NTS-Sachs-Engine
4-Gear
Fan/Air cooled

Go Your Own Way
– together with us

Table of content

For all our Sachs-products please scan and follow this QR-code.

For ALL our products please scan and follow this QR-code.

Engine Types

50/4 LK (4-Gear, footgear, fan-cooled with kickstarter)

Our 50/4 LK assembled with our optional parts.
This is how it will look when assemblied.
This one is equipped with our optional parts:

* Cylinder 04-63-101
* Cylinder head 12-26-101
* Carburetor 01-21-502
* Kickstarter pedal 10-24-101
* Ignition K-4011

50/4 KF (4-Gear, footgear, air-cooled with kickstarter)
50/4 EK (4-Gear, footgear, air-cooled with kickstarter)

Our 50/4 EK assembled without our optional parts. This is with the parts we deliver when you buy an engine.

You can choose free amoung our optional parts, and create your prefered enginge.

Build the Enginge of your Dream, or as we call it: BED

Please note that our engines comes unassembled, you as the customer has the pleasure to build your engine as you prefer. The engines comes packaged in a way to make it as smooth as possible for the customer to assembly them.

Parts included in 50/4 LK

Crank Case & Crank Shaft

12-29-101

02-36-501

K-1213

03-34-102

K-1015

12-15-901

10-26-903

25-16-207

Transmission & Layshaft

K-1207

K-1212

Clutch & Clutch cover

K-1209

K-1208

12-25-201

Gear Shift

K-1203

01-12-610

Kickstarter

K-1210

Fan Cowl

12-28-201

K-1204

12-28-101

K-1211

Fan

10-28-101

12-33-101

Cover for fan housing

10-36-102

01-14-102

01-11-702

Parts included in 50/4 EK

Crank Case & Crank Shaft

12-29-101

02-36-501

K-1213

03-34-102

K-1015

12-15-901

10-26-903

25-16-207

Transmission & Layshaft

K-1207

K-1212

Clutch & Clutch cover

K-1209

K-1208

12-25-201

Gear Shift

K-1203

01-12-610

Kickstarter

K-1210

Clutch Cover

12-25-201

Intermediate Housing

12-43-101

Intermediate Housing

12-43-201

01-14-102

01-11-702

Parts included in 50/4 EKF

Crank Case & Crank Shaft

12-19-201

02-36-601

K-1213

10-24-301

K-1015

12-15-901

10-26-903

25-16-207

Transmission & Layshaft

K-1207

K-1212

Clutch & Clutch cover

K-1209

K-1208

12-25-201

Gear Shift

K-1203

01-12-610

Parts included in 50/4 EKF

Kickstarter

K-1210

Clutch Cover

12-25-201

Intermediate Housing

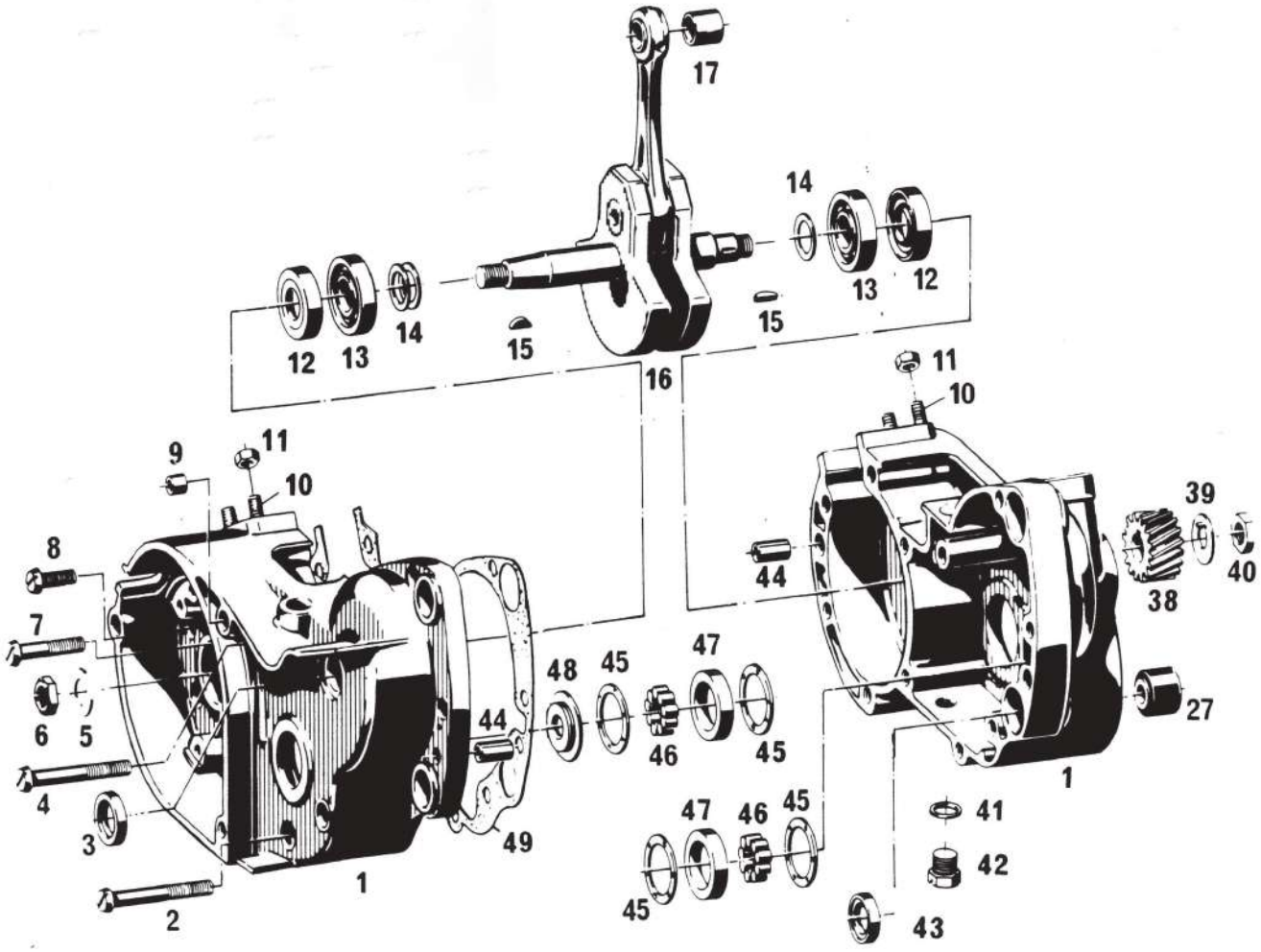
12-43-101

Intermediate Housing

12-43-201

01-14-102

01-11-702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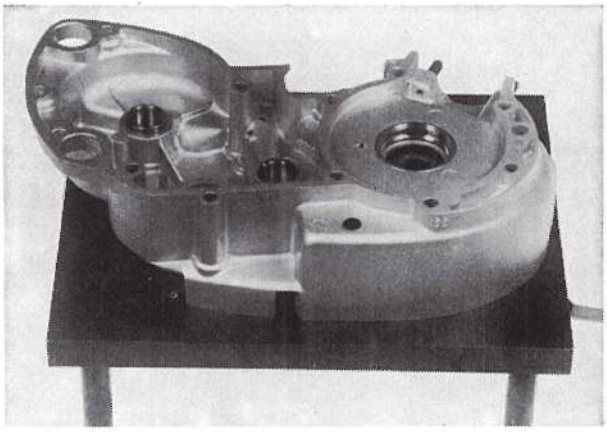
Crankcase, Crankshaft

Pic.no	Orig.no.	NTS.no.	Description	Amount
1	0287 109 005	12-29-101	Crankcase assy. LK/KF	1
1	0287 109 015	12-19-201	Crankcase assy. EKF	1
2	0240 120 001	-	Screw M6x52 (See 25-16-207)	2
3	0250 084 000	-	Oil seal 16x24x4 (See K-1015)	1
4	0640 003 001	-	Screw M6x56 (See 25-16-207)	1
5-6	-		Flywheel nut (See K-1213)	1
7	0241 040 000	-	Screw Mx38 (See 25-16-207)	1
8	0640 001 002	-	Screw M6x22 (See 25-16-207)	7
9	0229 000 000	-	Dowel sleeve 8,4x7,5mm (See K-1213)	2
10	0970 011 101	-	Cylinder screw M6 (See K-1213)	4
11	0316 057 002	-	Nut M6 with 9mm width (See K-1213)	4
12	0930 026 100	-	Oil seal 17x30x7 (See K-1015)	2
13	0232 015 005	-	Ball bearing L17 (See 10-26-903)	2
14	0244 058 - - -	-	Washer 17x24 (See 12-15-901)	-
15	0246 005 000	-	Woodruff Key (See K-1213)	2
16-17	0286 203 100	02-36-501	Crankshaft with needle bearing LK/EK	1
16-17	0288 123 001	02-36-601	Crankshaft with needle bearing EKF	1
27	0260 101 000	-	Rubber support L = 19mm (See K-1213)	4
38	0234 068 000	-	Drive sprocket 16T (See K-1208)	1
39	0246 049 000	-	Spring washer B10 (See K-1208)	1
40	0242 000 001	-	Nut M10x1 (See K-1208)	1
41	0250 042 001	-	Seal ring B10 (See K-1213)	1
42	0240 100 000	-	Oil drain plug M10x1 (See K-1213)	1
43	0246 018 000	-	Mounting plate (K-1213)	2
44	0929 009 000	-	Dowel sleeve 8,4x15mm (See K-1213)	2
45	0244 078 000	-	Washer 16,5x31,5x1 (See 10-26-903)	4
46	0232 002 000	-	Cylindrical roller 4x6 (See 10-26-903)	30
47	0232 049 000	-	Outer ring 23,5x31,5x6 (See 10-26-903)	2
48	0230 011 200	-	Oil seal 15,5x31,2x3,5 (See K-1015)	1
49	0250 088 100	-	Gasket (See 03-34-102)	1



Bild/Fig. 30

Pre-assembly of crankcase half on magneto side

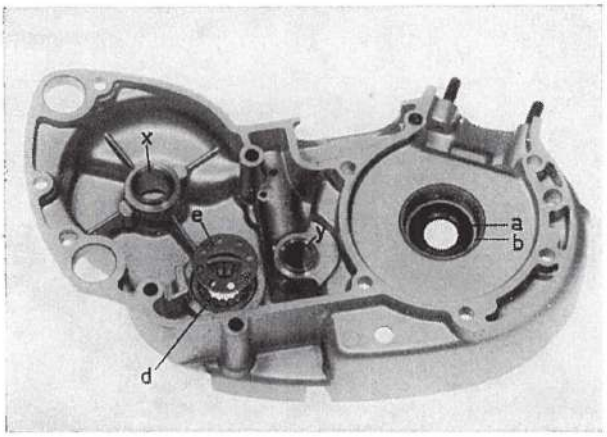
Heat the crankcase halves to 70 . . . 80° C

Before fitting the oil seals, fill the groove with high temperature grease and lubricate the sealing lip lightly.

