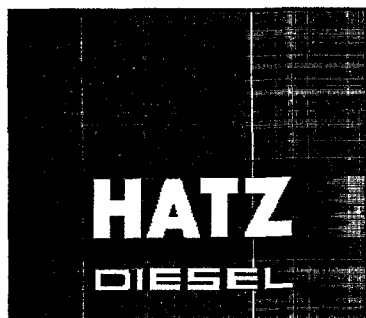


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B.R. LEE SERVICE SCHOOL



HATZ DIESEL OF AMERICA, INC.

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Web site: www.hatzusa.com

12/18/2002

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**SERVICE BULLETIN: SE02D
MODEL TAG INFORMATION**

2

HOW TO USE YOUR PARTS MANUAL

3

**SERVICE BULLETIN: SE36
L & M ENGINE - BELT REPLACEMENT**

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5

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ORIGINAL SPARE PARTS CD

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HOW TO USE SPARE PARTS CD

10

**DEALER WARRANTY POLICY
SUPPLEMENTAL WARRANTY STATEMENT
WARRANTY CLAIM FORM INSTRUCTIONS**

information



- ☐ SALES
- ☐ ENGINEERING
- ☒ SERVICE
- ☐ PARTS

Bulletin No. **SE02D**

Date **05/03/02**

SUBJECT: SERIAL NUMBER DATA PLATE-LOCATION AND INFORMATION
(Information Bulletin SE02C should be discarded and replaced with SE02D)

ENG. FAM.=EPA ID NUMBER

Engine Model and * Spec Number

13 Digit Serial Number

EU Emissions Approval Number

Engine RPM Full Load Speed 2500
No Load High Idle 2500 Plus 180= 2680

Special Factory Adj.

Engine Displacement

Engine output in kw (kilowatt)

Full Rack Setting in Millimeters

IMPORTANT ENGINE INFORMATION			
MOTORENFABRIK HATZ CE 159 H KG			
D-94099 RUHSTDORF			
ENG. FAM.	BUILD DATE		
1HZXL3.43A37	12 01		
TYPE / SPEC.	MIN ⁻¹	PV	
4L41C 159H	2500 180	200	
SERIAL NO.	NH/kW	CM	
104 12 01 123456	+053 44.7	3432	
EC-TYPE-APPROVAL-NUMBER			
e1*97/68CA*00/000*0046*01			
This engine conforms to MY 01 U.S. EPA regulations Nonroad compression-ignition engines. Refer to Owner's Manual for maintenance specifications and adjustments. MADE IN GERMANY			

Sample Serial Number

104	12	01	123456
Type	Series	Year	Consecutive
Model		of	Numbering
(4L41)		Manufacture	

Beginning in 1994 the 12-digit serial number was increased to 13 digits. The Type/Model designation is now preceded with a zero because of the 3-digit model numbers.

* Spec number given to engines built in Germany to customer specifications.

Lee Maramonte
Service Manager

**TYPE PLATE EPA (VARIABLE SPEED)
FOR ENGINES WITH
POWER OUTPUT UP TO 18kW**



HATZ Codes 20 – 22 – 24 – 26 – 28 – 29 – 33 – 36

⊕ IMPORTANT ENGINE INFORMATION ⊕		
MOTORENFABRIK HATZ GMBH KG · D-94099 RUHSTORF		
ENG.FAM.		
Y HZX L.997 V 40		
TYPE / SPEC / FDT		
2 G 40 - 180 c	10,0¹⁾	
SERIAL NO.		CM ³ / PV
0911400 037814		0997 / 226 a
MIN ⁻¹	NH / kW	BUILD DATE
2550-200	068 / 13,2	0200
This engine conforms to MY 00 U.S. EPA regulations nonroad compression-ignition engines. Refer to Owner's manual for maintenance specifications and adjustments.		
⊕ Made in Germany		041 702 00

- 1) With all EPA-type plates the nominal pump timing
(begin of delivery) must be indicated.

Explanation of code "Eng. Fam." (refers to all available EPA type plates)

Y HZX L. 997 V 40

Type Code

(In most cases identical with HATZ type designation)

V = Variable speed application

C = Constant speed application

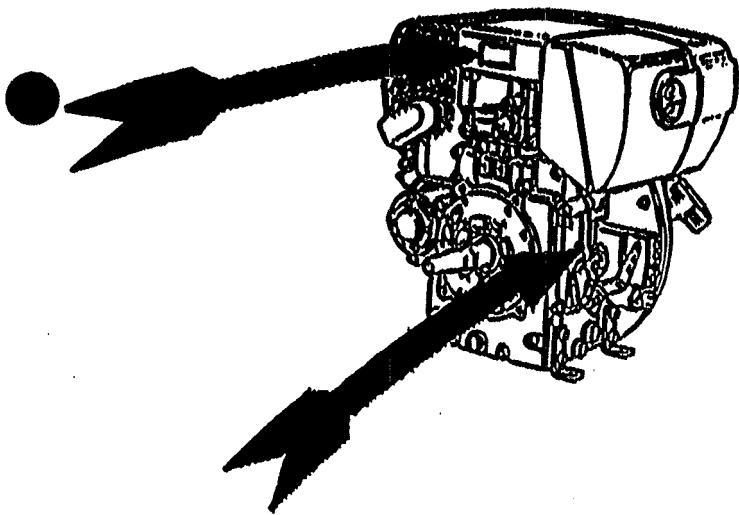
A = V + C as well

Swept volume (in cm³ or liters)

L = Diesel Engine, S = Gasoline Engine

Manufacturer HZX = Hatz Diesel

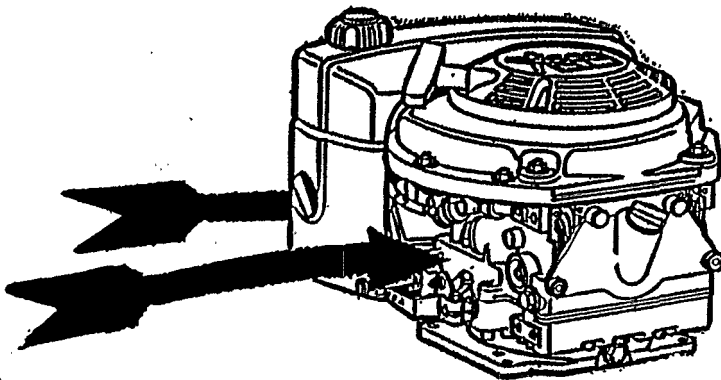
Manufacturer Year (X = 1999, Y = 2000, 1 = 2001, 2 = 2002, 3 = 2003)



1B20 1B30 1B40

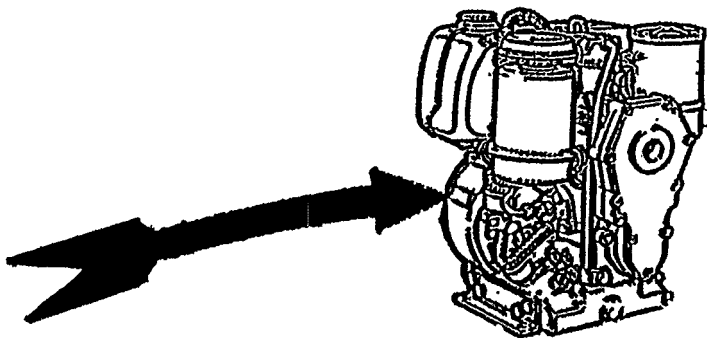
On center of air ducting on PTO side.

Later models, also on crankcase by oil fill plug,



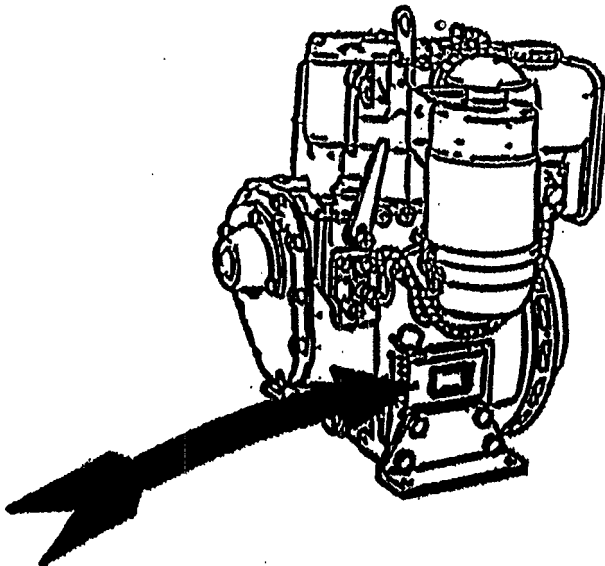
1B20V 1B30V 1B40V

On center of air ducting between muffler and air cleaner on back side (can't see it in this view) and on crankcase by side oil fill plug.



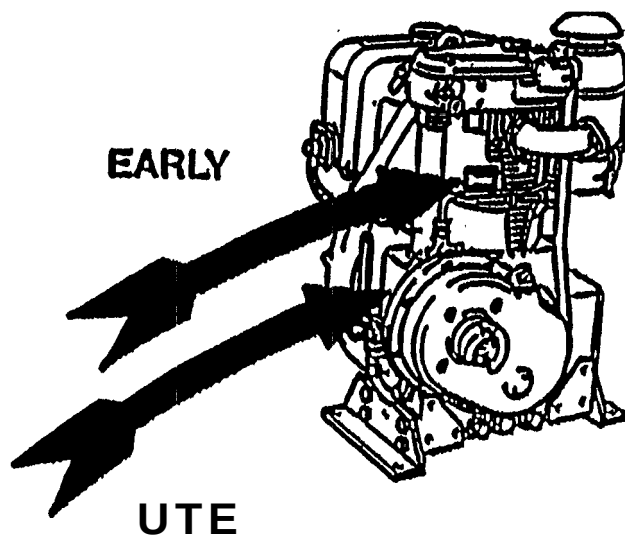
E671 E672 E673

On crankcase housing surrounding flywheel (injection pump side).



E71 E75 E79 E780 E785 E786

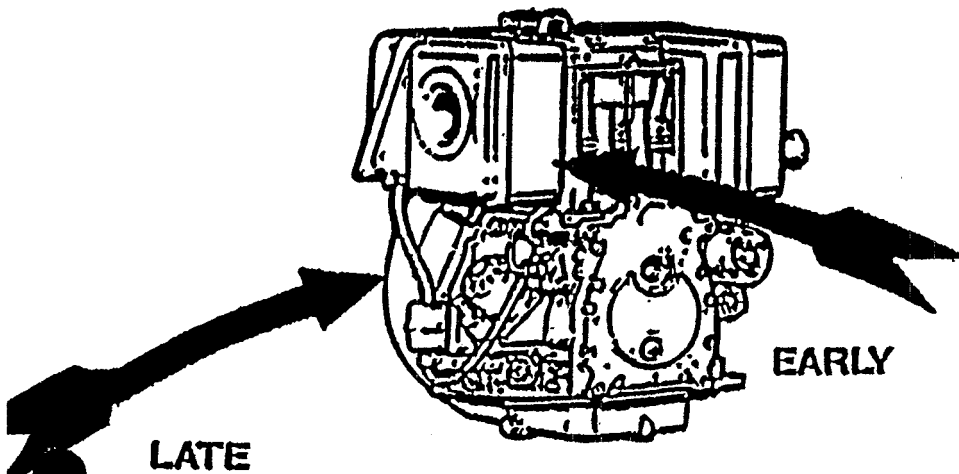
On air ducting below air cleaner near dipstick.



E80 E85 E88 E89

Early: On air ducting near exhaust port (early).

Late: Near throttle fever(fate).

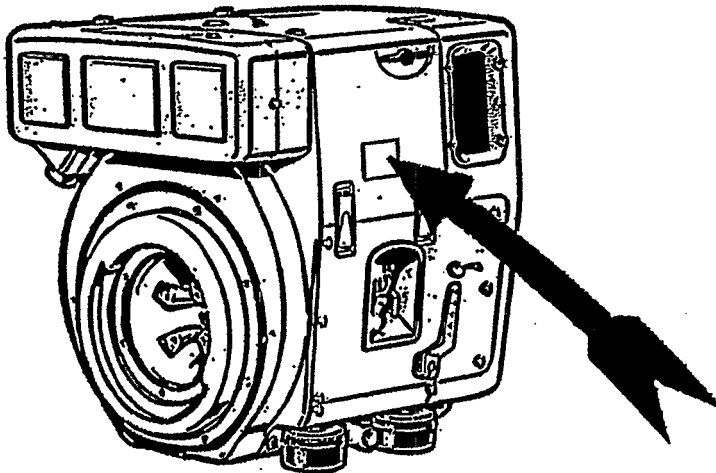


Small block - 1D30/31 1D40/41/50

Large block - 1D60 1D80/81 1D90

Early: On air filter housing,

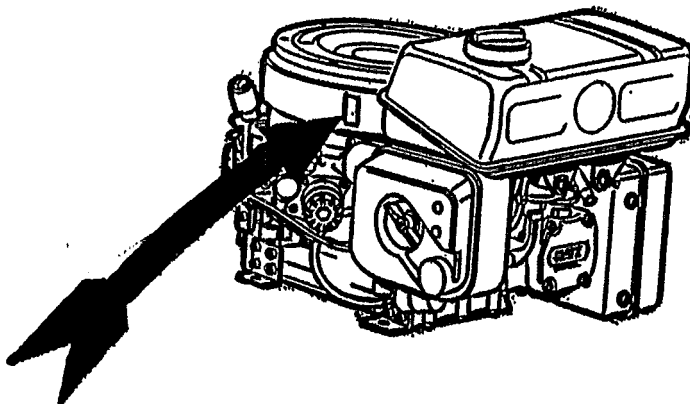
Late: On flywheel housing (injection pump side).



1D30/31C 1D40/41C 1D60C 1D80/81C

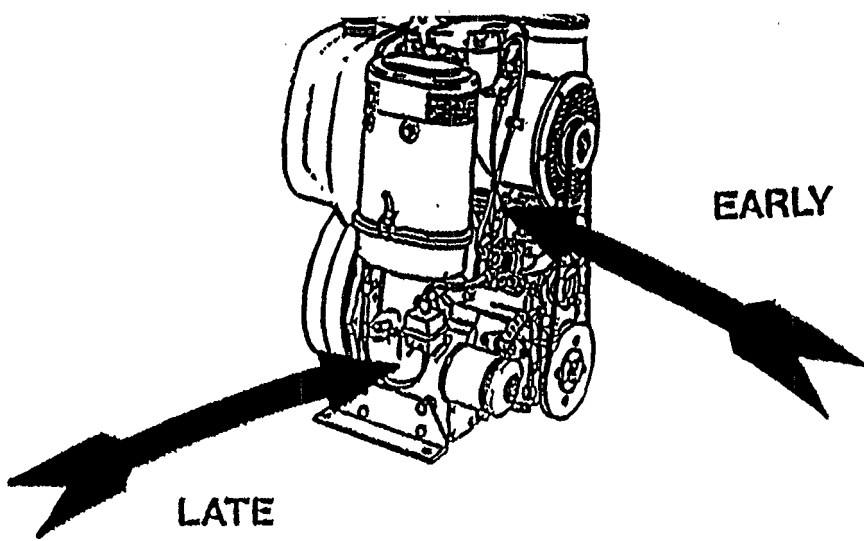
On sheetmetal panel on oil dipstick side.

Same location on the engine as above.



1D90V 1D90W

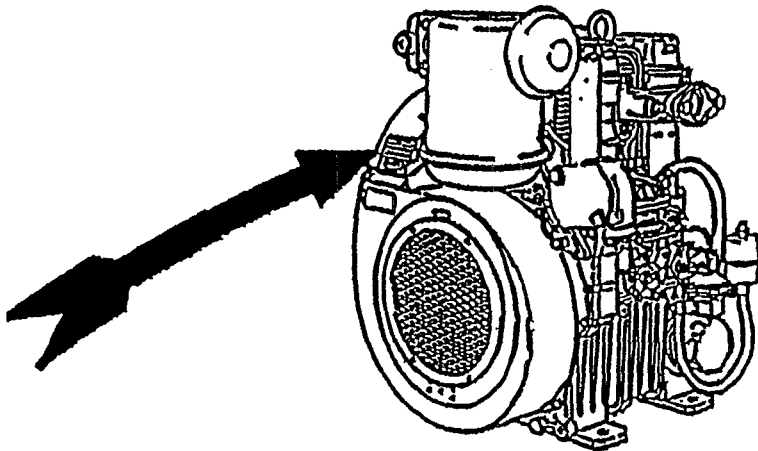
On flywheel housing, injection pump side.



E 950

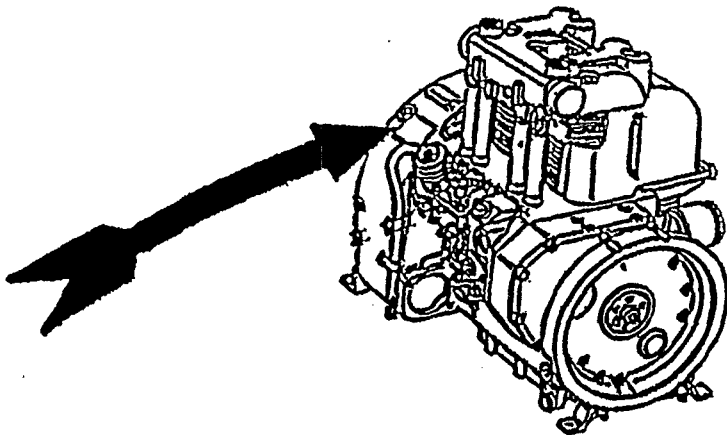
Early: On air ducting behind air filter (early),

Lab: Near oil filter (late),



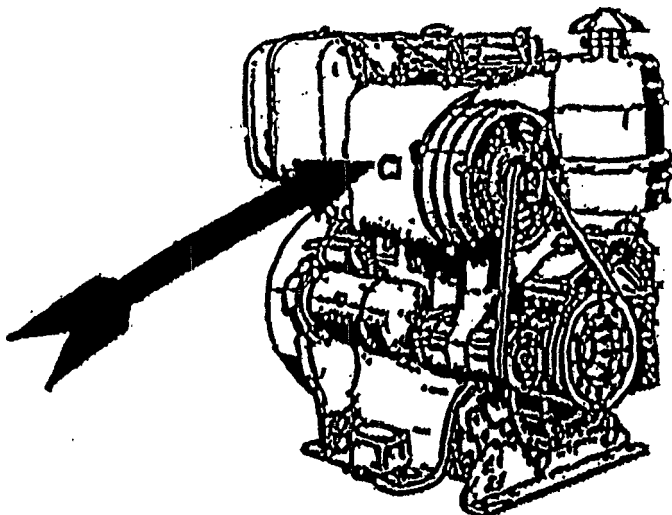
2030 2G40

On air ducting above flywheel.



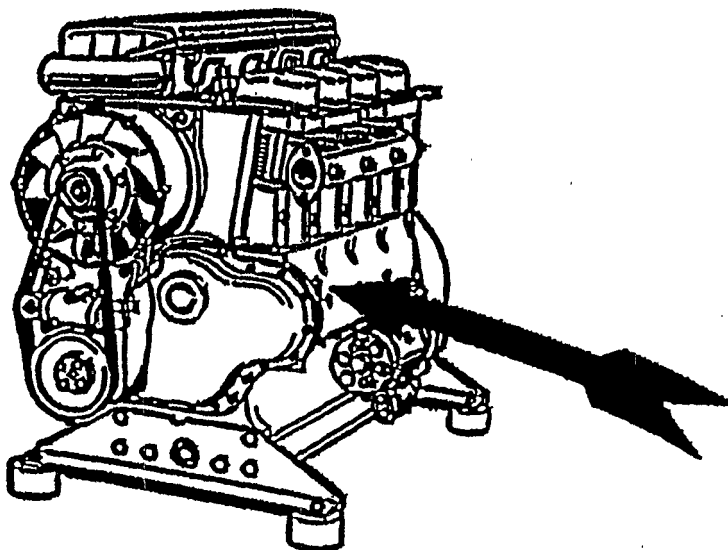
2782 2788 2789 Z790

Near breather tube on flywheel side,



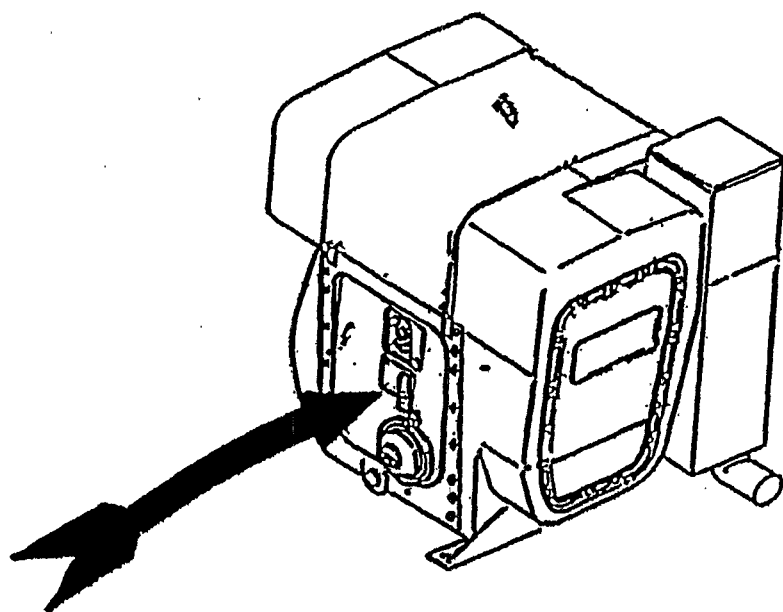
E108 2108 D108 V108

On air ducting behind fan



2L30 3L30 4L30
 2L31 3L31 4L31
 2L40 3L40 4L40
 2M31 3M31 4M31
 2M40 3M40 4M40
 2M41 3M41 4M41

Below exhaust manifold
 behind timing gear cover,



Silent Packs "C"

2L30 3L30 4L30
 2L31 3L31 4L31
 2L40 3L40 4L40
 2L41 3L41 4L41

Near throttle lever, also
 below exhaust manifold
 inside capsule,

MODEL INFORMATION



MODEL	S/N** (Type)	First/Last Year of Production	MODEL	S/N ** (Type)	First/Last Year of Production
E 90	1	1952 - 1956	A 1D40	62	1989 - 1995
Z 90 R	2	1953 - 1965	2L40	64	1981 - 1998
E 80	3	1953 - 1960	3L40	65	1982 - 1998
E 100	4	1953 - 1965	4L40	66	1982 - 1998
Z 100 R	5	1954 - 1959	2L31	68	1986 - 1995
E 85	9	1954 - 1960	3L31	69	1985 - 1995
E 85 F	10	1954 - 1957	4L31	70	1986 - 1995
E 89	11	1955 - 1995	1D31	71	1995 - 1998
E 80 F	12	1955 - 1997	1D81	73	1994 -
D 100	13	1956 - 1959	E 786	77	1984 - 1996
E 85 F-B	14	1956 - 1984	2M40	78	1984 - 1998
E 80 F-B	15	1957 - 1984	3M40	79	1984 - 1998
E 75	16	1958 - 2001	4M40	80	1984 - 1998
Z 105 R	17	1958 - 1967	2G30	82	1986 - 1995
D 105	18	1959 - 1967	2M31	84	1987 - 1995
E 95	19	1964 - 1974	3M31	85	1987 - 1995
Z 95	20	1964 - 1974	4M31	86	1987 - 1995
D 95	21	1965 - 1974	1D40	88	1989 - 1995
V 95	22	1965 - 1974	1D60	89	1989 - 1998
E 71	23	1961 - 1991	1D80	90	1989 - 1995
E 79	24	1962 - 1999	2G40	91	1988 -
E 780	27	1964 - 1998	1D30	92	1989 - 1995
E 785	28	1965 - 1984	1D35	93	1989 - 1997
E 671	29	1966 - 1974	1D41	94	1994 -
E 571	30	1966 - 1975	A1D41	95	1995 - 1998
Z 782	32	1968 - 1974	1B20	100	1997 -
E 108	33	1969 - 1985	1830	101	1997 -
Z 108	34	1970 - 1987	2L41	102	1997 -
D 108	35	1970 - 1987	3L41	103	1997 -
V 108	36	1970 - 1987	4L41	104	1997 -
Z 790	37	1971 - 2000	2M41	105	1997 -
E 950	44	1973 - 1990	3M41	106	1997 -
E 572	45	1974 - 1977	4M41	107	1997 -
E 672	46	1972 - 1977	1D90	108	1997 -
Z 788	48	1973 - 1994	1D50	109	1998 -
Z 789	49	1973 - 1994	1840	110	2000 -
2L30	51	1977 - 1988	1B20V	111	1998 -
3L30	52	1977 - 1988	1B30V	112	1998 -
4L30	53	1977 - 1988	1D90V	113	1998 -
E 88	55	1984 - 1993	1B40V	117	2002 -
E 673	56	1977 - 2001			
E 573	57	1977 - 1998			
HE 673	58	1978 - 1992			
HE 780	59	1978 - 1992			
H 2L30	60	1978 - 1989			
H 3L30	61	1979 - 1989			

** Beginning number(s) of engine serial nos.



LIST OF ENGINE FAMILIES, TYPES AND VERSIONS

Range and Color	Basic Types	Bore x Stroke (mm)	Type No.	Versions	Remark and Explanation of Code Letters
B... Apple Green	1B20	69 x 62	100		P.T.O. stub-shaft <u>one</u> piece with crankshaft*
	1B30	80 x 69	101	- 1	1 = cylindrical, 1", with male thread
				- 2	2 = cylindrical, 1", with key way and female thread bore
	1B20V	69 x 62	111	- 4	4 = tapered 3/4" or 7/8"
	1B30V	80 x 69	112	- 6	6 = tapered, 23 mm (ital.)
				- 7	7 = cylindrical, 3/4" with key way and female thread bore
				- 8	8 = cylindrical, 3/4: with male thread
				- X	..X = short crankshaft to screw in P.T.O., components per requirements
	1B40	88 x 76	110	T - U	T (1B40 only) = no counter-rotating balance shaft U (1B40 only) = with counter-rotating balance shaft
					V = vertical crankshaft, no counter balance shaft
	1B40V	88 x 76	117	V - W	W (1B40 only) = vertical crankshaft, with counterbalance shaft
					*all 1B-engines have <u>clockwise</u> rotation when facing the flywheel (anti-clockwise at P.T.O. side)

5/6 Blue	E571...*	71 x 57	30	)...LN(F)*	
	E 671...*	71 x 67	29	)...RN(F)*	
	E 572...*	71x57	45	)...LK(F)*	
	E 672...*	71 x 67	46	)...RK(F)*	
	E 573...*	73x67	57	)...LHK*	
	E673...**	73 x 67	56	)...RHK*	
				)...LS	LS = short version for
				)...LR*	hand-crank start and
				)...L36	up-to-date (short)
				)...R36	version (anti-
				)...L3N	clockwise only)
				)...R47	LR = recoil start (anti-clockwise only)
	HE673...*	73 x 67	58		
	(BMW-D7)				

..4. = flange SAE A
 ..6. = ital. stub-shaft 23 mm*
 ..7. = stub-shaft cyl. SAE cyl. 3/4"

..N* = tapered camshaft end

7.. Yellow	E 71	71/75 x 80	23	)	.E = single cylinder power takesff on flywheel as well as on governor end ..ES = power takesff on flywheel side only; crankshaft not protruding on governor end U = counter rotation balance weight installed) no "E S - versions") H. ... = water-cooled
	E75**	75 x 80	16	)	
	E79**	82 x 80	24	)E...	
	E780.*	82 x 100	27	)ES..	
	E785.*	85 x 110	28	)	
	E786.*	85 x 110	77	)	
				E780U E785U E786U	
	~~HE780 (U)* (BMW-D12)~~	82 x 100	59		

9... Orange	~~E950*~~	95 x 105	44	—	E = single cylinder, generally equipped with counter-rotating balance shaft; hydraulic pump directly flangeable
----------------	------------------	----------	-----------	---	---

G. Green	2G30*	88 x 75	82	)"H")	2. = two-cylindertype "H" = prepared to fit a hydraulic pump (introduced as a separate version in '97, before included in standard build)
	2G40	92 x 75	91		

D.. Pink	1 D 20		87	)	A.. = semi-capsuled* ..S = anti-clockwise rotation, unencapsulated, no counter balance shafts T = clockwise rotation, unencapsulated, no counter balance shafts ..Z = anti-clockwise rotation, unencapsulated, with counter balance shafts ..U = clockwise rotation, unencapsulated, with counter balance shafts ..C = anti-clockwise rotation, capsuled, with counter balance shafts <u>Versions "T" and "U":</u> no longer in production with 1D 41 - 50 - 60 - 81 - 90 1) = horizontal crankshaft 2) = vertical crankshaft ..V.) x. ..W.) 2.) 3.
	1 D 30..	86 x 65	92	)	
	1 D 31.	86 x 65	71	)..S)	
	A 1 D 35..	86 x 65	93	)..T) 2.	
	1 D 40.	86 x 65	88	)..Z) 3.	
	A 1 D 40..	86 x 65	62	)..U	
	1 D 41..	90 x 65	94	)..C) .3	
	~~A 1 D 41..~~	90 x 65	95	) .4	
	1 D 50	97 x 70	109	) .6	
	1 D 60..	88 x 85	89	))	
	1 D 80..	100 x 85	90	))	
	1 D 81..	100 x 85	73	))	
	1 D 90 ¹⁾	104 x 85	108	))	
	1 D 90 V ²⁾	104 x 85	113		

Z.. Brown	~~Z 782~~ Z 788 Z 789. Z 790.	82 x 100 90 x 90 90 x 100 90 x 100	32 48 49 37	))..H))	Z = two-cylinder type ..H = two positions for flanging hydraulic pump
------------------	---	---	-----------------------------	---------------------	--

** = production ended in 2001

M. Green	~~2 M 31~~		84	)	2-,3-,4-cylinder H = high swirl cylinder head + special camshaft for more power in speed range ≤ 2300 (LS) = initially named "low-speed" version L = low swirl cylinder head + standard camshaft for operation speed $n \geq 2300 \text{ min}^{-1}$ Z = with counter rotating balance shafts 2-3-4 M 41 : no versions "L" or "H" respectively
	~~3 M 31~~		85	)	
	~~4 M 31~~		86	)	
				)	
	~~2 M 40~~		78	)..H (LS)	
	~~3 M 40~~		79	)..L	
	~~4 M 40~~		80	) ..Z	
				)	
	2 M 41	102 x 105	105	)	
	3 M 41	102 x 105	106	)	
	4 M 41	102 x 105	107	j	

L.. Dark Blue	~~2 L 30.~~	95x100	51	)	2-,3-,4-cylinder .S* = semi-capsuled, no counter-rotating balance shaft(s) .Z* = semi-capsuled, with counter-rotating balance shaft(s) .C = encapsulated, with counter-rotating balance shafts .K = encapsulated, without counter-rotating balance shafts (with 4-cyl. versions at $n \leq 1800 \text{ min}^{-1}$ only) .H = high swirl cylinder head + special camshaft for more Power in the speed range $n \leq 2300 \text{ min}^{-1}$ 2-3-4 M 41 : no versions "L" respectively "H" (high swirl cylinder head) * = semi-capsuled versions no longer in production (replaced by the "M" -family!) BMW : "D 20", "D35" BMW : "D 50" H.= water-cooled
	~~3 L 30.~~	95 x 100	52	)	
	~~4 L 30.~~	95 x 100	53	)	
				)	
	~~2 L 31~~		68	)..S*	
	~~3 L 31~~	102 x 90	69	) ..Z*	
	~~4 L 31~~	102 x 90	70	)..C	
				)..K	
	~~2 L 40~~		64	)	
	~~3 L 40~~	102 x 105	65	)...H	
	~~4 L 40~~	102 x 105	66	)	
				)	
	2 L 41	102 x 105	102		
	3 L 41	102 x 105	103	)	
	4 L 41	102 x 105	104		
	~~H 2 L 30.*~~	95 x 100	60		
	~~H 3 L 30.*~~	95 x 100	61	)	



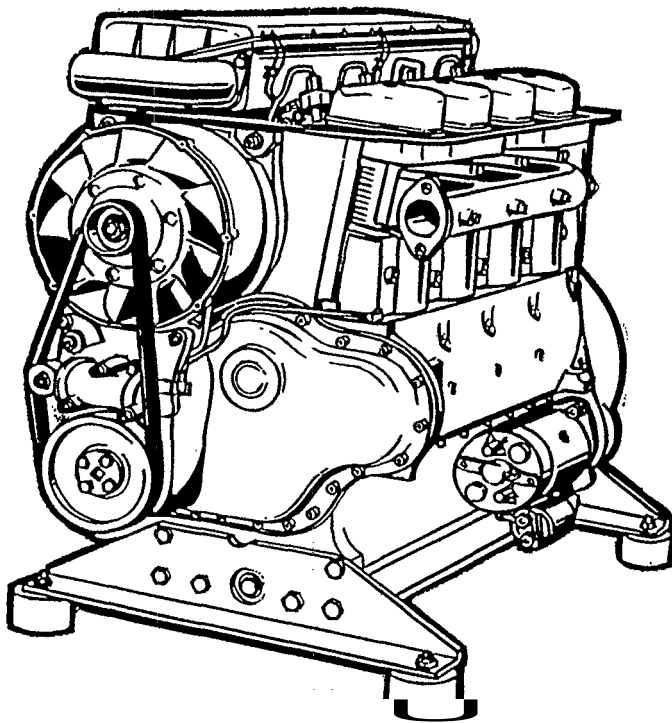
Original – Ersatzteile

Original – spare parts

Pièces d.echange d'origine

Repuestos originales

Pezzi di ricambio originali



2 M 40 .

3 M 40 .

4 M 40 .

2 M 41.

3 M 41.

4 M 41.

How To Use Your Parts Manual



HOW TO USE YOUR HATZ PARTS MANUAL

Your Hatz parts manual contains a wealth of information. To get correct parts you need to reference the engine serial number of the specific engine that is to be repaired. See Service Bulletin SE02C for serial number information and tag location. The engine type **series** number will guide you to the correct parts manual. Alternatively a newer parts manual along with the appropriate IMT Parts Bulletin (See page 17 through 22) may be referenced.

