Figure 1-9: The generator side of the crankshaft

is already here by the meshing of
of the pinion when starting process caused
gently wear on the front edges
th of the teeth. With the 2-position on
Figure 1-11 of the pinion of the primary
drive and with the item 3 of Antriebsrit-
zel shown the oil pump. Figure
1-10 shows the running as a ball bearing
right main bearing crankshaft with
a retaining ring for the axial fixation
tion in the housing (item 4).

The connecting rod bearings (Figure 1-12 and the
pos
7 and 8 on Figure 1-5) are as Na-
dellager with thrust washers between
the side surfaces of the connecting rod and the
Flywheels running. The connecting rod
eye (Figure 1-13) is not a se-
preparations bearing i.e. the piston pin is
directly stored in the connecting rod.

Other versions of crankshaft
and wear limits, and the description
ambient measurements, can be found on the

Figure 1-10: Output side of the crankshaft
with right main bearing

Figure 1-11: Output side of the crankshaft primary gear

Figure 1-12: Connecting rod bearings

Figure 1-13: Connecting rod

Pages 153 to 156 in the original factory-service manual.

In the Figure 1-14, the piston with two compression rings and an-NEM oil ring to see. Figure 1-15 shows the removed piston rings (compressions, medium-and oil control).

The cylinders are made of an aluminum miniumgehäuse, in the run-cast iron bushings are pressed. At ex-Figure 1-18 on the right is a piston ring inserted into a sleeve. By the an arrow mark pointed up the gap may on the one side 139 of the original Workshop manual described in more detail nes measure does not exceed. When a determined to large degree, they must the pistons and liners, as in the ori-inal Workshop Manual describes measured and excessive Ver-wear are revised. The through-diameter of the liner is then an in-repair heated motors operating on The next largest increases after grind and larger pistons with new, this pas-Send piston rings installed.

With the dismantling of Piston, only the per-because external backup ring to be removed the piston pin and verify the . hen A retaining ring, the ever-mon benefits was should wherever possible with-sensitivity to be replaced.

Figure 1-14: Piston with piston pin and snap ring inserted

Figure 1-15: Piston Rings

The upper compression ring is flat and narrow- faster than the lower. In the vicinity of the impact of Letter "B" imprinted top of the mark- draws. In addition, it contains a characteristic- drawing in the form of a two-digit Ziffernkom combination. The numbers show the first 25 after gr of 75.25 mm. In Figures 1-16 and 1-17 are the piston ring and piston rings GE documented in detail. The upper ring on the Figure 1-17 is flatter and the cross section narrow ring of the upper piston ring GE- listens.

Further information can be found on the piston on pages 130 to 137 of the original work- Workshop Manual.

