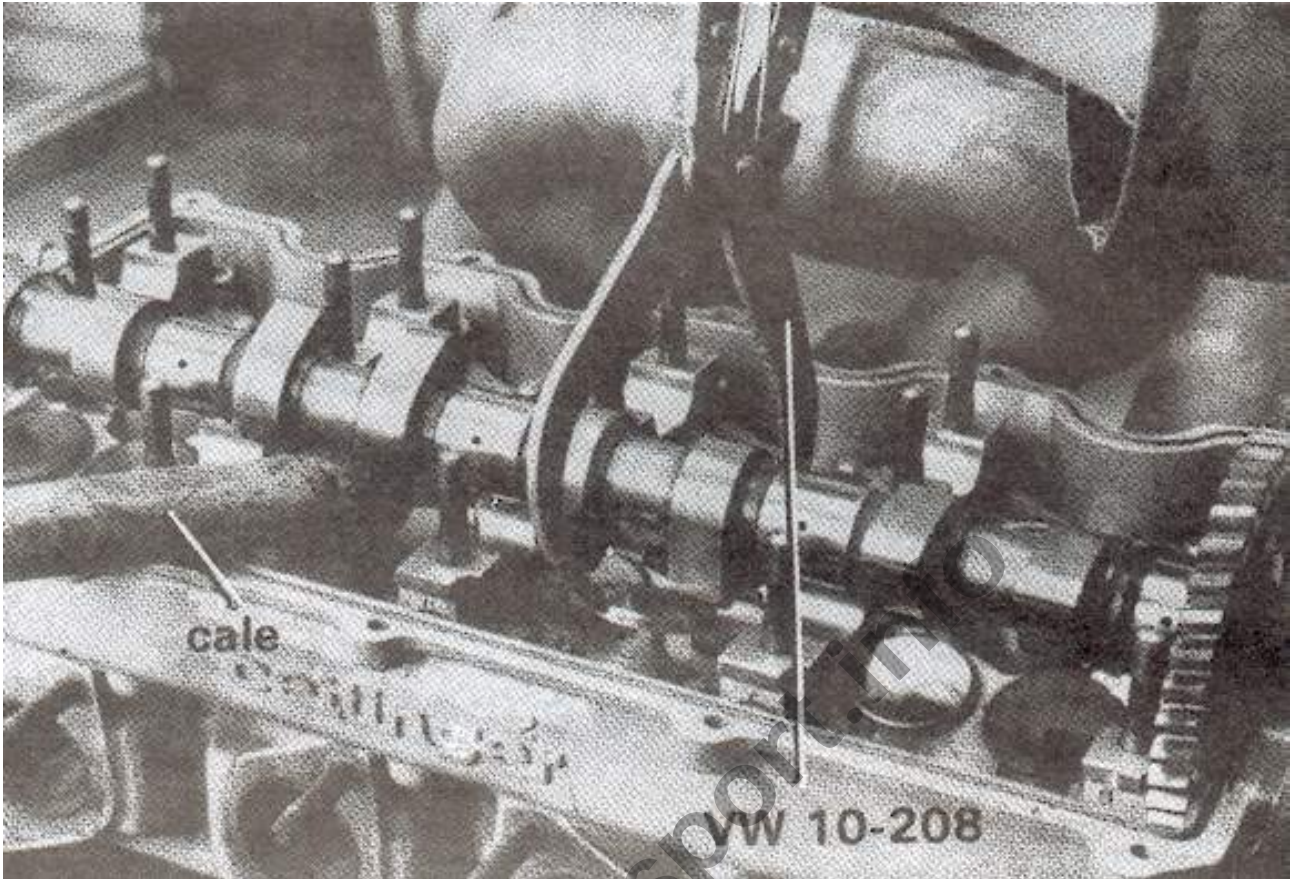


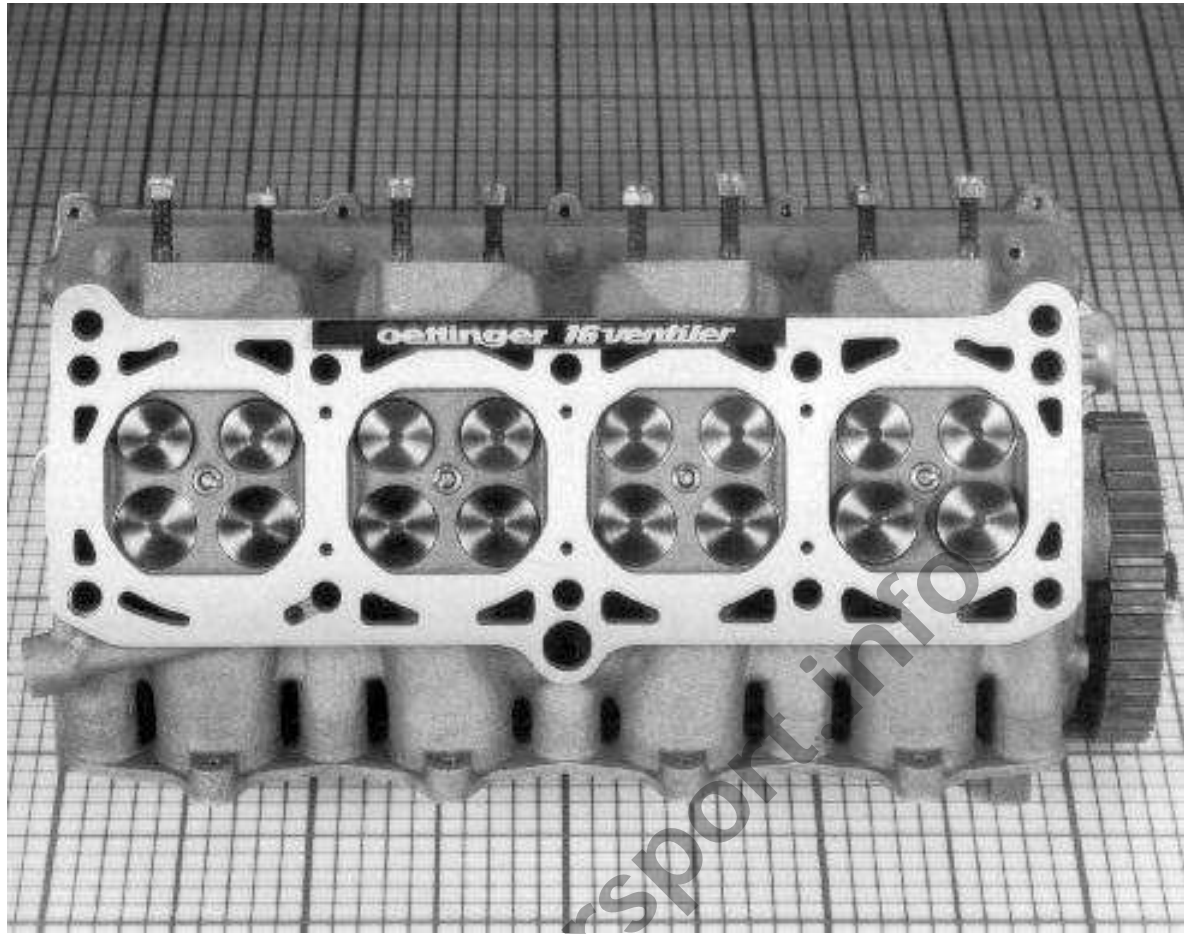












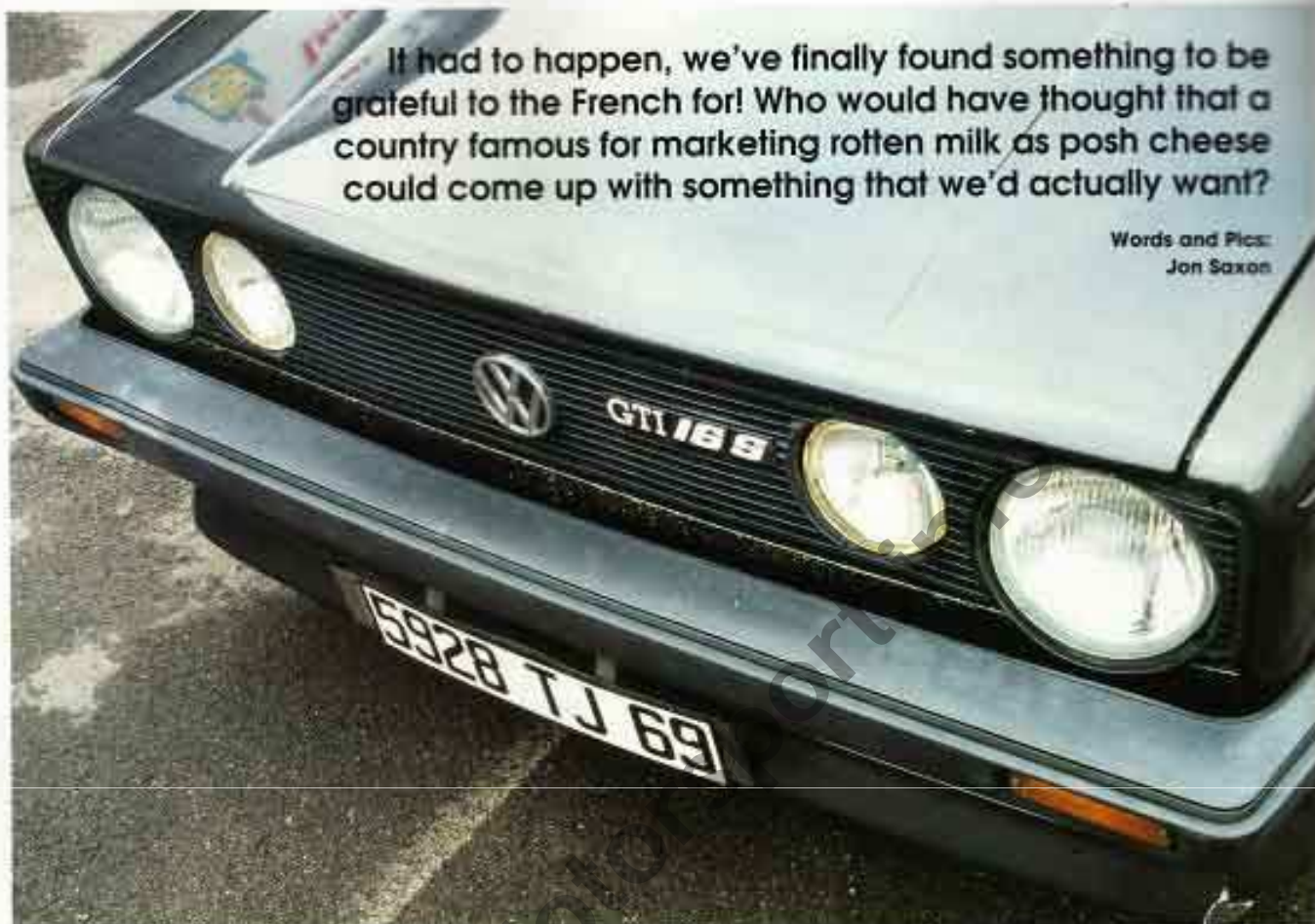




# Tunnel Vision

It had to happen, we've finally found something to be grateful to the French for! Who would have thought that a country famous for marketing rotten milk as posh cheese could come up with something that we'd actually want?

Words and Pics:  
Jon Saxon



**W**hen Volkswagen first initialised the after-hours GTI project, did they ever imagine the impression it would leave on the world of quick motoring? As it was, their vision would never stand as a guaranteed storm of success for long, with many rival manufacturers snapping at Volkswagen's heels for a slice of the highly publicised action. No need in principle to slander the GTI's competition, for they too, in their own quiks of design became great cars, to buy, to own and to enjoy. In England, following the successful launch of the Escort XR3i, the Lotus engineered Talbot Sunbeam and the Renault 5 Gordini turbo, the competition was starting to hot up. Volkswagen had the higher capacity 1800cc powered Golf waiting in the wings and when it did finally surface it was enough to take back its rightful slot at the top of the tree but that wasn't to be for another two years. Over the channel though in France it was a whole different story. In its 1600cc guise, the Golf duly became one of the best selling hatchbacks

in the French market, the GTI dealers began to feel justifiably concerned. While they were waiting for the 1800cc version to be publicly available, the old VW hot hatch could quite easily drop in both desirability and performance (is that a word? -KW).