Gasket Kits, Maintenance Kits, and Emergency Kits are also available. The **15 X 21-cm parts** manuals from Germany use a system, explained herein, to indicate which parts are included in different kits. See page 9 and **10**. H.D.A. also supplies **8 ½" X 11"** size parts manual and a P.R.O. Kits Catalog, p/n-00000017 which lists component parts in the kits. H.D.A. supplied "large" manuals also include the description of the part in English. Germany supplied manuals are designed for worldwide use. Due to space limitation, no description is used.

When locating a part number make sure you reference the correct column and correct item number. Pay special attention to the notes in the right hand column, especially if an item is listed more than once. Notes will indicate if the part is for a capsuled engine, clockwise rotation, counter-clockwise rotation, or other difference.

The larger capital Letters with the black background indicate where the use of adhesives and sealants are necessary. A section in the front of the manual identifies which specific material to use and supplies the Hatz part number for it. See page **11** through **15**.

Some parts are not listed in the standard **Hatz** parts manual. These include specialized parts for OEM applications, and component parts. Component Part Catalog **42**, p/n-00000097 provides component parts of vendor supplied items. **H.D.A.** Large size manuals also supply more information in the back sections. Your Hatz distributor can also determine specialized parts by referencing his Hatz microfiche library in most cases.

1-19-00

Bestellung für HATZ-Original-Ersatzteile
Order for HATZ Original spare parts
Commande de pièces d'origine HATZ
Pedido de repuestos originales HATZ
Ordine parti di ricambio originali HATZ

1	Besteller / Customer / Client / Cliente / Cliente																															
2	TYP MOTOR/FABRIK NO. MIN-1	←	←																													
3	Ersatzteilliste Nr./ Spare parts list no./ Liste des pièces de rechange no./ Lista de repuestos No./ Lista ricambi n. 2M40.19 ☐ 3M40.19 ☐ 4M40.19 ☐ 2M41.12 ☐ 3M41.12 ☐ 4M41.12 ☐																															
4	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Stück / Qty / Q.tà</th> <th style="width: 25%;">HATZ Ident No.</th> <th style="width: 25%;">Stück / Qty / Q.tà</th> <th style="width: 25%;">HATZ Ident No.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>				Stück / Qty / Q.tà	HATZ Ident No.	Stück / Qty / Q.tà	HATZ Ident No.																								
Stück / Qty / Q.tà	HATZ Ident No.	Stück / Qty / Q.tà	HATZ Ident No.																													
5	Versandart / Mode of dispatch / Mode d'expédition / Despacho deseado / Modo di spedizione Post ☐ Surface / Poste / Correo ☐ Posta ☐ Luftfracht ☐ Airfreight / frêt aérien ☐ Aereo ☐ Via aerea ☐ Express/ express/ exprès ☐ Expreso ☐ Espresso ☐ ☐																															
6	Versandadresse / Consignee / Adresse destination / Dirección / Indirizzo di destinazione																															

Bestellung an: Order at: Commande à: Pedido a:
 - **die nächste HATZ-Service-stelle** (siehe **Service-stellenverzeichnis**)
 - your nearest HATZ service station (see **service-list**)
 - votre station-service **HATZ** la plus proche (voir liste "Service")
 - al servizio **HATZ** más cercano (ver **cuaderno de Servicio**)
 - al più vicino centro di servizio **HATZ** (vedi **lista centri autorizzati**)

MOTORENFABRIK HATZ
D-94099 RUHSTORF
 Tel: 0 85 31 / 319 - 0
 Fax: 0 85 31 / 31 94 21

Note: The engine model series is listed **in** the third information **box** next to the engine model type.



INFORMATION REQUIRED FOR SPARE PARTS ORDERS

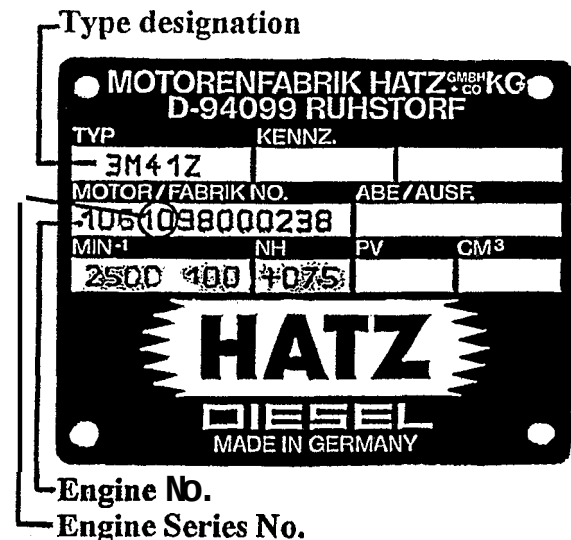
Hatz supplies a Spare Parts List with every engine. Corresponding part numbers can be found in the spare parts list for ordering.

To avoid costly mistakes by supplying the wrong parts, the following information should be provided when ordering parts. See engine name plate sample.

- ♦ Engine Type
- ♦ Engine Serial Number (Motor/Fabrik No.)
- ♦ Spare Parts List Series No.

If the series number of the engine (3rd and 4th or 4th and 5th digit of the engine serial number, see picture) correspond to the series number of the spare parts list (last two digits), one can be assured that the **parts** ordered are the correct vintage for the engine.

If the above numbers do not correspond, one cannot be **sure** that the correct **parts** are ordered. Please obtain a spare **parts** list **with** the same series number before ordering **parts**.



PICTURED EXAMPLE:

Correct series number of Spare **Parts** Catalog: 3M41.10

Inhaltsverzeichnis		Index	Tafel-Nr. Table No.
M ..	Grundmotor	Basic engine	
00	Ersatzteilsätze	Spare parts kits	01
34	Zubehör	Accessories	02
01	Kurbelgehäuse	Crankcase	03 + 04
01	Massenausgleich	Compensation of masses	05
02, 03	Kurbelwelle	Crankshaft	06
04	Nockenw., Regler, Spritzversteller	Camshaft, governor, timer	07
04	Drehzahlverstellung	Speed control	08
05, 06	Kolben, Pleuel, Zylinder	Piston, conrod, cylinder	09
07	Zylinderkopf	Cylinder head	10
08	Deckel z. Zyl.-Kopf	Cover cyl.-head	11
09, 10	Stoßstangen, Ölpumpe	Pushrod, oil pump	11
11	Steuerdeckel	Timing cover	12
12	Startfüllung	Extra fuel device	13
13	Gebtlise	Blower	14
14	Einspritzausrüstung	Injection equipment	15
16, 17	Riemenscheibe, Schwungrad	Pulley, flywheel,	
20	Hydr. Abstellvorrichtung	hydr. belt tensioner	16
22, 27	Luftfilter, Luftansaugrohr	Air filter, air intake manifold	17
26	Luftführung	Air ducting	18, 19 20
A ..	Zusatzausrüstung	Equipements	
01	Förderpumpe	Fuel feed pump	21
01	Kraftstoffbehälter	Fuel tank	22
02	Zyklon	Cyclon	23
03	Auspuff	Exhaust	24
04	Andrehkurbel, Andrehvorr.	Starting handle, starting device	25
04	Dekompressionsautomatik	Autom. decompression	26
04	Abschaltautomatik mech.	Autom. shut-off device mec.	27
05	Starter, Generator	Starter, alternator	28
05, 10	Armaturenkasten	Instrument box	29
05, 10	Armaturen, Leitungen	Electric equipment, wirings	30
06	Motorfüße, Schwingungsdämpfer	Engine brackets, vibration damper	31
07	Ölkühler, Ölwanne	Oil cooler, oil sump	32
08	Anbaut. Zuluftschacht, Abluftschacht	Air duct. adaption, air ducting	33
12, 15	Keilriemenschutz, Anschlußgeh.	V-belt guard, intermediate housing	34
16	Elastische Kupplung	Flexible coupling	35
10	Steuerdeckel f. Hydraulik	Timing cover hydr.	35
Serien-Nr.-Änderungen		Serial-code modification list	Seite/Page 98

Note: The “M” section refers to basic engine equipment and the “A” section refers to accessory or additional equipment. The number in the far right-hand column indicates the table number, not the page number.

IDENTIFICATION CODE FOR STANDARD ENGINES



Each engine is **split** up into a **certain** number **of** individual groups, the total of these group results in a complete standard equipment.

HATZ Diesel engines are split up according to the following systems:

<u>IOENT. CODE</u>	<u>DESCRIPTION OF GROUP</u>
M 00.00	Spare parts sets
M 01.00	Crankcase
M 02.00	Crankshaft
M 03.00	Bearing flange
M 04.00	Camshaft
M 05.00	Piston with conrod
M 06.00	Cylinder
M 07.00	Cylinder head
M 08.00	Cover for cylinder head
M 09.00	Push rod and protection tube
M 10.00	Oil pump
M 11.00	Governor housing
M 12.00	Extra fuel device
M 13.00	Blower
M 14.00	Injection pump and injection valve
M 15.00	Starting device
M 16.00	V-belt pulley resp. crank jaw
M 17.00	Flywheel
M 18.00	Suction nipple
M 19.00	Oil relief valve
M 20.00	Tension pulley, stop device/belt tensioner device
M 21.00	Fuel tank with filter (also see A 01.00)
M 22.00	Air filter (also see A 02.00)
M 23.00	Fuel filter with support (also see A 01.30)
M 24.00	Fuel lines (also see A 01.20)
M 25.00	Fuel tank with console (also see A 01.00)
M 26.00	Cowling/ air duct
M 27.00	Air-intake manifold
M 28.00	Exhaust manifold (also see A 03.00)
M 29.00	Oil return pipe
M 30.00	Lifting bracket
M 31.00	Breather
M 32.00	Speed control (also see A 09.00)
M 33.00	Oil pressure gauge
M 34.00	Tools and labels
M 35.00	Capsule
M 36.00	Cooling liquids hoses (also see A 30.00)

IDENTIFICATION CODE FOR ADDITIONAL EQUIPMENT



Due to a comprehensive availability of additional equipment each and every engine is adaptable to the very special demands of installations. This additional equipment program is subdivided as follows:

- A 01.00 Fuel
 - A 01.10 Fuel tanks
 - A 01.20 Fuel lines
 - A 01.30 Fuel filters
 - A 01.40 Fuel feed pumps
 - A 01.50 Supports, brackets
- A 02.00 Combustion air
 - A 02.10 Oil bath air filters
 - A 02.11 Dry-type air filters
 - A 02.12 Wet-type air filters
 - A 02.13 Service indicators; vacuum gauges
 - A 02.20 Pre-cleaners; cyclones
 - A 02.30 Supports
 - A 02.40 Air intake pipes; manifolds
- A 03.00 Exhausts
 - A 03.10 Exh. silencers / pepperbox
 - A 03.11 Exh. silencers / standard
 - A 03.12 Exh. silencers / high performance
 - A 03.13 Exh. silencers / special classification
 - A 03.20 Exh. silencers / combinations
 - A 03.30 Supports
 - A 03.40 Exhaust pipes; manifolds
- A 04.00 **Start** mechanical / pneumatic
 - A 04.10 Starting handles without supports
 - A 04.11 Starting handles with supports
 - A 04.12 Cranking **claws**
 - A 04.20 Automatic decompression devices
 - A 04.21 Manual decompression devices
 - A 04.30 Rope **starts**
 - A 04.40 Spring **starters**
 - A 04.50 Inertia starters
 - A 04.60 Compressed air starters
 - A 04.70 Starting **devices**
 - A 04.80 Starting aids
- A 05.00 Start electrical
 - A 05.10 Electric starter equipment compl.
 - A 05.20 Starter motors
 - A 05.30 Mount. parts for starter motors
 - A 05.40 Alternator / regulators
 - A 05.50 Mount. parts for alternators
 - A 05.60 Accessories; control panels
 - A 05.70 Glow plugs; electric starting aids; preheaters
 - A 05.80 Ring gears
 - A 05.90 Interference suppressions
- A 06.00 Engine mountings
 - A 06.10 Standard engine brackets / rigid mount.
 - A 06.11 Special engine brackets / rigid mount.
 - A 06.20 Engine brackets / flexible mount.
 - A 06.30 Resilient mounts
- A 07.00 Lubrication **oil**
 - A 07.10 Lub.-oil coolers
 - A 07.20 Lub.-oil filters; strainers
 - A 07.30 Oil sumps
 - A 07.40 Special oil filling devices
 - A 07.50 Special oil drain devices
 - A 07.60 Separate oil reservoirs with feed pump
- A 08.00 Cooling air
 - A 08.10 Blower Covers
 - A 08.20 Inlet air ducts
 - A 08.30 Dirt protectors
 - A 08.40 Cleaning openings
 - A 08.50 Air ductings
 - A 08.60 Heating devices
 - A 08.70 Blowers
- A 09.00 Speed controls
 - A 09.10 Speed control / infinitely variable
 - A 09.20 Speed control / **Bowden** control
 - A 09.30 Speed control / toothed segment
 - A 09.40 Speed control / adjustable speeds
 - A 09.50 Speed control / idle speed device
 - A 09.60 Special governors
- A 10.00 Engine Controls
 - A 10.10 Fuel level
 - A 10.20 Oil pressure
 - A 10.21 Oil level
 - A 10.22 Oil **temperature**
 - A 10.30 Cylinder / cylinder head temp.
 - A 10.40 Exhaust gas temperature
 - A 10.50 Cooling air blower
 - A 10.60 Revolution counter
 - A 10.70 Hour meter
 - A 10.80 Indicators
- A 11.00 Remote engine controls
 - A 11.10 Stop devices
 - A 11.20 Automatic shut down
 - A 11.30 Start-stop devices
 - A 11.60 Accessories; control panels

A 12.00 Protection devices
 A 12.10 Belt guards
 A 12.20 Flywheel/ shaft protection devices
 A 12.30 Exhaust silencer protections

A 13.00 Dynamic dampening
 A 13.10 Torsional dynamic damper

A 14.00 Flywheels
 A 14.10 Standard flywheels
 A 14.20 Special flywheel

A 16.00 P.T.O. not disengageable
 A 16.10 P.T.O. flanges
 A 16.20 Stub shafts
 A 16.30 Flexible couplings
 A 16.40 Belt pulleys

A 17.20 Clutch without outboard bearing:
 permanent disengageable
 A 17.21 **Clutch** with outboard bearing:
 permanent disengageable
 A 17.30 Initial drive clutches
 A 17.40 Pivot bearings
 A 17.50 Mount. parts for A 17.30

A 18.00 P.T.O. Hydraulic
A 18.10 Mount. parts for hydraulic pumps
 A 18.20 Hydraulic pumps
 A 18.30 Hydraulic oil coolers

A 19.00 P.T.O. Compressed air
 A 19.10 Mount. parts for auxiliary
 compressor
 A 19.20 Lubrication for auxiliary

A 20.00 Gear boxes-reverse direction
 A 20.10 Reduction gears without clutch
 A 20.11 Reduction gears with clutch
 A 20.20 Gear boxes / mechanical
 A 20.30 Gear boxes / hydrostatic
 A 20.40 Gear boxes / hydrodynamic
 A 20.50 Marine reverse gears
 A 20.60 Mount. parts for gears

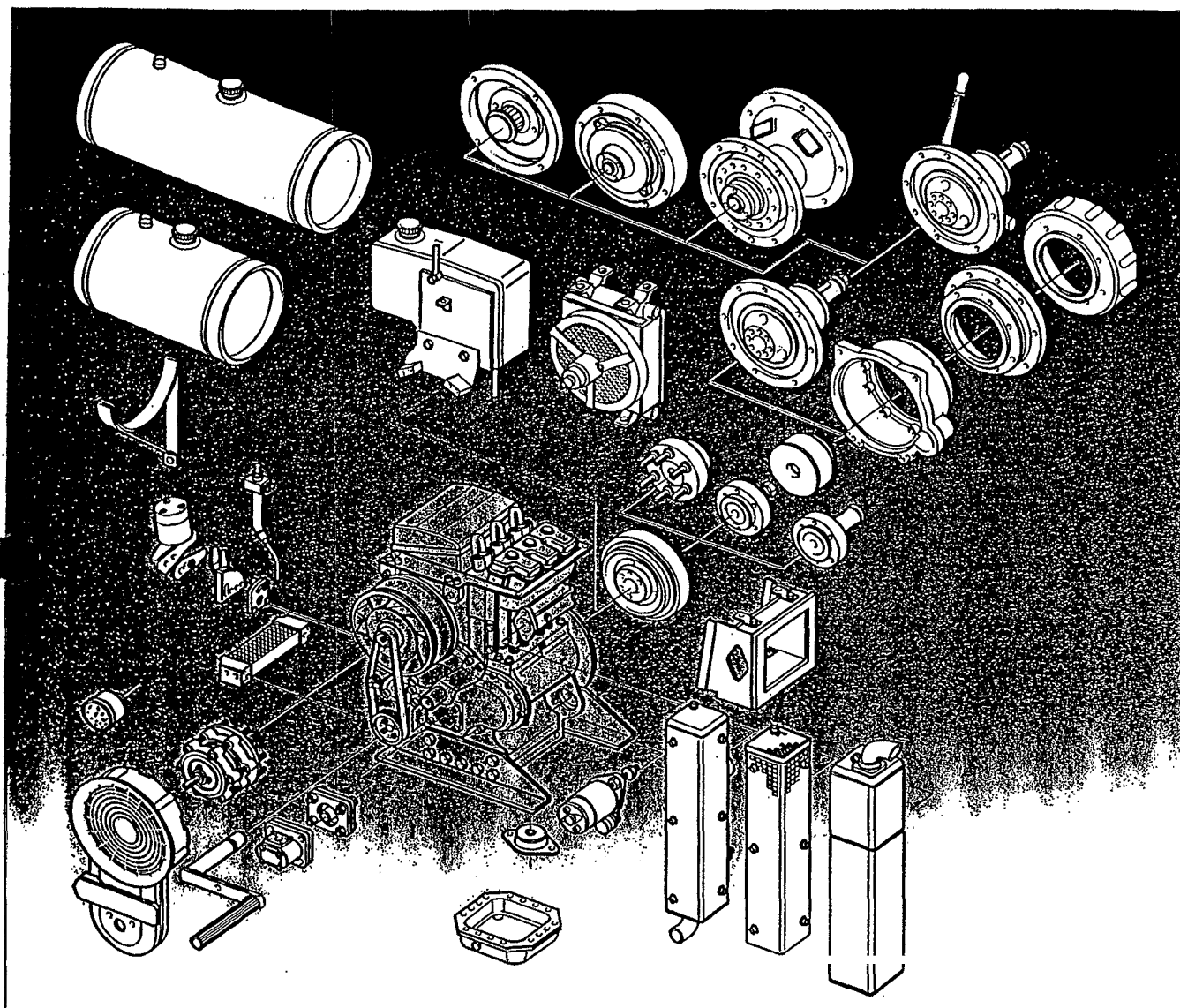
A 21.00 Gear boxes-direct direction
 A 21.10 Reduction gears without clutch
 A 21.11 Reduction gears with clutch
 A 21.20 Gear boxes / mechanical
 A 21.30 Gear boxes / hydrostatic
 A 21.40 Gear boxes / hydrodynamic
 A 21.60 Mount. parts for gears

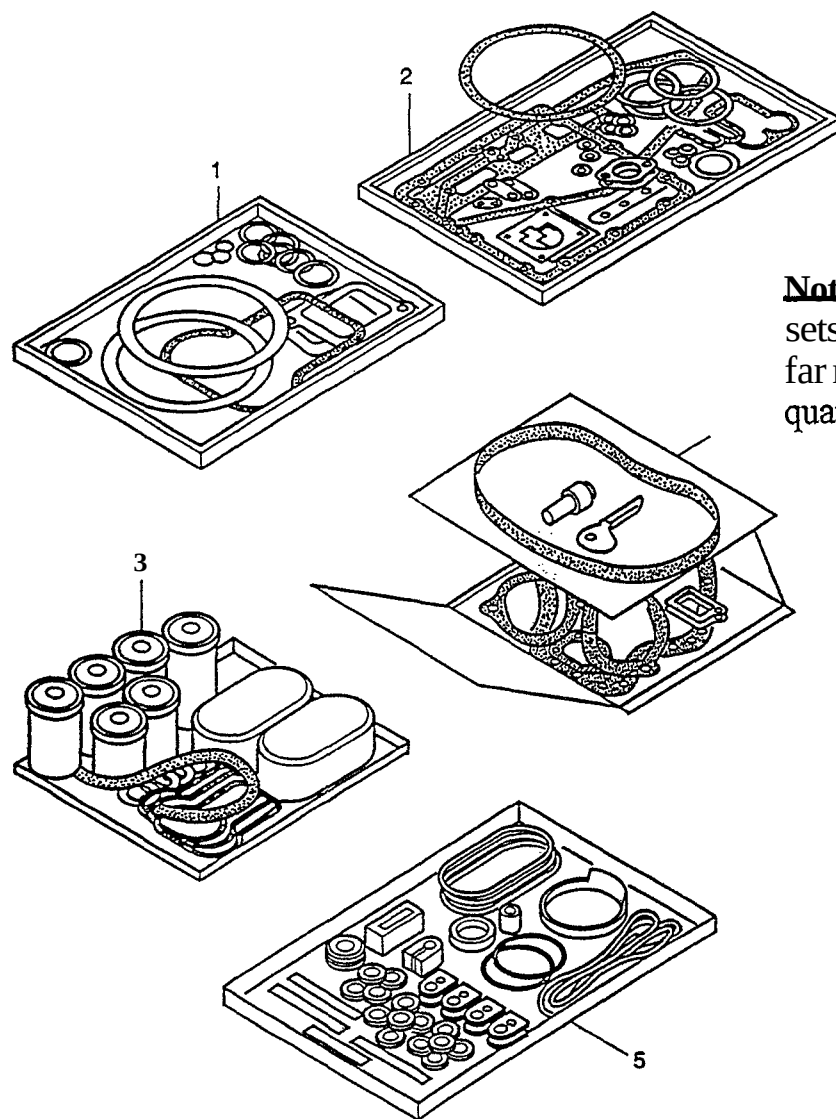
A 30.00 Water cooling
 A 30.10 Mount. parts for pumps
 A 30.20 Freshwater pumps
 A 30.30 Pipes; hoses
 A 30.40 Accessories

A 40.00 Pump units
 A 40.10 Mount. parts for pumps
 A 40.20 Pumps
 A 40.30 Frames
 A 40.40 Accessories

A 90.00 Classifications-regulations

A 90.1 1 Special outfit - Germanischer Lloyd
 A 90.12 Special outfit - Lloyd register of shipping
 A 90.13 Special outfit - Det Norske Veritas
 Bureau Veritas





Note: Component parts of the gasket sets are located in the column to the far right of the part number. The quantity of each item is also indicated.

Fig.- No.	HATZ Ident-No.	Stück Qty.	2 M	3 M	4 M	P / W d / D	Bemerkungen Notes
(W)	Im Wartungssatz enthalten. <u>Incl. in maintenance kit.</u> Contenu dans le jeu d'entretien. Incluido en el juego de mantenimiento. Contenuto nella sene manutenzione						
(d)	Im Dichtungssatz für 1 Zyl.-Kopf enthalten. <u>Incl. in gasket set for 1 cylinder head.</u> Contenu dans le jeu de joint p. 1 culasse. Incluido en el juego de juntas p. 1 culata. Contenuto nella sene guamizioni d. 1 testa.						
(P)	Im Pannensatz enthalten. <u>Incl. in emergency kit.</u> Contenu dans le jeu secour. Incluido en el juego para averias. Contenuto nella sene di prima necessità.						
(D)	Im Dichtungssatz Kurbelgehäuse <u>Incl. in gasket set crankcase.</u> Contenu dans le jeu de joints carter moteur. Incluido en el juego de juntas caja cigüeñal. Contenuto nella serie guarnizioni basamento.						
						1:	Anzahl pro Satz - Quantité par jeu Cantidad por juego. Quantità per sene.
1	00992202	2	3	4	P1		Dichtungssatz für 1 Zylinderkopf <u>Gasket set for 1 cyl. head</u> Jeu de joint p. 1 culasse Juego de juntas para 1 culata. Sene guamizioni per 1 testa.
2	01230902	1	1	1			Dichtungssatz für Kurbelgehäuse <u>Gasket set for crankcase</u> Jeu de joints p. Carter moteur Juego de juntas para caja cigüeñal. Serie guarnizioni basamento.
3	00987104	1					Wartungssatz für 1000 h <u>1000 hours maintenance kit</u>
3	00991504		1				Kit d'entretien 1000 heures - Juego de piezas para servicio 1000 horas.
3	01203304			1			Kit di manutenzione a 1000 ore.
4	01226201	1	1	1			Pannensatz - <u>Emergency kit</u>
4	01544200	1	1	1	2-4M41		Kit de secours - Juego para averias. Kit di prima necessità.
5	01215601	1	1	1			Gummiteilesatz, <u>Rubber comp. set</u> Garniture caout., Guarnición goma Guarnizioni in gomma.

Deck Zyl.-Kopf
Cover cyl.-head
M 08 Couvercle culasse
Tapa culata
Coperchio bilanc.