Figure 1-16: Piston ring

Figure 1-17: Identification of piston rings

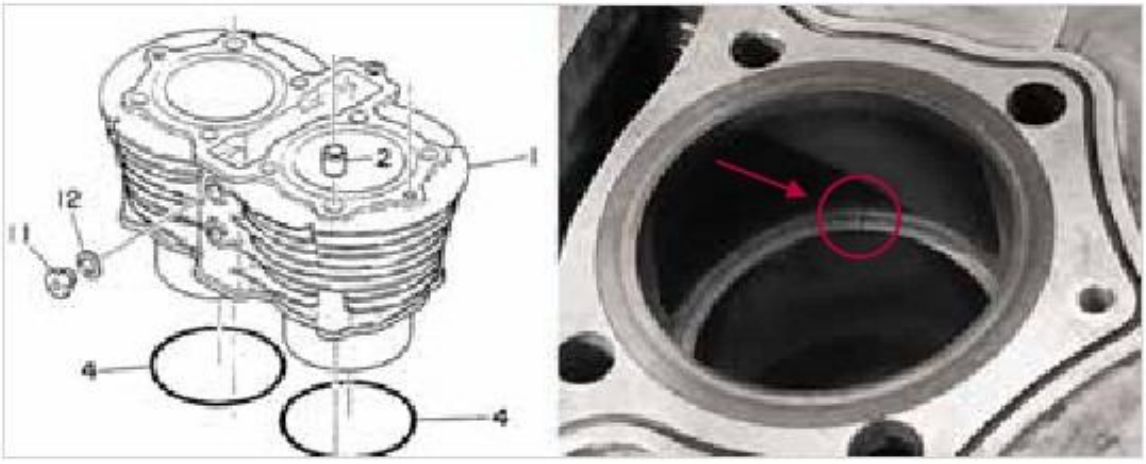

Figure 1-18: Cylinder

1.1.2 TIMING CHAIN, CAMSHAFT

The Figure 1-19 shows the timing chain with its clamping mechanism and the Camshaft. The timing chain is a endless roller chain used in the assembly was riveted at the factory. A clamping device (fig. 1-20 and 1-21), it is necessary because the operation of a certain Preload the necessary timing chain dig, and the chain over the Time elongates wear. Out and is biased by the timing chain two clamps, one of which pre- more (item 25 on the Figure 1-19) with fixed the cylinder housing is screwed. The fitting of the front clamping rail is the key 26 and 27 Figure 1-19 shows the set. The to- further clamping rail with its lower End rotation in the upper part of the motor- supported housing. The pivot point is on Figures 1-20 and 1-21, the Clamps in the form of a graph and a photo exhibit by Pfeilmarkie- demonstrated changes. Both clamps are made of aluminum, which with an overlay for the timing chain from Plastic is occupied. The rotatably loaded siege tensioning rail has on the back a formation in which the Spannme- mechanism, as shown on the Figure 1-22 played, intervenes. This clamping mechanism consists of a housing seteil with internal thread that has six M 6 bolts to the cylinder housing is connected.

The actual clamping element is from a hollowed-out bolt with Male thread and a hex on one end (item 1 on the Figure 1-22), with the internal thread in the housing has been fitted. The thread is for adjusting the tension of the tax erkette. Is in a stretched state, the Timing chain by a compression spring (item 2 charged in Figure 1-22).