Press the outer races of the bearings and oil seals into the crankcase half on magneto side while it is still warm.

Crankshaft bearing

Press in oil seal (a, sealing lip pointing inwards) flush with the inner edge of the bore.
Press in the outer race of the separable ball bearing (b) down to the stop.



Bild/Fig. 31

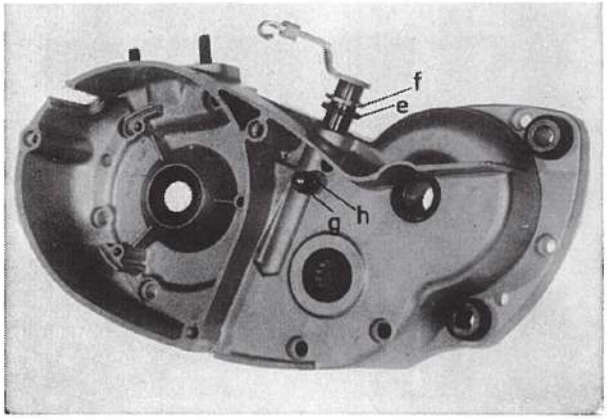
Main shaft bearing

Press in oil seal (tension spring toward the outside) until it reaches a stop.
Insert intermediate shim and press in the outer race of the cylindrical roller bearing (d) down to the stop.
Insert 15 bearing rollers 4 x 6 mm with high temperature grease and cover with cover plate (e).

Press the bearing in again after the crankcase half has cooled down.

Kickstarter or pedal shaft bearing

The bronze bushing (x, Fig. 31) is part of the crankcase half on the magneto side.
Press in the oil seal (f, sealing lip pointing inwards) flush with the crankcase.

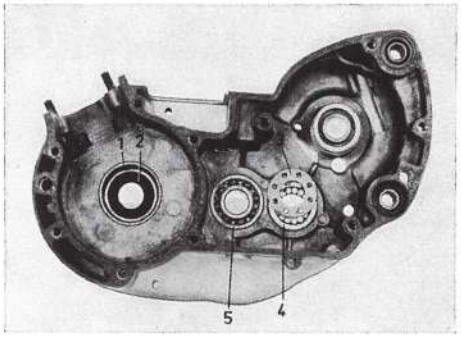


Bild/Fig. 34

Clutch lever

Insert the oil seal (e, sealing pointing inwards) together with the protective cap (f).

Insert oil clutch lever and secure with grooved pin (g) and rubber washer (h).



Bild/Fig. 35

Pre-assembly of crankcase half (clutch side)

Before fitting, fill the groove of the oil seal with high temperature grease and lubricate the sealing lip lightly.
Press ball race bush, outer races of bearing and oil seals into the still warm crankcase half on the clutch side.

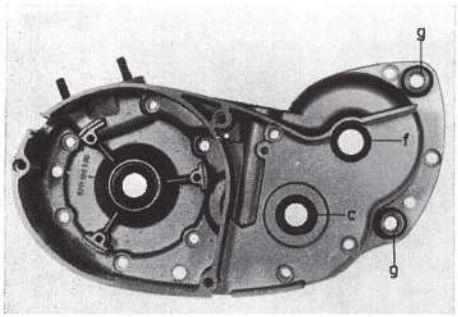
Crankshaft bearing

Press in oil seal (2, sealing lip pointing inwards) flush with the inner edge of the bore.

Press in outer race of the separable ball bearing (1) until it reaches a stop.

Layshaft bearing

Press in ball race bush (5) until it reaches a stop.



Bild/Fig. 32

Main shaft bearing

Insert intermediate shim and press in the outer race of the cylindrical roller bearing (4) until it reaches a stop.
Insert 15 bearing rollers 4 x 6 mm with high temperature grease and cover with cover washer (3).

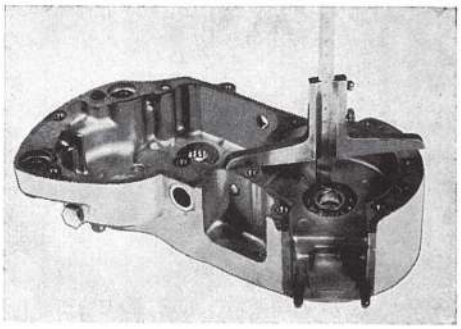
After the crankcase half has cooled off, repress the bearing.

Fitting the rubber bearings

After the crankcase halves have cooled down, press in the rubber bearings (g, Fig. 32).
Care should be taken to ensure that the large diameter of the steel bushing, which should meet the corresponding support on the chassis frame, faces toward the outside of the crankcase.

Measuring the axial play of the crankshaft

Permissible axial play 0.05 . . . 0.1 mm
Insert inner races of bearing into the outer races of bearing.

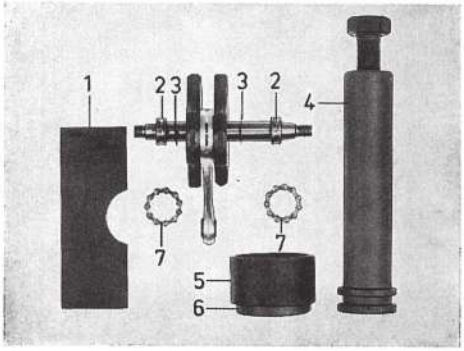

Bild/Fig. 36

Example:

Crankcase half (clutch side):

Distance from mating surface (with gasket) to inner race of bearing	26.40 mm
Crankcase half (magneto side):	
Distance from mating surface to inner race of bearing	+ 6.50 mm
Dimension in crankcase	32.90 mm
Dimension of crankshaft (measured over both webs)	− 30.40 mm
existing axial play	2.50 mm
permissible axial play	− 0.10 mm
difference to be compensated	2.40 mm

The difference of 2.40 mm is compensated by shims (3, Fig. 37) which should be placed equally on both sides of the crankshaft directly behind the inner races of the bearings.



Bild/Fig. 37

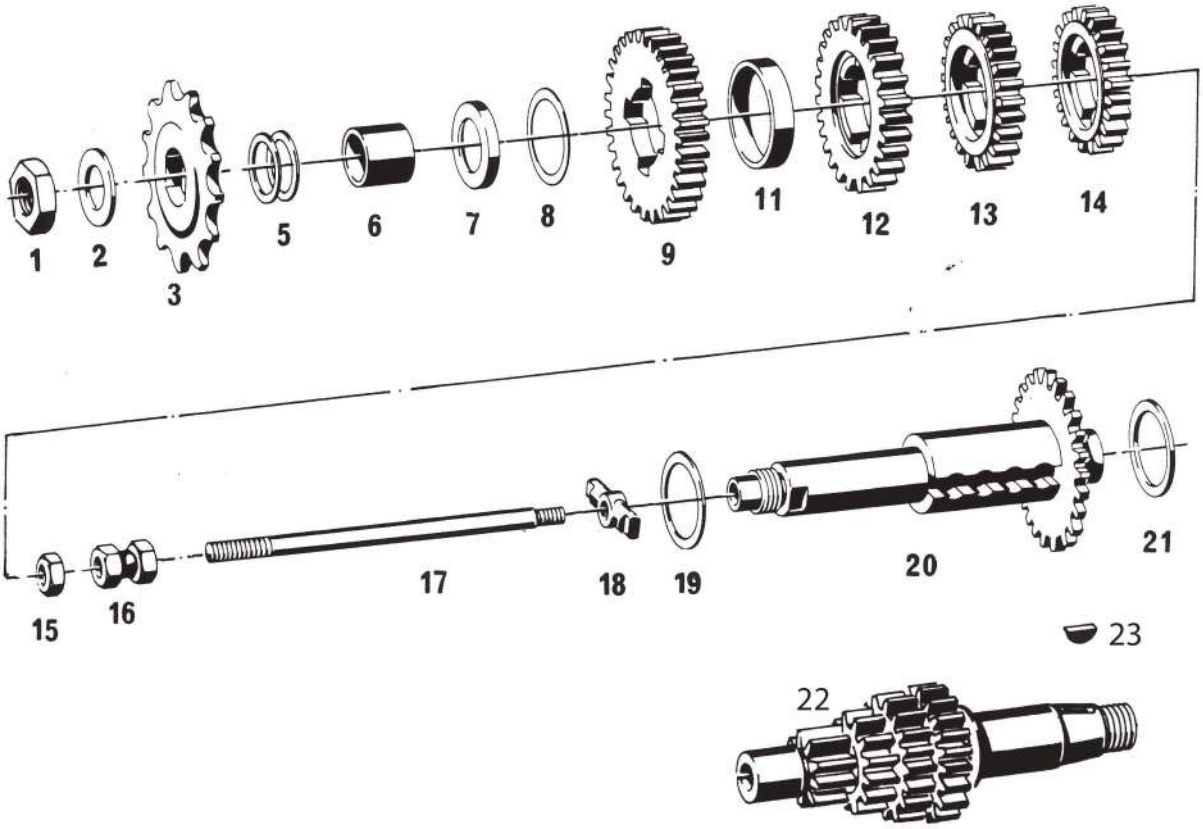
Pre-assembly of the crankshaft

Press off the ball cages (7) from the inner races of the bearing (2).
Remove the inner races of the bearing (2) with puller shells (6), puller sleeve (4) and clamping ring (5).

Heat inner races of the bearing (2) before pressing on.

Attention!