## THE MASTER PLAN

So the French division of VW devised a plan. A plan that would keep the GTI sales flowing, fight off the contenders and maintain the Golf's track record of reliability, practicality and performance. There were no bigger capacity blocks in the Volkswagen

performance range and early attempts at turbo-charging had

been dropped due to the inherent heat problems generated, so they had to look elsewhere to extract more power from the 1.6-litre high rev screamer that remained at the heart of the French master plan. Obviously reliability was a key issue so they called upon the well-reknowned expertise of leading German aftermarket tuner, Oettinger. The results were spectacular. Even on paper, way before the engineers began toying with the VW rocket rocket, it



## OETTINGER 16s Mk1

Power output - 136 @ 6500  
Maximum torque - 116lb/ft @ 5500  
Maximum rpm - 7500  
Cubic capacity - 1568cc  
Bore/stroke - 79.5 x 80mm  
Compression ratio - 10.5:1  
Type (cylinders) - 4 in line (16v)  
Valves by cylinder - 4  
Camshaft - twin  
Injection - Bosch K-Jetronic

Front suspension - Macpherson struts  
(anti roll bar & strut brace)  
Brakes (front) - ventilated 239mm discs  
Brakes (rear) - 180mm drums

Wheels - 6Jx14-inch AT5  
Tyres - 185/60 R14 H

Body - BBS bodykit  
Oettinger 16s badges (front/back)  
Oettinger 16 Soupapes wing decals  
Kamei roof spoiler (optional)  
Kamei lower boot spoiler (optional)

Total weight - 900 kg  
Torque distribution - 64%/36%



8-spoke ATS are a design classic look for 6x14s on a 16s.