Stoßstangen
Pushrod
M 09 Tige de culbuteur
Varilla de balancin
Asta bilanciare

Ölpumpe
Oil pump
M 10 Pompe à huile
Bomba de aceite
Pompa olio

Tafel Nr.
Tabl. No.
Tavola N.
11

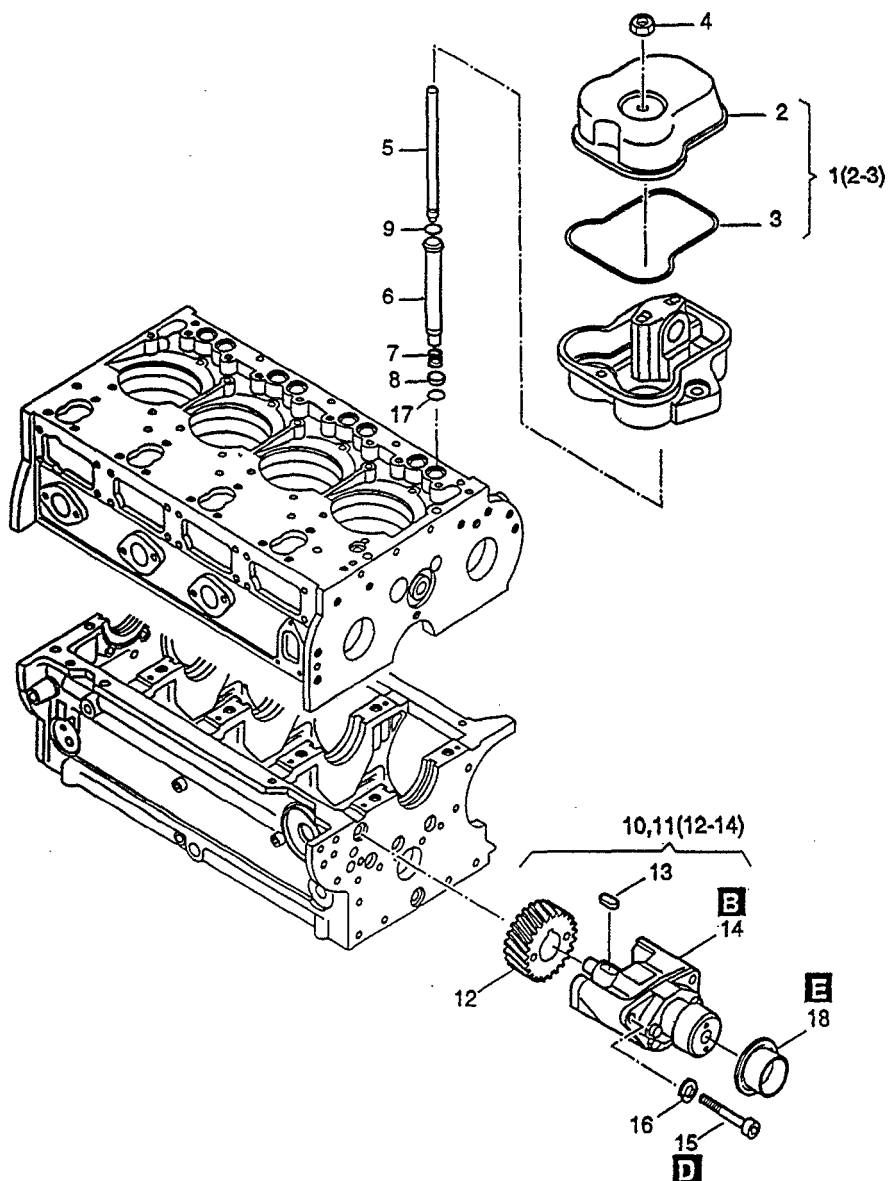


Fig.- No.	HATZ Ident-No.	Stück Qty.			P / W d / D	Bemerkungen Notes
		2 M . .	3 M . .	4 M . .		
1	01205900	2	3	4		
2	-----					
3	40224900	2	3	4	W4/6/8 d1	123 x 2,5 M 10
4	50132300	2	3	4		
5	00743600	4	6	8		
6	03566701	4	6	8		
7	03185100	4	6	8		
8	03185200	4	6	8		
9	50288000	4	6	8	d2	17 x 3
10	00924204	1	1			
11	00923904			1		
12	03562020	1	1	1		
13	50316800	1	1	1		4 x 4 x 20 DIN 6885
14	-----					
15	50206800	3	3	3		M 8 x 105 DIN 912-8.8
16	50002800	3	3	3		8 DIN 128
17	50288100	4	6	8	d2	15 x 3,2 55 mm
18	50289400	0...1	0...1	0...1		

Note:

P indicates Emergency Kit
W " Maintenance Kit
d " Gasket Set for one cylinder head
D " Gasket Set for crankcase

W4/6/8 indicates Fig. No.3 is included in the Maintenance Kit (W), quantities, (4) (6) (8).

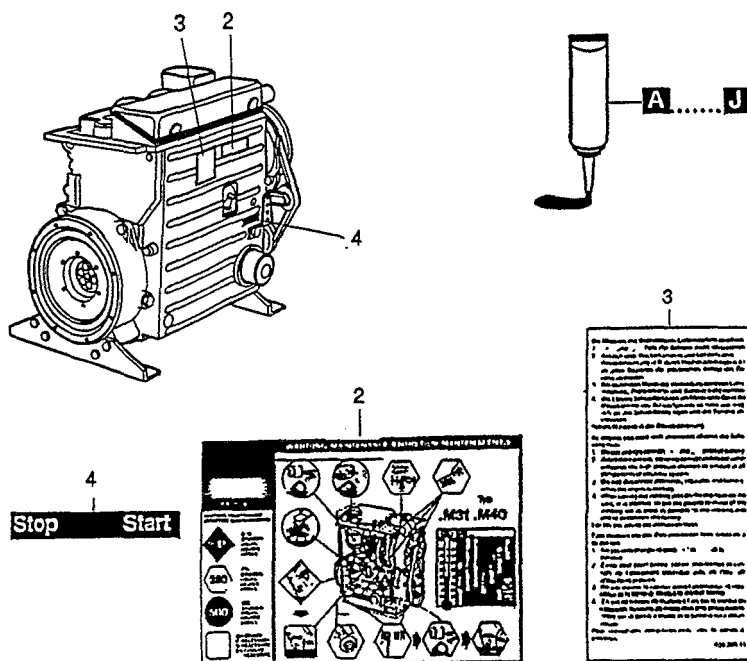
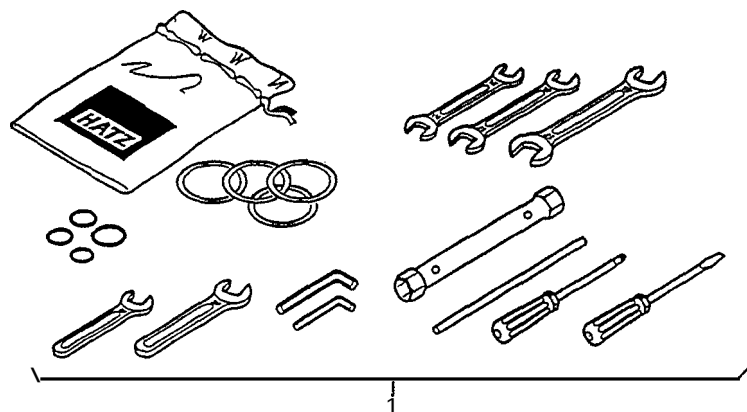
d1 indicates Fig. No.3 is included in the Gasket Set for one cylinder head (d), quantity (1).

2 M . .

3 M . .

4 M . .

Fig.- No.	HATZ Ident-No.	2 M . .	3 M . .	4 M . .	Bemerkungen Notes
1	00938301	1	1	1	Zubehörsatz • Accessoires kit <u>Sort. accessoires</u> Juego de accesorios Sene accessori
2	04039000	1	-	-	ohne Zusatzölwanne <u>without add. oil sump</u> sans carter d'huile sin carter de aceite senza coppa olio
2	03788101	1	1	1	
3	03430612	1	1	1	
4	03325400	1	1	1	



Dicht- und Klebstoffe
Sealing- and bonding adhesives

Etanchéifiant et Colle
Materias para empaquetar y pegar

A = 502 230 01	Loctite Activator N	500 ml	} siehe Hinweis auf den einzelnen Bildtafeln as specified in the individual tables suivant les remarques sur les tableaux correspondant según las indicaciones de las tablas correspondientes seguire le indicazioni sul quadro corrispondente
B = 502 231 00	Loctite 573	50 ml	
C = 502 232 00	Loctite 601	50 ml	
D = 502 233 00	Loctite 221	50 ml	
E = 502 234 00	Loctite 648	10 ml	
F = 502 238 00	Technicoll 8058	0,75 kg	
+ 502 239 00	Technicoll 8367	0,75 kg	
G = 502 565 01	Loctite S 407	20 g	
H = 502 825 01	Silicon	30 ml D1	
J = 502 830 03	Hochtemp. Paste	100 ml	

Note: Accessory Kit and Decals.
Sealants and Adhesives.

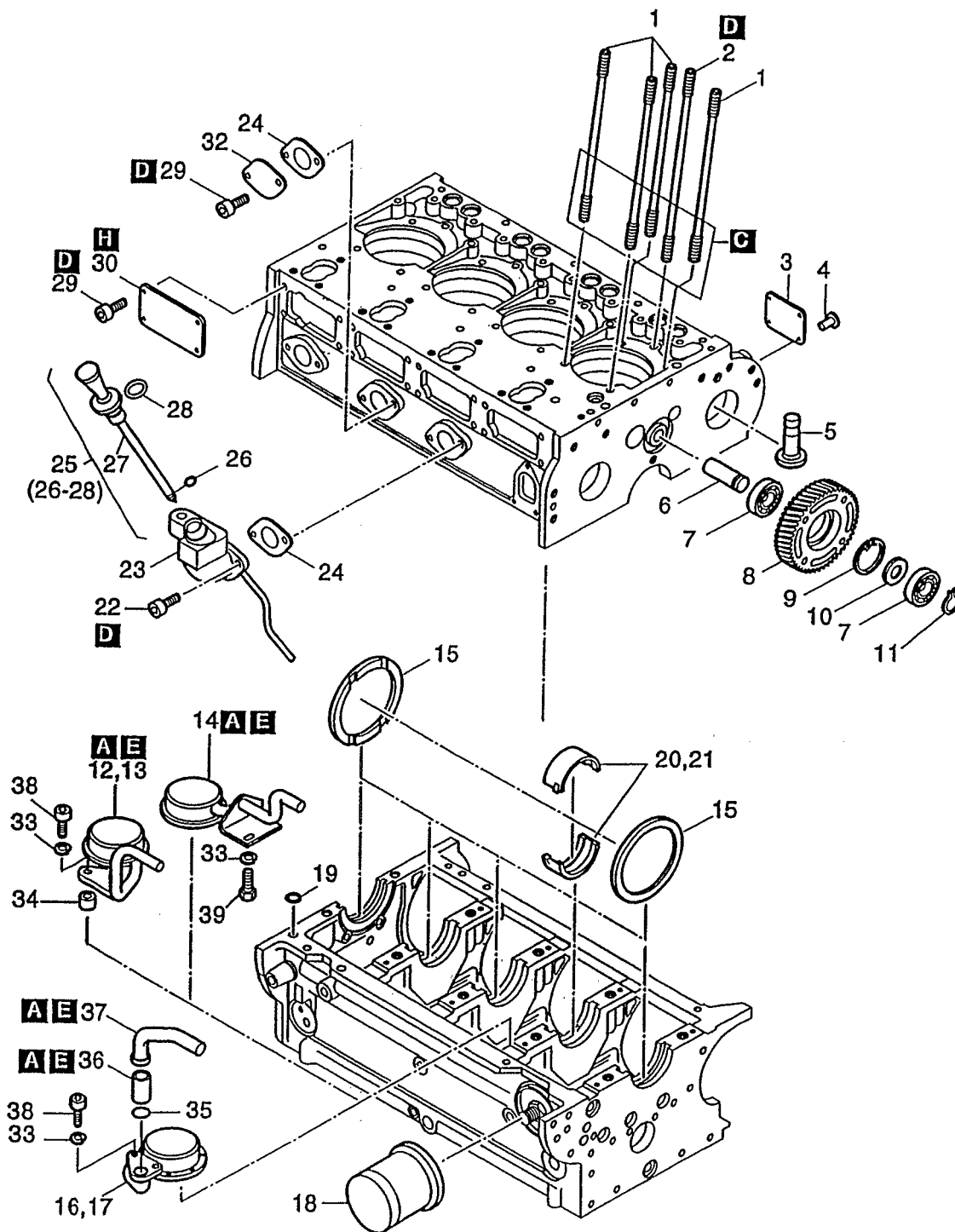
Hatz parts **manuals** also indicate where adhesives and sealants are required. The letter in the left-hand column refers to *the* item (noted inside a black **box**) required for assembly. Sample page follows.

M 01

Kurbelgehäuse
Crankcase
Carter moteur
Caja cigueñal
Basamento motore

Tafel Nr.
Tabl. No,
Tavola N.

04



16

Note: Samples.



SEALING AND BONDING ADHESIVES AS SPECIFIED IN THE INDIVIDUAL TABLES

FIG. NO.	PART NUMBER	DESCRIPTION		
A	502 230 01	Loctite Activator N	-	500 ml
B	502 231 00	Loctite 573	-	50 ml
C	502 232 00	Loctite 601	-	50 ml
D	502 233 00	Loctite 221	-	50 ml
E	502 234 00	Loctite 648	-	10 ml
F	502 238 00	Technicoll 8058 Adhesive	-	0.750 kg
+	502 239 00	Technicoll 8367 Solvent	-	0.750 kg
G	502 565 01	Loctite IS 407 Super Glue	-	20 g
H	502 825 01	Silicone Sealer	-	30 ml
J	502 830 03	High Temperature Paste (Can)	-	100 ml
K	503 426 00	High Temperature Paste (Tube)	-	100 g
L	502 566 00	Silicon Sealer	-	100 g
M	504 851 00	Grinding Paste	-	80 ml



Material used in repair work

Designation	Letter Code	Purpose	Location	Identification Number
Loctite 573 green	B	Surfacejointing solution	Between the halves of the crankcase	502 231 00
Loctite 601 green	C	Jointing	Crankcase plugs	502 232 00
Loctite 221 red	D	Screw locking	Screw connections	502 233 00
Loctite Activator N	A	Surface pre-treatment	For cleaning and de-greasing parts to be sealed	502 230 01
Loctite 648 green	E	Jointing	For the breather valve in the governor housing.	502 234 00
Loctite IS 407	G	Adhesive	Adhesive for rubber gasket strips	502 565 01
Technicoll 8058	F	Adhesive	Adhesive for rubber gasket strips on the cooling system	502 238 00
Technicoll 8367		Solvent		502 239 00
Silicon	H	Surfacejointing solution	For crankcase bottom oil sump cover	502 825 00
High temp paste	J	Slushing grease - 100 ml	Exhaust high temp.	502 830 03
	K	- tube	screw fittings	503 426 00

information



- ☐ SALES
- ☐ ENGINEERING
- ☒ SERVICE
- ☐ PARTS

Bulletin No. SE47

Date 09/25/97

Subject: Sealant and Adhesive Product Conversions

We have found that the Loctite Corporation products vary between the European market and the North American market. The following are appropriate substitutes:

<u>Hatz Part Number</u>	<u>European Market</u>	<u>North American Market</u>
50223100	Loctite 573	Loctite Gasket Eliminator 518
50223200	Loctite 601	Loctite Retaining Compound 609
50223300	Loctite 221	Loctite Threadlocker 222
50223400	Loctite 648	Loctite Retainer 642
50256501	Loctite IS407	Loctite Super Bonder 498

All Hatz **part** numbers are supplied as European market products.

David Carlson,
Service Manager

Fig.- No.	HATZ Ident-No.	Stuck Qty.	P / W d / D	Bemerkungen Notes
		2..4M...		
1	50170800	2		M 6 x 25 DIN 912-8.8 A3C
2	00932700	2		
3	50170800	2		M 6 x 25 DIN 912-8.8 A3C
4	00921400	2		
5	04068900	1		220 mm
6	04069000	1		143 mm
7	03575500	4		
8	03646800	1		
9	03646900	1		
10	50002800	2	a	DIN 128
11	50051600	1	M 8 x 16	DIN 912-8.8
12	01301500	1		
13	50081200	4	A 6	DIN 137
14	50144400	4	M 6	DIN 934-8 A3C
15	40033300	0...1	F 21	
16	-----			
17	-----			
18	04069200	1		113 mm
19	04069100	1		65 mm
20	-----			
21	5015901 I	0...1		
22	50026700	1	M 8 x 16	DIN 933-8.8
23	50380500	I	6,4	DIN 6797 A3C
24	-----			
25	50081200	I	A 6	DIN 137 A3C
26	50025400	2	M 6 x 10	DIN 933-8.8 A3C

Note: This is an international spare parts list, no part descriptions are used because of the five languages. Some DIN or dimensional information may be available.

Serien-Nr.-Änderungen
Serial-code modification list
Modification des Nos de serie
Modificación de los Nos de serie

		IMT.-No.
2 M 40.15	2 M 40.16	89.487
3 M 40.15	3 M 40.16	09.487
4 M 40.15	4 M 40.16	09.487
2 M 40.16	2 M 40.17	89.488
2 M 40.17	2 M 40.18	91.513
3 M 40.16	3 M 40.17	89.488
3 M 40.17	3 M 40.18	91.513
4 M 40.16	4 M 40.17	89.488
4 M 40.17	4 M 40.18	91.513
2 M 41.10	2 M 41.11	98.578
2 M 41.11	2 M 41.12	98.582
3 M 41.10	3 M 41.11	98.578
3 M 41.11	3 M 41.12	98.582
4 M 41.10	4 M 41.11	98.578
4 M 41.11	4 M 41.12	98.582

Note: Use this modification page, found in the **back** of the parts manual, to determine which parts are not interchangeable between series.

Example: If ordering parts for a 2M41.10 (Series 10) from a 2M41.12 (Series 12) parts manual, you must review IMT (Parts Bulletins) **numbers; 98.578** and 98.582. Samples follow.

IMT

INFORMATION
Ersatzteile - Spare parts
Pièces de rechange
Recambios

2 - 4 M 41
2 - 4 L 41 C/K

cylinder head
temperature switch
see reverse

37
98.578
05.06.98
Bl. 1 von 1

Disp.	Bisher / Former / Ancienne			Neu / New / Nouvelle			WSI													
	Benennung / Description / Désignation	Ident-No.	Symbol	Ident-No.	Benennung / Description / Désignation	St. Qty.	Pos.	Typ	kg	ABC	DM br.									
	Cylinder head and temperature switch for 2 - 4 M 41 and 2 - 4 L 41 C/K																			
0	cylinder head	013 175 00	< == >	{ 013 175 1 502 686 0	cylinder head	1	42 43 44													
0	temperature switch 180° C	400 328 01			temperatur swith 220 ° C															
0	interned. piece	050 278 00																		
0	joint	500 010 00																		
<u>Modification of series no.:</u> 2-4 M 41.10 to 2-4 M 41.11 2-4 L 41.10 to 2-4 L 41.11																				
<table border="1"> <thead> <tr> <th>SYMBOL</th> <th>INTERCHANGEABLE</th> <th>NOT/NOW INTERCHANGEABLE</th> </tr> </thead> <tbody> <tr> <td>< == ></td> <td>old into new, new into old</td> <td></td> </tr> <tr> <td>< * * ></td> <td></td> <td>old into new, new into old</td> </tr> <tr> <td>< * == ></td> <td>old into new</td> <td>new into old</td> </tr> <tr> <td>< = * ></td> <td>new into old</td> <td>old into new</td> </tr> </tbody> </table>						SYMBOL	INTERCHANGEABLE	NOT/NOW INTERCHANGEABLE	< == >	old into new, new into old		< * * >		old into new, new into old	< * == >	old into new	new into old	< = * >	new into old	old into new
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< == >	old into new, new into old																			
< * * >		old into new, new into old																		
< * == >	old into new	new into old																		
< = * >	new into old	old into new																		
erstellt MFD- Abs-ke	gesehen	Disposition 0 = bleibt ET Remains available Reste livrable	1 = Aufbrauchen Use up Epuiser	2 = Nacharbeiten Remachine Retoucher	3 = Verschrotten Scrap Ferrailler	Vervielfältigung und Veröffentlichung nur mit unserer Genehmigung This form must not be reproduced without our permission Ce formulaire ne doit pas être reproduit sans notre permission			 MOTORENFABRIK HATZ GmbH & Co. KG Postfach 11 62 D-84095 Ruhstorf a.d. Rott ☎ 08531/319-0 - Fax: 08531/319-418											

IMT

INFORMATION
Ersatzteile - Spare parts
Pièces de rechange
Repuestos

Type + Tafel/Tabl. No.

2 - 4 L / M 40

2 - 4 L / M 41

Baugruppe / Group / Groupe

M 05 conrod

Code IMT No.

37 98.582

Dat. 10.11.98

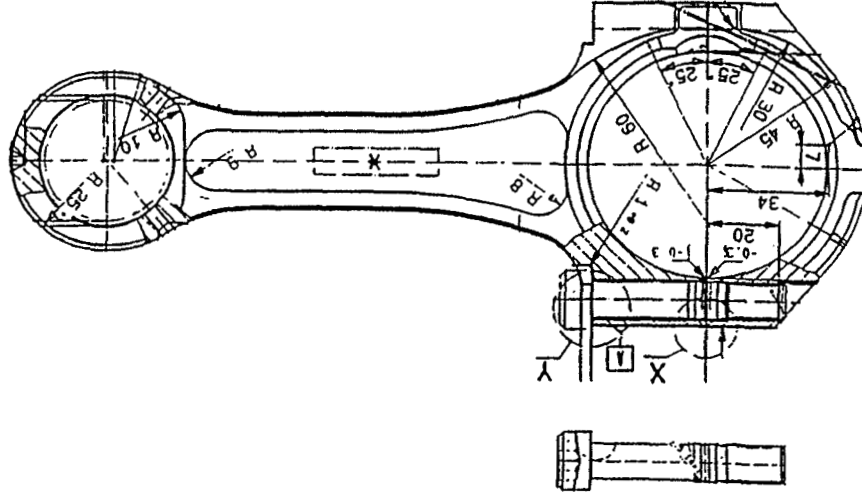
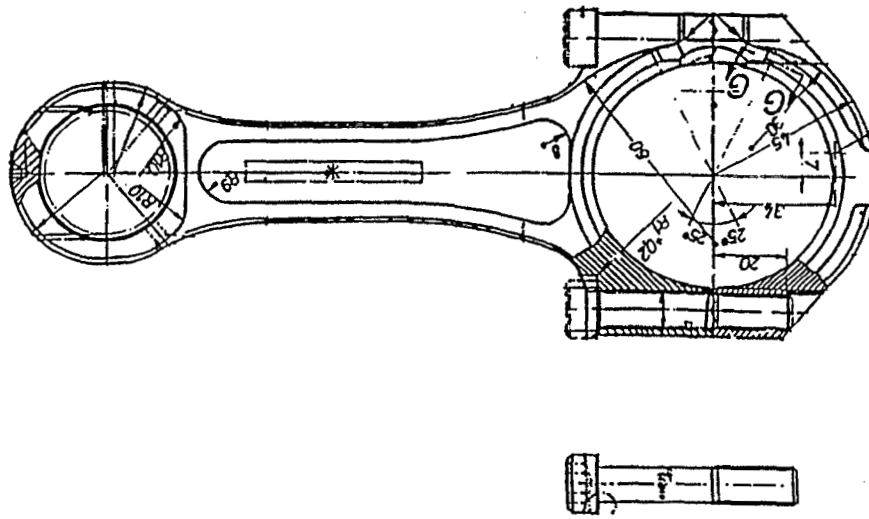
Bl. 1 von 4

see reverse

Disp.	Bisher / Former / Ancienne		Neu / New / Nouvelle		St. Qty.	Pos.	Typ	kg	ABC	DM br.																												
	Benennung / Description / Désignation	Ident-No.	Symbol	Ident-No.							Benennung / Description / Désignation																											
Conrod 2 - 4 L / M 40 I41 with flat mating face and fitting bolts																																						
1	Conrod with bushing and bolts	009 297 02	< == >	009 297 03	conrod with bushing and bolts	1																																
0	Conrod screw	037 752 00	< ≠ ≠ >	037 752 10	conrod screw	1																																
Serial-no. modification: <table border="1"> <thead> <tr> <th>from</th> <th>to</th> <th>from</th> <th>to</th> </tr> </thead> <tbody> <tr> <td>2M40.18</td> <td>2M40.19</td> <td>2M41.11</td> <td>2M41.12</td> </tr> <tr> <td>3M40.18</td> <td>3M40.19</td> <td>3M41.11</td> <td>3M41.12</td> </tr> <tr> <td>4M40.18</td> <td>4M40.19</td> <td>4M41.11</td> <td>4M41.12</td> </tr> <tr> <td>2L40.21</td> <td>2L40.22</td> <td>2L41.11</td> <td>2L41.12</td> </tr> <tr> <td>3L40.21</td> <td>3L40.22</td> <td>3L41.11</td> <td>3L41.12</td> </tr> <tr> <td>4L40.20</td> <td>4L40.21</td> <td>4L41.11</td> <td>4L41.12</td> </tr> </tbody> </table>											from	to	from	to	2M40.18	2M40.19	2M41.11	2M41.12	3M40.18	3M40.19	3M41.11	3M41.12	4M40.18	4M40.19	4M41.11	4M41.12	2L40.21	2L40.22	2L41.11	2L41.12	3L40.21	3L40.22	3L41.11	3L41.12	4L40.20	4L40.21	4L41.11	4L41.12
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						<table border="1"> <thead> <tr> <th>SYMBOL</th> <th>INTERCHANGEABLE</th> <th>NOT/NOW INTERCHANGEABLE</th> </tr> </thead> <tbody> <tr> <td>< == ></td> <td>old into new, new into old</td> <td></td> </tr> <tr> <td>< ≠ ≠ ></td> <td></td> <td>old into new, new into old</td> </tr> <tr> <td>< ≠ = ></td> <td>old into new</td> <td>new into old</td> </tr> <tr> <td>< ≠ ≠ ></td> <td>new into old</td> <td>old into new</td> </tr> </tbody> </table>					SYMBOL	INTERCHANGEABLE	NOT/NOW INTERCHANGEABLE	< == >	old into new, new into old		< ≠ ≠ >		old into new, new into old	< ≠ = >	old into new	new into old	< ≠ ≠ >	new into old	old into new													
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Bisher / Former / Ancienne

Neu / New / Nouvelle



98.582

How to Use Your Parts Manual – page 21

IMT PARTS BULLETIN INDEX

<u>SYMBOL</u>	
< == >	The old <u>is</u> interchangeable with the new and
< ≠ ≠ >	The new <u>is</u> interchangeable with the old.
	The old <u>is not</u> interchangeable with the new and
< ≠ = >	The new <u>is not</u> interchangeable with the old.
< ≠ = >	The old <u>is</u> interchangeable with the new and The new <u>is not</u> interchangeable with the old.
< ≡ # >	The new <u>is</u> interchangeable with the old and The old <u>is not</u> interchangeable with the new.

NUMBERING SYSTEM



HATZ identifies all their products as engines, engine accessories, spare parts, and special tools by a standardized numbering system.

Each item or part is specified by an 8-digit identification number

Identification Numbers are partitioned into sections as follows:

000 001 ..- 002 999 ..	=	Engines
003 000 ..- 029 999 ..	=	Engines accessories, assemblies, sub-assemblies, Customer spec. lists
030 000 ..- 599 999 ..	-	Individual parts
600 000 ..- 699 999 ..	-	Special tools
950 000 ..- 950 999 ..	-	Technical advice

HATZ 8-digit part numbers can be broken down **as** follows:

1 st 6 digits	-	Part Number
Final 2 digits	=	Part Number Modification Index

Part Number Modification Index (last 2 digits of all HATZ spare parts numbers)

EXAMPLE	P/N 400001	00
00 = ORIGINAL, STATE		
01 = FIRST MODIFICATION		
02 = SECOND MODIFICATION, ETC.		

First, second, third modifications, etc. up to 09 are designed to be interchangeable in most cases therefore are not stated in the obsolete/replacement parts listing.

(00-09 interchangeable)

(10-19 interchangeable)

(20-29 interchangeable)

In case of major modifications to the part, the tenth's digit of the part number is incremented by one.

EXAMPLES: from 01 to 10
from 10 to 20

These **parts** are NOT directly interchangeable.

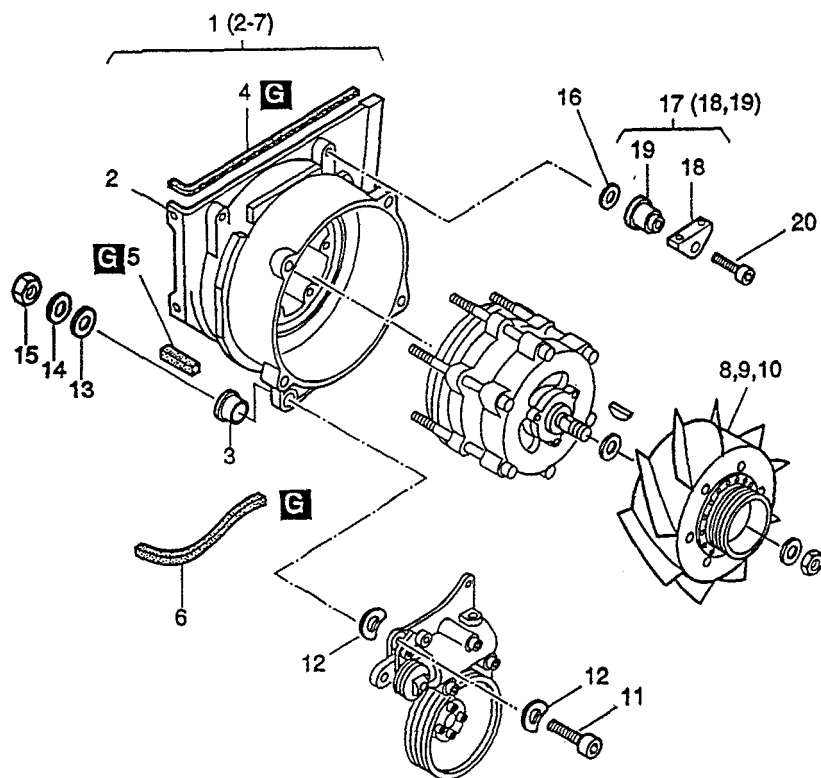


Fig.- No.	HATZ Ident.-No.	Stück Qty.	P / W d / D	Bemerkungen
		2 M . .	3 M .	4 M
1	00740202	1	1	
1	01203701			1
2				
3	03562500	2	2	2
4	03552600	1	1	1
5	03598500	1	1	1
6	03552401	1	1	1
7				
8	00959000	1		
9	00989701		1	
10	00990011			1
11	50055100	2	2	2
12	50061700	4	4	4
13	50070600	2	2	2
14	50002900	2	2	2
15	50023500	2	2	2
16	03595600	0...4	0...4	0...4
17	00919800	2	2	2
18				
19	03552600	2	2	2
20	50052600	2	2	2

Note: The spare parts manual section “M” or “A” corresponds with the same section in the repair manual. Sample follows.