Do not mix up the outer and inner races of the bearings and the ball cages belonging together.
Insert an intermediate plate (1) between both crank webs and support at both ends.
The crankshaft must rest freely on it.
Heat the inner races of the bearing and press on until a stop is reached.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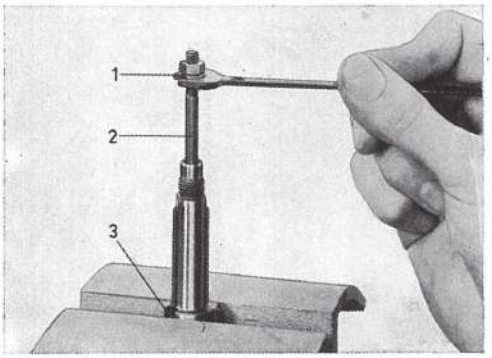
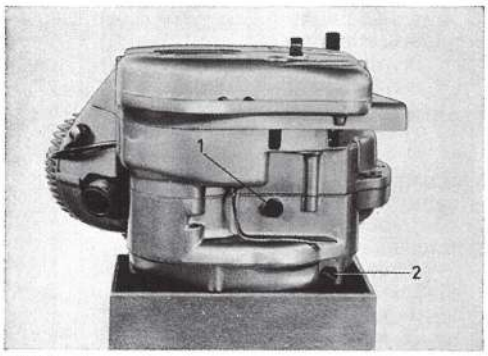
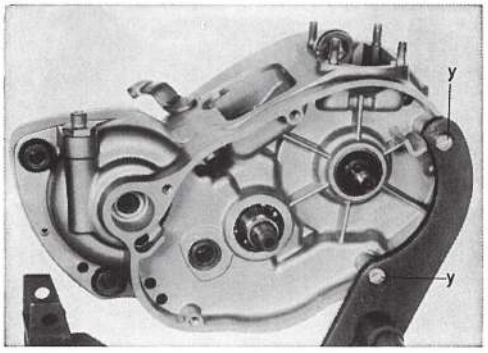
Pic.no	Orig.no.	NTS.no.	Description	Amount
1	0242 124 000	-	Nut M12x1 (See K-1213)	1
2	0246 056 000	-	Washer 12,3x22x1,5 (See K-1213)	1
3	-	02-16-101	Front sprocket 11T	-
3	-	02-16-201	Front sprocket 12T	-
3	-	02-15-301	Front sprocket 13T	-
3	-	06-74-401	Front sprocket 14T	-
5	0244 081	-	Washer 16x22 (12-15-901)	-
6	0247 108 000	-	Bush 16x20x16 (See K-1207)	1
7	0244 110 100	-	Washer 15,6x27x3 (See K-1207)	1
8	0246 043	-	Washer 23,1x28 (See 12-15-901)	-
9	0234 113 000	-	Large idle gear 31T (See K-1207)	1
11	0247 020 000	-	Ring 29x32x7 (See K-1207)	1
12	0234 115 100	-	Transmission gear 27T (See K-1207)	1
13	0234 114 000	-	Transmission gear 24T (See K-1207)	1
14	0234 104 100	-	Small idle gear 22T (See K-1207)	1
15	0316 057 002	-	Nut M6 (See K-1212)	1
16	0242 103 100	-	Grooved nut M6 (See K-1212)	1
17	0271 106 000	-	Shifting rod (See K-1212)	1
18	0246 046 100	-	Shifting wedge (See K-1212)	1
19	0246 043	-	Washer 23,1x28 (See 12-15-901)	-
20	0285 108 007	-	Main shaft 26T (See K-1207)	1
21	0246 042 000	-	Washer 23,1x28 (See 12-15-901)	-
22	0286 205 010	-	Layshaft (See K-1207)	1
23	0246 005 000	-	Woodruff Key (See K-1213)	1



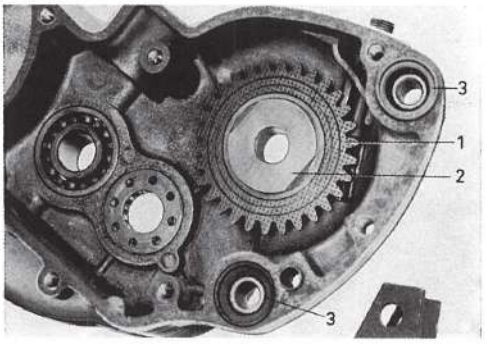
Bild/Fig. 50



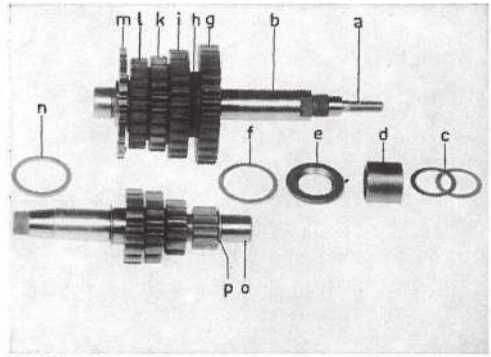
Bild/Fig. 1



Bild/Fig. 22



Bild/Fig. 28



Bild/Fig. 61

Main shaft

Removing and fitting the selector rod

Gently clamp main shaft in a vice, using soft jaws and placing selector key up against the vice jaws.

Screw on two nuts (1) M 6, lock them, unscrew the selector rod and remove the selector key. Pay attention to washer underneath the selector key.

After renewal of worn parts, place washer (1 mm thick), insert selector key (3) in the main shaft in such a manner that the chamfered side of its inner thread points toward the thread of the selector rod (2).

Screw selector rod (2) and selector key (3) tightly together and secure them by tap. with a center punch.
Unscrew the 2 nuts (1).
Make sure that the selector rod moves smoothly.

ASSEMBLING THE ENGINE

Screw the crankcase half (clutch side) on to the mounting jig with 2 fillister head screws M 6 x 20, as shown in Fig. 22.
Screw in oil drain plug (1, Fig. 1) with sealing ring.

Insert the two locating plates (3, Fig. 28).

Installing the set of gears

On engines with speedometer drive, fit washer (n, Fig. 61) on the main shaft.

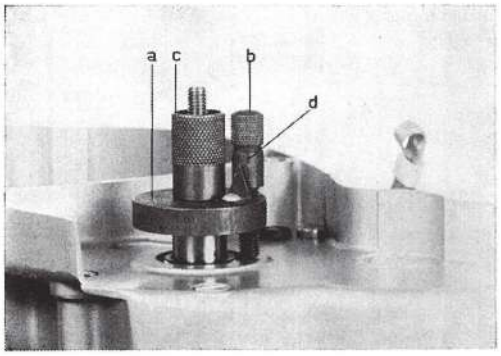
Insert main shaft and layshaft together in the crankcase half (clutch side).
Oil the selector gears and fit them in pos. as follows:
Selector gear for 4th speed (l, Fig. 61, flat side pointing downward)
Selector gear for 3rd speed (k, Fig. 61, collar facing upward)
Selector gear for 2nd speed (i, Fig. 61, recess for spacer ring pointing upward)
Spacer ring (h, Fig. 61)

Selector gear for 1st speed (g, Fig. 61, recess for spacer ring pointing downward)

Insert shims (f, Fig. 61) up to the shoulder of the main shaft (b, Fig. 61).

Place washer (e, Fig. 61), 2 mm thick, on the main shaft, counterbore downwards.

Place bush (d, Fig. 61), 16 mm long, on the main shaft.



Bild/Fig. 63

Measuring the axial play of the main shaft and layshaft

Insert both dowel sleeves and position housing gasket.

Place the crankcase half (magneto side) temporarily in position and screw on with 4 fillister head screws M 6, tightening diagonally.

Measuring the main shaft

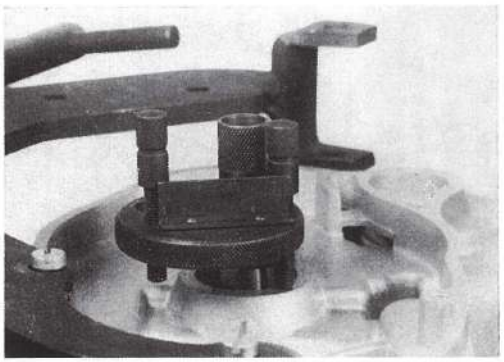
Permissible axial play 0,1 mm

Turn back adjusting screw (b).

Fit calibration plate (a) and tighten with knurled nut (c).

Press calibration plate with shaft against housing and screw in adjusting screw (b) until it reaches a stop.

Pull back calibration plate with shaft from the housing and screw the adjusting screw (b) in again until the stop, at the same time reading off the scale (d).



Bild/Fig. 64

The scale reading (d) shows the axial play (1 scale division = 0,1 mm).

The difference is compensated by shims (c. Fig. 61) which, after removal of the crankcase half (magneto side) are placed on the main shaft (b, Fig. 61).

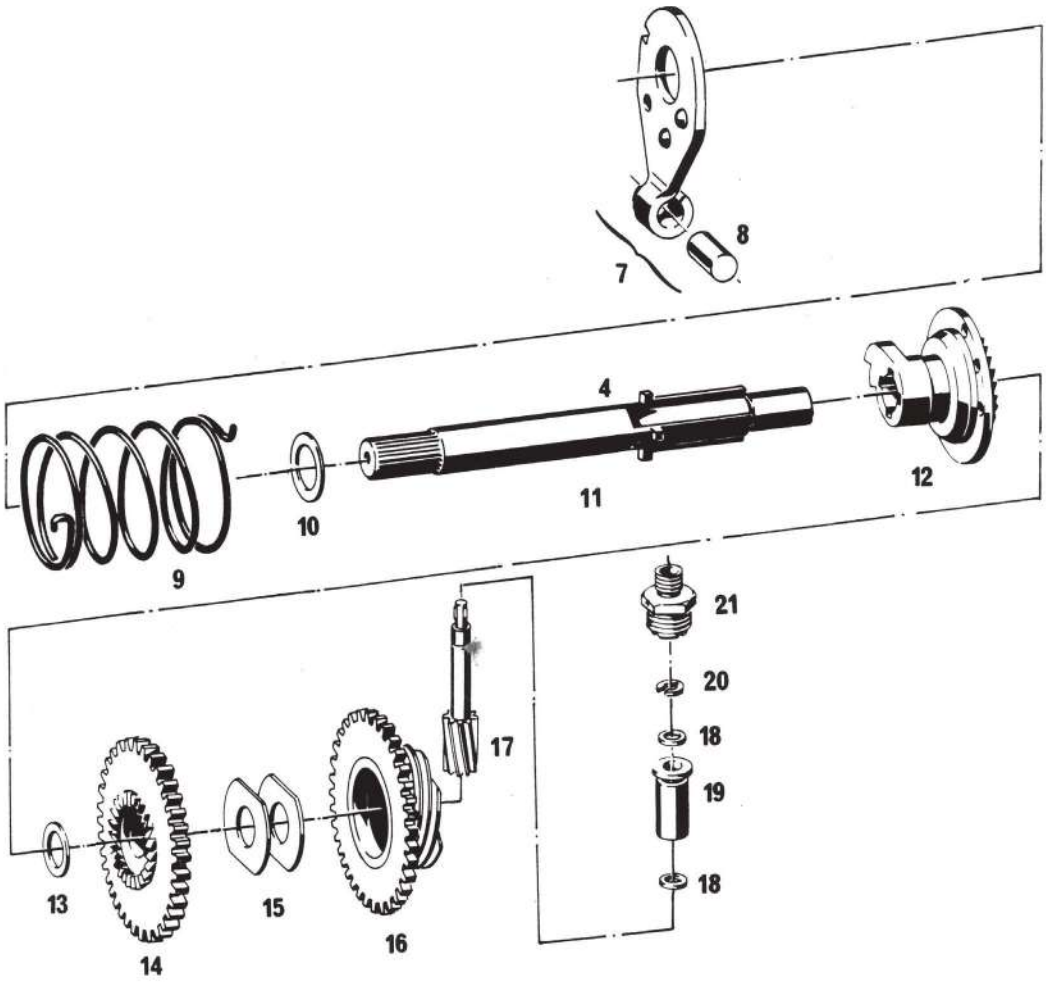
Measuring the layshaft

Permissible axial play max. 0,05 mm

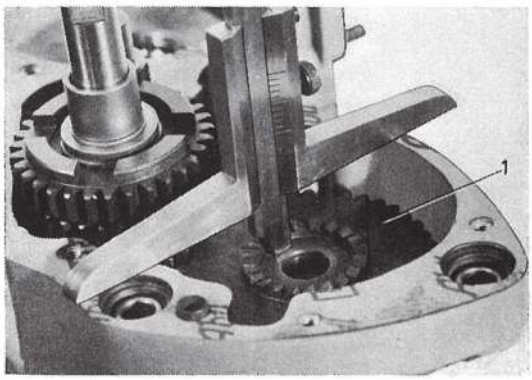
The above instructions apply also for the measuring of the layshaft.