The legendary Oettinger 16-valve head was the start of a revolution



A-level French was never as interesting as this



All these parts are unique to the 16s and come with their own unique price tags!

all the performance aids in place.

In 1981, a brand new UK showroom Golf GTI was £5,800, whilst the revamped Oettinger version, made available from September 1981 in France, was 75,000 Francs, compared to the 1983 model which cost a staggering 92,250 Francs - a whopping 50% extra over the factory original 1600 and 1800 GTI respectively. Undaunted, Volkswagen of France began to market the 16-valve Oettinger equipped Mk1 which later became known simply as

### BIG BOY NOW

What started life as a fuel injected 8-valve engine now had an alloy, twin cam, crossflow cylinder head with 16 valves. The new head necessitated the use of new forged pistons and the compression ratio was upped to 10.5:1. The oil pump, too, was updated, as was the capacity of the K-Jetronic injection system and the whole bottom end was carefully balanced. Put into play by a new 5-speed GTI gearbox with a different final drive ratio, the 16s

136bhp at 7250rpm. The differences don't stop here either, there's an unfamiliar distributor cap, moulded at an angle rather than straight up, thinner and longer spark plugs and a baffled oil sump capable of holding an extra litre of oil.

Visually though, the engine compartment was dominated by the fantastic 16s inlet manifold casting, curling over the cylinder head and stamped with the fancy Oettinger brand logo. It looked like it meant business, and with a



# Tunnel Vision



The two optional rear boot spoilers were sourced from that other famed VW accessory manufacturer, Kamel

## Oettinger

Oettinger is best known as one of the foremost leaders of Audi and Volkswagen tuning, with a heritage stemming back over more than 60 years (1996 being their Golden Jubilee). The company recently obtained VDAT tuner certification in Germany, making them the first VAG tuner to achieve ISO certification.

Oettinger has applied its class of excellence to not only engine conversions, but also body styling and stylish alloy wheel design. They have also had equal success on the racetrack, notching up numerous wins, as well as being a market leader on the consumer front.

Oettinger, unlike many other aftermarket tuners, have been able to secure a relationship with Volkswagen that is unmatched by any other rival firm. This bond of the two companies allowed Oettinger sports and performance accessories to be ordered and subsequently purchased direct from VW. For this reason alone, it stands clear to see why Volkswagen committed the job of the 16s development to Oettinger and no other tuner.

Further information can be gathered from the Oettinger website, [www.oettinger.de](http://www.oettinger.de) which, as well as supplying background history, also allows you to browse through their impressive catalogue. Alternatively, you can call Oettinger direct on 0049 617 295 330

the wild performance claims made by the sales brochure.

Now 260hp doesn't sound like much of an improvement, especially when most exhaust manufacturers claim this sort of power as a result of fitting their aftermarket systems (yeah, and if anyone believes that they're mad-MP) but, taking into account how much the 16s cost back then, the hype surrounding it and its second hand value nowadays this seemingly miniscule hike in power was treated as nothing short of phenomenal back in the 80s.

## IDENTITY PARADE

Peering down over the closed bonnet, the 16s looks like any other GTI of that era; in a way really driving home the whole hidden identity, wolf in sheep's clothing thing going on with this car. Not immediately apparent either is the colour of this feature car. What could be passed off as Jet Black is in fact Anthracite Grey, which is coated over the bodyshell and BBS supplied bodykit. What is seldom known also is that this kit was designed for the Golf by BBS to actually simulate additional top end speed; a reported extra 3mph gained by extensive development and wind tunnel testing.

Brakes and suspension remained basically the same, though Oettinger replaced the standard brake pads, whilst an uprated additional lower brace was fitted across the front wishbone brackets and a new anti roll bar keep things buttoned up behind the 14x6-inch ATS alloys and Uniroyal 185/60 R14 H rubber.

Sitting a Mk2 16-valve engine under the

bonnet of a Mk1 Golf is fairly commonplace these days, the advance in power and feel being a bonus for many, but when you consider that a Mk1 came from the factory (well, almost) with 16 valves between 1981 and 1983 – a good 7 years before Volkswagen themselves designed, built and branded their own 16-valve cylinder head, it sounds a real tempting buy. What is so unusual about the 16s is that, unlike all previous Oettinger equipped cars both then and now which can be ordered as an aftermarket option through a VW dealer, these were actual VW models which were extensively tested by VW themselves and sold with a full VW warranty. In total, only 1250 were ever built to 16s spec and they were only available on the French market, although there are rumours that they were also marketed in South Africa as well.

Available colour options on the 16s were limited to the aforementioned Anthracite Grey and Alpine White – two colours only – with the remaining silver, red and black trademark colours of the GTI range devoid of any association with the French special.

Further factory extras were made as an option, most notably being the Kamel roof and lower boot spoilers.

## SAFE OR SNIDE?

A grey area resides over the authenticity of many so-called 16s Golfs, as it does with so many of the 'factory' hot rods, witness Lotus Corlins, Abarth Fiats and the like. Some say the Oettinger heads were offered as an aftermarket conversion before and after



Check out all the Oettinger only bits. Originality is the key



The telltale 165 badge is typically understated



1980's BBS bodykit looks well dated now

VW decided to endorse if and offer fully built Oettinger cars. Others adamantly discard this belief, settling only for the possibility that the engines finding their way into non genuine 165 bodies were sourced from crashed Oettinger cars located in salvage yards.

One thing however is for sure, certified 165 Golfs bore a factory embossed number on the rocker cover casing, obviously running from 1-1250 when they ceased production, and owner records back up the argument that only etched blocks exist in genuine cars.

Care needs to be taken when buying a 165 on reflection of this very debate. The more obvious signs are on the outside, with originals sporting Oettinger badges front and back and with

taken from a redundant 165, while mimicking a sticker is far from a hard thing to do in practice.

The 165 also ran ATS alloys, very popular at the time, with a resurgence of these old skool variants in current rotation. 15-inch ATS alloys seem to be the keen favourites of the VW owner, whereas VW themselves settled for the 14-inch versions, an inch less for better handling, on-road comfort and arch clearance. The presence of 7x15-inch ATSs instead of 6x14s should be considered a question mark, though by no means a definitive confirmation of the heritage of a 165. On a proper car the rim dimensions should be