M 13.00 Fan



Preparatory work:

- Take off the exhaust-system capsule (encapsulated engines only) and the silencer (muffler); see A 03.00.

Encapsulated engines:

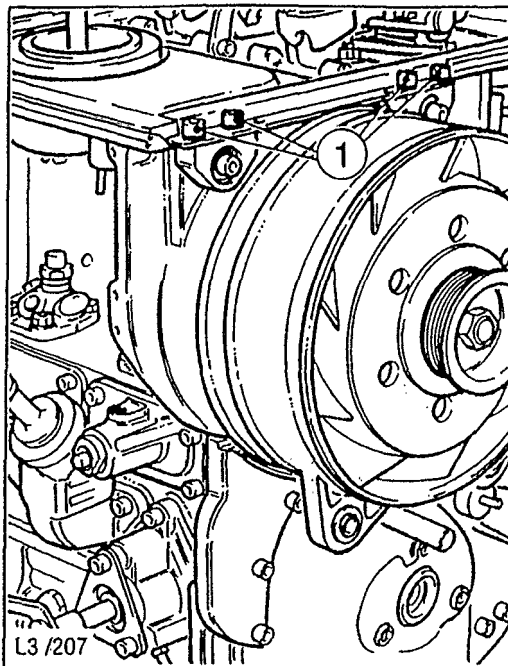
- Take off the capsule side panel, air outlet duct, air guide housing and fan impeller; see M 35.00.

Non-encapsulated engines:

- Take off the cooling air guide.
- Take off the hydraulic shutdown device; see M 20.00.
- Disconnect the battery.

Removing:

- Mark and disconnect the wiring at the alternator.
- Take out screws (117/1).
- Pull out the fan housing.



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Checking parts:

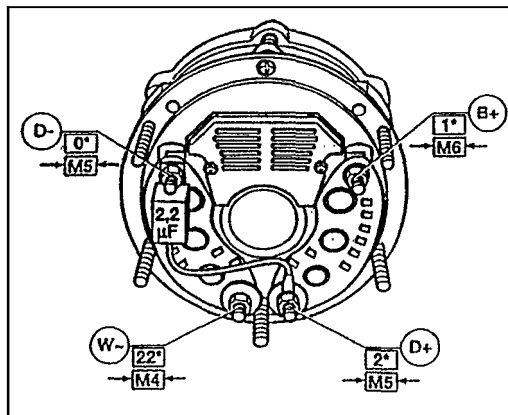
- Check the fan housing sealing strips for signs of damage; if necessary, attach new sealing strips with adhesive G.

Installing:

- Apply a slip agent, e.g. Vaseline, to the contact faces of the fan housing sealing strips.
- Install the fan housing and check that the sealing strips are correctly positioned.
- Re-assemble the items removed from the engine in the opposite order of work to that described for their removal.
- Make sure that the Poly-V belt is installed accurately.

Note:

When connecting cables to the alternator, do not accidentally interchange them; see Fig. 118.



118

L / M .. 01.97

3

Note: Sample.

information



- ☐ SALES
- ☐ ENGINEERING
- ☒ SERVICE
- ☐ PARTS

Bulletin No. _____

Date SE36

09/30/96

Subject: L&M Engines - Belt Replacement

This bulletin is designed to address the occasional belt life complaint on L and M Hatz engines. The belt generally lasts 2000 to 4000 operating hours, or two to three years, depending on operating conditions (i.e.: heat, dust, and other contaminants). If belt problems exist, please **ask** the customer to reference the L and M Instruction **Book** or send your customer this information by fax or mail.

Major reasons for premature belt failure or repeated belt failure are:

- Foreign material entering the blower fan. Binder twine and plastic, if they enter the blower fan, can strangle the blower belt and pull it off the sheaves. This is not a common failure.
- The major reason for repeated failure is incorrect installation and failure to inspect why they failed.

Inspection and Installation:

- 1) Remove covers to access belt. Look for foreign materials which may have caused failure.
- 2) Remove lower pulley. Clean area below pulley.
- 3) Inspection
 - a) Does the alternator shaft turn freely?
 - b) Are the blower/alternator pulley grooves in good condition? (i.e.: no knicks, no material embedded)
 - c) Check sheaves and bearings of the hydraulic belt tensioner pulley.
 - d) Check grooves for knicks and embedded material of the lower pulley.

4) INSTALLATION ref: L/M INSTRUCTION BOOK

6.2. Renewing fan drive belt, checking operation of belt monitor

- Remove one machine screw at belt pulley "1" (Figure 32).
- Press back tensioning pulley "2" and lock it with the machine screw provided.
- Unscrew and remove the belt pulley.
- Take off the Poly-V belt.

Note:

If any grooves on the belt pulley have broken off or are bent, always renew the pulley.

Checking operation of belt monitor

Always check operation of the shutdown device when the belt is renewed.

- Remove the machine screw to release the piston with tensioning pulley "1" (Figure 33).
- Spring pressure will force the piston with tensioning pulley out of the housing.
- Angled lever "2" rotates downwards and releases shutdown pin "3".

Important:

Shutdown pin must be forced out by spring loading or else automatic shutdown will not take place if the belt breaks.

Installing the fan drive belt

- Push in shutdown pin "1" (Figure 34).
- Push piston with tensioning pulley "2" into housing "3" and lock with the machine screw.
- Place the Poly-V belt **centrally** on the fan pulley and install the tensioning pulley and the lower belt pulley (Figure 35).

- Retain the belt pulley with one machine screw "1" without pushing it fully on to the centering hub (Figure 36).
- Insert a large screwdriver between the hydraulic belt tensioner and the belt pulley and press it down until the pulley slides on to the centering hub (Figure 37).
- Insert and tighten the remaining machine screws "1".

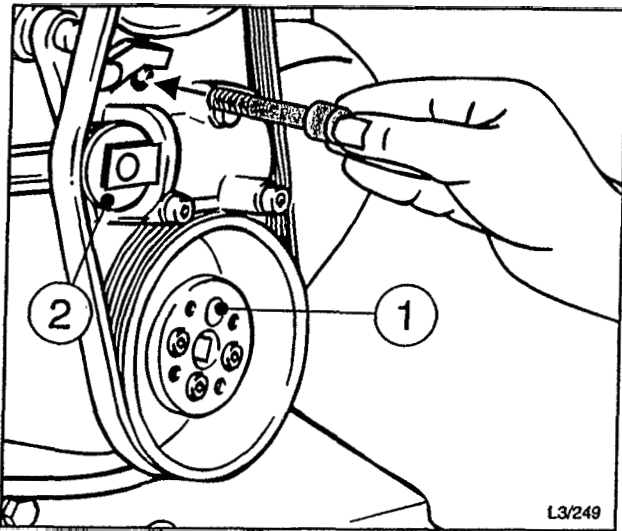
Types of belt

Since the belt pulleys on the fan side differ in diameter on various engine types and versions, Poly-V belts of differing lengths are fitted.

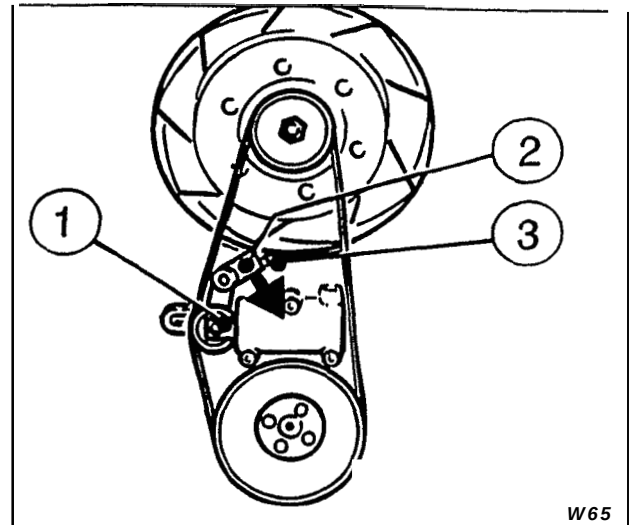
Type and engine version	Ident. No.	Belt length (mm)	Fan pulley diameter (mm)
2 L 31 / 40 C 3 L 31 C	50203100	920	72
All other types and versions	501415 00	910	64

Note:

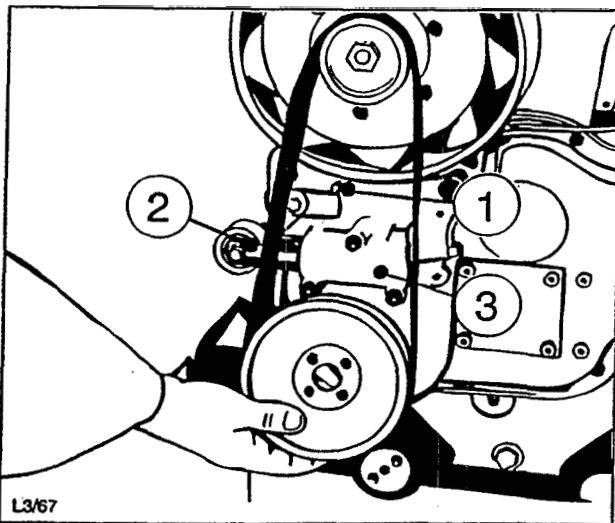
In order to be sure of avoiding mistakes concerning the length of Poly-V belts when ordering them, **it is best to measure** the diameter or the belt pulley at the fan end and refer to the above table, using this figure as a starting point.



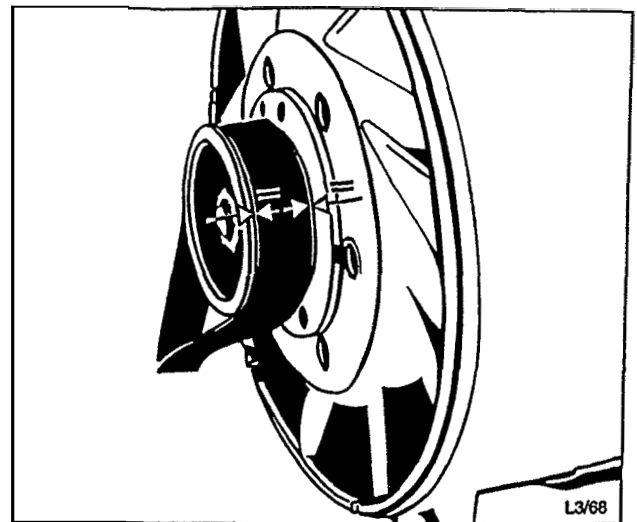
32



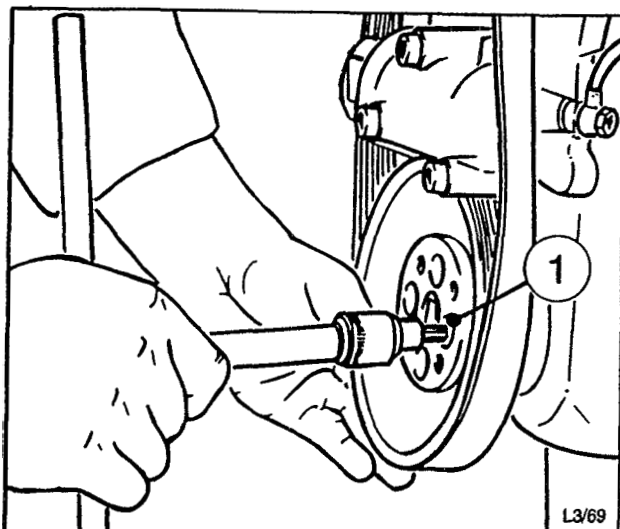
33



34

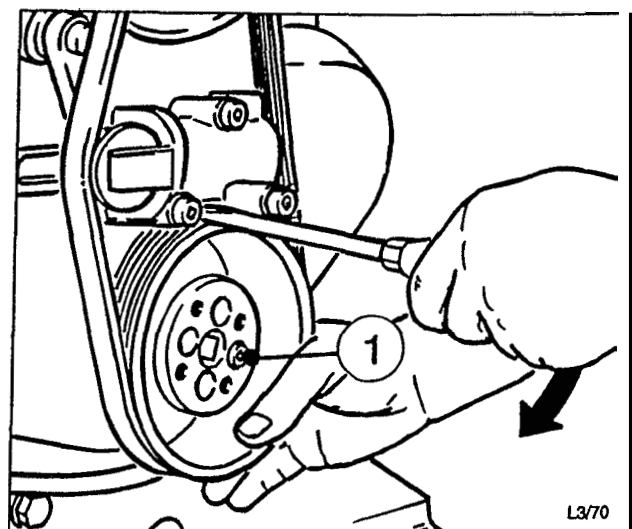


35



36

c:\mike\se36.sam



37

information



- ☐ SALES
☐ ENGINEERING
☒ SERVICE
☐ PARTS

Bulletin No. SE44
 Date 06/13/97

SUBJECT: OIL PRESSURE DATA (PSI) MODELS L/M 31 - 40 -41

This data sheet should be placed in your L/M Repair Manual for future reference.

	Ref.	n = (min-1) ± 5 %							
		850		1500		2300		3000	
		nom.	min.	nom.	min.	nom.	min.	nom.	min.
2 L/M 31-40-41	1	14.5 - 26.1	8.7	23.2-36.3	17.4	29.0 -40.6	23.2	33.4 - 43.5	26.1
	2	18.9 - 26.1	14.5	24.7- 36.3	17.4	31.9- 37.7	21.8	33.4-40.6	24.7
	3	126.1 - 36.3	20.3	34.8 -43.5	26.1	37.7 - 46.4	27.6	39.2 -47.9	29.0
3 L/M 31-40-41	1	14.5 - 26.1	8.7	23.2 - 36.3	17.4	29.0 -40.6	23.2	34.8 -43.5	26.1
	2	17.4 - 23.2	13.1	27.6-36.3	21.8	27.6 - 37.7	21.8	31.9 -40.6	26.1
	3	118.9-26.1	14.5	26.1 - 37.7	20.3	36.3 - 45.0	24.7	39.2 -47.9	29.0
4 M 31-40-41	1	14.5 - 26.1	8.7	23.2-36.3	17.4	29.0 - 40.6	23.2	33.4 -43.5	26.1
	2	17.4 - 23.2	13.1	27.6 -36.3	21.8	29.0 -40.6	23.2	31.9 -40.6	26.1
	3	21.8 - 29.0	17.4	130.5 -40.6	23.2	134.8 -46.4	26.1	137.7-49.31	29.0
4L 40-41 (C-Version)	1	14.5 - 26.1	8.7	23.2-36.3	17.4	30.5-40.6	23.2	33.4-43.5	26.1
	2	13.1 - 20.3	8.7	26.1 - 33.4	20.3	30.5 - 39.2	23.2	31.9 -40.6	26.1
	3a	24.7 - 31.9	18.9	46.4-55.1	34.8	60.9-72.5	43.5	63.8 -75.4	46.4

These pressures are for engines at operating temperatures under load (approximately 220°F).

Ref 1 - Values as indicated in the existing service literature.

Ref 2 - Up-dated values, taken from belt tensioner connection

Ref 3 - Reference values, taken from oil pressure switch connection. NOTE: 4L40C oil pressure switch is located at the inlet side of the oil cooler which results in higher pressure readings.

HATZ SERVICE MANAGER

information



- ☐ SALES
- ☐ ENGINEERING
- ☒ SERVICE
- ☐ PARTS

Bulletin No. **SE59**

Date **07/16/02**

SUBJECT: POSSIBLE CAUSES FOR SHUTDOWN SOLENOID FAILURE **L & M ENGINES**

After investigating reported solenoid failures, we have been able to pinpoint some of the leading causes contributing to the premature failure of the shutdown solenoid.

The main reason for the solenoid failure has been traced to improper wiring. In most cases both windings are being powered at the same time when the key switch is in the **run** position. This will cause the solenoid to over heat and short out the solenoid windings.

Over extending the wiring harness or using too small a wire gauge causes a voltage drop. The solenoid won't be able to stay open or it will over heat, eventually burning itself out.

External overheating of the solenoid can lead to premature failures. This stems from restricted cooling airflow. Dirt and debris are the leading causes of reduced or restricted airflow. Engines that have been placed in an enclosure that restricts airflow or allows the heated waste air to re-circulate can also cause over heating of the solenoid and lead to other engine problems.

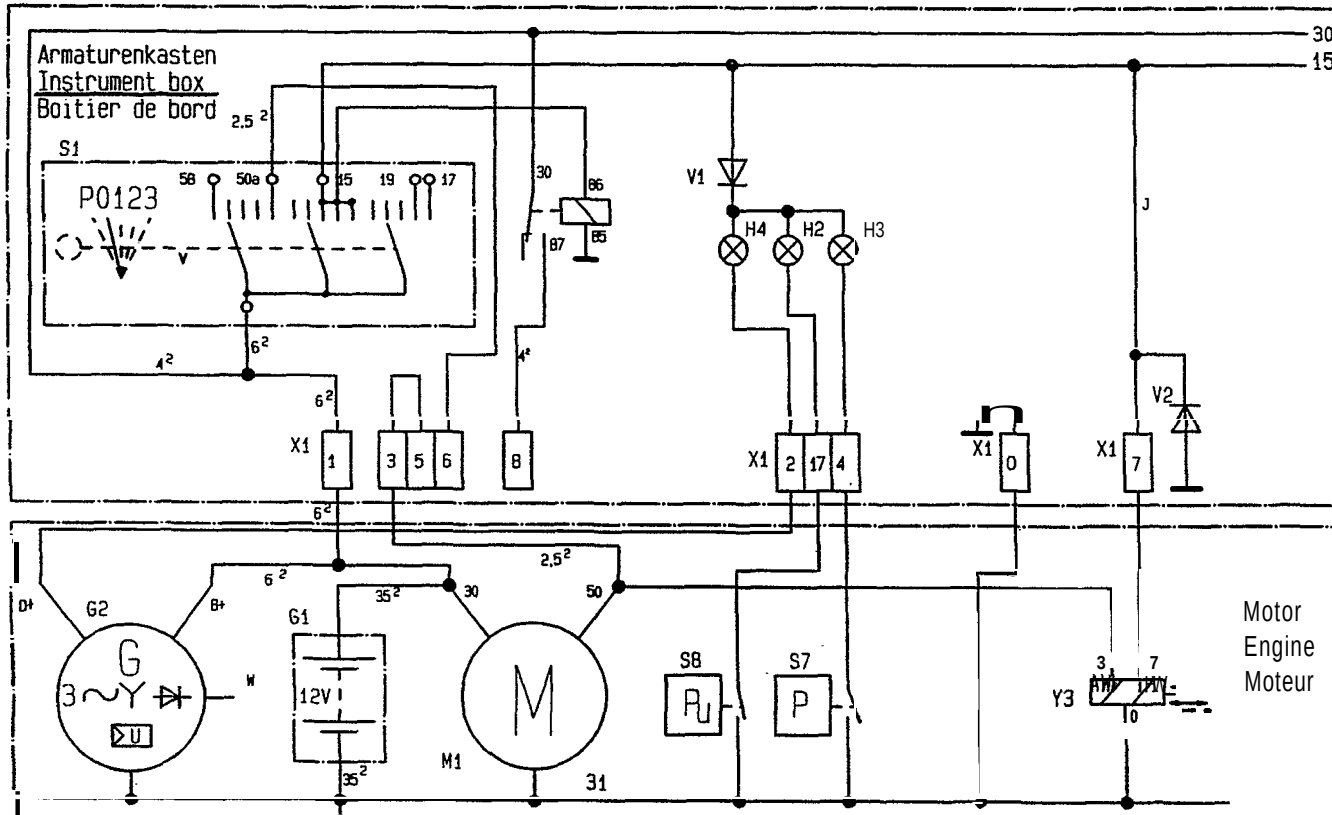
Dirty oil or prolonged intervals between oil changes, which has turned the oil into sludge, will cause the shutdown solenoid valve to stick. This will cause the engine to either not start or not shutdown leading to the burn out of the solenoid.

Over tightening the solenoid mounting bolts has been known to cause the piston inside the extra fuel/shutdown device to stick (the engine will not start or will not shutdown). **If** not corrected the solenoid will fail.

In some rare cases making the battery connection in reverse, jumping **a** dead battery with cables reversed, **or** welding on the unit with battery connected, could damage internal diodes **of** the solenoid. **If** one **of** the above-mentioned circumstances has occurred, other electrical components, such **as** the alternator and clamping diodes will also be damaged.

Special Note: We have had some reports **of** new solenoids not working when installed. Other than some of the problems mentioned earlier, we have found that the mounting gasket sometimes is installed improperly. It is very important to line up the small oil passage hole of the gasket with oil passage of the solenoid and extra fuel/shutdown device. This is also true of the mounting gasket between extra fuel/shutdown device and engine block.

Lee Maramonte
Service Manager



Instructions:

terminal 5/6 on terminal block X1
for safety start switch

terminal 8 on terminal block X1
for additional power done by customer

Stromversorgung / Ladeeinrichtung
* Power supply / Charging device
Alimentation electr. / Chargeur

Starteinrichtung
Starting device
Dispos. de demarr.

Überwachung + Anzeige
Monitoring + display
Surveillance + témoin

Motorabstellung
Motor shut-down
Arrêt du moteur

Sämtliche Leitungen ohne Querschnittsangabe sind 1 .
All wires without conductor cross section data are 1 .
Tous les cables sans indication de section sont de 1 .

* Hinweis: Jede Änderung der Verdrahtung erfordert eine Rücksprache mit dem Werk !
* Instruct.: Any changes in the wiring require a consultation of the factory !
* Remarque: Avant de modifier le câblage, contacter l'usine !

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Markings in HATZ circuit diagrams (as per **DIN** 40719)

New mark- ing (DIN)	Designation of electrical components	Former mark- ing (HATZ)
A 1	Instrument box	---
A 2	Instrument panel	---
A 3	Automatic start-stop	202
A 4	Starter protection module	201
B 1	Temperature sensor	171
B 2	Pulse speed sensor	---
B 3	Oil pressure sensor	167
B 4	Acoustic signal	193
C1	Capacitor	---
E 1	Heater for fuel filter	197
F 1	Fuse	179
G 1	Battery	125
G 2	3-phase generator	126
G 3	Flywheel alternator	126
H 1	Indicator, charging indicator lamp	129
H 2	Indicator, oil pressure	129
H 3	Indicator, engine temperature	129
H 4	Indicator, air filter (maintenance switch)	129
H 5	Indicator, belt monitor	129
H 6	Indicator, glow indicator	123
H 7	Indicator, fan monitor	129
H 8	Remote indicator lamp: engine on	---
K 1	Control relay 1 start/ antirepeat start	151a
K 2	Control relay 2 pre-glowing	151b
K 3	Control relay 3 speed adjustment	151c
K 4	Engine protection relay -	177
K 5	Time-lag relay	160
K 6	Start interlock relay	153
K 7	Timing relay (pulse relay)	198
K 8	Leistungsrelais	---

M 1	Starter motor	127
MG	Starter alternator	120
N 1	Regulator for starter alternator	124
N 2	Regulator for flywheel alternator	124
N 3	Regulator for 3-phase generator (unless integrated)	124
N 4	Pulse generator (supplementary to Syncro regulator)	---
P 1	Hours meter	169
P 2	Rev counter	203
P 3	Pressure indicator	168
R 1	Glow plug	121
R 2	Heater flange	130
R 3	Series resistor for preheater	163
R 4	Resistor	181
R 5	Series resistor with thermostatic switch	---
S 1	Glow starting switch	182
s 2	Ignition light switch	128
S 3	Preheater starter switch	122
s 4	Start-Stop switch	191
S 5	Switch for speed adjustment	190
S 6	Temperature switch for engine temperature	161
s 7	Oil pressure switch	167
S 8	Pressure switch for air filter	170
S 9	Fan monitoring switch	176
S 10	Temperature switch for preheating	---
S 11	Remote start switch	---
S 12	Remote stop switch	---
T 1	Transformer for rev counter	---
V 1	Decoupling diode	159
v 2	Free-wheeling diode	159
v 3	Zener diode	195
W 1	Ground, negative return line	---
w 2	Shielded line on alternator	---

X 1	Terminal strip on instrument box	---
x2	Flat quick-connect distribution box	173
x3	Connector on Emergency Stop switch	156
x4	Socket on Emergency Stop switch	155
X 5	Terminal block in operators panel	---
X 6	Terminal block in terminal box	---
Y 1	Solenoid for speed adjustment	172
Y2	Solenoid for engine shut-off	157
Y3	Servo-magnet (= solenoid valve) for engine shut-off	194
Y4	Fuel shut-off valve	158
Y5	High-pressure shut-off valve	181
Z 1	Interference suppression filter	199
22	Interference suppression capacitor	200

information



- ☐ SALES
- ☐ ENGINEERING
- ☒ SERVICE
- ☐ PARTS

Bulletin No. **SE31-H**

Date **11/25/02**

(Replaces SE31G dated 12/27/01)

SUBJECT: 2003 HATZ SERVICE SCHOOL SCHEDULE

Dear Distributor Owners and Service Managers:

Please review the enclosed Hatz Service Seminar Schedule for the coming year.

We strongly recommend that you send your Hatz Technicians to our in-house training schools. Quality service makes the difference between good sales or great sales. Our training will increase your Technician's efficiency in troubleshooting, repairs and overhauls. This means happy customers and better service profits for your company.

Service schools at Hatz are at no charge. We provide daily lunches and dinner on Wednesday evening. We will be working with engines, so suitable attire is recommended.

Your expenses would be round trip airfare or transportation from your location to the hotel, hotel charges, meals not provided by Hatz, wages, etc.

Please review Service Bulletin SE22A and return your reservation form to us at your earliest convenience. Personal attention to each participant is one of our key objectives. We therefore, have a class limit of 4 to 6 persons attending. Firm commitments are appreciated.

If you have any items or ideas you would like to see included in our service schools, please let us know.

We look forward to your early response.

Sincerely,

Lee Maramonte
Service Manager

information



- ☐ SALES
- ☐ ENGINEERING
- ☒ SERVICE
- ☐ PARTS

Bulletin No. SE05B

Date 10/30/99

(Replaces SE05A dated 9/30/98)

Subject: REVISED HATZ FIELD SERVICE SCHOOL POLICY

There have been several incidents when reservations were made and we had **an** appropriate number of students for a field service school. Then at the last minute, some of them have canceled. This causes an inconvenience for HATZ and the hosting distributor.

From now on, for schools to be on a "no charge" basis, a minimum of six students will be needed to complete the whole service school. If there are less than six students, the hosting distributor will be responsible for the cost of the school and it will be invoiced to your account.

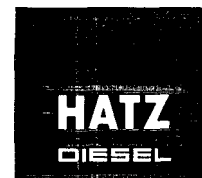
We will provide classroom books, needed handouts and giveaway items as before.

If you have any additional questions, please give me a call.

Lee Maramonte
Service Manager

HATZ DIESEL OF AMERICA, INC.

W229 N 1645 Westwood Drive
P.O. Box 258
Waukesha, WI 53187-0258



2003

SERVICE SEMINAR SCHEDULE

DATES

September 9-11

Starts 8:00 AM Tuesday
Ends 4:30 PM Thursday

October 7-9

Starts 8:00 AM Tuesday
Ends 4:30 PM Thursday

November 4-6

Starts 8:00 AM Tuesday

December 2-4

Starts 8:00 AM Tuesday
Ends 4:30 PM Thursday

CURRICULUM

L&M Engines

Troubleshooting, overhaul and major repairs.

Supra and 2G40 Engines

Troubleshooting, overhaul and major repairs

General School

Learn the HATZ engine line, model familiarization and current models. Review the L&M, 2G40, Supra and Challenger electrical and fuel systems. Review troubleshooting.

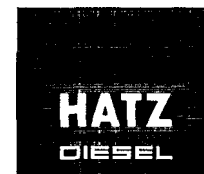
L&M Engines

Troubleshooting, overhaul and major repairs.

NOTE: We may change dates, add or delete schools depending on distributor needs. School will be canceled if a minimum class size of four (4) is not met.

HATZ DIESEL OF AMERICA, INC.

W229 N1645 Westwood Drive
P.O. Box 258
Waukesha, WI 53187-0258



Hotel / Motel Information for Hatz Service Schools

Hatz Diesel of America, Inc. is about 30 miles northwest of Mitchell International Airport. There are several hotels and motels relatively close to us, including the following:

Baymont Inn

**20391 W. Blue Mound Road
Waukesha
262-782-9100**

Comfort Suites Inn

**N14 W24121 Tower Place
Pewaukee
262-506-2000
(ask for Hatz Diesel of America, Inc. discount)**

Fairfield Inn

**20150 W. Blue Mound Road
Waukesha
262-785-0500**

Hampton Inn

**575 N. Barker Road
Waukesha
262-796-1500**

Holiday Inn-Waukesha

**2417 Blue Mound Road
Waukesha
262-786-0460**

All of these are in the same general vicinity as noted on the map. There is a lot of activity around these hotels: restaurants, nightclubs, movie theaters, and shopping malls.

Transportation to and from the airport is the Distributor's responsibility. The approximate cost via Milwaukee Airport Executive Car Service is \$24.00 per person each way, \$28.00 for two people each way or you can ask the hotel you are staying at if they have a shuttle service. The phone number for the car service is 800-236-5450 or 414-769-2450. If you do not have a vehicle, we will gladly transport you between your hotel and Hatz Diesel.