The difference is compensated by removing the crankcase half (magneto side) and placing shims (p, Fig. 61) on the layshaft or (o, Fig. 61).

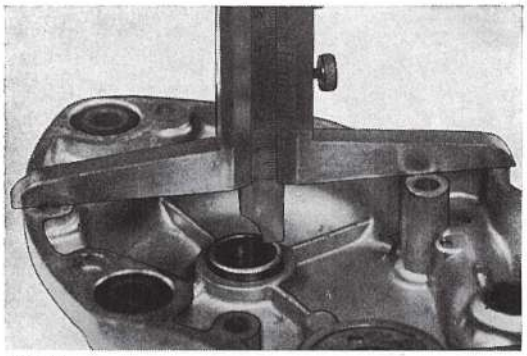
Kickstarter



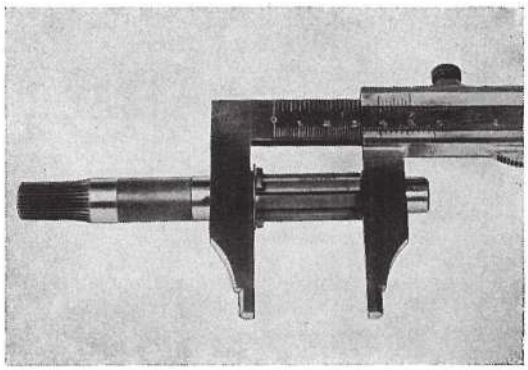
Pic.no	Orig.no.	NTS.no.	Description	Amount
7	0286 115 006	-	Kickstarter stop (See K-1210)	1
8	0260 100 000	-	Vulkollan buffer (K-1210)	1
9	0239 054 000	-	Torsion spring (K-1210)	1
10	0244 115 000	-	Washer 16x22 (See 12-15-901)	-
11	0237 113 100	-	Starter shaft (See K-1210)	1
12	0270 135 000	-	Blocking gear (K-1210)	1
13	0244 006	-	Washer 13x19 (See 12-15-901)	-
14	0234 106 000	-	Starter gear 41T (See K-1210)	1
15	0244 116 000	-	Profile washer (K-1210)	2
16	0286 192 001	-	Helical gear 30T (See K-1210)	1
17	0234 061 000	12-21-801	Helical pinion	1
18	0246 047 000		Washer 6x9x1	2
19	0232 050 100		Bearing bushing	1
20	0245 026 000		Retaining washer 5mm	1
21	0241 046 000		Threaded stud M16c1,25	1



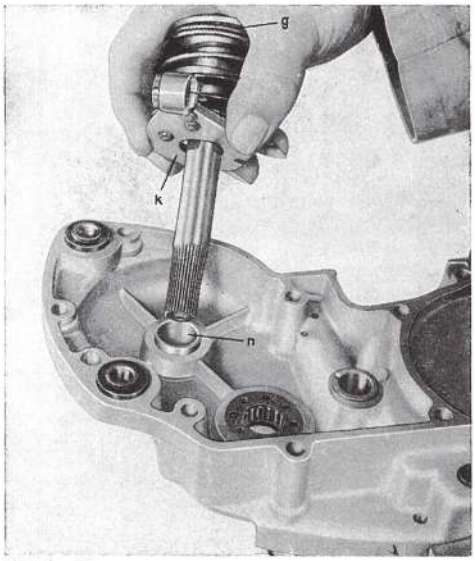
Bild/Fig. 65



Bild/Fig. 66



Bild/Fig. 67



Bild/Fig. 68

Starter equipment

Measuring the axial play of the starter shaft

Permissible axial play 0.1 mm

Example:

Crankcase half (clutch side):

On engines with speedometer drive, insert helical gear, 2 profile washers and starter gear.

On engines without speedometer drive, insert 2 profile washers and starter gear.
Distance from mating surface (with gasket) to starter gear 19.6 mm.

Crankcase half (magneto side):

Distance from mating surface to bearing bush	+ 18.5 mm
	38.1 mm

Starter shaft:

Length of spline profile with constant washer 0.5 mm	−37.4 mm
existing axial play	0.7 mm
permissible axial play	− 0.1 mm
difference to be compensated	0.6 mm

The difference of 0.6 mm is compensated by shims on the starter gear.

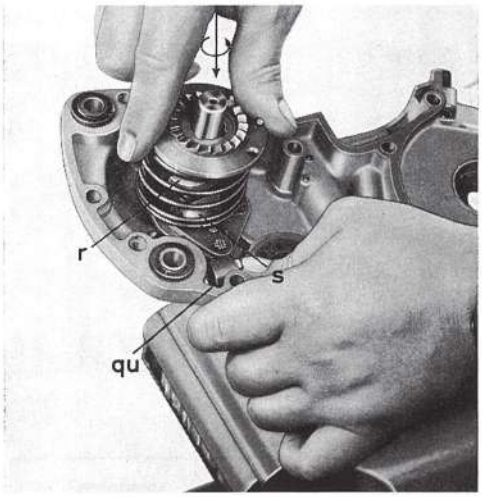
Installation of the starter equipment

Insert the double-angled end of the return spring into the starter stop (k) and place the lower winding of the return spring against the outer side of the guide piece.
Insert the starter shaft with washer (0.5 mm thick) and ratchet (g) in the starter stop (k) and insert the angled end of the return spring into the central hole of the ratchet (g).

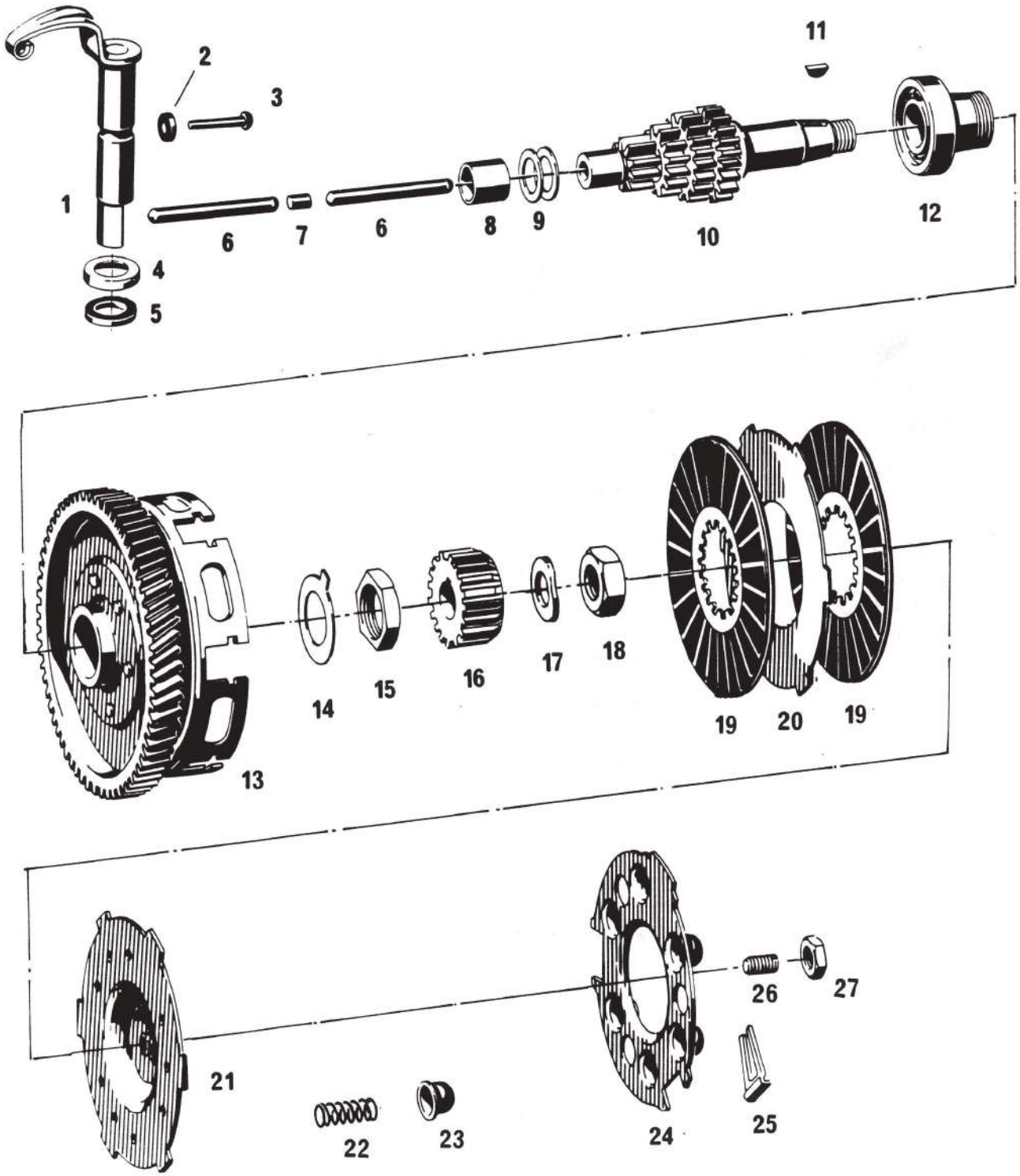
Insert the starter equipment into the magneto half of the crankcase, as shown in Fig. 69, and center starter stop (k) over sleeve (n).

Press the ratchet downwards against the pressure of the return spring and turn counter-clockwise (see arrows), until the lug (r) on the ratchet engages in the strap (s) of the starter stop.

The starter equipment should be seated tightly in the crankcase half.