## BODY BUILDER

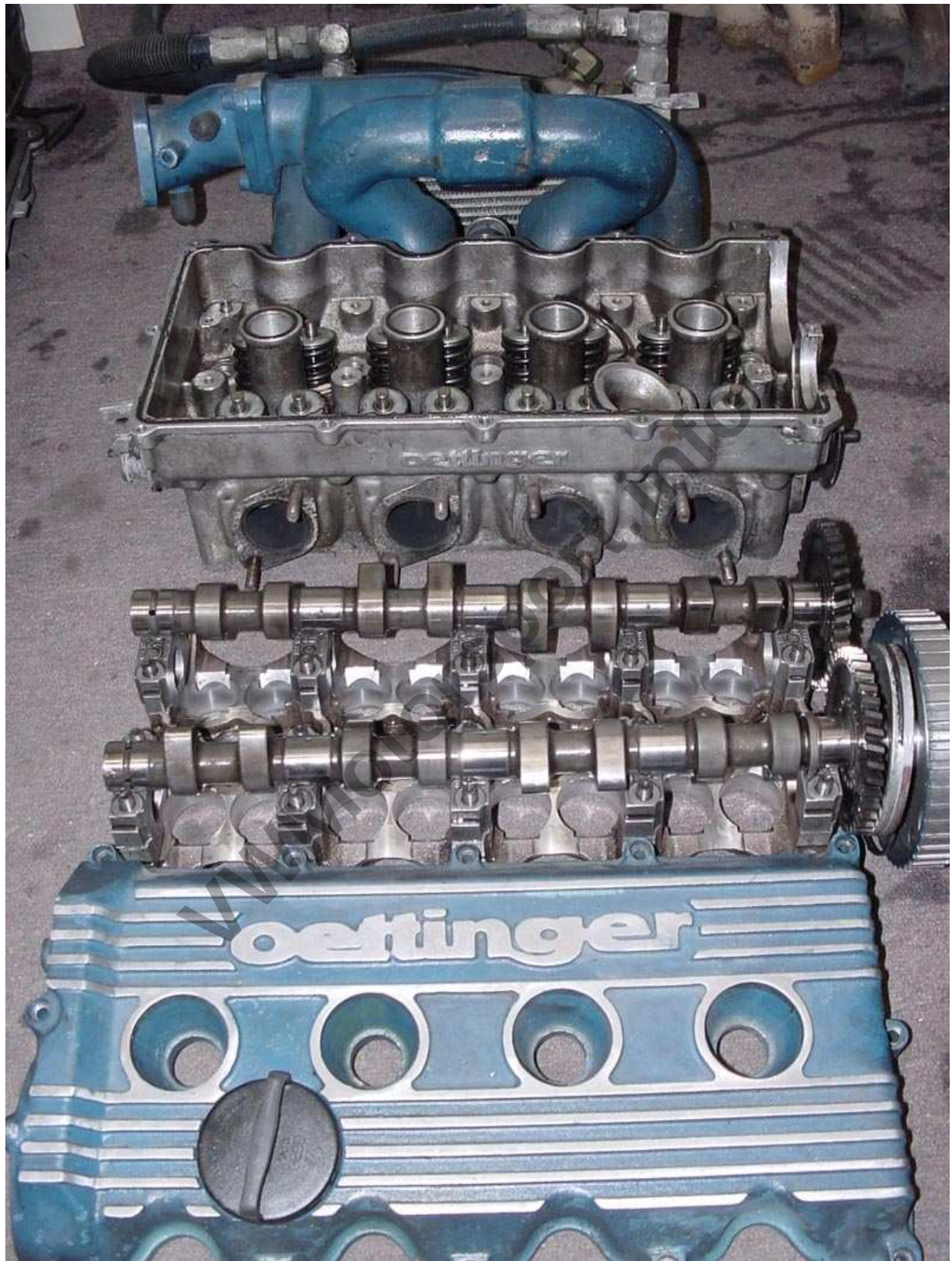
BBS body kits are commonplace and any Tom, Dick or Harry could fit one to a GTI, so again this is not a foolproof means of identification, although there is meant to be a BBS originated kit on the car. And finally, the interior. For the Alpine White 165, black and grey striped interior cloth was used, whilst the Anthracite Grey 165 employed a red and black striped cloth. Any differences should be investigated. Swapping interior trim, colour and specification is a done thing, but we are talking about a factory special of only a few in road-going condition, so don't be too forgiving of the current or previous owners' taste buds.