Please feel free to call, fax, or write me if you have any further comments or questions.

With best regards,
Hatz Diesel of America, Inc.

Lee Maramonte
Service Manager

LM/sjo

HATZ DIESEL OF AMERICA, INC.

W229 N1645 Westwood Drive

P.O. Box 258

Waukesha, WI 53187-0258

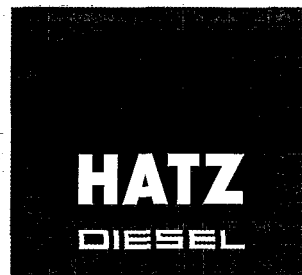
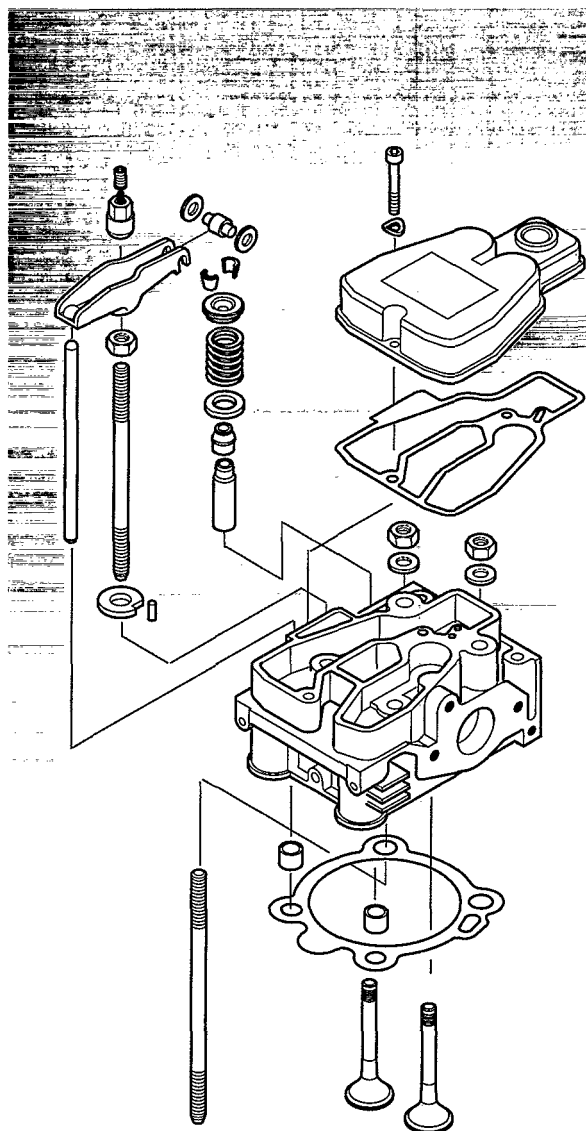


HATZ DIESEL OF AMERICA, INC.

ORIGINAL SPARE PARTS

CATALOG “CD” 2002

PART #00000119



Original-Ersatzteile

Original-spare parts

Pieces de rechange d'origine

Repuestos originales

Pezzi di ricambio originali

MANUAL SPARE PARTS CATALOG

Version 006

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Most of the hardware and software names that are used in this instruction manual are registered trade marks.

■ System requirements

PC with Pentium-350Mhz processor or faster,
32 MB RAM (random access memory) or more,
Minimum of 280 to 580 MB of free hard disk memory,
Operating systems: Windows 9x, Windows ME, Windows NT 4.0 with Service Pack 4 or later, Windows 2000
Windows XP
e-mail (for sending spare parts orders).

2. Installing Hatz Spare Parts

If a HATZ Spare Parts catalogue is already installed, delete it first.
Deleting the **16 Bit versions 2.07 and 2.21** (for the version number, refer to the menu Help - Camelot version):
Delete the Camelot directory in the Windows Explorer.

For instructions on how to delete the **32 Bit version 3.22 and 3.27**, please refer to section 5.

2.1. Standard installation

The program and the databases are installed on the PC's hard disk; the illustrations remain on the CD-ROM.
The CD-ROM must then be inserted in the drive every time you work with the program.
For the standard installation, at least 280 MB of free hard disk space are required.

2.2. Complete installation

All files are installed on the PC's hard disk.
The illustrations can then be accessed considerably faster than with the standard installation.
For the complete installation, at least 580 MB of free hard disk space are required.

2.3 Network installation

Network installation instructions for network administrators are provided in the CD-ROM's main directory.

2.4. Adobe Acrobat Reader

Adobe Acrobat Reader software is required for displaying the IMTs.

If the Acrobat Reader is not yet installed on your PC, you will find it on the CD-ROM in German, English, French and Spanish language versions.

Installation

Close all applications in Windows before starting the installation.

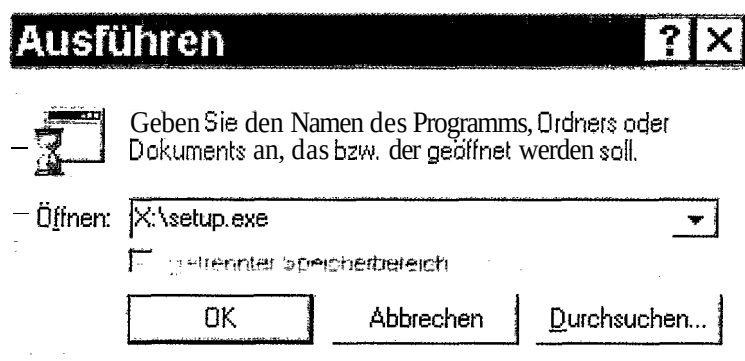
In Windows NT resp. Windows 2000, you have to be logged on as a user with administrative rights.

Start the installation via the **Start / Run** command.

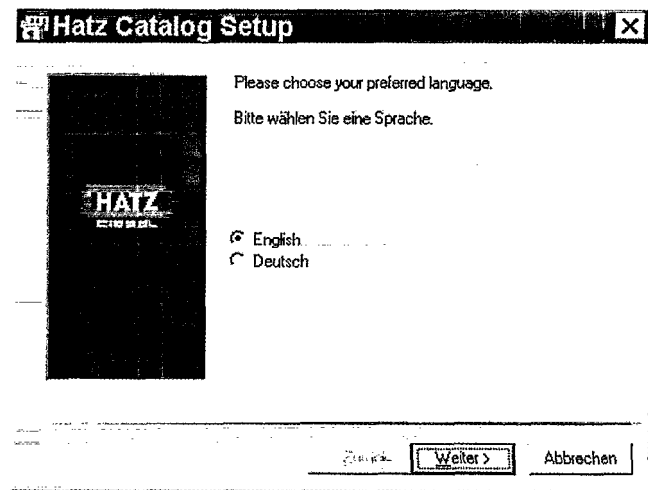
Enter **X:\setup.exe**.

(x = put the letter representing the CD-ROM drive here).

Click **OK**.



Select the desired language and click **Next**.

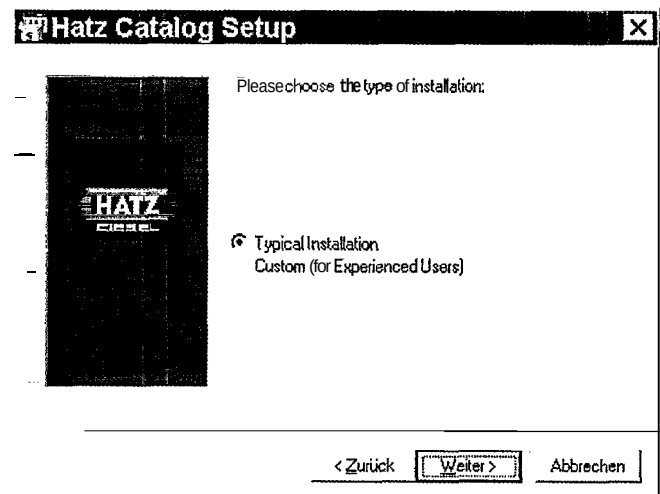


Select the installation option

Typical installation

This is the standard installation, see section 2.1.

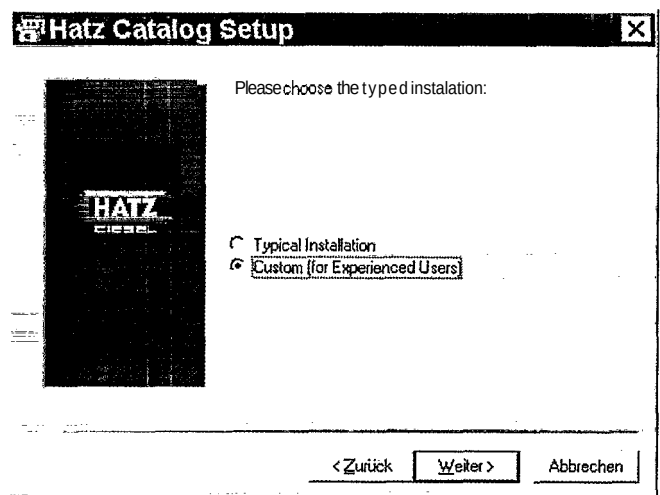
Click the **Next** button.



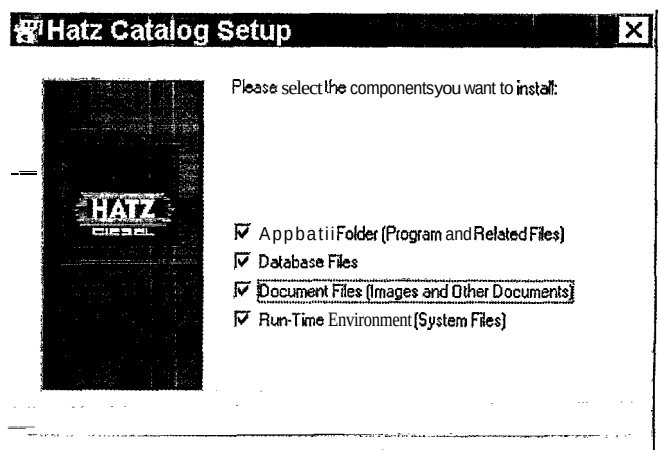
Custom installation

This is the complete installation, see section 2.2.

Click the **Next** button.

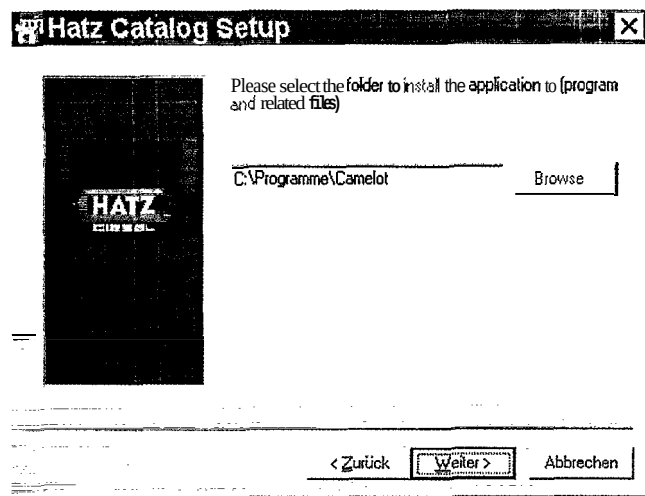


The document files also have to be selected for the complete installation. (Select by clicking the white box - a tick appears)



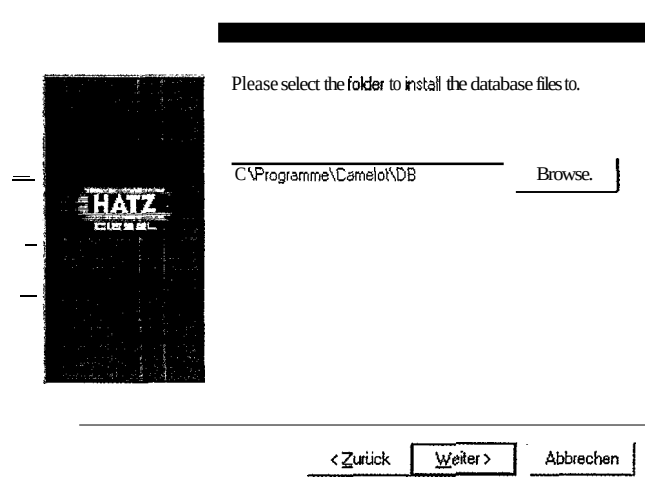
The installation directory is called
C:\Programme\Camelot

Click the **Next** button.

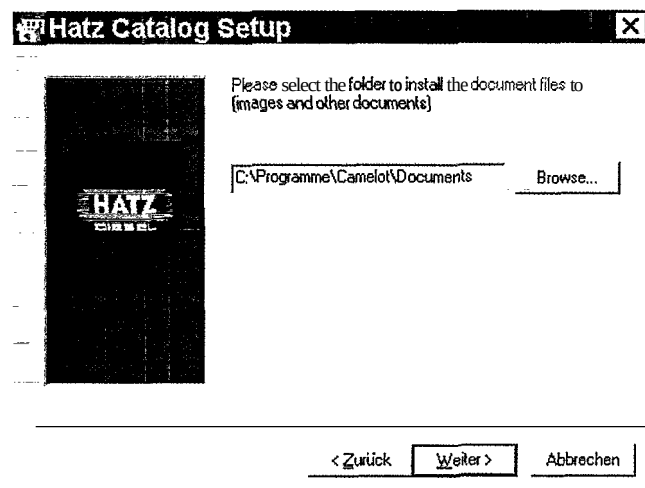


During the custom installation, folders for
the database and document files need to
be specified.

Click the **Next** button.

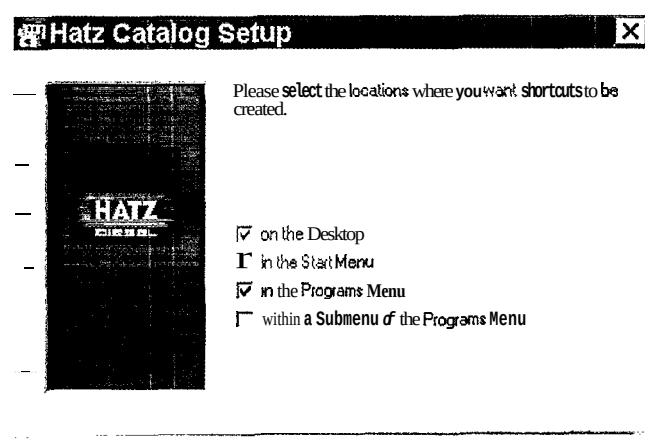


Click the **Next** button.



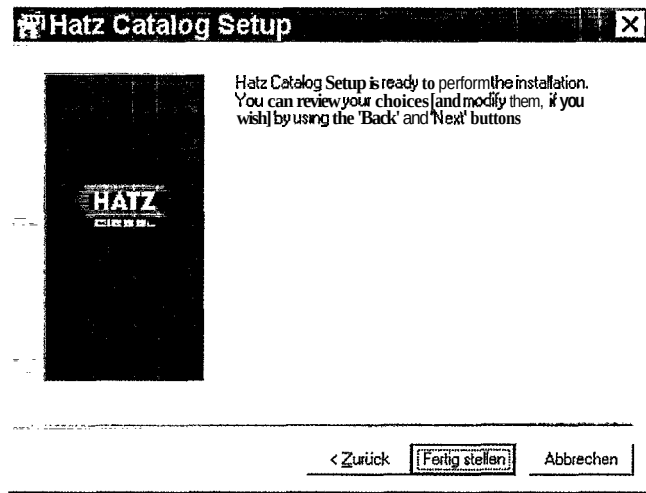
At the end of the installation, you can choose
the points in the operating system from which
you want to start the Hatz Spare Parts catalog.

Click the **Next** button.

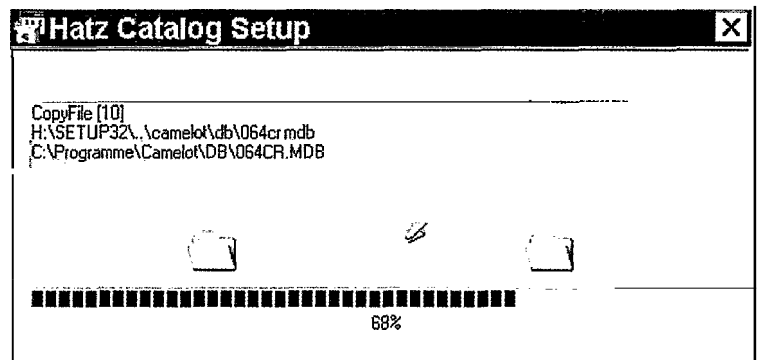


After all necessary settings have been made, the program is installed.

Click the **Finish** button.

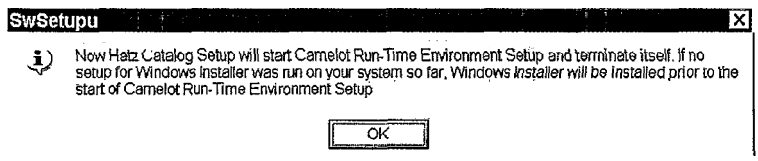


Several minutes are needed to complete the installation.

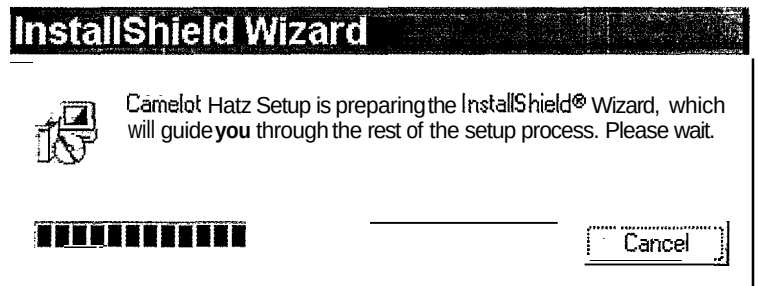


After the spare parts catalog has been installed, the view application is installed.

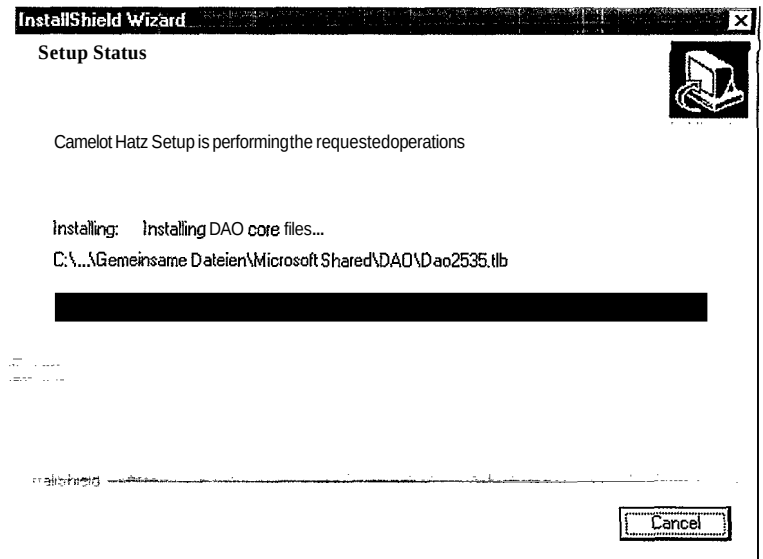
Click **OK**.



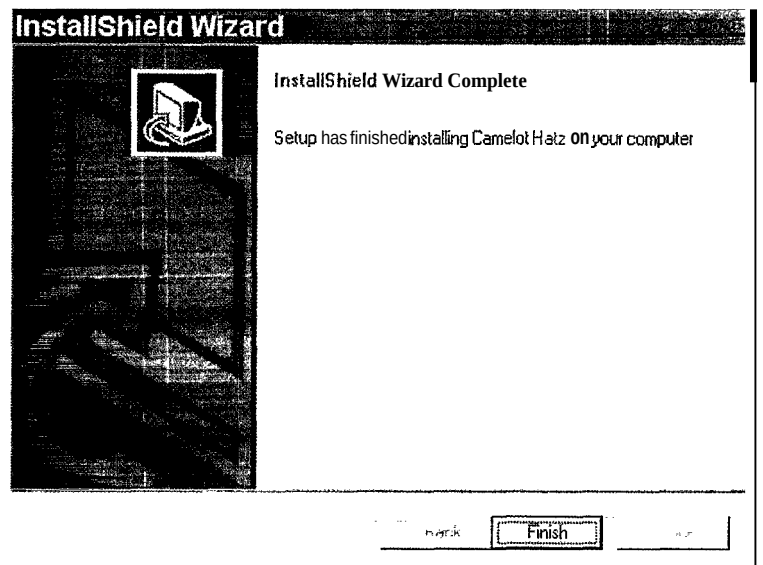
The installation then starts.



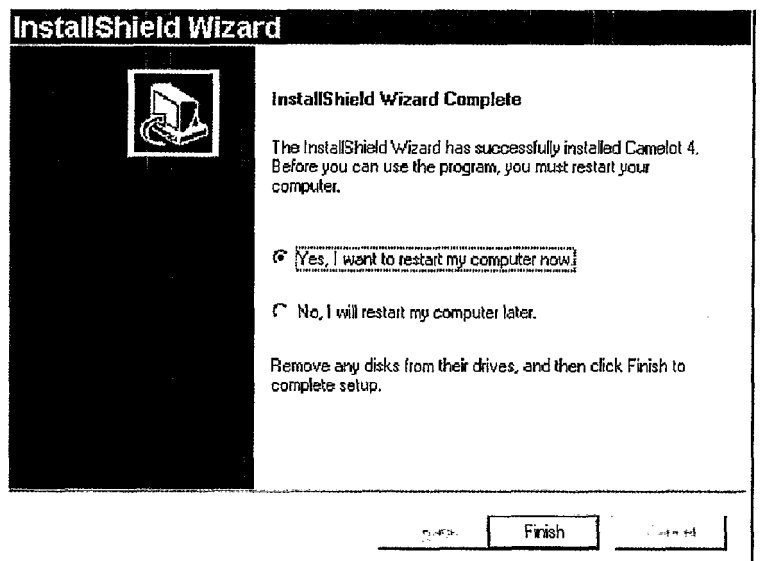
Installation in progress.



Click the **Finish** button.
The installation is complete.



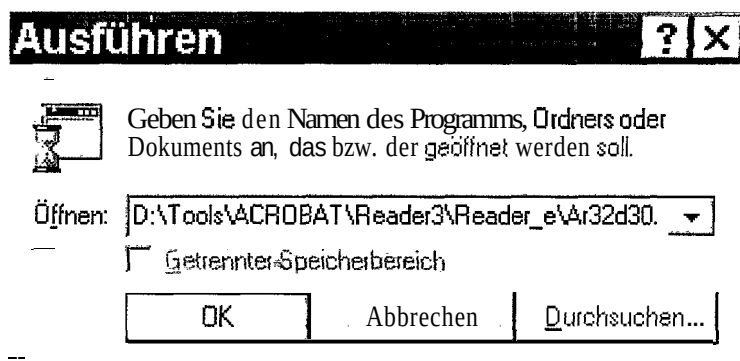
When the software is installed for the first time, you may have to re-boot your PC afterwards.
Click **Finish**.



Adobe Acrobat Reader 3.0

If the Acrobat Reader is not yet installed on your PC, please proceed as follows:

Start with **Start / Run**



Depending on the desired language version for the Acrobat Reader, enter one of the following lines:

Windows 95 / 98 / ME / NT 4.0 / 2000 / XP:

with **German** Acrobat Reader:

Enter **X:\tools\acrobat\reader3\reader_d\ar32d301.exe**.

(X = put the letter representing the CD-ROM drive here)

Press **OK** to continue.

with **English** Acrobat Reader:

Enter **X:\tools\acrobat\reader3\reader_gb\ar32e301.exe**.

(X = put the letter representing the CD-ROM drive here)

Press **OK** to continue.

with **French** Acrobat Reader:

Enter **X:\tools\acrobat\reader3\reader_flar32f301.exe**.

(X = put the letter representing the CD-ROM drive here)

Press **OK** to continue.

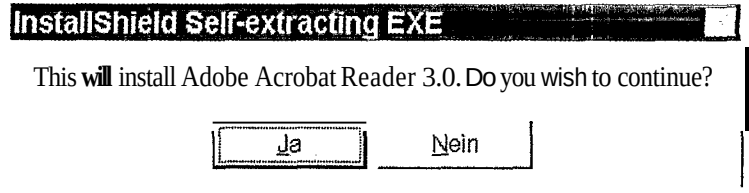
with **Spanish** Acrobat Reader:

Enter **X:\tools\acrobat\reader3\reader_es\ar32s301.exe**.

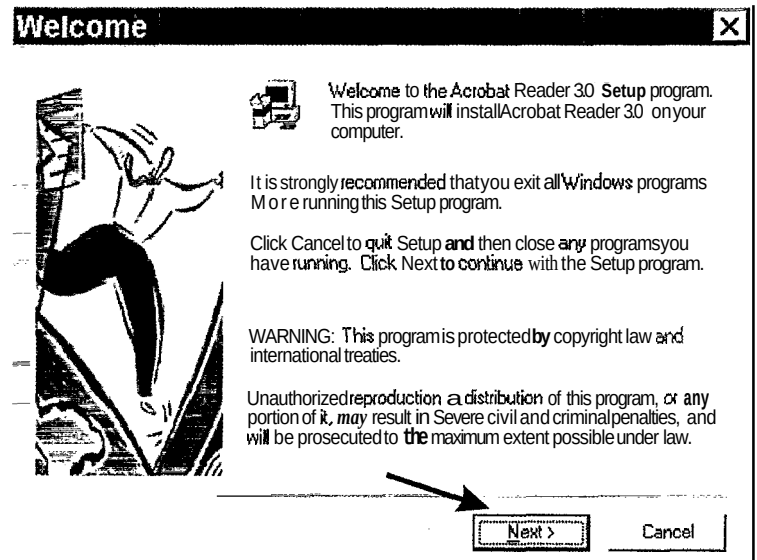
(X = put the letter representing the CD-ROM drive here)

Press **OK** to continue.

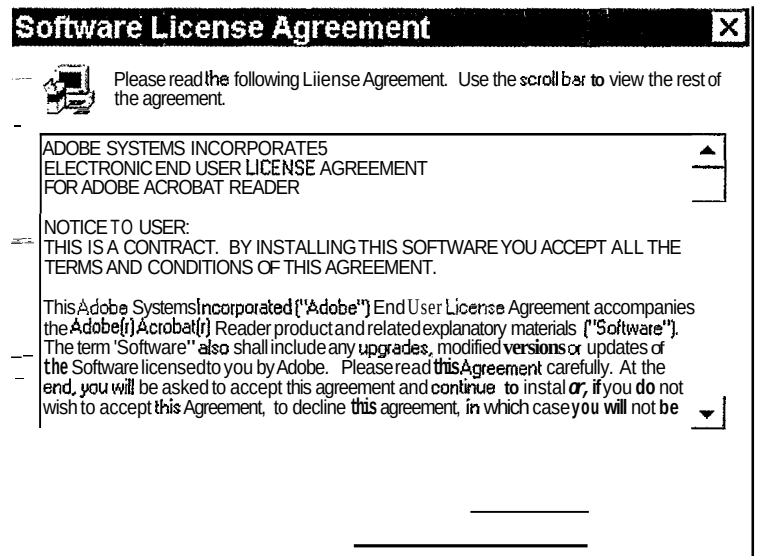
Click on **Yes**.



Follow the instructions on the screen, then press the **Next** button.

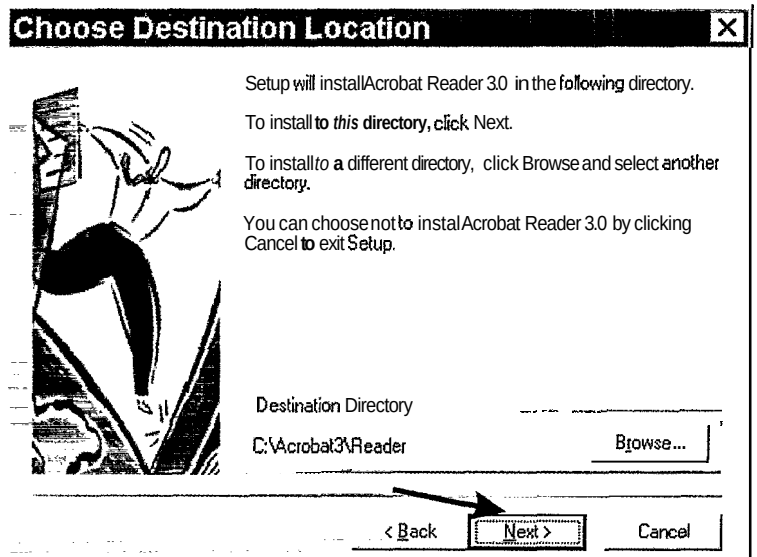


Yes.

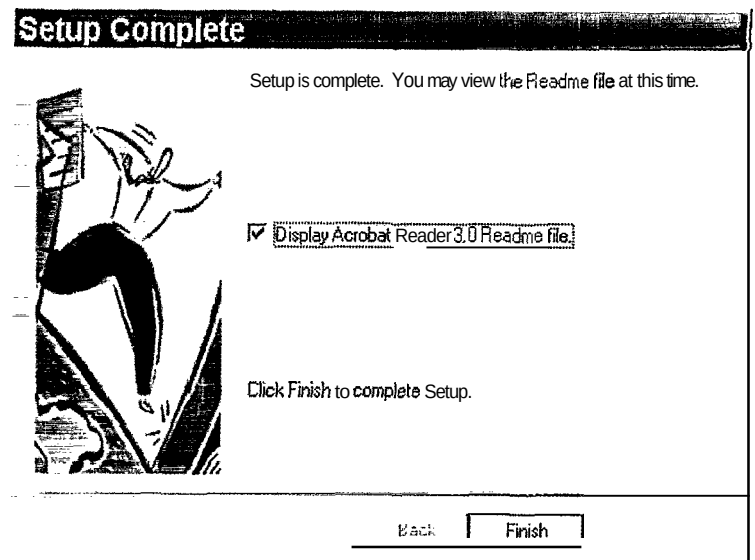


The installation folder for the Acrobat software is **C:\Acrobat3\Reader**.