Bild/Fig. 69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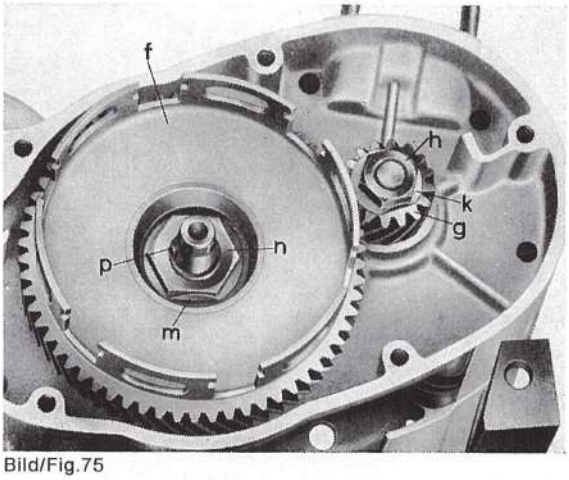
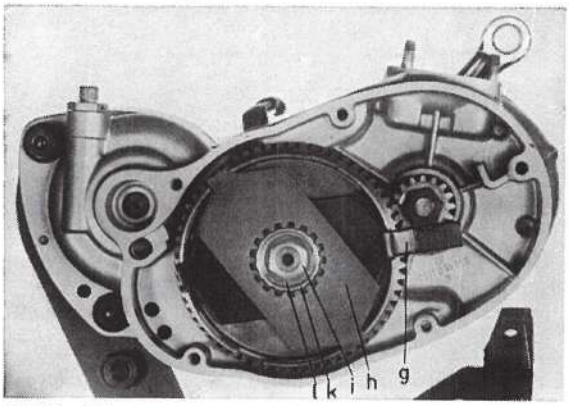
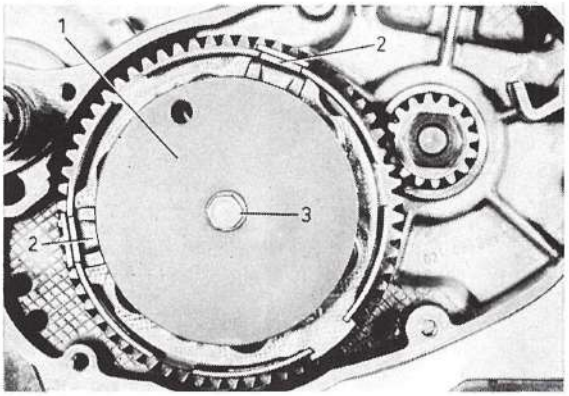
Pic.no	Orig.no.	NTS.no.	Description	Amount
1	0286 215 001	K-1209	Clutch lever with rubber grommet	1
2	0660 002 000		Rubber washer 3x10x2	1
3	0249 023 000		Semicircular stud 3x20	1
4	00246 012 000		Protective cap	1
5	0650 017 000		Seal ring 13x19x2,5	1
6	0249 104 000		Pressure pin 4,5x51,5	2
7	0232 107 100		Cylindrical roller 4,5x6	1
	0232 153 001	-	Bush 13x16x13 Pre-mounted in the crank case	1
9	0244 006	-	Washer 13x19 (See 12-15-901)	-
10	0286 205 010	-	Layshaft (see compl. gearbox K-1207)	1
11	0246 005 000	-	Woodruff Key (See K-1213)	1
12	0286 079 105	-	Ball race bushing (See 10-26-903)	1
13	0290 035 005	K-1208	Clutch case	1
14	0244 052 005		Retaining washer 21mm	1
15	0242 030 005		Nut M20,8x1	1
16	0259 024 000		Clutch hub	1
17	0644 010 000		Spring washer	1
18	0242 027 000		Nut M12x1	1
19	0659 010 006		Inner disc	2
20	0259 015 000		Outer disc	1
21	0686 018 005		Pressure disc	1
22	0239 015 000		Spring	9
23	0659 006 000		Spring cup	3
24	0659 004 000		Spring plate	1
25	0259 014 000		Cover plate	1
26	0240 043 002		Adjustment screw	1
27	0242 003 101		Nut M6	1



Bild/Fig.75



Bild/Fig. 76



Bild/Fig. 77

Drive and clutch

Degrease the cones of the bearing race bush, layshaft, clutch housing and clutch hub.

Insert Woodruff key into layshaft and crankpin.

Mount clutch housing (f) and insert tab washer (m). Screw on nut (n) M 20.8 x 1 (left-hand-thread) with collar pointing downwards.

Place driving pinion (g) on the crankpin, install tab washer (k) and nut (h) M 10 x 1 (with the collar pointing downwards).

Insert retaining plate (g, Fig. 76), tighten and secure both nuts.
Tightening torque of the nut (h) 37 . . . 40 Nm (3,7 . . . 4 kpm)
Tightening torque of the nut (n) 20 . . . 22 Nm (2 . . . 2,2 kpm)

Mount the clutch hub (k), install spring washer (l) and flat nut (i) M 12 x 1.
In addition, insert locking washer (h) and tighten nut.

Tightening torque 37 . . . 40 Nm (3,7 . . . 4 kpm)
Remove locking washer and retaining plate.

Insert greased pressure pin – intermediate roller – pressure pin into the layshaft.

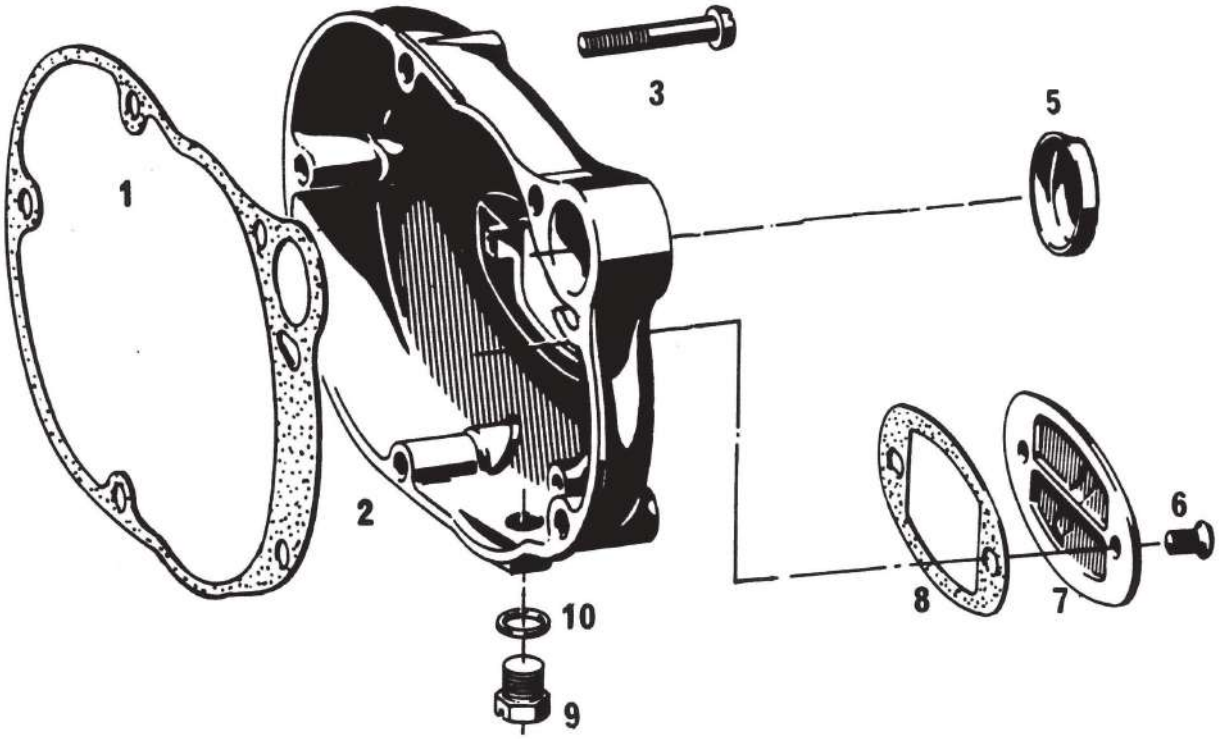
Insert friction plate, – steel plate, – friction plate successively.
Insert compressed set of springs into clutch housing, then insert both locking plates (2).

Remove the clamping device.
Take care that the locking plates are correctly seated.
Install clutch adjusting screw with lock nut.

Crankcase cover on clutch side

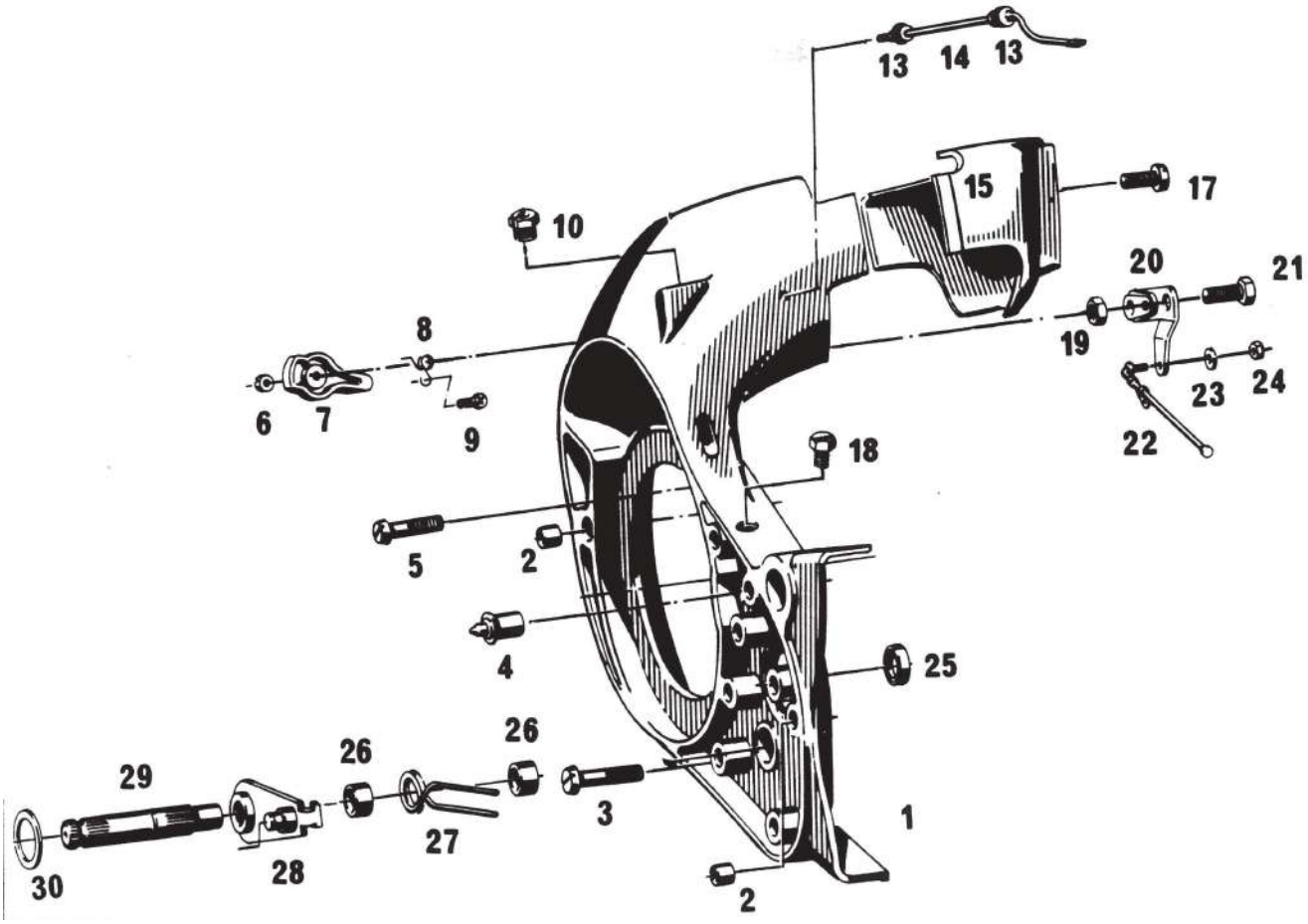
Lubricate the mating surfaces with sealing compound and place gasket in position.
Put on cover plate and tighten with 5 fillister head screws M 6 x 35.
Tightening torque 8 . . . 10 Nm (0.8 . . . 1 kpm)
Install oil level control screw with sealing ring.