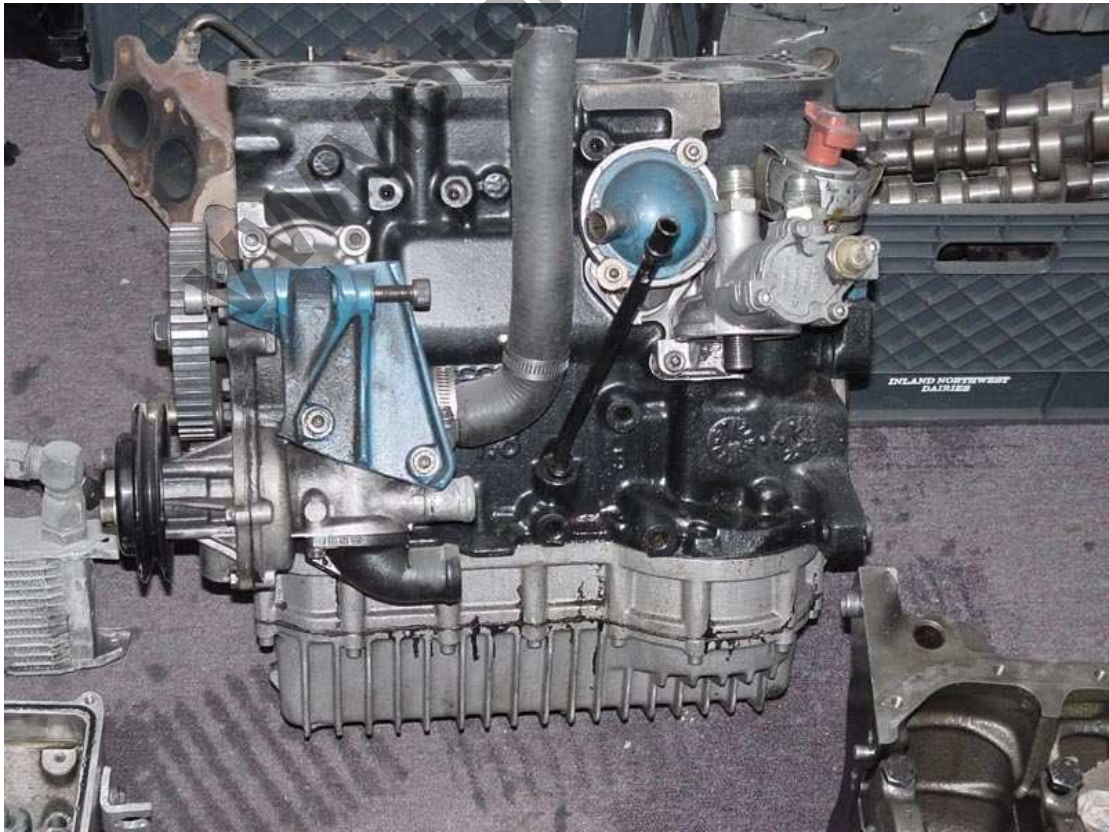
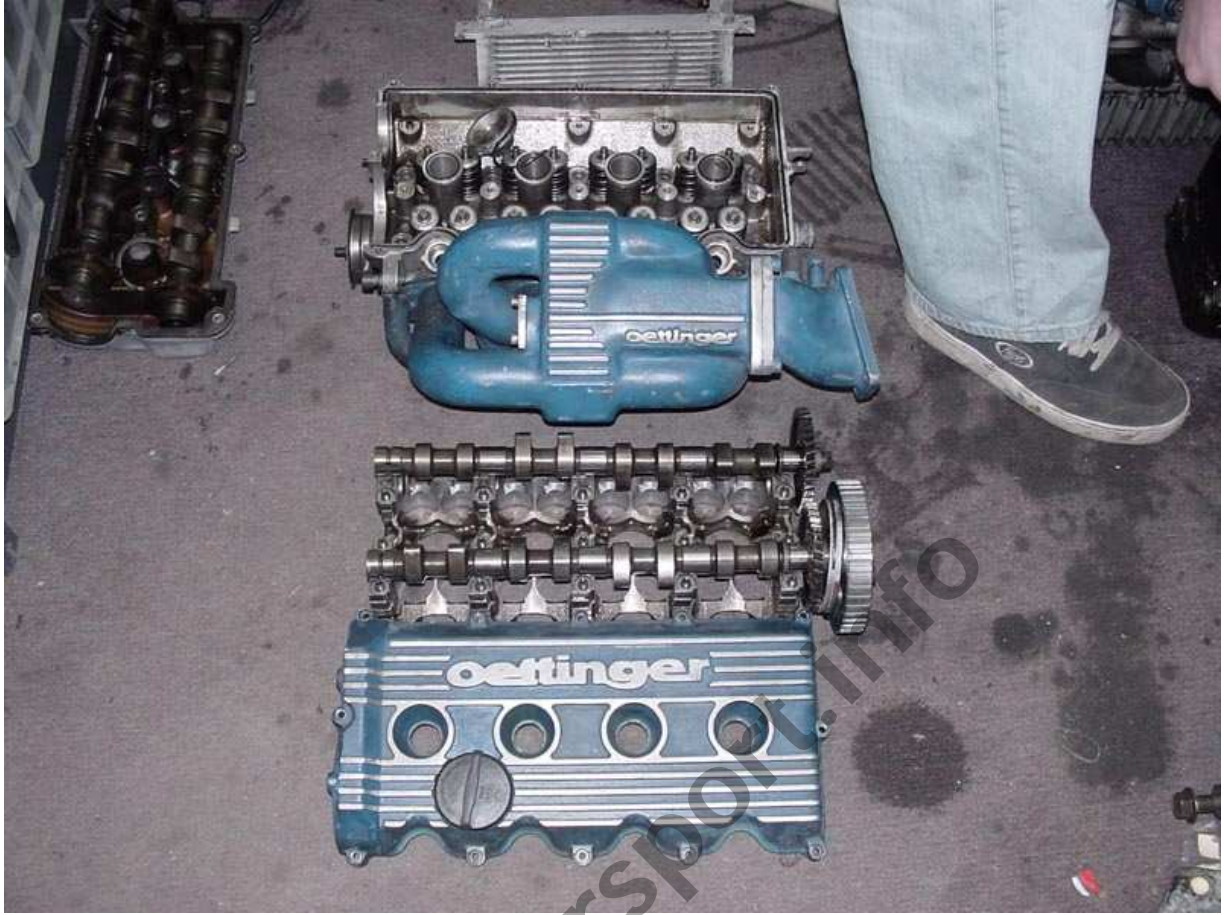
The steering wheel should feature the Oettinger badge, with the Oettinger logo sat above both the speedometer and rev counter behind the plastic cover. Oettinger clocks should also be found in the centre console, where white on black Oettinger lettered dials monitored oil temperature, oil pressure and ampage. According to some sources even the radio was updated in line with the high specification theme and a four headlight grille came as standard.