Click the **Next** button.



Clicking on the **Finish** button completes the Acrobat Reader installation.



3. How to launch the program

3.1. Starting Hatz Spare Parts

Start the program via the
Start Menu / Programs.

Click on **HATZ Spare-Parts camelot.**

After the program has been started, a window with the HATZ model plate opens.

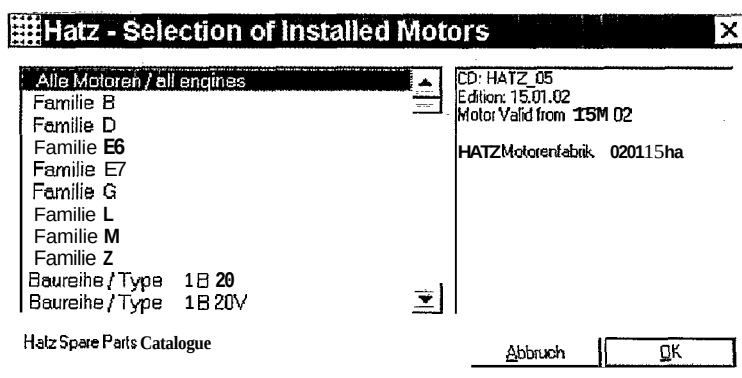
The spare parts list for a particular engine is displayed by entering the engine identification number and the serial number (e. g. 10010 for the engine **1B20**, series 10) and clicking on button (1).

Clicking on button (1) without entering the engine number opens the option window (HATZ - Selection of Installed Motors).

There is a **list of the following:**

- All engines
(including the History)
- Engine families
- Model series with several series statuses
- Engines with one series status each
(for selection via the engine number)
- History

Click on **OK** to continue.



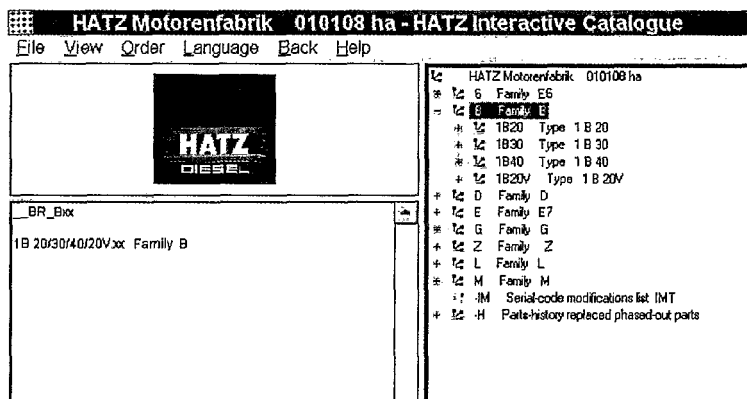
3.2. User interface

Note:

The program language, the online help and the displayed data can be changed if required (see "Setting the language" chap. 4.3).

3.2.1. Selection via the structure window

Double-click on **Family B**, for example.



Double-click on **1B20** model series.

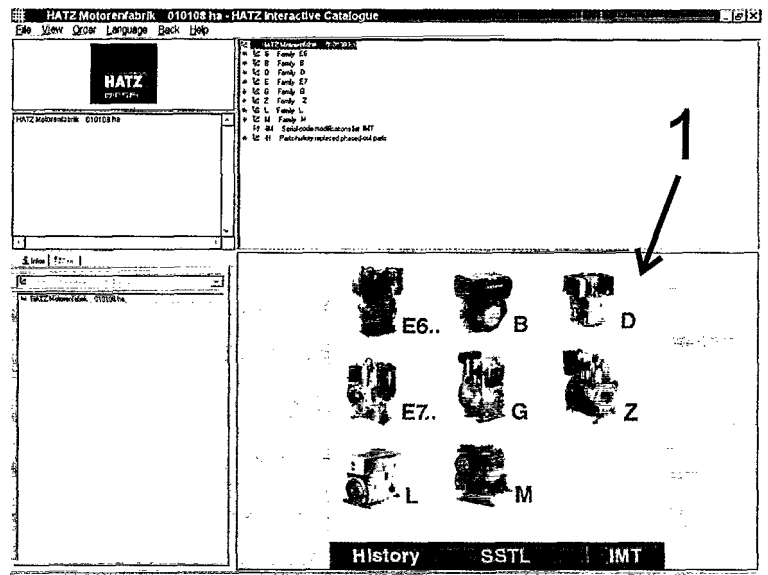




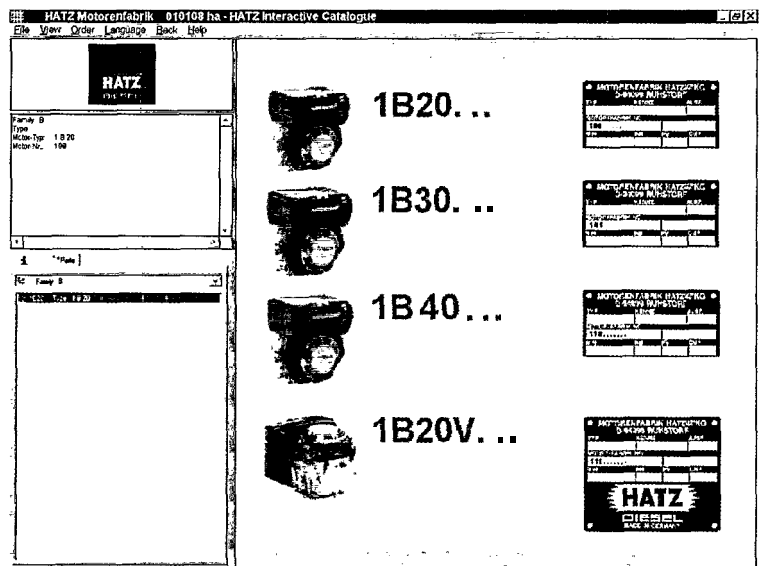
3.2.2. Selection via the picture

A click on the picture -1- closes the structure window.

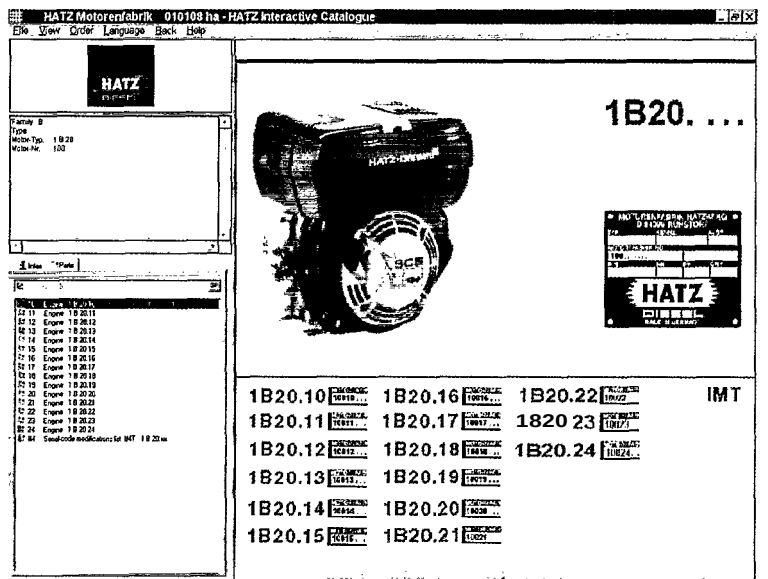
The engine family can now be chosen with a double-click.



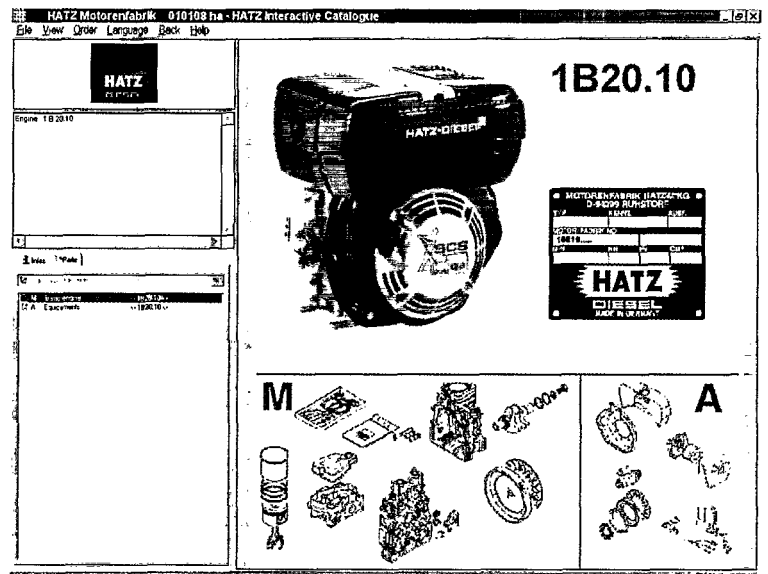
Select the engine type with a double-click.



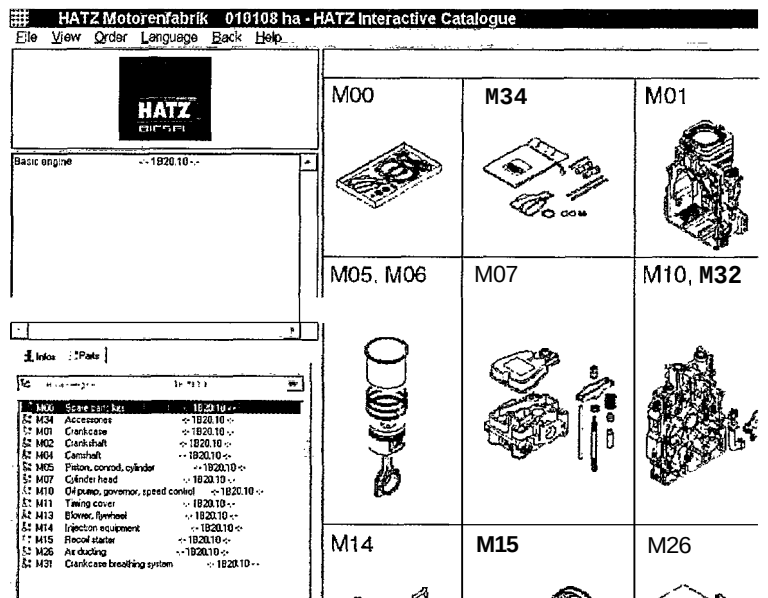
Select the desired engine series status with a double-click.



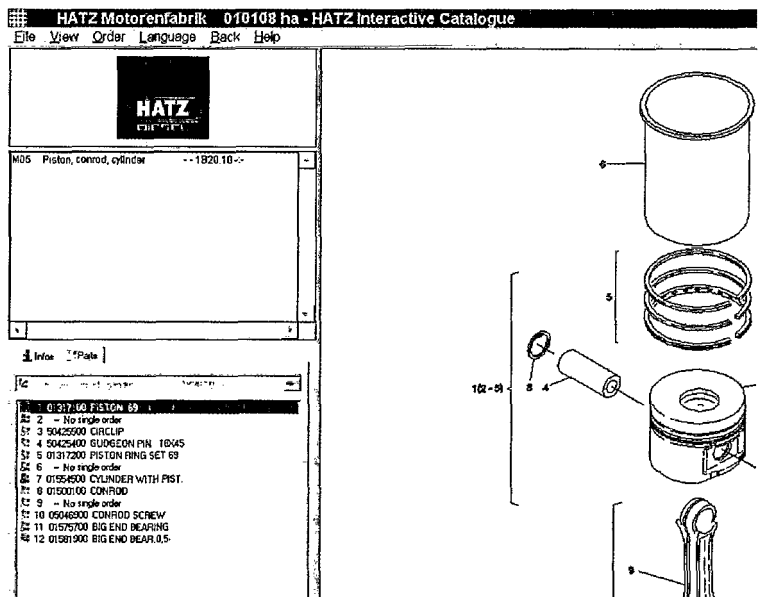
Double-click on **M** or **A**.



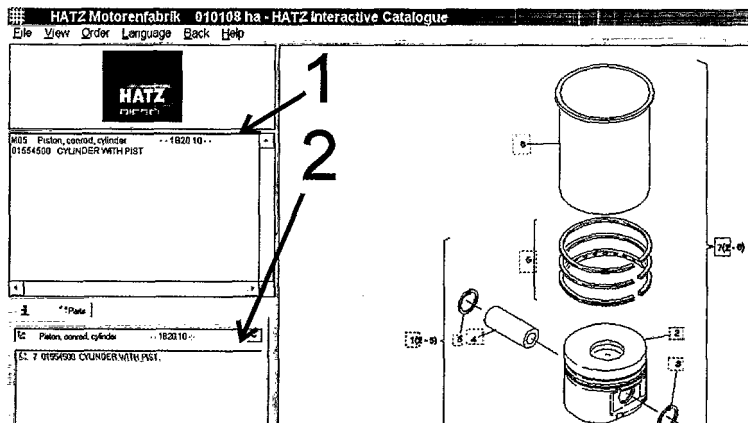
Double-click on the desired sub-assembly (e. g. M05, M06).



The item numbers can now be clicked.



Clicking once on an item number in the picture or in the list window **-2-** displays the identification number, name and, if required, remarks concerning the part in window **-1-**.

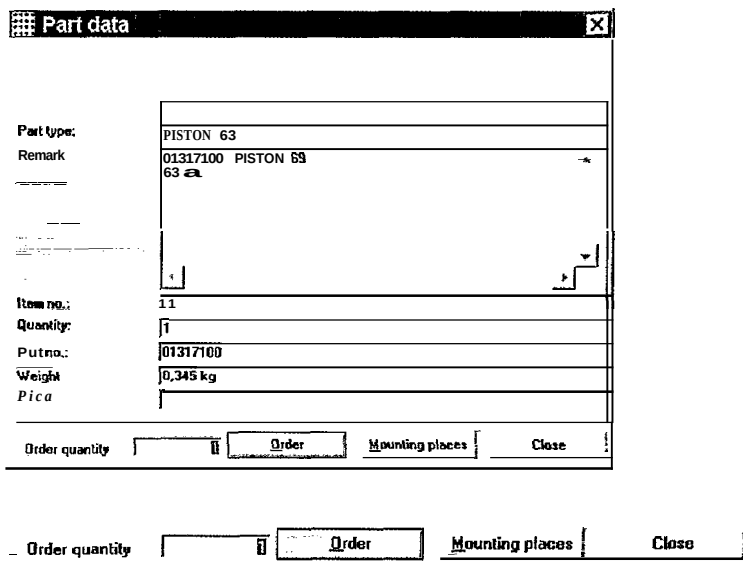


3.3. Information windows

3.3.1. Parts data window

The parts data window is opened with a double-click on the item number in the picture display or in the list window **(2)**. This displays even more information.

The prices are not included in the standard version but can be installed from a floppy disk containing the prices.



Immediately after the parts data has been called up the fields for order quantity and ordering are active, this simplifies the order process.

- Enter order quantity
(Numerical keys, decimal keyboard).
- Execute order.
Press **Enter key** or click with the mouse on **Order**.
- Confirm order acceptance.
Press **Enter key** or click with the mouse on **OK**.
- Close Parts data window.
Press **ESC key** or click with the mouse on **Close**.

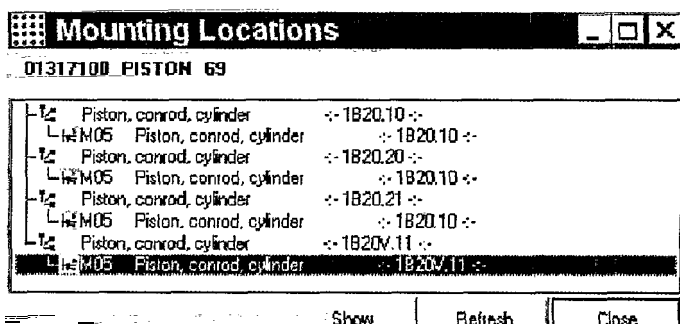
For ordering, please refer to Chapter 3.4.

3.3.2. Mounting locations

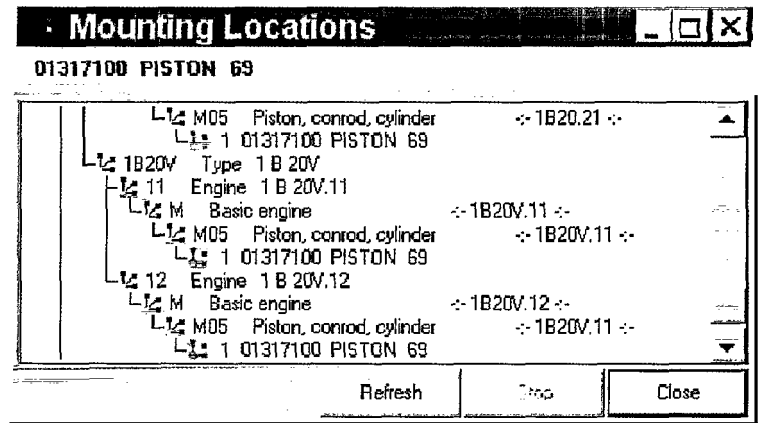
If you click on the "Mounting locations" field, you can choose between **Pictures** and **Hierarchy**.



The Pictures window shows you the figures in which this part is shown. Selecting a figure, e. g. **M05 Piston, connecting rod, cylinder 1B20V.11** and subsequently clicking the **Show** button displays the corresponding figure in the 1B20V.11 engine.



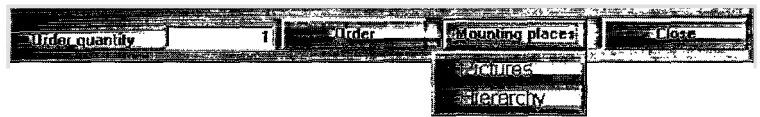
The **Hierarchy** window shows where and in which series-production statuses the part is installed.



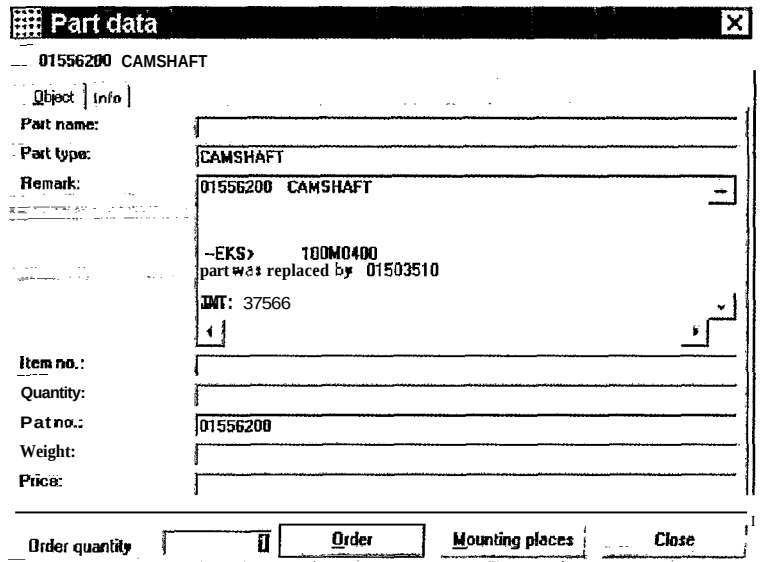
3.3.3. Earlier spare parts

If there is a previous part for a given spare part, this is also displayed in the window **Mounting locations - Hierarchy** (only possible in the database for all engines).

The example for camshaft 01503510 shows replaced or deleted parts in the Spare parts history line after the mounting locations for the various engines have been displayed. The camshaft 01503510 appears at the end of the structure tree and the previous part is displayed in the line above it.



Clicking on the previous part with the left mouse button and a subsequent right mouse button click displays the previous part. If an IMT exists for this part, additional information can be called up.



3.3.4. Displaying IMTs

Click on the IMT number in the parts data window with the right mouse button and select **Copy**.

Part data

01503510 CAMSHAFT

Object: Info

Part number: 01503510 CAMSHAFT

Part type: CAMSHAFT

Remark: 01503510 CAMSHAFT

-EKS> 100M0400

IMT: 98576

Item no.:

Quantity:

Part no.: 01503510

Weight: 0,415 kg

Price:

Order quantity: 1

Order Mounting places Close

Go to the menu **View, Search**, click on the data entry window with the right mouse button for the **Information name** and select **Insert**.

Select **Information name anywhere** as a search criterion.

Search

Part name 98576

Part no. exactly

ditto grouped at beginning

Info name at end

Drawing name anywhere

Search Cancel

In the **Found information**, the IMT can be displayed by clicking and pressing the **Select** button.

Note:
If the IMT is not displayed here, please correct the program link to the Acrobat Reader; see "Settings" chap. 4.2.

Infos found

3 Hits

IMT	Part name	Part no.
IMT 98576	-> M04+M10+M11	Serie 1 B 20/30
IMT 98576	Serie 1B20.17-18	-> M04+M10+M11
IMT 98576	Serie 1B30.12-13	-> M04+M10+M11

Cancel Select

Acrobat Reader - [98576.pdf]

File Edit View Tools Window Help

INFORMATION

engine 1B20 - 1B30

camshaft oilpump timing cover

IMT 98576

IMT	Part name	Part no.
IMT 98576	camshaft	015 035 10
IMT 98576	oilpump	015 302 02
IMT 98576	timing cover	013 195 02

Modification of series 1B20.17 to 1B20.18 1B30.12 to 1B30.13

INTERCHANGEABLE

NOT INTERCHANGEABLE

- 



- 



hexagon nut	
Search	
☒ Part name	hexagon nut
☒ Part no.	☒ exactly
☒ ditto grouped	☒ at beginning
☒ Info name	☒ at end
☒ Drawing name	☒ anywhere

	Search reference	Name
Complete	123456789	123456789
at any position	345	123456789 971 <u>345</u> 642
at the beginning	123	<u>123</u> 456789 <u>123</u> 84525
at the end	789	123456 <u>789</u> 456789

Parts found		
93Hits		
L-1	28 50159100 HEXAGON NUT CE 13M	..TA> 11
	Capsule C	--3L40.22--
L-1	28 50159100 HEXAGON NUT CE 13M	..TA> 11
	Capsule C	--3L41.12--
L-1	28 50159100 HEXAGON NUT CE 13M	..TA> 11
	Capsule C	--4L40.21--
L-1	28 50159100 HEXAGON NUT CE 13M	..TA> 11
	Capsule C	--4L41.12--
L-1	28 50159100 HEXAGON NUT CE 13M	..TA> 11
	Electric equipment, wirings	--E71.18--
L-1	27 50159100 HEXAGON NUT CE 13M	..TA> 11
	Electric equipment, wirings	--E75.15--
L-1	27 50159100 HEXAGON NUT CE 13M	..TA> 11
	Electric equipment, wirings	--E780.15--
L-1	27 50159100 HEXAGON NUT CE 13M	..TA> 11
	Electric equipment-wirings	--E786.11--
L-1	27 50159100 HEXAGON NUT CE 13M	..TA> 11
	Electric equipment, wirings	--E79.15--
L-1	27 50159100 HEXAGON NUT CE 13M	..TA> 11
	Instrument box	--1D31.16--
L-1	8 50159100 HEXAGON NUT CE 13M	..TA> 11
	Instrument box	--1D90V.10--
L-1	8 50159100 HEXAGON NUT CE 13M	..TA> 11

Click on the address and shipping method in the **Order** menu and enter the details.

3.4.1. Order print preview

Select the order proposal in the menu **Order / Order print preview**.

HATZ Motorenfabrik 010108 ha - HATZ In

Order

- Add to Order
- Order Print Preview F9**
- Edit order
- Delete Order

HATZ Motorenfa

- Sender
- Supplier
- Delivery Address
- Shipping

HATZ
6
B
D
E
G
Z
L
M
-IM
H

Enter the internal order number.
Press **OK**.

Order X

Order No.

OK

Cancel

001

The headline can be edited. This allows the form to be used not only for spare part orders but also for quotations, for example.
Press **OK**.

Order X

Report Heading

OK

Cancel

Bestellung/Order

Currency
Here the actual currency is shown.
Press **OK**.

Order X

Currency

OK

Cancel

DM

Enter the price factor.
Press **OK**.

Order X

Price Factor (%)

OK

Cancel

100

The order form is displayed.

A click in the **Print** menu or on the printer button prints the form.

Order
Print Refresh Save Close

1 of 1 100% Total: 100% 5 of 5

Absender Name
 Absender Straße
 Absender PLZ Absender Stadt
 Absender Tel
 Absender Fax

07.02.01

Lieferant Name
 Lieferant Straße
 Lieferant PLZ Lieferant Stadt

OrderNo
001

Bestellung / Order

Delivery Address
 Lieferanschrift Name
 Lieferanschrift Straße
 Lieferanschrift PLZ Lieferanschrift Stadt

Shipping
Versandart
Currency
Währung

Pos	Amount	Partno	Description	Weight	Price	Total price
1	1	01317100	PISTON 80	0.345	80,00 DM	80,00 DM
2	1	01500100	KOLBEN 69	0.335	87,20 DM	87,20 DM
3	1	01554500	CONROD	0.800	109,60 DM	109,60 DM
4	1	01576700	PLEUELSTANGE	0.028	11,43 DM	11,43 DM
5	1	05046900	CYLINDER WITH PIST. NUT DRY KOLBEN BIG END BEARING PLEUELLOCHER PAAR CONRODSCHREW PLEUELSCHRAUBE	0.013	3,03 DM	3,03 DM
Total weight				1,510	Total price 287,15 DM	



A click on the export symbol at the upper edge of the display opens a window with data export options.

By choosing **Rich Text Format**, resp. **Text** or **Word for Windows Document** the form can be stored and afterwards processed in text processing programmes.

You can use the **Excel** and **Lotus** formats for table calculations.

Export

Format:

- Character-separated values
- Rich Text Format**
- Tab-separated text
- Tab-separated values
- Text
- Word for Windows document

OK Cancel

If you want to send the order-form as an e-mail attachment please click on **Microsoft Mail (MAPI)** at "Destination".

Click **OK**.

Export

Format:

- Rich Text Format

Destination:

- Disk file
- Application
- Disk file
- Exchange Folder
- Lotus Domino Database
- Microsoft Mail (MAPI)**

OK Cancel

3.4.2. Delete order

Deletes all the parts from the proposed order.

HATZ Motorenfabrik 010418 - HATZ Interactive Catalogue

View Order Language Back Help

- Add to Order
- Edit order
- Order Print Preview F9
- Delete Order**

3.4.3 Editing the order
Select **Edit order** in the **Order** menu.

HATZ Motorenfabrik 010418 - HATZ Interactive Catalogue

View

Order

Language

Back

Help

Add to Order

Edit order

Order Print Preview F9

Delete Order

Quantity ordered
Correct under Amount in the Order list window.

Order list		
	Amount	Part no:
▶	1	01554500
	1	01575700
	1	05046900

Deleting individual items
Clicking on the grey box (see arrow) selects the item you wish to delete. Pressing **Del** on your keyboard deletes the item.

Order list

	Amount	Part no	Description	Id
▶	2	01317100	PISTON 69	4
	3	01500100	CONROD	7
	3	01554500	CYLINDER WITH PI	5
	3	05046900	CONROD SCREW	6

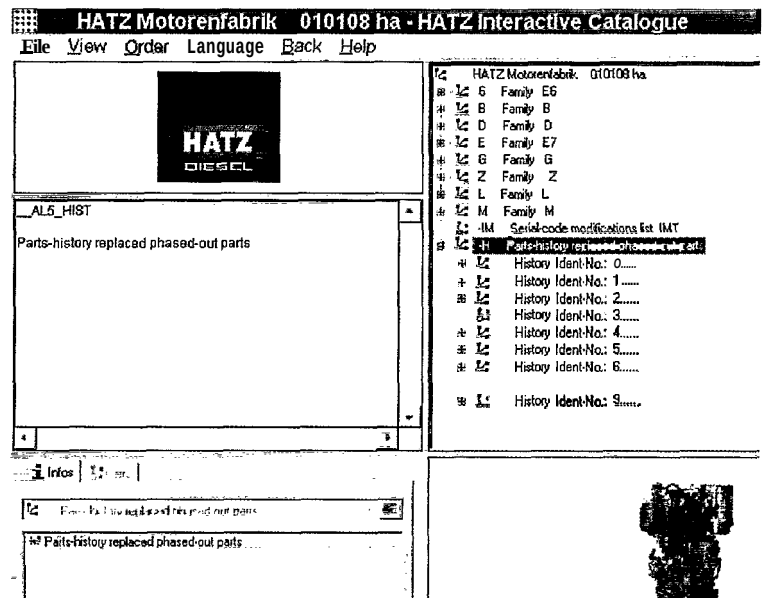
Close

3.5. History / IMTs / Test instructions / Remaining Spareparts / Components

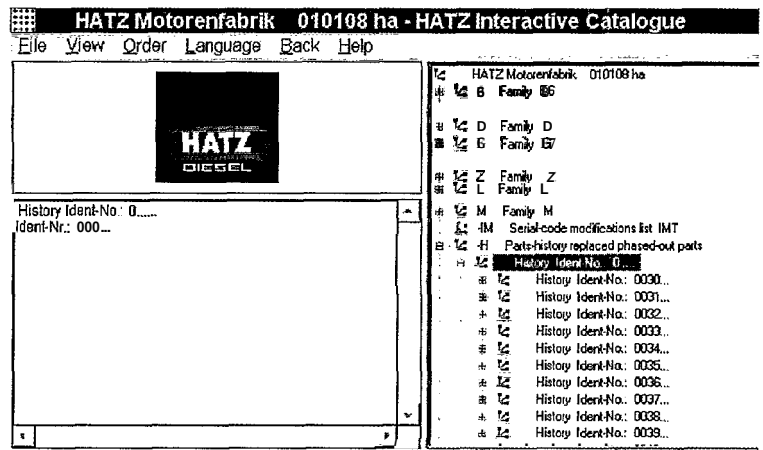
3.5.1. History

As an example, we are searching for the identification number 00320000.