Clutch cover



Pic.no	Orig.no.	NTS.no.	Description	Amount
1	0250 087 100	-	Gasket (See 03-34-102)	1
2	0289 041 205	12-25-201	Clutch cover	1
3	0940 091 200	-	Screw M6x35 (See 25-16-207	5
5	0270 030 000	-	Cap (See K-1213)	1
6	0640 002 000	-	Countersunk Screw M5x10 (See 25-16-207)	2
7	0611 002 100	-	Cover (See K-1213)	1
8	0650 001 000	-	Gasket for cover (See 03-34-102)	1
9	0240 095 105 0241 029 005	-	Screw M12x1 (See K-1213)	1
10	0250 118 000	-	Copper ring B12 (See K-1213)	1

Fan Cowl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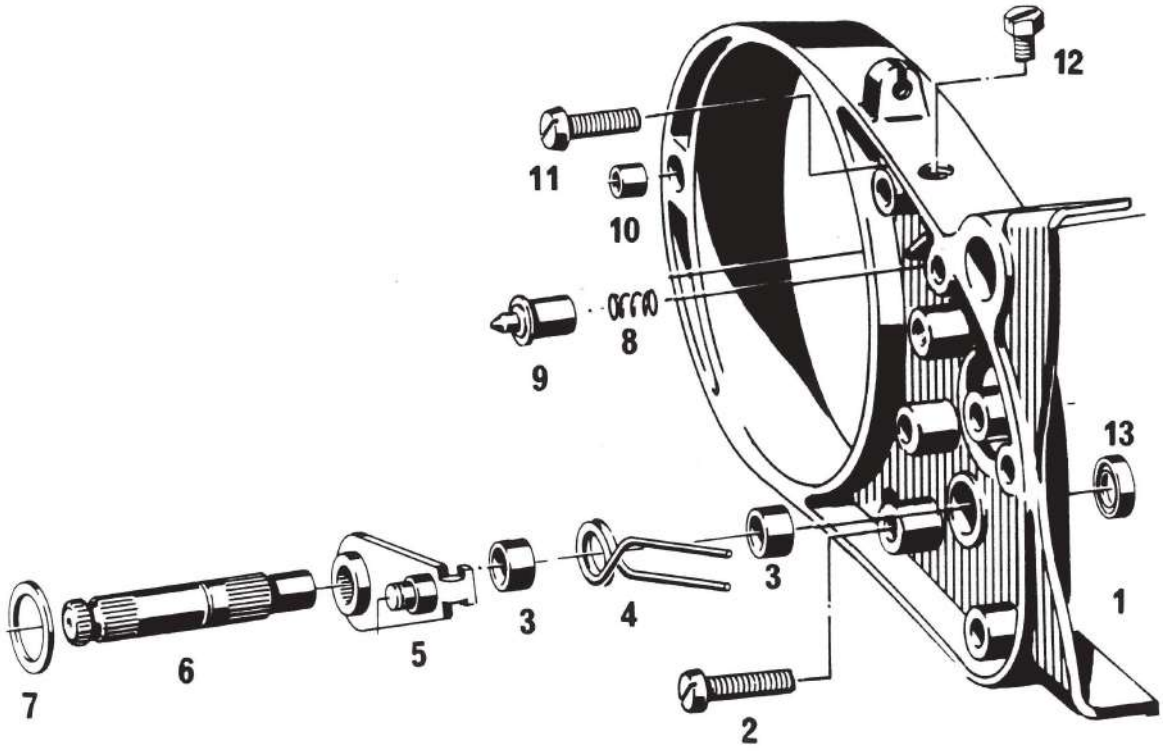
Fan Cowl

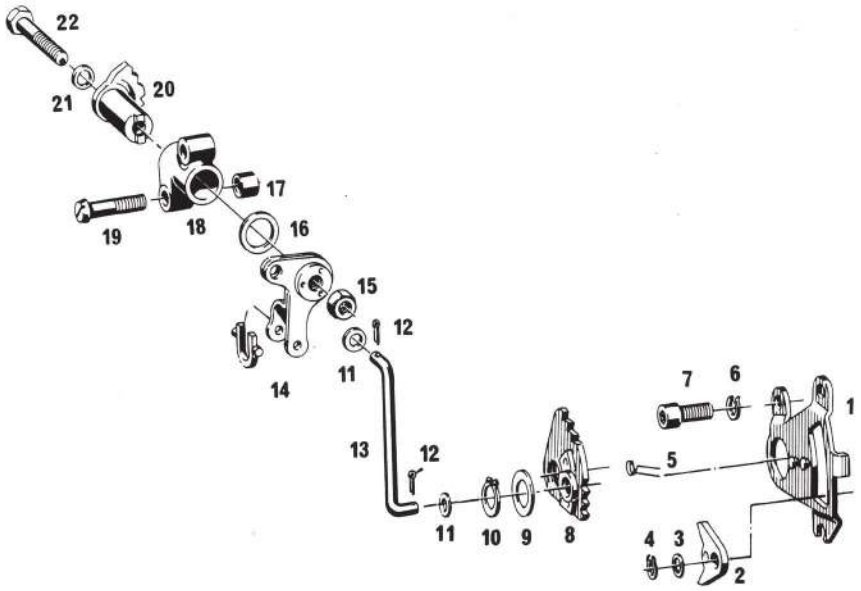
Pic.no	Orig.no.	NTS.no.	Description	Amount
1	0286 307 100	12-28-201	Fan cowl with no. 25 & 26	1
2	0229 000 000	-	Dowel sleeve 8,4x7,5mm (See K-1213)	2
			Dowel sleeve 8,4x7,5mm (See K-1203)	2
3	0241 019 202	-	Screw M6x28 (See 25-16-207)	3
4	0290 114 000	01-12-610	Selector index compl. (See	1
5	0640 001 001	-	Screw M6x22 (See 25-16-207)	1
6	0242 101 000	K-1204	Slotted nut M3	1
7	0248 115 000		Primer lever	1
8	0239 113 000		Torsion spring	1
9	0240 119 101		Screw M3x8	1
13	0260 113 000		Bearing bushing	1
14	0286 302 000		Primer linkage	1
15	0211 122 000	12-28-101	Deflector cap	1
17	0241 050 000	-	Screw M6x15 (See 25-16-207)	1
18	0241 023 000	-	Screw M6x5,5 (See 25-16-207)	1
10	0240 111 005	K-1211	Hex head screw M10x1	1
19	0316 057 000		Nut M6	1
20	0290 110 000		Deflection lever	1
21	2740 024 002		Screw M6x16	1
22	0290 108 001		Clutch linkage	1
23	0244 111 000		Washer B3	1
24	0242 111 002		Locking nut M3	1
25	0230 012 000	-	Seal ring 10x16x4 (Pre.mounted in 12-28-201)	1
26	0232 106 000	-	Bush 10x13x7,5 (Pre.mounted in 12-28-201)	1
		K-1203	Bush 10x13x7	1
27	0239 118 100		Torsion spring	1
28	0286 148 100		Locking lever	1
29	0237 112 000		Selector shaft	1
30	0244 103 000		Washer 18x25	1

Intermediate Housing

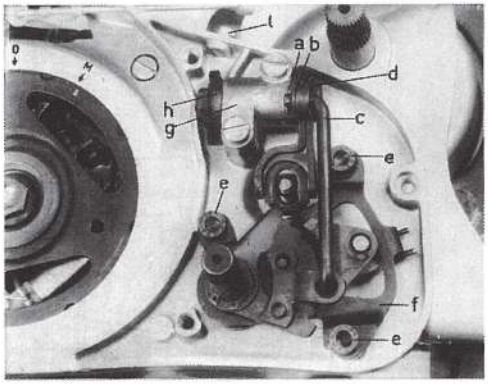


Pic.no	Orig.no.	NTS.no.	Description	Amount
1	0287 131 000	12-43-101	Intermediate housing with no. 3 & 13	1
2	0640 001 001	-	Screw M6x22 (See 25-16-207)	1
3	0232 106 000	-	Bush 10x13x7,5 (Pre.mounted in 12-43-101)	1
		K-1203	Bush 10x13x7,5	1
4	0239 118 100		Torsion spring	1
5	0286 148 100		Locking lever	1
6	0237 112 000		Selector shaft	1
7	0244 103 000		Washer 18x25	1
8-9	0290 114 000	01-12-610	Selector index compl.	1
10	0229 000 000	-	Dowel sleeve 8,4x7,5mm (See K-1213)	2
			Dowel sleeve 8,4x7,5mm (See K-1203)	2
11	0241 019 202	-	Screw M6x28 (See 25-16-207)	3
12	0241 023 000	-	Screw M6x5,5 (See 25-16-207)	1
13	0230 012 000	-	Seal ring 10x16x4 (Pre.mounted in 12-43-101)	1