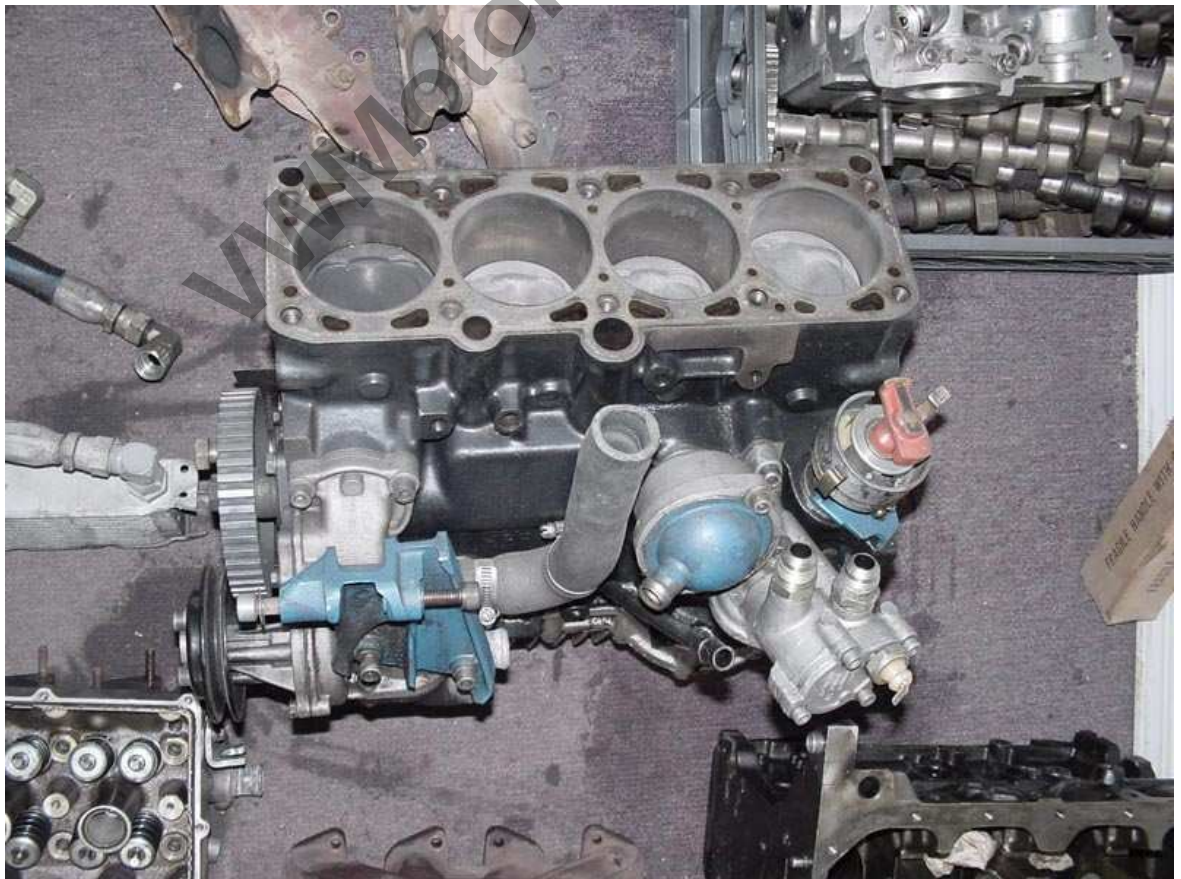
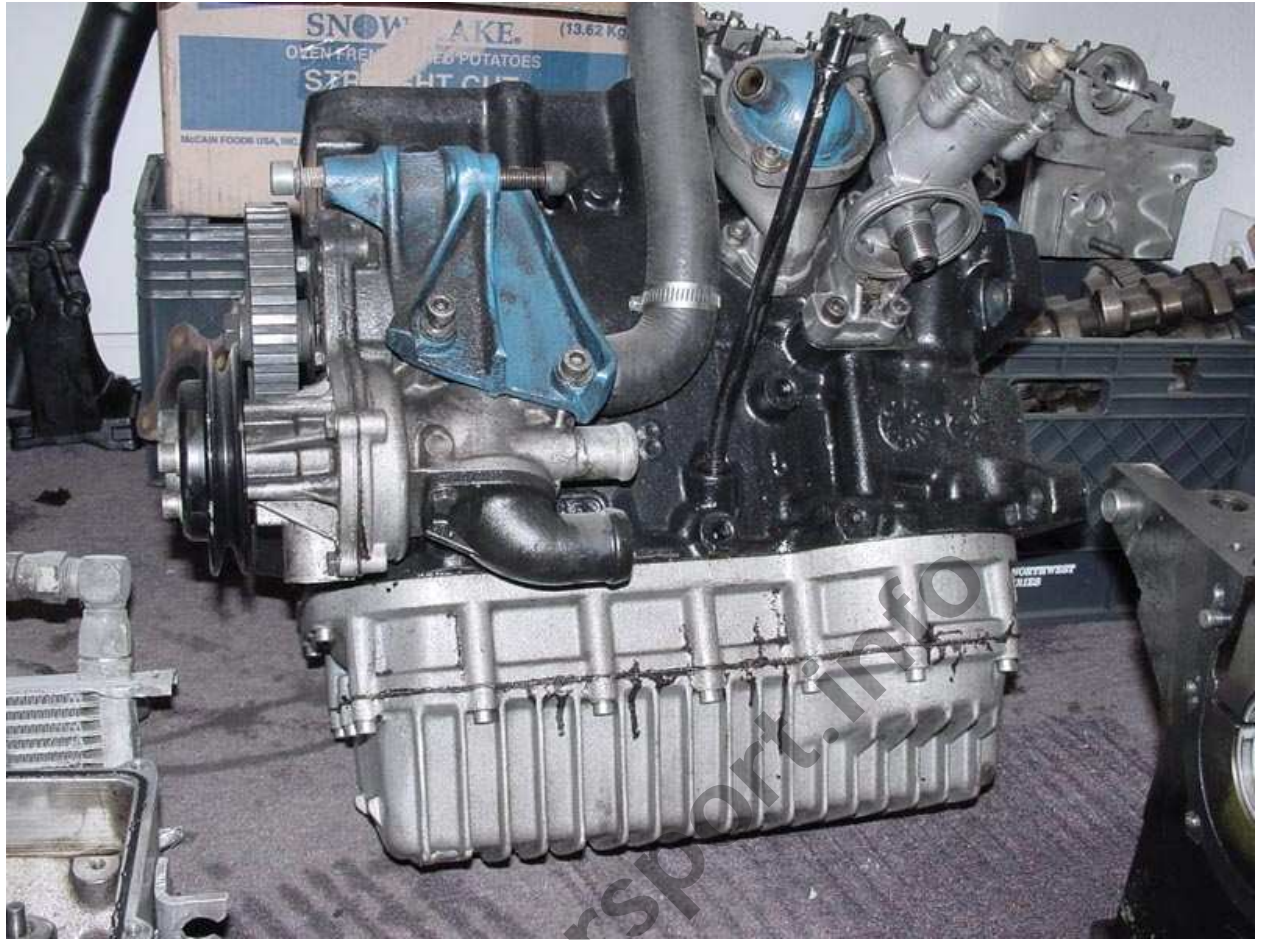