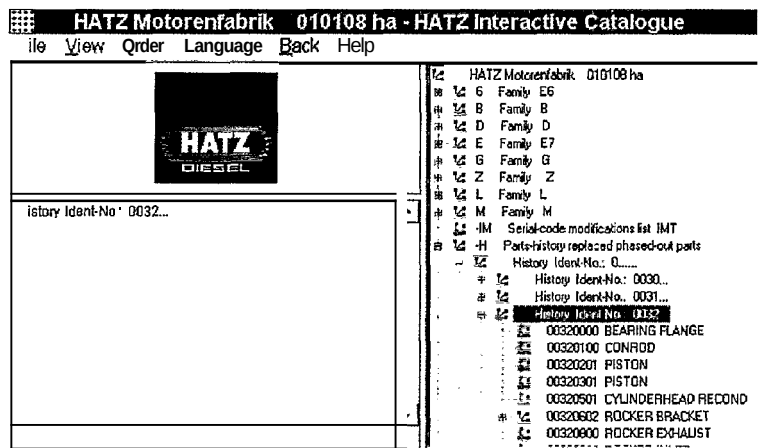
Double-click on Components History



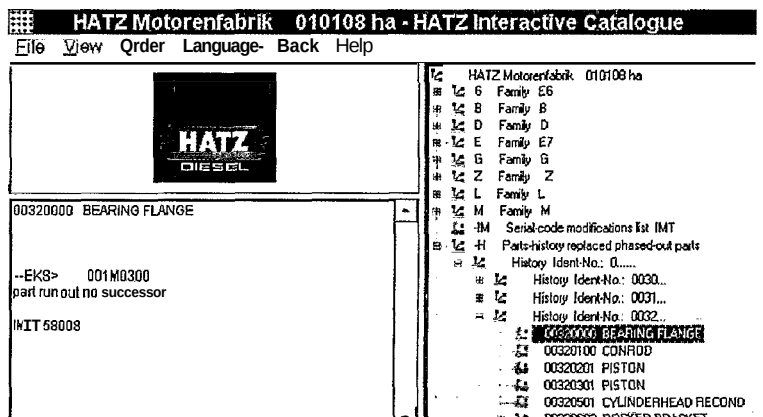
Double-click on the History identification number: 0...



Double-click on the History identification number: 0032

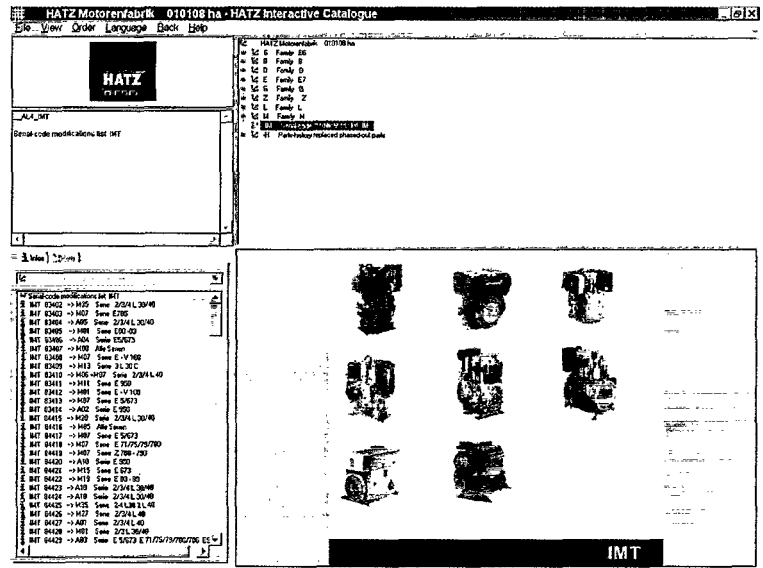


Clicking on **00320000 Bearing flange** displays the data for this component in the left window.



3.5.2. IMTs

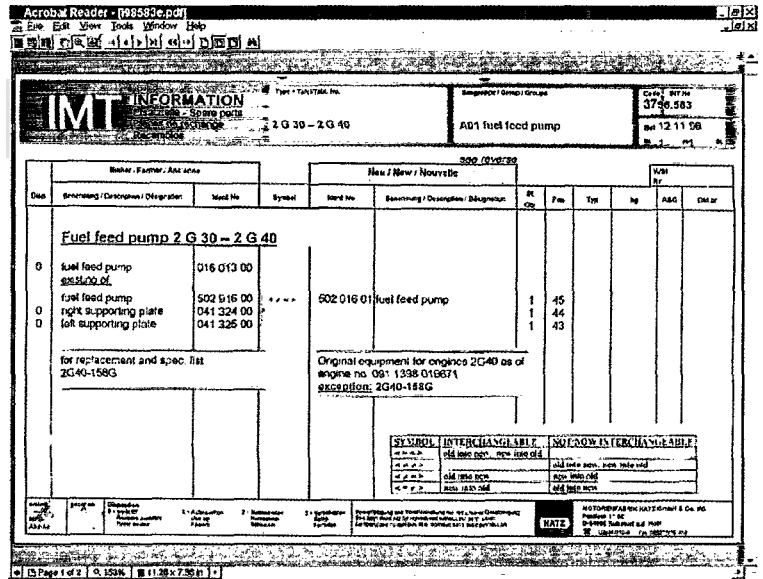
A click on **Serial-code modifications list** displays all available IMTs in the list window (lower left).



Double-click on the required IMT with the mouse in order to view it.

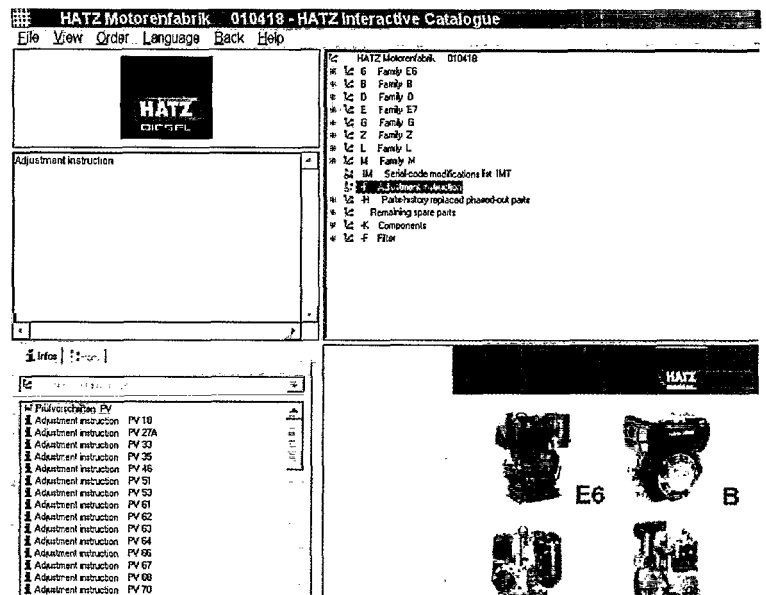
Note:

If the IMT is not displayed here, please correct the program link to the Acrobat Reader; see "Settings" chap. 4.2.



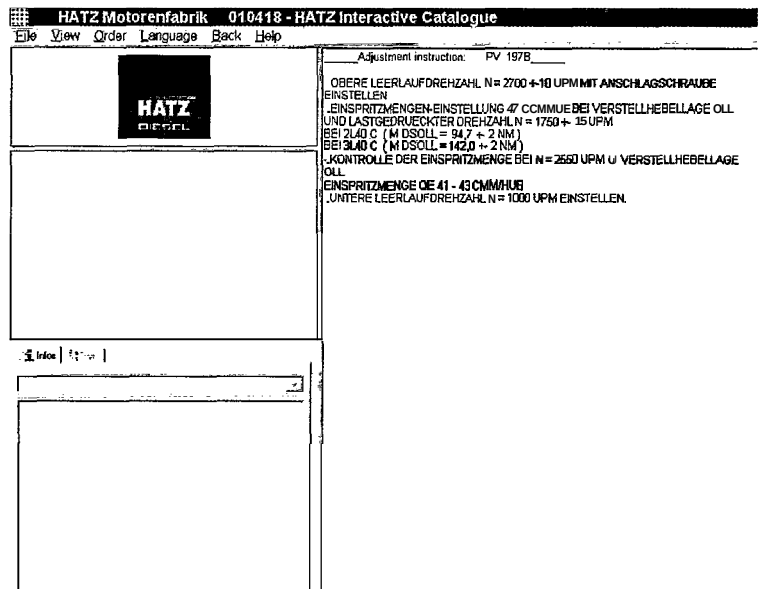
3.5.3. Test instructions

If **Test instructions** is clicked, all the available test instructions will appear in the list window (bottom left).



Use the mouse to move to the test instruction you need, and double-click on it.

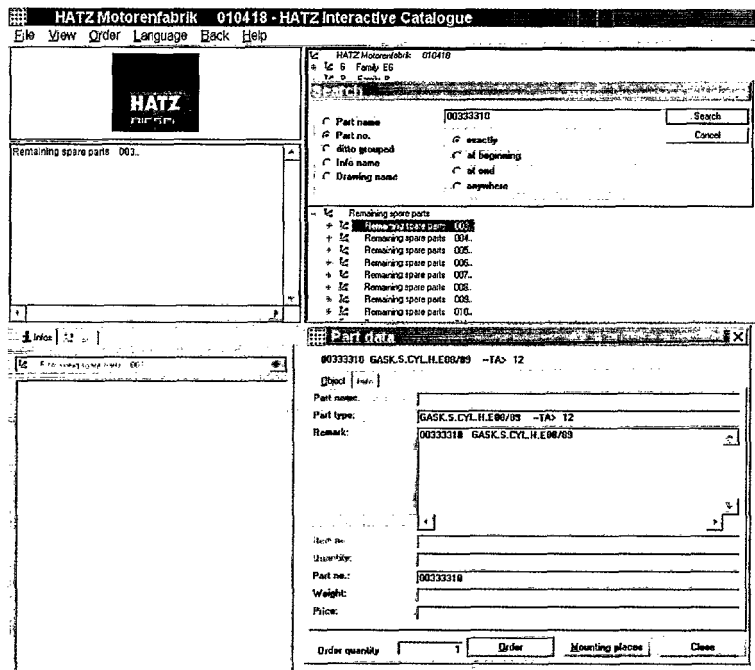
Click **Back** to return to the structural tree.



3.5.4. Remaining Spareparts

"Remaining spare parts" is a numerically sorted list of all spare parts not allocated to a specific engine, history or special part list.

Using the Part No. from an old spare part list (e.g. 00333310 - Gasket set for cylinder head E88/89), this part can also be identified electronically (by way of the View - Search function or key F3) and ordered.



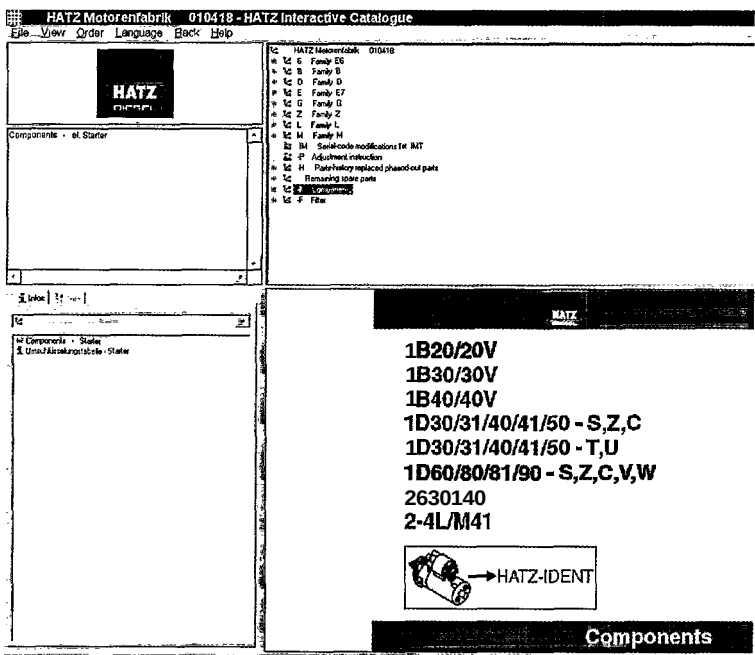
3.5.5. Components

The content of "Components" is arranged in the same way as the component part list on paper.

To identify a part, proceed exactly as explained in Section

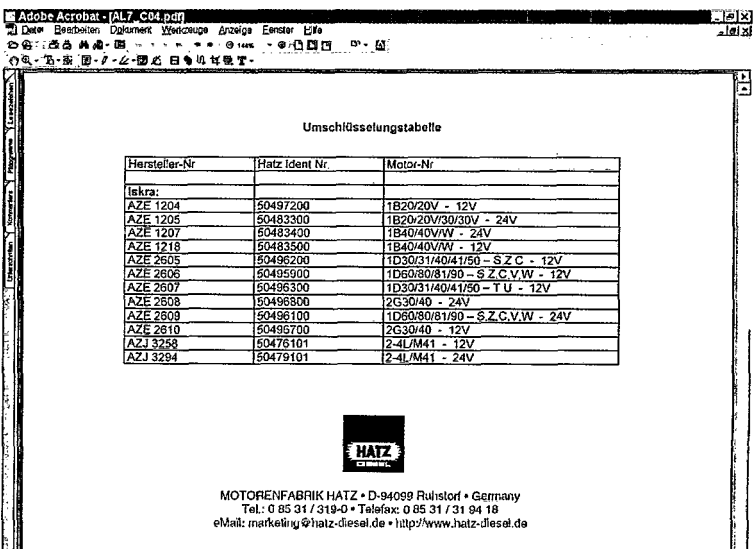
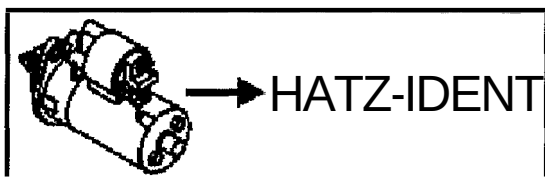
4.2 Working with the program.

Only the components of the Iskra company's starters are currently listed. When the component part list is updated, the remaining components will be added and will appear in one of the next editions of the Hatz Spare Part List.



Double-click on HATZ IDENT.

This will open a table that you can use to convert the manufacturer's part number into a HATZ part number.

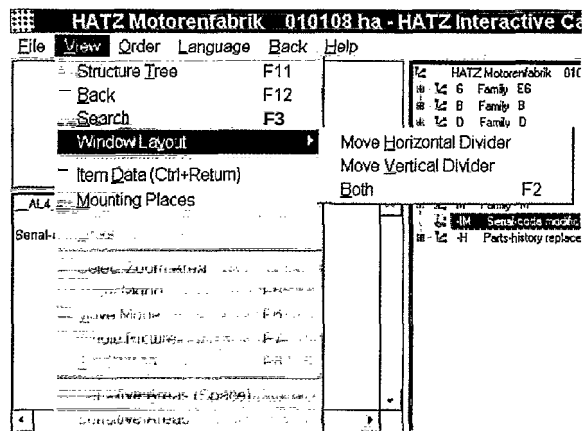


3.6. Screen layout settings

3.6.1. Customising the structure window

Various functions for window division are contained in Menu/View.

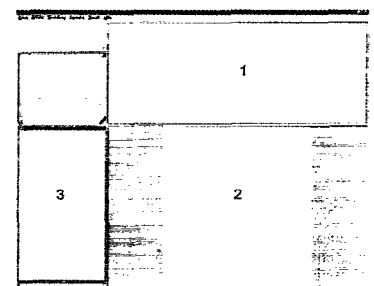
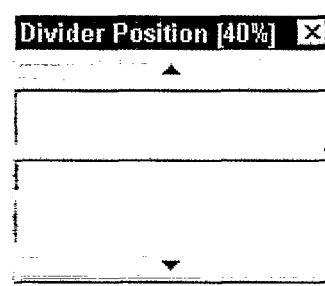
You can open as many of these sub-windows at the same time as desired and can set different divisions for each one. By clicking on the header bar of the division window, you can quickly switch between the different screen divisions.



Top/bottom ratio

With this function you can change the ratio between the structure window (1) at the top and the image display (2) at the bottom.

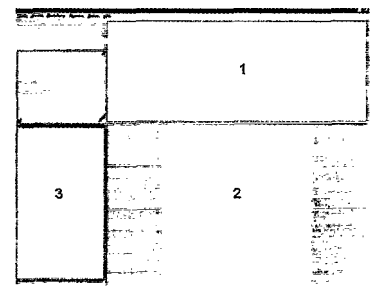
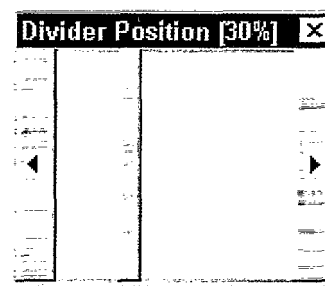
Using the left mouse button, click on the arrow or the surface next to the dividing bar or move the dividing bar until the desired position is reached.



Left/right ratio

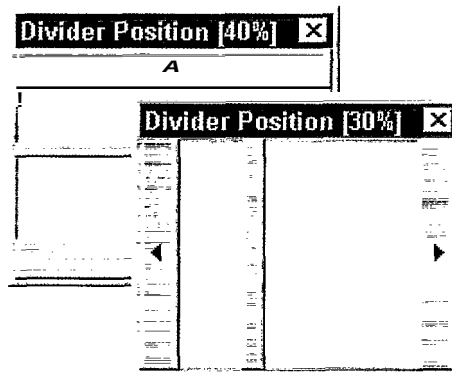
With this function you can change the ratio between the structure window (1) on the right and the list window (3) on the left.

Using the left mouse button, click on the arrow or the surface next to the dividing bar or move the dividing bar until the desired position is reached.



Both

With this function you can open both dividing windows simultaneously.



Switch over division

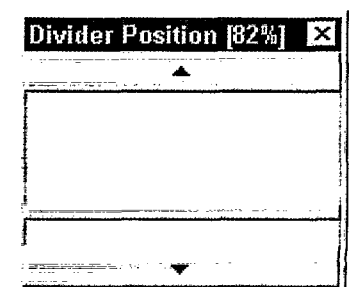
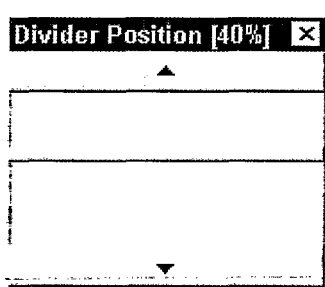
Click on the header bar of the division window with the left mouse button.

The screen display is switched between the settings.

Moving the division window

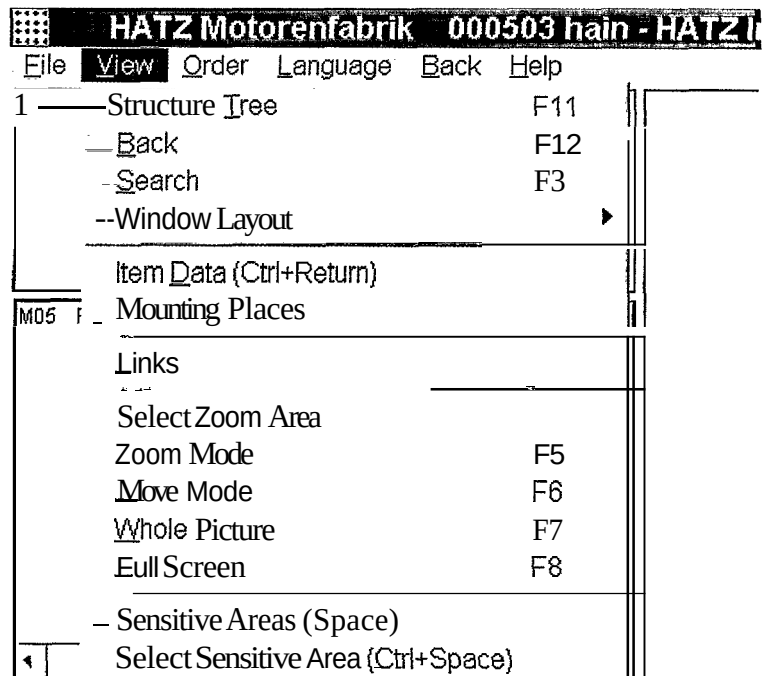
Click on the header bar of the division window with the left mouse button.

Hold down the left mouse button and move the window into the desired position.



3.6.2. Screen layout

You will find the various screen layout functions that are active in the screen mode, under **Menu / View**.



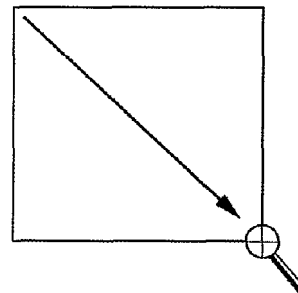
Zoom mode

Zooming enables you to enlarge or reduce an area of the image you have personally selected. Call up the function by **clicking the mouse** or pressing the **F5 function key**. You can cancel this function by pressing the **F5** button.

Enlarge area of image

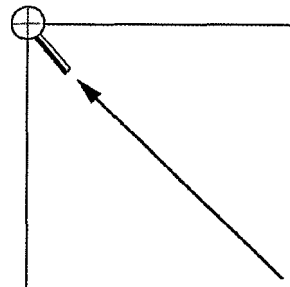
Position the mouse cursor (magnifying glass) on the **left hand** side of the required area of the image, press the left mouse key (keep it depressed) and drag the frame from **left to right** across the required area of the image. Release the mouse key.

The selected screen section is magnified to match the window size.



Reduce area of the image

Position the mouse cursor (magnifying glass) on the **right hand** side of the required area of the image, press the left mouse key (keep it depressed) and drag the frame from **right to left** across the required area of the image. Release the mouse key.



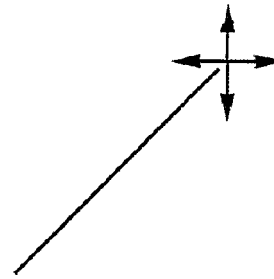
Move mode

Move enables you to correctly position the enlarged area of the image on the screen.

Call-up the function by clicking the mouse or pressing the **F6 function key**.

Press the **left mouse key** (keep it depressed) and drag the crosshair in the direction you wish to move the area of the image.

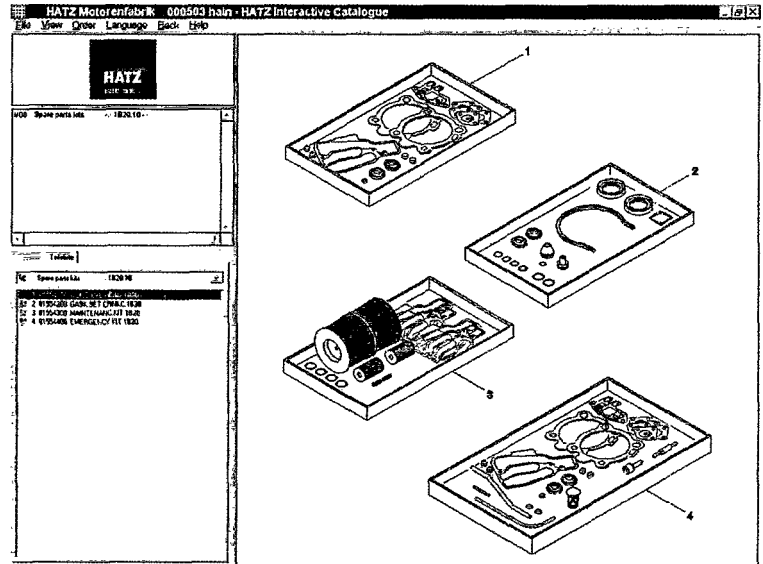
You can cancel this function by pressing the F6 button.



View whole image

This enables you to switch back from the zoomed area of the image to display the whole image.

Click the mouse or press the **F7 function key**.

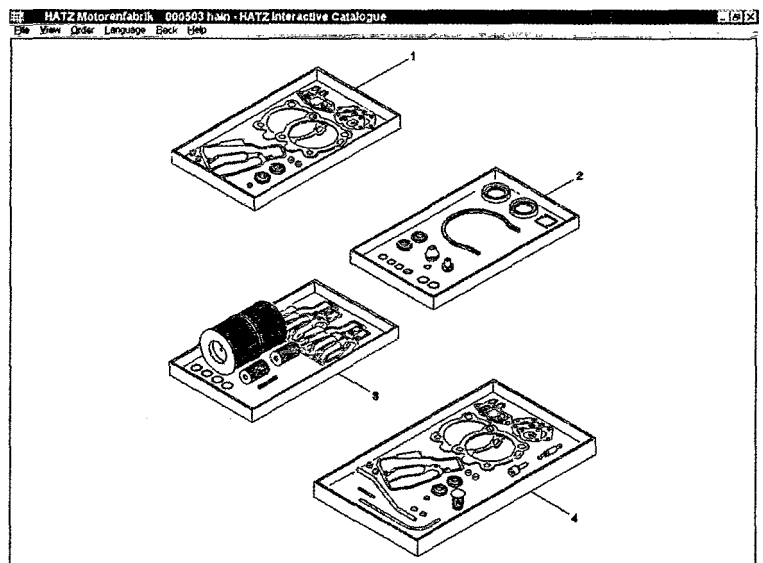


View whole screen

To provide a better overview, this function enables you to switch between:

- normal screen display with list windows
- or
- full screen with display without list windows.

Click with the mouse or press the **F8 function key**.



3.7. Hardcopy of the screen

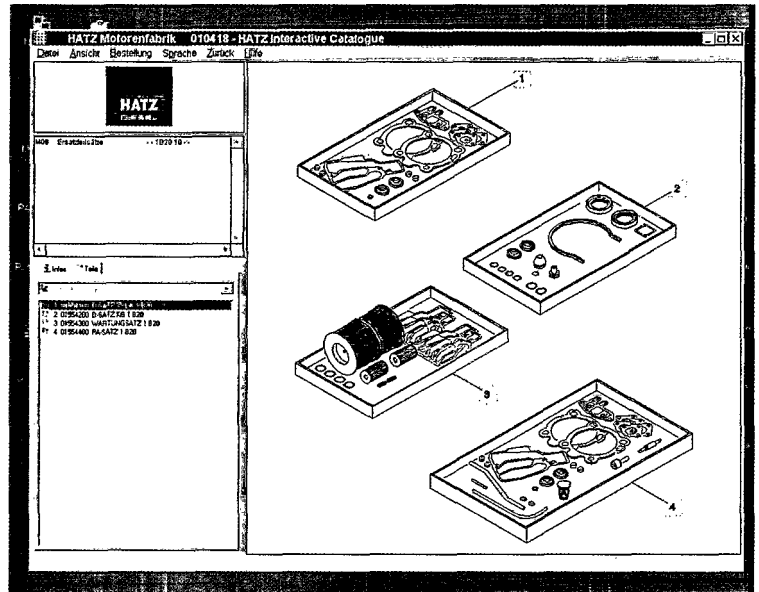
You can produce a copy - a hard copy - of the current screen display, e.g. for queries.

For this you must have installed a programme which can process or incorporate Bitmap files (*.bmp), e.g. the Windows programme Paint, Paintshop, Word or possibly e-mail programs etc.

3.7.1. Entire screen

Press the **Print** key:

Save the entire screen display in the Temp file.



3.7.2. Current window

Press the **Alt + Print** keys to save the current window in the Temp file.

Start programme to save the **Bitmap file** and paste the picture from the Temp file using the Windows command **Edit/Paste**.

7 01554500 CYLINDER WITH PIST.

Object Info

Part name: _____

Pat type: CYLINDER WITH PIST.

Remark: 01554500 CYLINDER WITH PIST.

Item no.: _____

Quantity: 1

Part no.: 101554500

Weight: 0.8 kg

Price: _____

Order quantity

4. Settings

This dialog window offers various register cards for expanded programme settings.

Attention, without following the orders of this manual, you may get heavy programme errors !

4.1 Settings I

On this register card you can carry out settings for the data paths and the plan display.

4.1.1. Database file:

Displays the data path for the current Camelot database setting.

Enter valid path and database name and save. Or open the selection window by clicking the mouse on the Select symbol, select path and Camelot Database, confirm by pressing Ok and save settings

Warning !

If you make changes here and the path does not indicate a Camelot database, the programme is closed and Camelot can no longer be started.

4.1.2. Database directory

Displays the data path for the pictures and documents for the current Camelot database setting. Enter valid path and database name and save or open the selection window by clicking the mouse on the Select symbol (...), select path and Camelot database, confirm pressing ok and save setting.

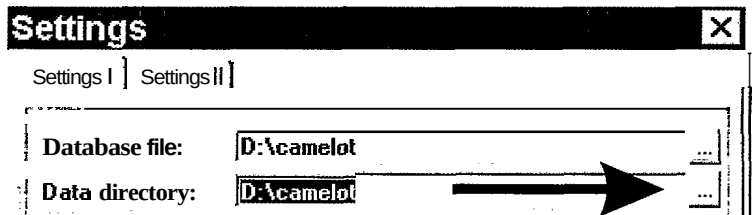
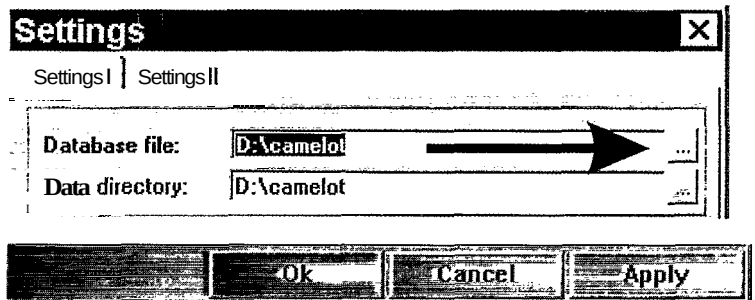
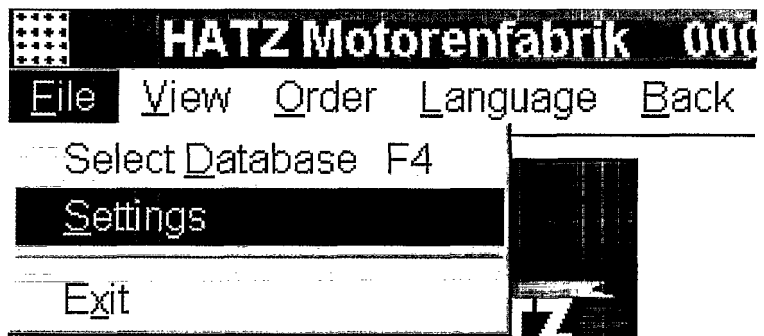
Warning !