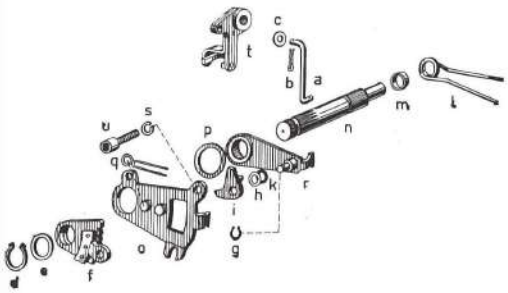
Gear Shift



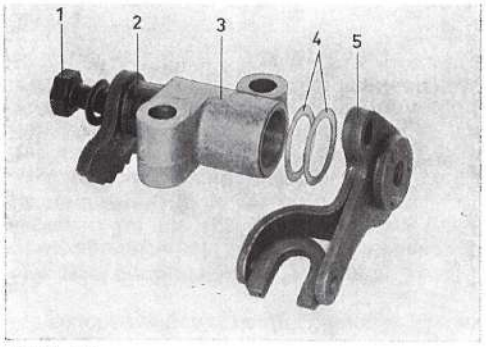
Pic.no	Orig.no.	NTS.no.	Description	Amount
1	0286 267 000	K-1203	Adjusting plate	1
2	0286 147 000		Pawl	1
3	0244 100		Washer	-
4	0945 105 000		Circlip 6mm	1
5	0239 100 300		Pawl spring	1
6	0245 023 002		Spring washer B6	3
7	0240 104 000		Fillister screw M6x14	3
8	0286 270 010		Transmission lever	1
9	0244 102		Washer	-
10	0245 104 000		Retaining ring 12mm	1
11	0244 054		Washer	-
12	0245 101 000		Fore lock	2
13	0271 105 000		Transmission rod	1
14	0290 111 000		Shifting fork with shoe	1
15	0316 057 002		Nut M6	1
16	0244 006		Washer	-
17	0229 000 000		Dowel sleeve 8,4x7,5mm	2
18	0211 116 100		Shifting cog bearing	1
19	0241 019 202		Screw M6x28	2
20	0286 269 000		Shifting cog	1
21	0644 012 000		Spring washer B6	1
22	0240 146 001		Screw M6x45	1



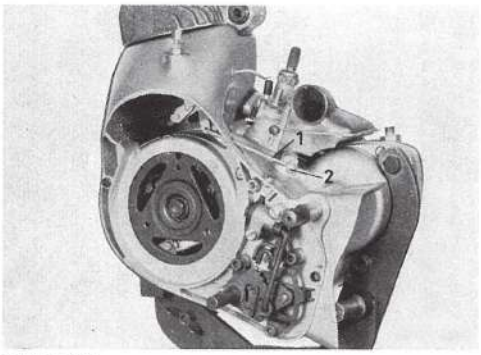
Bild/Fig. 51



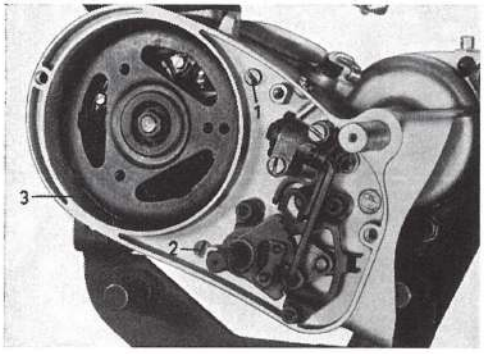
Bild/Fig. 52



Bild/Fig. 53



Bild/Fig. 81



Bild/Fig. 82

Assembly

The following text refers to Fig. 53.

Grease selector bolt (2) with high temperature grease, and insert into the selector bolt bearing (3). Apply shims (4), fit selector fork (5) and screw tight with hexagon head screw M 6 x 40 and spring washer or hexagon head screw M 6 x 45 and spring ring and screw on nut.

Axial play of the selector bolt = 0.1 mm.

The following text refers to Fig. 52.

Place check plate (p) – 0.8 mm thick – on the gearshift lever shaft (n) and put on adjusting plate (o) with pawl spring (q).

Place shim (k) – 0.3 mm thick – on the pin of arrester arm (r).

Install pawl (i) so that its pin lies between the two arms of the pawl spring.

Install shims (h) and cirplic (g).

Axial play of pawl = 0.1 mm.

Place link arm (f) on gearshift lever shaft (n), insert shims (e) up to lower edge of recess and fit circlip (d).

Axial play of the link arm = 0.1 mm.

Place the bush (m) on the gearshift lever shaft. Place straight arm of the return spring (l) against right side of the angled piece of the adjusting plates (o) and pull the offset arm of return spring over it and lodge into place.

Installation

The following text refers to Fig. 51.

Grease bush, compression spring and indexing pawl with high temperature grease, insert them into the spring cup and secure them.

Note:

Approx. every 3000 km, the indexing pawl should be lubricated by removing hexagon head screw (l) and applying 2 . . . 3 cc of high temperature grease with a grease gun.

Insert 2 dowel sleeves.

Insert the pre-assembled gear change assembly. Align longitudinal slots in the adjusting plate (f) with the thread bores and tighten with 3 hexagon socket head screws M 6 x 14 and spring rings.

Place the shifter rod (c) with its longer angled end in the gearshift fork (d) and with its shorter angled end in the link arm. Position washer and secure with cotter.

Fan cover

Insert the two dowel sleeves.

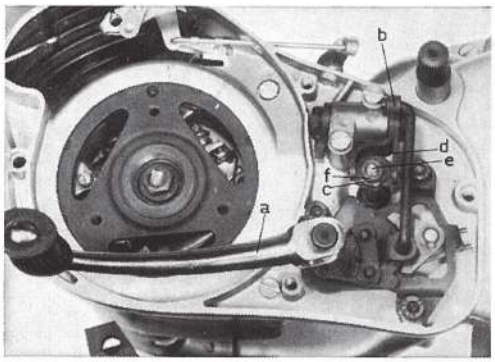
Place the fan cover with the gear shifting assembly in position and tighten with 1 each fillister head screw M 6 x 28 and M 6 x 22.

Insert clutch linkage (1) into the clutch lever (2).

Insert 2 dowel sleeve for version without fan.

Lubricate mating surfaces with sealing compound.

Place the intermediate housing (3) with the gear shifting assembly in position and tighten with 1 each fillister head screw (1) M 6 x 28 and M 6 x 22 (2).



Bild/Fig. 83

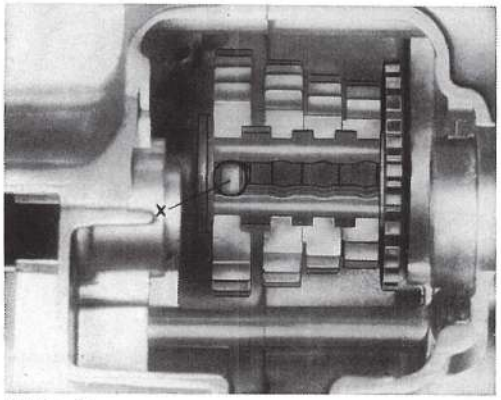
Adjusting the gear shift mechanism

Position shift pedal (a) temporarily and engage 1st gear.

Low gear is engaged by pushing the shift pedal downwards, 4th gear is engaged by pushing the pedal upwards.

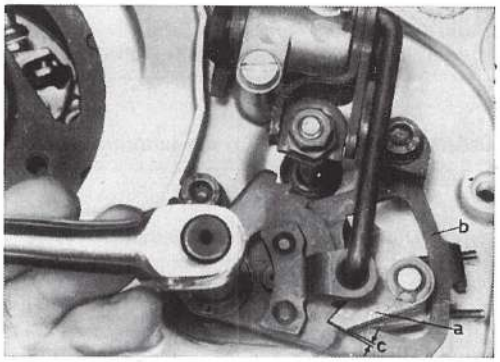
Insert the crown nut (c) with its thick collar pointing upwards into the shifter socket (d), and screw it on to the gearshift bar (e) while simultaneously pressing the shift pedal downwards until the gear-shift bar is drawn fully outwards.

Then turn back the crown nut (c) 8 edges, screw lock nut (f) on to the gearshift bar (e) and lock the crown nut.



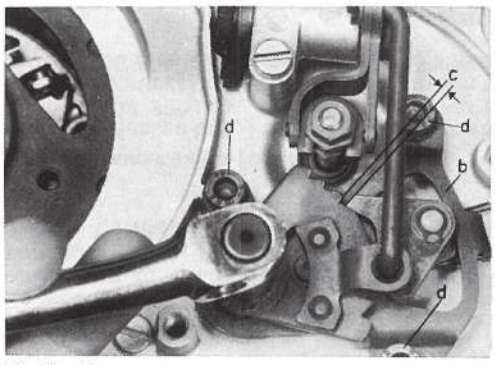
Bild/Fig. 84

In this position the gear shift cotter (x) lies in the 1st gear recess of the main shaft.



Bild/Fig. 85

Push shift pedal towards 2nd gear until the pawl (a) touches the teeth ot the transmission lever. Determine the play (c) between tooth profiles.



Bild/Fig. 86

Push shift pedal towards 1st gear, after having shifted into 2nd gear, until the pawl touches the teeth of the transmission lever. Determine the play (c) between the tooth profiles.

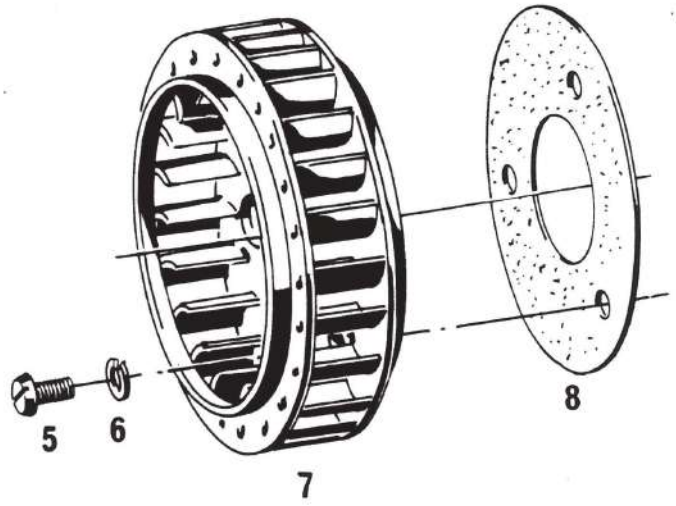
The play (c) between the tooth profiles should be equal on both sides.

If this is not the case, loosen the 3 hexagon socket head screws (d) and correct the play by swivelling the adjusting plate (b).

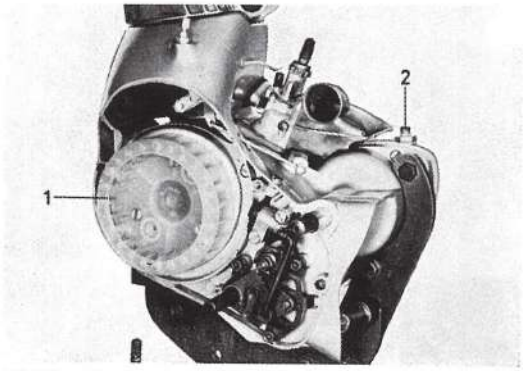
After having carried out the adjustment, retighten the 3 hexagon socket head screws (d).

Tightening torque 10 . . . 12 Nm (1 . . . 1,2 kpm)

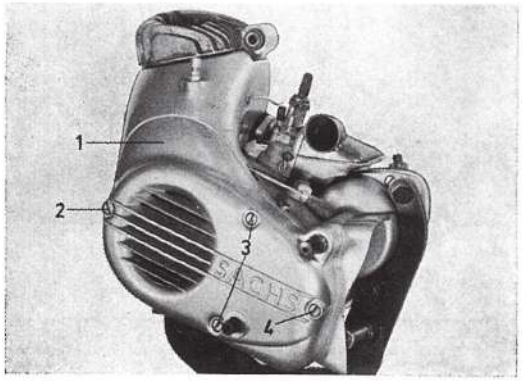
Remove shift pedal.