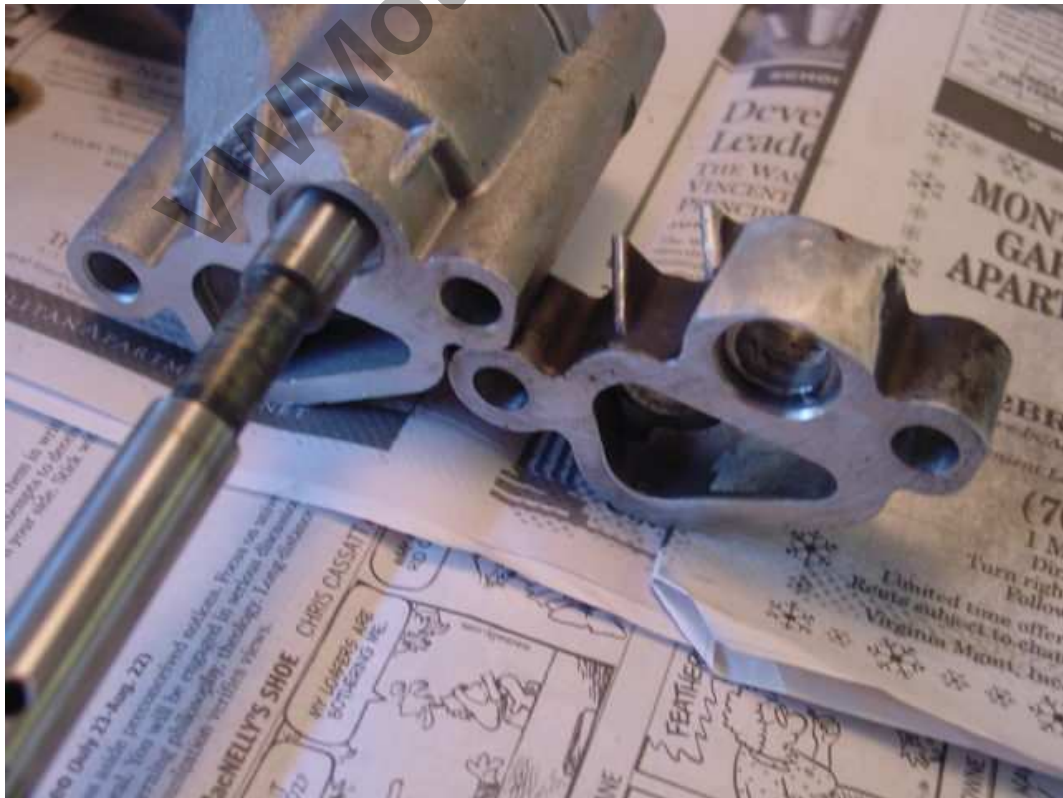












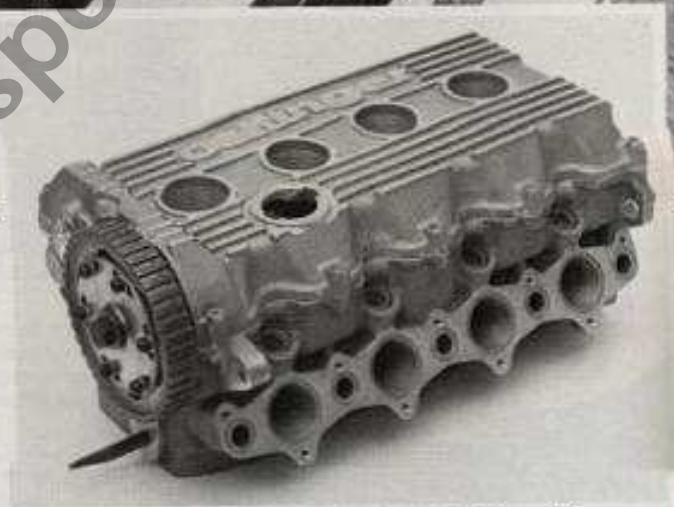
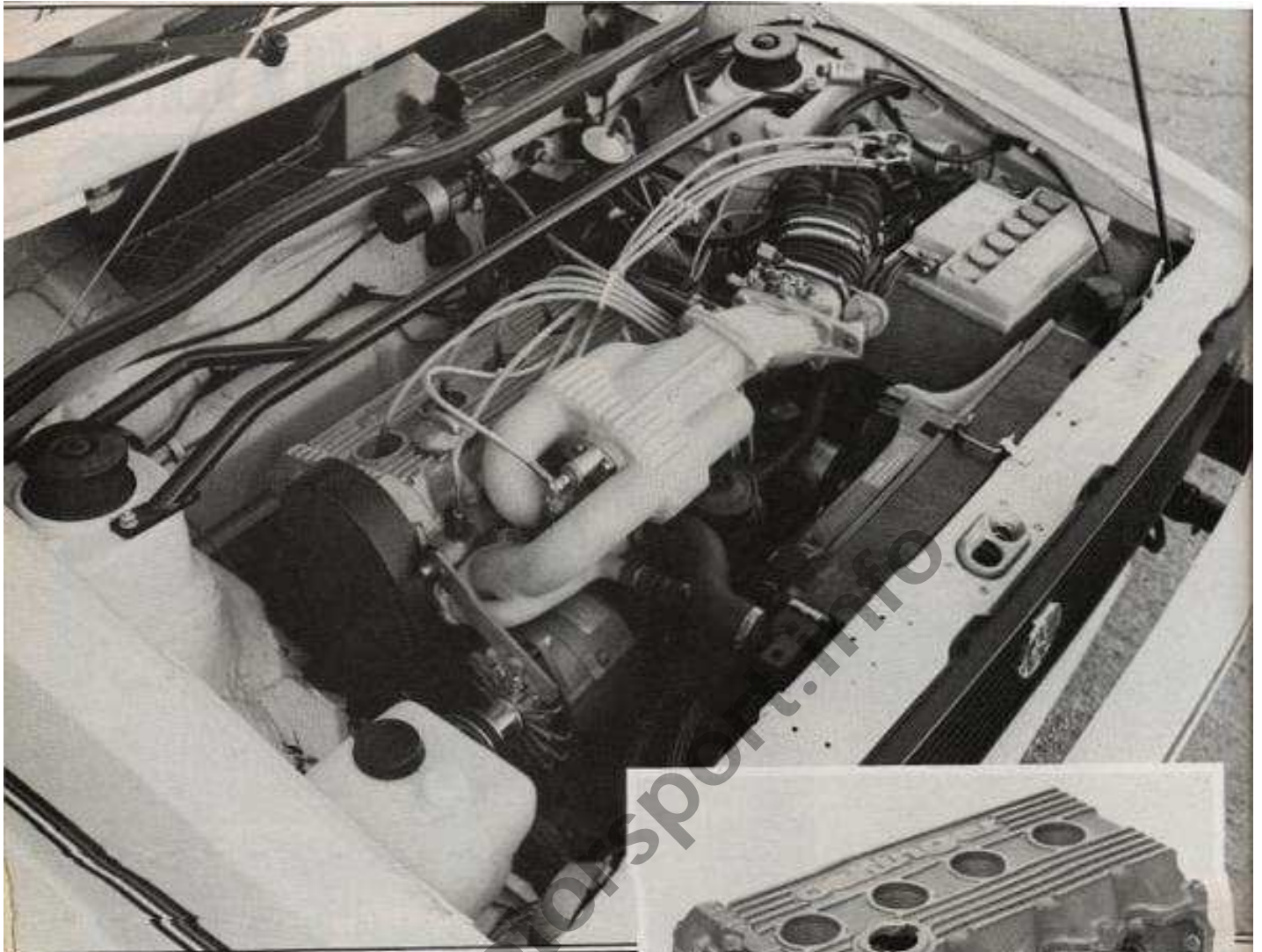


VWMoto





VWMotors



# HEAD RUSH

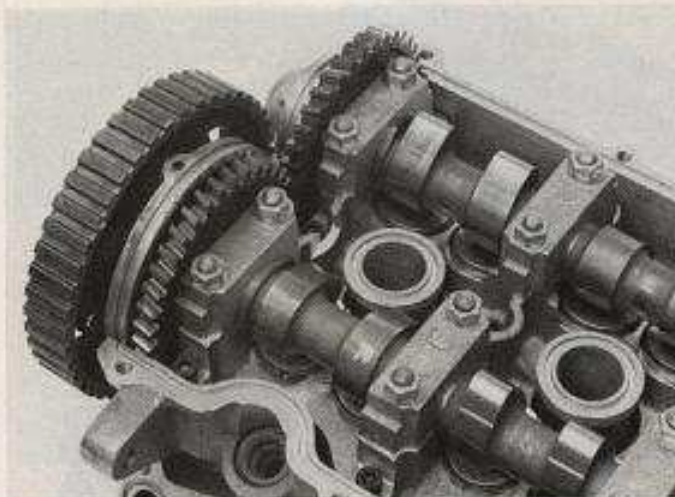
**This Exotic Setup Makes VW Water-Pumpers Travel At Warp Drive!**

**E**uropeans take high-performance motoring seriously. After all, when the autobahns are available for cruising at 100-plus mph, there is a demand for conveyances capable of cruising at warp speed for hours at a time. However, the Continent, just like the U.S., is saddled with its share of low-horsepower engines. Fortunately, there is also a strong aftermarket ready and willing to provide the parts needed

to upgrade the weaklings of Europe into fire-breathing, *reliable* engines that can withstand *everything* the autobahn dishes out.

For Europeans in need of a horsepower and torque transfusion, there is Herr Oettinger of Germany. As a purveyor of potent parts for VWs, he offers one of the most sought-after and finely built bolt-on performance packages

Once tucked under the hood, the Oettinger head and its various accessories blend in with the rest of the stock appliances. Only a discerning eye can spot the lettering on top of the intake manifold or notice the rather unusual-looking cylinder head cover and its finned surface (for improved cooling characteristics). The installation leaves a clean engine compartment while bumping the performance substantially.