The path must indicate the folder which contains the other folders (plans, docs etc.) with the Camelot data. Otherwise no information (pictures) will be displayed, the corresponding error message appears.

4.1.3. Background colour for plans

Displays the current background colour for plans. Clicking with the mouse takes you to the Selection window for other background colours. Select colour, confirm by pressing Ok and save setting.

Ensure you have sufficient contrast.

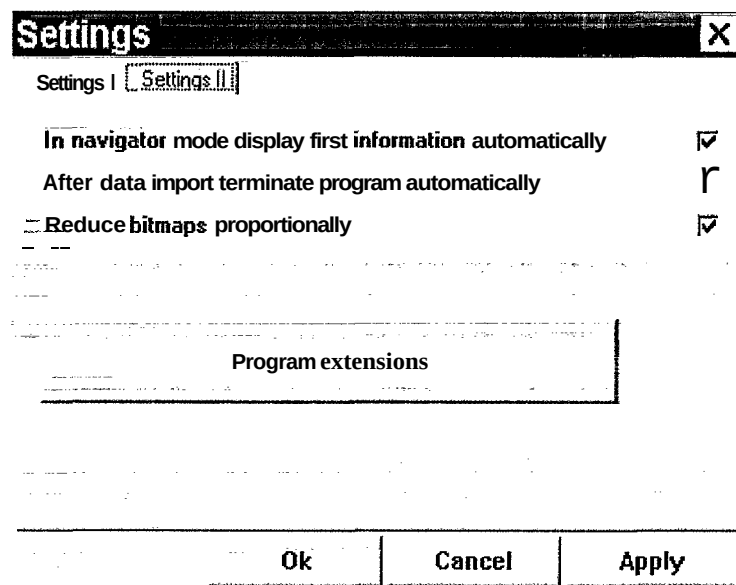


4.2. Settings II

On this register card you should not make any changes, normally it looks like the example.

Programme expansions

Opens a Settings window with which additional display modules (Acrobat Reader, Wordview etc.) can be incorporated into Camelot. The top window shows the programmes and the associated paths which have already been incorporated into Camelot. The input line is used for altering or entering programmes



Create, alter programme link:

4.2.1. Insert new link

Click the mouse on the Add symbol.

4.2.2. Alter

Click the mouse on the entry in the top display window.

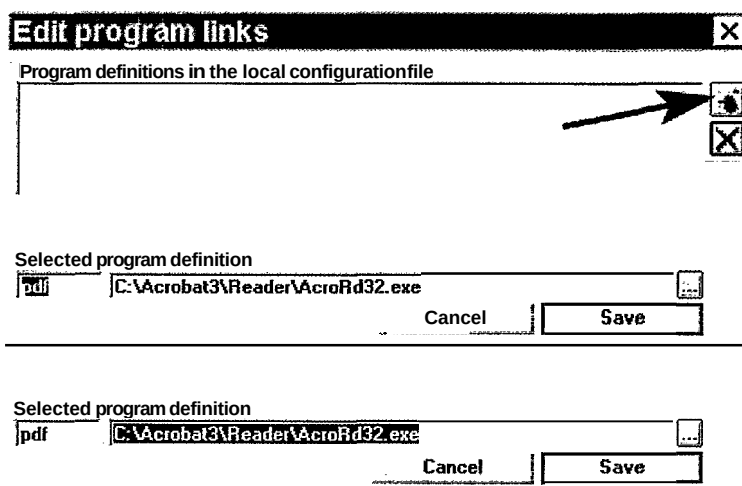
Enter the **file name extension** in the **left window** of the input line.

Enter and **save the valid path for the corresponding programme** in the **right window** of the input line.

Or, by clicking the mouse on the **Select symbol (...)** open the **Select window**, select the **path** and confirm with **OK**.

Save setting.

The programme link is copied into Camelot. When selecting corresponding information in Camelot the programme is automatically called up.



4.2.3. Delete programme link

Click with the mouse on the **Delete symbol** in the top display window.

Click with the mouse on the **Delete symbol**.

The entry is deleted. Corresponding information can no longer be displayed in Camelot.

4.3. Setting the language

You can alter the language for programme interface, online help and for the data displayed, at any time.

In the **Menu bar** called up the **Language** menu and select the **Settings** function: click the left mouse key.

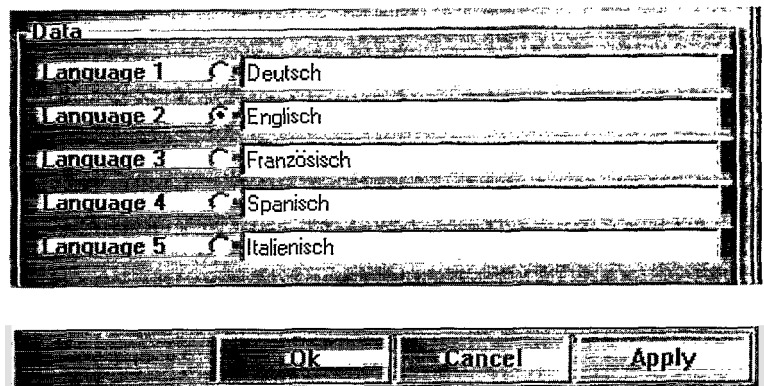
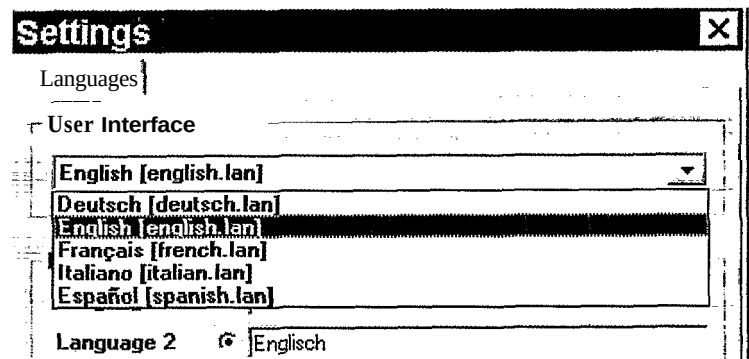
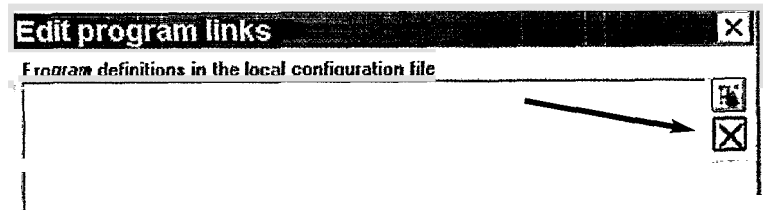
The window for the language setting is displayed. The current language is shown under **Programme Interface**.

Open the selection box with the available languages, select the required language from the list of available languages and save your setting.

Click the mouse on the icon for the required language, save.

The selected language for programme interface and the online help is displayed and the programme changes to this language.

You must save the setting.



5. Uninstalling HATZ Spare Parts

Perform the following steps for uninstalling Camelot:

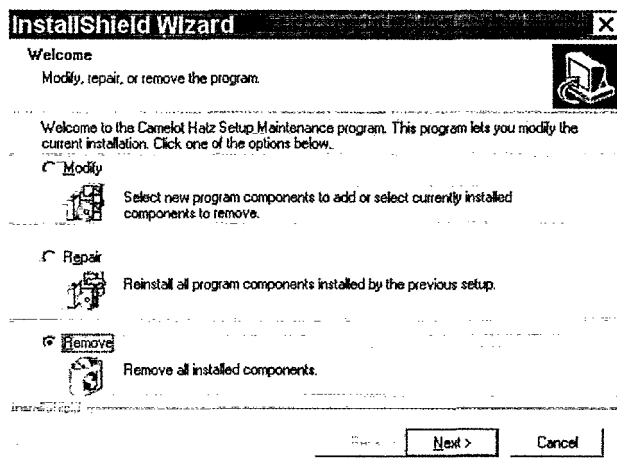
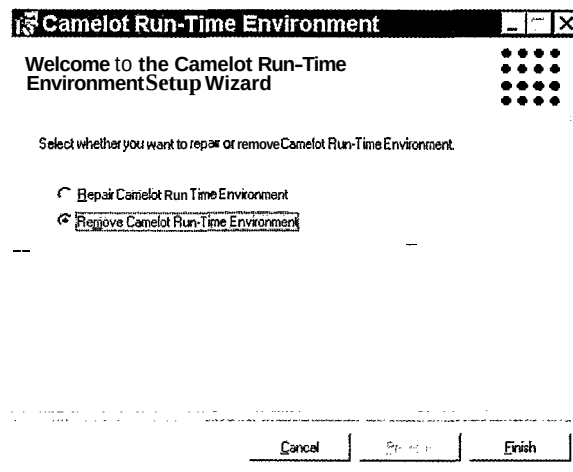
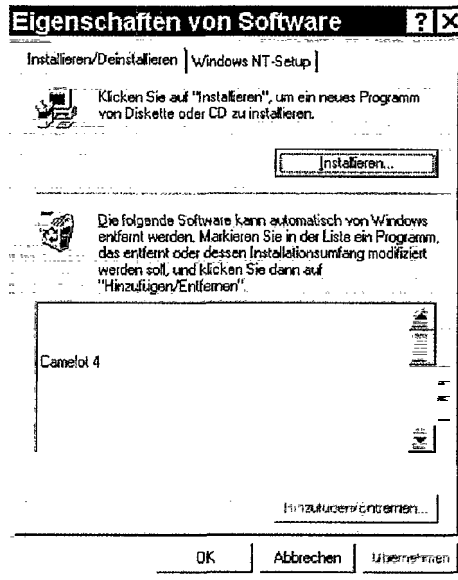
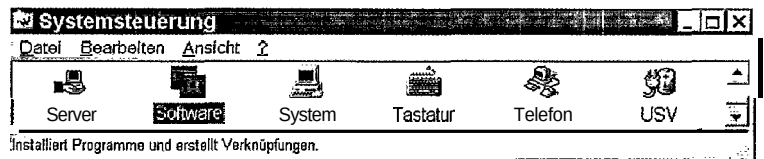
Double-click **Software** in **Start - Settings - Control panel**.

Click on **Camelot Run-Time Environment** (Version 3.22) or **Camelot 4** (Version 3.27) and then on the **Add/Remove** button.

It may take a moment before the next window opens.

If you have version 3.22 installed, the window illustrated on the right will open; if you have version 3.27, the one below will appear.

For version 3.22, click on **Remove** and **Finish**. For version 3.27, click on **Remove** and **Next** and follow the instructions on the screen.



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eMail: marketing@hatz-diesel.de • <http://www.hatz-diesel.de>



DEALER WARRANTY POLICY

July, 2000

HATZ DIESEL PREMIER LIMITED ENGINE WARRANTY

HATZ DIESEL OF AMERICA, **INC.**, hereinafter referred to as "HATZ" warrants each new 4-cycle air-cooled diesel engine with automatic low oil pressure shutoff device and sold by Hatz to be free from defects in material and workmanship, under normal use and service, for a period of twenty-four **(24)** months or 2,000 operating hours after the date of delivery to the original retail purchaser, or twenty-eight **(28)** months after the date of invoice by Hatz, whichever occurs first, and Hatz will, at their option, repair or replace at Hatz's sales headquarters, or at a point designated by Hatz, any part or parts which shall appear to the satisfaction of Hatz upon inspection at such point, to have been defective in material or workmanship. This Warranty does not obligate Hatz to bear any transportation charges in connection with the repair or replacement of defective parts and such charges shall be borne by the original retail purchaser.

In order to obtain service under this Warranty, the original retail purchaser shall give notice in writing to Hatz within ten **(10)** days of the time that the defect becomes apparent. Repairs must be completed in a timely manner. Claims must be received at Hatz no later than thirty **(30)** days after repair date.

This Warranty shall not apply to any engine which shall have been installed or operated in a manner not recommended by Hatz; nor to any engine which shall have been repaired, altered, neglected or used in any way which, in the opinion of Hatz, adversely affects its performance; nor to any engine in which parts not authorized by Hatz have been used, which parts or the use of which have damaged, caused defects **in**, or otherwise adversely affected the engine or its performance; nor to any accessories installed on the engine where the accessory manufacturer has its own warranty; nor to normal maintenance services or replacement of normal service items.

Hatz reserves the right to modify, alter and improve any engine or parts without incurring any obligation to replace any engine or parts previously sold without such modified, altered or improved engine or parts.

Hatz reserves the right to require that any engine upon which warranty service is sought be made available **to** Hatz at Hatz's sales headquarters or point designated by Hatz free and clear of any liens and other encumbrances.

THIS LIMITED ENGINE WARRANTY, AND THE OBLIGATION OF HATZ HEREUNDER, ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED, IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTIES **OF** MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, and all other obligations or liabilities, including actual, special, direct, indirect, incidental or consequential damages, lost profits, lost sales, lost time, lost use, or contingent liabilities arising out of the failure of **any** engine or part to operate properly. No person is authorized to give any other warranty or to assume any additional obligation on behalf of Hatz unless made in writing and signed by an officer **of** Hatz.

HATZ DIESEL LIMITED ENGINE WARRANTY

HATZ **DIESEL OF AMERICA**, INC., hereinafter referred to as "HATZ", warrants each new 4-cycle air-cooled diesel engine without automatic low oil shutoff device and sold by Hatz to be free from defects in material and workmanship, under normal use and service, for a period of twelve (12) months or 2,000 operating hours after the date of delivery to the original retail purchaser, **or** sixteen (16) months after the date of invoice by Hatz, whichever occurs first, and Hatz will, at their option, repair or replace at Hatz's sales headquarters, or at a point designated by Hatz, any part or parts which shall appear to the satisfaction of Hatz upon inspection at such point, to have been defective in material or workmanship. This Warranty does not obligate Hatz to bear any transportation charges in connection with the repair or replacement of defective parts and such charges shall be borne by the original retail purchaser.

In order to obtain service under this Warranty, the original retail purchaser shall give notice in writing to *Hatz* within ten (10) days of the time that the defect becomes apparent. Repairs must be completed in a timely manner. Claims must be received at Hatz no later than thirty (30) days after repair date.

This Warranty shall not apply to any engine which shall have been installed or operated in a manner not recommended by Hatz; nor to any engine which shall have been repaired, altered, neglected or used in any way which, in the opinion of Hatz, adversely affects its performance; nor to any engine in which parts not authorized by Hatz have been used, which parts or the use of which have damaged, caused defects **in**, or otherwise adversely affected the engine or its performance; nor to any accessories installed on the engine where the accessory manufacturer has its own warranty; nor to normal maintenance services or replacement or normal service items.

Hatz reserves the right to modify, alter and improve any engine or parts without incurring any obligation to replace any engine or parts previously sold without such modified, altered or improved engine or parts.

Hatz reserves the right to require that any engine upon which warranty service is sought be made available to Hatz at Hatz's sales headquarters or point designated by Hatz free and clear of any liens and other encumbrances.

THIS LIMITED ENGINE WARRANTY, AND THE OBLIGATION OF HATZ HEREUNDER, ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESSED, IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, and all other obligations or liabilities, including actual, special, direct, indirect, incidental or consequential damages, lost profits, lost sales, lost time, lost use, or contingent liabilities arising out of the failure of any engine or part to operate properly. No person is authorized to give any other warranty or to assume additional obligation on behalf of Hatz unless made in writing and signed by an officer of Hatz.

HATZ DIESEL LIMITED PARTS WARRANTY

HATZ DESEL OF AMERICA, INC., hereinafter referred to as "HATZ", warrants each new spare part sold by Hatz to be free from defects in material and workmanship, under normal use and service, for a period of six (6) months after the date of delivery to the original retail purchaser, and Hatz will, at their option, repair or replace at Hatz's sales headquarters, or at a point designated by Hatz, any part or parts which shall appear to the satisfaction of Hatz upon inspection at such point, to have been defective in material or workmanship. This Warranty does not obligate Hatz to bear any labor or transportation charges in connection with the repair or replacement of defective parts and such charges shall be borne by the original retail purchaser.

In order to obtain service under this Warranty, the original retail purchaser shall give notice in writing to Hatz within ten (10) days of the time the defect becomes apparent. Claims must be received at Hatz no later than thirty (30) days after part defect date.

This Warranty shall not apply to any parts which shall have been installed or used in a manner not recommended by Hatz; nor to any part which shall have been repaired, altered, neglected or used in any way which, in the opinion of Hatz, adversely affects its performance; nor to any part which is not a genuine Hatz part, the use of which will damage, cause defects in, or otherwise adversely affect the engine or its performance; nor to any accessories installed where the accessory manufactured has its own warranty; nor to normal maintenance services or replacement of normal service items.

Hatz reserves the right to require that any part upon which warranty service is sought be made available to Hatz at Hatz's sales headquarters or point designated by Hatz free and clear of any liens and other encumbrances.

THIS **LIMITED PARTS** WARRANTY, AND THE OBLIGATION OF HATZ HEREUNDER, ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED, IMPLIED, OR STATUTORY, INCLUDING **ANY** WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A **PARTICULAR PURPOSE**, and all other obligations or liabilities, including actual, special, direct, indirect, incidental or consequential damages, lost profits, lost sales, lost time, lost use, or contingent liabilities arising out of the failure of any part to operate properly. No person is authorized to give any other warranty or to assume any additional obligation on behalf of Hatz unless made in writing and signed by an officer of Hatz.

WARRANTY EXCLUSIONS

The following items will not be covered in the second year under the Premier Engine Warranty:

- ◆ Electrical components.
- ◆ Hoses.
- ◆ Belts.
- ◆ Sealants.
- ◆ Sealing compounds.
- ◆ Adhesives.
- ◆ Gaskets.
- ◆ Clutches.
- ◆ Hydraulic components.
- ◆ Injection nozzles.
- ◆ Gear Cases.
- ◆ Incidental expenses: travel time, mileage, and freight.
- ◆ Components functionally dependent on the oil circuit on engines without low oil pressure shutoff devices.

ITEMS NOT COVERED BY WARRANTY

- ◆ Lubricants, fuels, shop towels, and supplies.
- ◆ Phone/Fax/Communication costs.
- ◆ Deterioration caused by poor or prolonged storage of an engine such as rust, corrosion or gum and varnish caused by deteriorating fuel.
- ◆ Any sales taxes.
- ◆ Diagnostic and/or cleaning time.
- ◆ Overtime labor.
- ◆ Damage caused by the use of any starting aid or fluid.



**SUPPLEMENTAL INFORMATION
TO THE OWNER'S MANUAL FOR 1998 AND
LATER
EPA CERTIFIED
NONROAD COMPRESSION IGNITION ENGINES**

**EPA EMISSION CONTROL SUPPLEMENTAL
WARRANTY STATEMENT**

July, 2000

MAINTENANCE AND WARRANTY

SUPPLEMENTAL INFORMATION TO THE OWNERS MANUAL FOR 1998 AND LATER EPA CERTIFIED NONROAD COMPRESSION IGNITION ENGINES

The following supplemental information is furnished for EPA Nonroad Compression Ignition Engines which are certified according to 40 CFR Part 89.

This information contains the following specific items:

- ◆ EPA-related engine parts and engine operating conditions.
- ◆ Maintenance instructions for EPA-related engine parts.
- ◆ Emission control system and adjustments.
- ◆ Warranty statement.

ENGINE PARTS AND / OR EQUIPMENT RELATED TO EPA EXHAUST EMISSION REGULATIONS

Parts which are mandatory for engine operation.

The following parts as manufactured according to HATZ specifications are mandatory for engine operation which meets EPA exhaust emission regulations.

- | | |
|--------------------------------------|--|
| ◆ Fuel injection pump(s). | ◆ Intake manifold. |
| ◆ Injection nozzle(s). | ◆ Exhaust manifold. |
| ◆ Crankcase breather valve assembly. | ◆ Oil filler cap. |
| ◆ Air cleaner housing. | ◆ Intake and exhaust gaskets at head interfaces. |

Only parts manufactured by Hatz and which passed the Hatz Quality Assurance Program are assured of meeting EPA exhaust emission regulations.

UNUSUAL OPERATING CONDITIONS

The engine must not be operated at a load factor less than 25% for an extended period as such operation will cause the fuel injectors to foul. If such a condition occurs, you should contact the nearest **HATZ** authorized Service Center for necessary repairs.

The engine is designed and adjusted to operate most efficiently at the following conditions:

- ♦ Air temperature of 25°C (77°F).
- ♦ Atmospheric pressure of 100kPa (14.5 psi).
- ♦ Relative humidity of 30%.

Operation of the engine at conditions other than above will affect performance and exhaust emissions. Normally the equipment manufacturer takes this into account during the design of the machine and your equipment will perform within specifications over a wide range of climatic conditions. However, if you must operate your equipment under very unusual climatic conditions, please contact your nearest Hatz distributor for advice.

MAINTENANCE SCHEDULE – EPA – RELATED PARTS

No unusual maintenance is required for **EPA** certified engines. Follow maintenance schedule as outlined in the owners manual.

EMISSION CONTROL SYSTEM AND ADJUSTMENTS

The emission control system for this engine is EM (Engine Modification). No adjustments are needed or possible.

EPA EMISSION CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

Motorenfabrik Hatz GmbH & Co. KG warrants the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system includes:

- ◆ Fuel injection pump(s).
- ◆ Intake manifold.
- ◆ Injection nozzle(s).
- ◆ Exhaust manifold.
- ◆ Crankcase breather valve assembly.
- ◆ Oil filler cap.
- ◆ Air cleaner housing.
- ◆ Intake and exhaust gaskets at head interfaces.

HATZ DIESEL SUPPLEMENTAL WARRANTY FOR 1998 AND LATER EPA CERTIFIED ENGINES

PARTS WITH SUPPLEMENTAL LIMITED WARRANTY

The following limited warranty is supplemental to the standard HATZ DIESEL LIMITED ENGINE WARRANTY and covers 1998 and later EPA certified engines and applies to the following exhaust emission-related components:

- ◆ Fuel injection pump(s).
- ◆ Intake manifold.
- ◆ Injection nozzle(s).
- ◆ Exhaust manifold.
- ◆ Crankcase breather valve assembly.
- ◆ Oil filler cap.
- ◆ Air cleaner housing.
- ◆ Intake and exhaust gaskets at head interfaces.

Where a warrantable condition exists, Motorenfabrik Hatz will repair your engine at no cost to you including diagnosis, parts and labor.

MANUFACTURERS WARRANTY COVERAGE

The emission control related parts of 1998 and later engines are warranted for five years or 3000 hours whichever occurs first. If any emission related part on your engine is defective, the part will be repaired or replaced by Motorenfabrik Hatz.

OWNER'S WARRANTY RESPONSIBILITIES

- ◆ As the engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. Motorenfabrik Hatz recommends that you retain all receipts covering maintenance on your engine, but Motorenfabrik Hatz cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- ◆ As the engine owner, you should be aware, however, that Motorenfabrik Hatz may deny you warranty coverage if your engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.
- ◆ You are responsible for presenting your engine to a Motorenfabrik Hatz authorized service center as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact **HATZ DIESEL OF AMERICA, INC.** at 1-262-544-0254.

SUPPLEMENTAL LIMITED WARRANTY

Hatz Diesel of America, Inc. hereinafter referred to as "HATZ" warrants each of the above-listed parts when installed in a new engine sold by Hatz to be free from defects in material and workmanship under normal use and service, for a period of five years or 3000 hours, whichever occurs first, after the date of delivery to the original retail purchaser and Hatz will at their option, repair or replace at Hatz's sales headquarters, or at a point designated by Hatz, any part or parts which shall appear to the satisfaction of Hatz upon inspection at such point, to have been defective in material or workmanship.

- ◆ Any warranted part which is scheduled for replacement as required maintenance is warranted for the period of time up to the first scheduled replacement point for that part.
- ◆ Any replacement part, which is equivalent in performance and durability, may be used in non-warranty maintenance or repairs and will not reduce the overall engine warranty obligations of Hatz. However, Hatz is not responsible for failure of such replacement parts or failure of any other parts directly caused by failure of such replacement parts.
- ◆ This warranty does not obligate Hatz to bear any transportation charges in connection with the repair or replacement of defective parts. This warranty is transferable to subsequent owners within the original five years or 3000 hours whichever expires first.
- ◆ In order to obtain service under this warranty, the retail purchaser should contact Hatz Diesel of America, Inc. at 262-544-0254 for information and the nearest service center. The retail purchaser will not be charged for diagnostic labor, which leads to the determination that a warranted part is defective, nor for the repair or replacement of warranted parts if the work is performed at an authorized Hatz service center. If other engine components are damaged due to a failure of the above-listed warranted parts still under warranty, these other engine components will also be repaired or replaced at no charge.
- ◆ **This** warranty shall not apply to any engine which shall have been installed or operated in a manner not recommended by Hatz, nor to any engine which shall have been repaired, altered, neglected, or used in any way which, in the opinion of Hatz, adversely affects its performance, nor to any engine in which parts not authorized by Hatz have been used, which parts or the use of which have damaged or caused defects in or otherwise adversely affected the engine or its performance, nor to normal maintenance service or replacement of normal service items.

Hatz reserves the right to modify, alter, and improve any engine or parts without incurring any obligation to replace any engine or parts previously sold with such modified, altered, or improved engine or parts.



WARRANTY CLAIM FORM

(1)

Distributor Reference No.

(2)

H.D.A. Claim No.

(3)

Distributor Name

Street Address

Phone (Area Code)

City, State, ZIP

(4)

Warranty Service Performed By

Street Address

Phone (Area Code)

City, State, ZIP

(5)

Customer Name

Street Address

Phone (Area Code)

City, State, ZIP

PLEASE ATTACH "PROOF OF PURCHASE"

O.E.M.: (6)

Engine Type: (11a)

Date Purchased: (12)

Model of Eq: (7)

Engine Spec#: (11b)

Date of Failure: (13)

Type of Eq: (8)

Engine S/N: (11c)

Engine Hours: (14)

Def. Part Name: (9)

Engine RPM: (11d)

Date Repaired: (15)

Def. Part #: (10)

Pump Setting: (11e)

Date Claim Processed: (16)

Detail of failure and repair: (17)

(17)

Parts Replaced:

Qty.	Part Number	Description	List Price Each	List Price (Ext.)
(18)	(19)	(20)	(21)	(22)

(Attach additional sheet if needed)

Labor Hrs. (23) x \$ = \$

Travel Miles (24) x \$ = \$

Claim Processed by: (25)

Travel Hrs. (26) x \$ = \$

Shipping \$ (27)

Signature: (28)

Request for Policy Adjustment: (29)

Field Svc. Auth#: (30)

HATZ DIESEL WARRANTY STATUS (factory use only)

Accepted ()

Rejected ()

Partially Accepted ()

Policy Adj. ()

See Letter ()

Parts at List:

Less % =

\$ (31)

Customer Number:

A separate Credit Memo will be issued for the following amount

Hrs. Labor x \$ =

\$

Hrs. Travel x \$ =

\$

Miles x \$ =

\$

Mist. =

\$

Total Reimbursement: \$

Date:

Auth. By



WARRANTY CLAIM FORM INSTRUCTIONS

Hatz Diesel of America, Inc.
W229 N1645 Westwood Drive
P.O. **Box** 258
Waukesha, WI 53187-0258

February, 2000

INSTRUCTIONS FOR COMPLETING WARRANTY CLAIM FORM

To ensure rapid processing of your warranty claim, please follow these instructions:

- 1). Your reference number (optional).
- 2). Do not complete – for H.D.A. use only.
- 3). Name and address of distributor filing claim.
- 4). Name of organization which performed warranty work.
- 5). Name and address of equipment owner. **Attach copy of “Proof of Purchase”.**
- 6). Name of equipment manufacturer on whose equipment the engine is installed.
Example: Bomag, Caterpillar, Wacker, etc.
- 7). Model number of machine. Example: BW75S, CB214B, DPU6055, etc.
- 8). Type of equipment. Example: pump, roller, compactor, gen set, etc.
- 9). **Part** name which is responsible for failure.
- 10). **Part** number which caused failure.
- 11). Information from the engine serial number plate. See sample plate, page 4.
 - 11a). Engine type. Example: 3M41, 2G40, etc.
 - 11b). Engine spec. number. Example: 151a, 241b, etc.
On some engines this space will be blank.
 - 11c). Engine serial number – 13 digits required.
 - 11d). Engine r.p.m.
 - 11e). Injection pump setting.
- 12). Date when owner purchased the machine.
- 13). Date failure occurred.
- 14). Engine hours when failure occurred.

**INSTRUCTIONS FOR COMPLETING
WARRANTY CLAIM FORM (cont.)**

- 15). Date repair was completed.
- 16). Date this claim form was completed.
- 17). Enter a brief description on what caused the failure and how you repaired the unit.
- 18). Quantity of parts used in repair.
- 19). Part number of parts used for repair.
- 20). Part description of parts used for repair.
- 21). Current list price of each part.
- 22). Extension of list price. Quantity times list price.
- 23). Your total labor hours times your hourly rate.
- 24). If field service call, enter miles traveled times the cost per mile.
NOTE: See item 30.
- 25). Name of person completing form.
- 26). If field service call, enter hours traveled times your hourly rate.
NOTE: See item 30.
- 27). Enter any shipping charges, which is a direct result of parts being returned for warranty.
- 28). Authorized signature such as service manager.
- 29). If the unit is out of warranty but circumstances dictate that a policy adjustment should be considered, check this box and complete the rest of the form as stated above.
- 30).** Field Service Authorization Number.
- 31). This section to be left blank - for **H.D.A.** use only.