Pic.no	Orig.no.	NTS.no.	Description	Amount
5	0941 057 001	-	Screw M6x10 (See 25-16-207)	3
6	0245 023 002	-	Spring washer B6 (See 25-16-207)	3
7	0211 107 200	10-28-101	Fan (3 holes)	1
8	0250 102 000	12-33-101	Sealing disc (3 holes)	1



Bild/Fig. 90



Bild/Fig. 91

Fan and cover

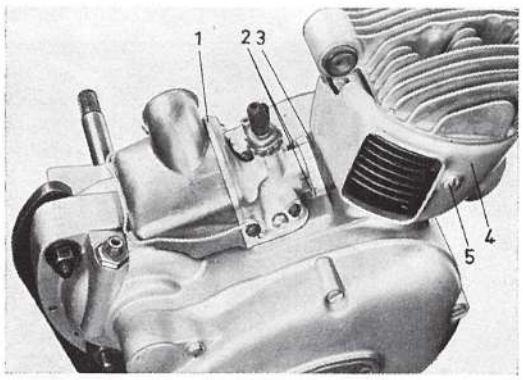
Insert packing washer and fan (1) and tighten with 3 fillister head screws M 6 x 10 with spring rings.

Tightening torque 6 . . . 8 Nm (0.6 . . . 0.8 kpm).

Insert 2 dowel sleeves for version without fan, lubricate the mating surface with sealing compound and tighten cover (3) with 1 fillister head screw (4) M 6 x 65, 2 fillister head screws (1) M 6 x 42 and 1 fillister head screw (2) M 6 x 38.

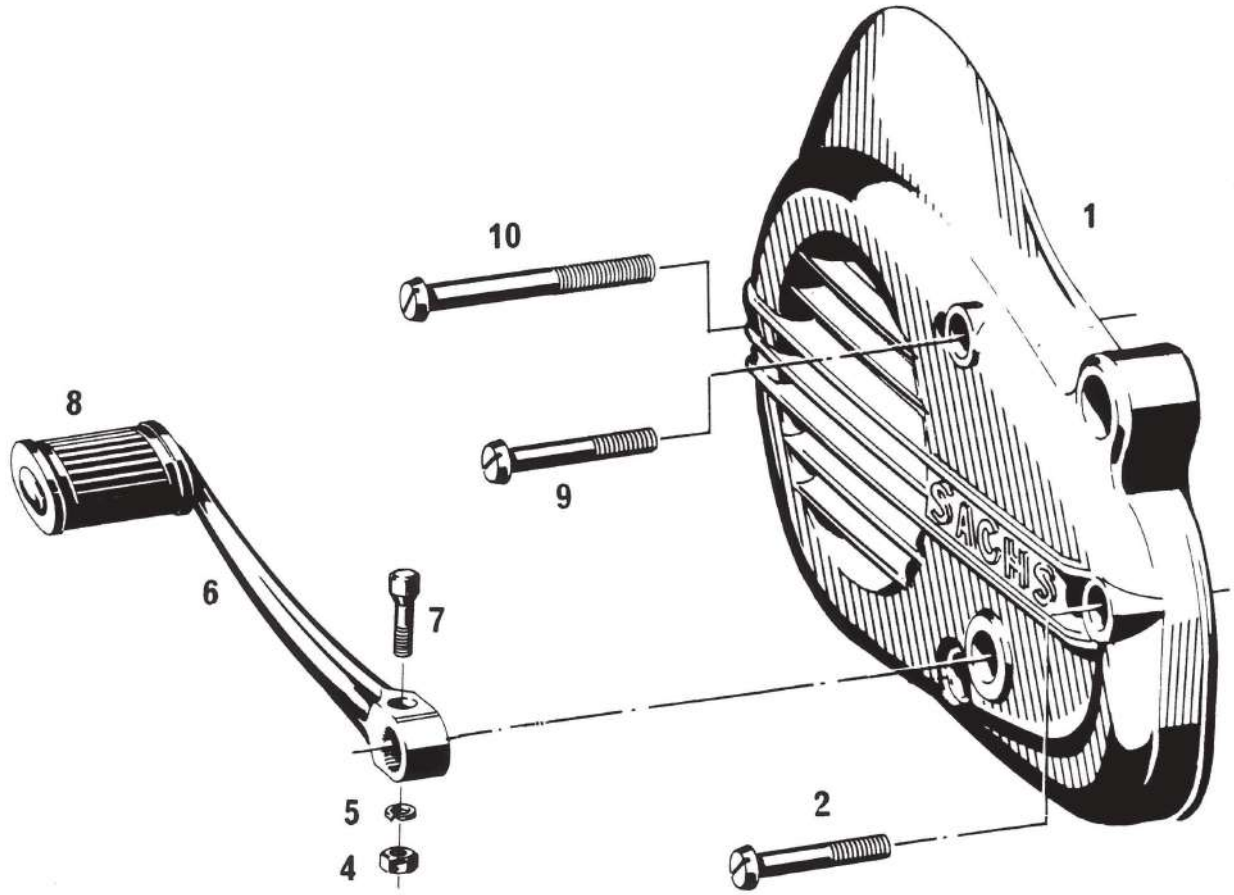
Deflector cap

Tighten the deflector cap (4, Fig. 6) to the cylinder by means of a lens head screw (5, Fig. 6) M 6 x 15.

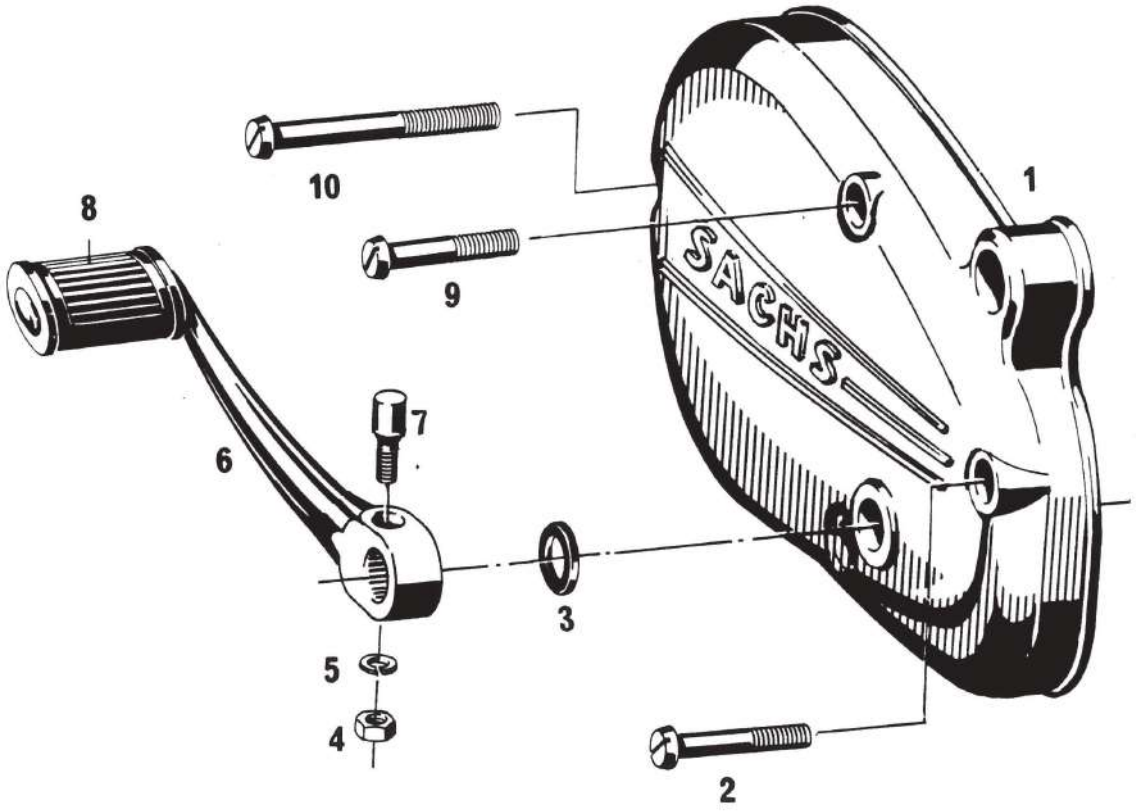


Bild/Fig. 6

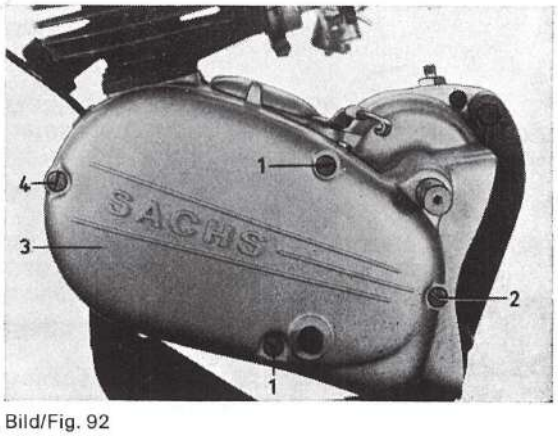
Cover for fan housing



Pic.no	Orig.no.	NTS.no.	Description	Amount
1	0211 117 101	10-36-102	Fan cover	1
2	0241 040 001	-	Screw M6x38 (See 25-16-207)	1
4-5, 7	0242 024 104 0245 023 001 0240 103 000	01-11-702	Clamping screw	1
6 & 8	0248 119 000 0660 000 000	01-14-102	Gear change pedal with rubber	1
9	0941 066 101	-	Screw M6x42 (See 25-16-207)	2
10	0640 011 102	-	Screw M6x65 (See 25-16-207)	1



Pic.no	Orig.no.	NTS.no.	Description	Amount
1	0211 148 000	12-43-201	Cover	1
2	0241 040 001	-	Screw M6x38 (See 25-16-207)	1
4-5, 7	0242 024 104 0245 023 001 0240 103 000	01-11-702	Clamping screw compl.	1
6 & 8	0248 119 000 0660 000 000	01-14-102	Gear change pedal with rubber	1
9	0941 066 101	-	Screw M6x42 (See 25-16-207)	2
10	0640 011 102	-	Screw M6x65 (See 25-16-207)	1



Bild/Fig. 92

Insert 2 dowel sleeves for version without fan, lubricate the mating surface with sealing compound and tighten cover (3) with 1 fillister head screw (4) M 6 x 65, 2 fillister head screws (1) M 6 x 42 and 1 fillister head screw (2) M 6 x 38.

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Go Your Own Way – together with us