The cam actuating the exhaust valves is geared off the intake cam, which gets its power by way of a Gilmer belt off the crankshaft.



We mustn't forget the bottom end—a baffled and finned alloy deep sump holds the oil in place. Above, a windage tray keeps oil aeration to a minimum and reduces drag on the crankshaft.

available in Europe: the Oettinger head. Oettinger's device is available to the American public through Power Haus Products (19102 Ervin, Santa Ana, CA 92705). The cam cover that bears his name is attached to a wonderful piece of machinery. Correction, make that *cams*. The Oettinger head is not just a ported and polished version of the factory offering, but a complete four valve per cylinder, double overhead cam *weunder*head that will boost the horsepower of a standard, water-cooled VW powerplant from 75 horsepower to 135-plus horsepower in federalized form, according to George Ferch, operator of Power Haus and importer of the Oettinger head. (Ferch says that the Oettinger head is currently undergoing evaluation to be federalized, but he doesn't anticipate any problems with it passing smog emission standards.)

In European trim, the head is capable of putting out 150 horsepower, although like many high-performance parts, the horsepower figures will vary from engine to engine, and reports of 175 horsepower are not uncommon. The head that Ferch works on differs from its European counterpart only in compression ratio—the original kit comes with 10.2:1 pistons, but Ferch will lower that to a ratio of 8.2:1.

Obviously, obtaining such a radical increase in horsepower requires more than just a head. The Oettinger head should more aptly be named the Oettinger metamorphosing kit, because it contains approximately 150 pieces.

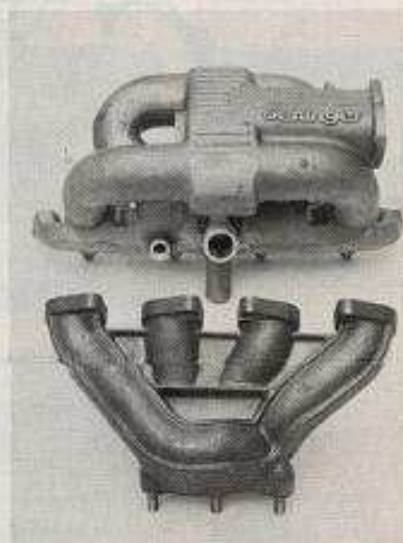
Strip your VW to simply the block, flywheel, crankshaft, connecting rods, and CIS fuel injection metering system and injectors, and the kit includes everything else you need. Among the parts are a new distributor, Mahle 10.2:1 pistons, alloy oil pan, windage tray, oil pump extension, intake manifold with equal length runners, exhaust header, O-rings, gaskets, and all the nuts, bolts, and various pieces needed to complete the engine.

The head is of crossflow design, with 31mm stainless steel intake valves and 27mm exhaust valves. The center of the hemispherical combustion chamber holds what has to be the smallest spark plug we've seen, and the kit includes a special tool to reach the small plug. The two cams are interconnected by gears, which are driven by a common gear that is driven by a Gilmer belt off the crankshaft. The intake manifold is O-ringed to the head, while the exhaust manifold uses a conventional gasket. The fine machine work is simply amazing; everything goes together with a quality of fit rarely found today. For example, the wrist pins for the Mahle pistons slide snugly into the piston with a precision seldom seen even on racing engines.

Having driven a 2-liter, unfederalized version of the VW engine fitted with the Oettinger head, the transformation is amazing. A twist of the key and the engine immediately fires, settling down to a smooth idle accompanied by a mild whirring noise as you hear the twin cams spinning away. When you put your foot in it, there is instant,



A European GTI distributor comes with the kit because the head's configuration requires a new distributor. Note the long, high-tension leads necessary to reach the tiny spark plugs.

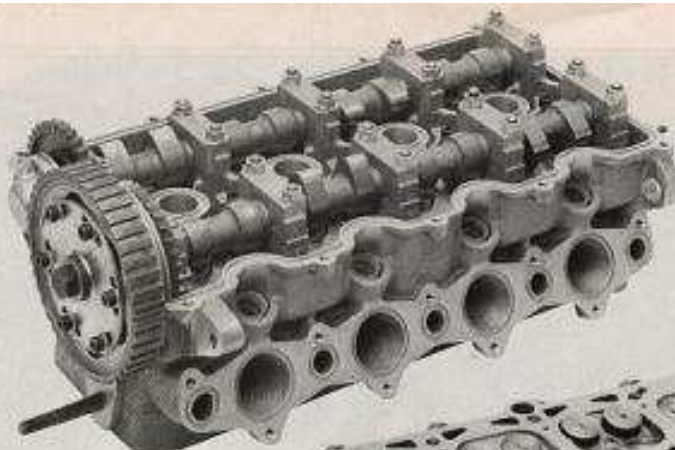


The intake manifold (with equal-length runners) is O-ringed to the intake ports for a tight seal. The exhaust header, a four-into-one design, uses a conventional exhaust manifold gasket.

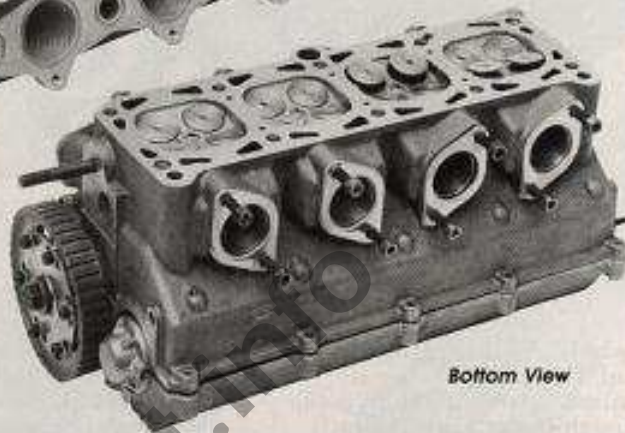
# HEAD RUSH

tremendous throttle response—no waiting for a turbocharger to get up to speed—that pushes you back in the seat with such force you'd swear the VW engine just grew two or more cylinders. Simply put, the Oettinger head exemplifies efficient, uncompromising combustion.

The tariff on the *wunderhead* is stiff: Ferch retails the Oettinger head for \$5900. Fewer than 50 people have opted for the head, preferring, we imagine, to go the route of turbocharging for a horsepower transfusion. But if you've got the money (don't forget you're virtually rebuilding the engine), the result is a powerplant that will make your VW "Water Pumper" all but untouchable by anything short of a big-block. One last note: Lower the compression ratio and you could add a turbocharger. It's food for thought . . . ■



Top View



Bottom View

The Oettinger head isn't simply a head. It's a complete kit (with approximately 150 pieces) designed to transform your 70-odd-horsepower VW water pumper

into a fire-breather capable of putting out nearly 135 horsepower. As you can see, everything from the major components to the necessary hoses, clamps, and O-rings is included in the \$5900 kit.