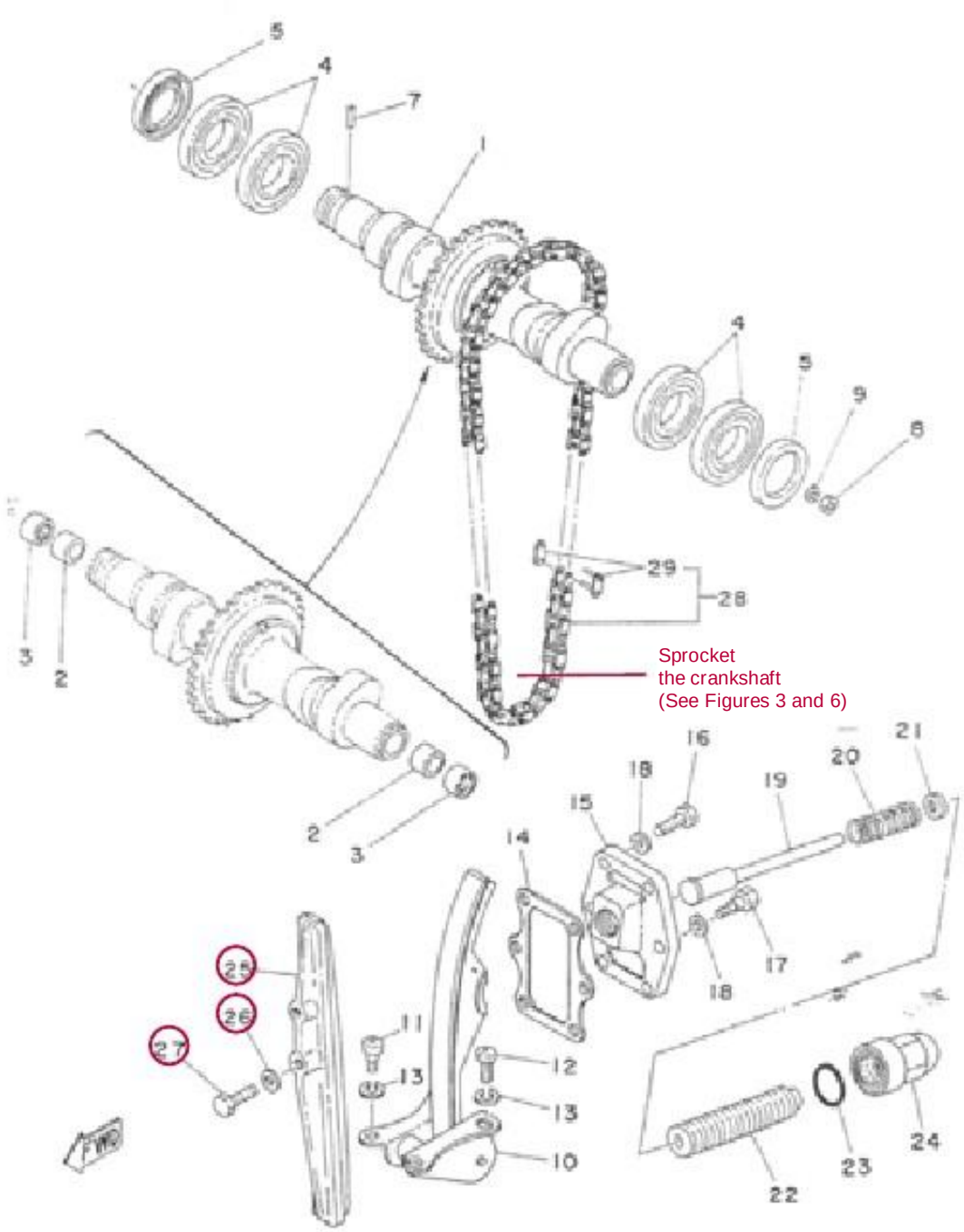

Figure 1-19: Camshaft and timing chain

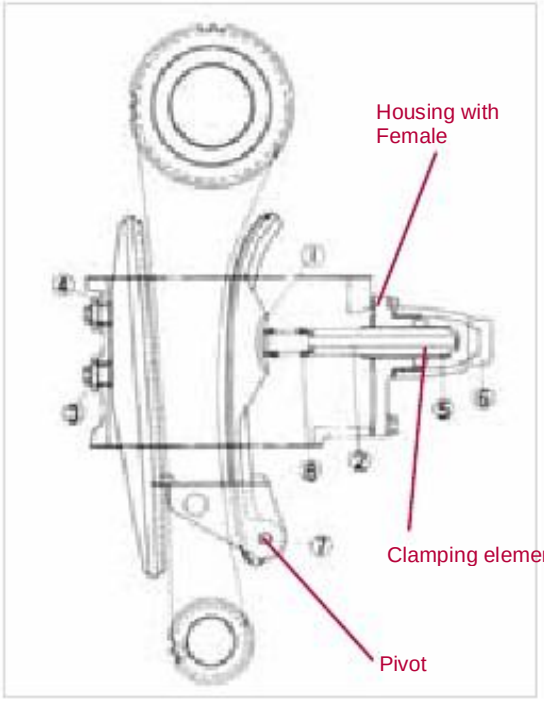

Figure 1-20: The timing chain tensioning mechanism

Figure 1-21: Timing chain tensioning rail

It transfers its power in a
the hollowed bolt mounted
Pin (item 3 on Figure 1-22) with a mushroom-
shaped formation at the end, which
in a corresponding shaping of the
rear-mounted rotatably Steuerket
tenspannschiene intervenes. Between the
Spring and the bolt hole drilled
There is a rubber-coated
Washer (Item 4 on Figure 1-22), which prevent
countries is that of the control chain
induced noise on the housing
be transferred. This disc can
be omitted, or is possibly
no longer exists. A one-
provide the control voltage according to
Kattenberg
described in the Workshop Manual
is then no longer possible.

A preload of the timing chain is
necessary because the crankshaft, and in
particularly at low speeds,
not a constant speed
turns, which in the unstrained chain
Hitting the chain leads. A too tight
stretched timing chain, but leads to
excessive wear on the Steuerket-
tenspannschienen and the timing chain
itself as a reference value for the voltage
the timing chain is in original factory-
described service manual for the pin
(Item 3) is flush with the hexagon of
Bolt to finish. Since the Fe-
the (item 2), however, sets the time, can
be the only one reference value. Is better
it, the timing chain by screwing
to tighten the bolt, while
simultaneously with the fingertip

End of the stylus touches. If the pin still pulsates slightly, the timing chain correctly tensioned. You should be here absolutely rely on his instincts.
As for the counter-attack the pin, There are various types of Clamping mechanism, the func-onsweise but the same.

There are valve actuators with a translation tion of 17 to 34 teeth and those with a ratio of 18 to 36 teeth , NEN with translation 18 to 36 Teeth with model year 1974 (TX 650 A was introduced). To the individual have three different versions belonging to chains different divisions, so that a Interchange is not possible.

The driven via the timing chain overhead camshaft four-fold in ball bearings mounted in the cylinder head. The cylinder head consists of a Upper and a lower part. In the lower part the cylinder head are the Valves and the bottom half of the camp-seat of the camshaft bearings. In the upper Are part of the rocker shaft with the rocker arms and the upper half-te of the bearing seat of Nockenwellenla-ger. In the Figure 1-23, is based a cutaway model of the motor in the Middle of the timing chain on the sprocket the camshaft to be seen. Right and left of this is seen in about the middle image of the cams of the camshaft with the ends of the rocker and soft-ter below the rear rocker shafts. Below the picture are the valve plate, the Valve springs and the other ends of the With the rocker-Ventilspieleinstell to see the screws. In the upper part of the Picture you see the connection of oil riser for supplying lubrication make the valve train.

The camshaft (fig. 1-24) is a GE-forged hollow shaft running. To Recording of the as-groove ball bearings Camshaft bearings are guided her The cylindrical shape.

Are respectively located further inside the Cams for operating the on and off-exhaust valves of the right and left-Zy cylinder. In the middle is the sprocket the timing chain is shrunk. On the right there is a thread for inclusion of the governor of Ignition, a hohlge-in drilled camshaft guided wave with the base plate of the contact set

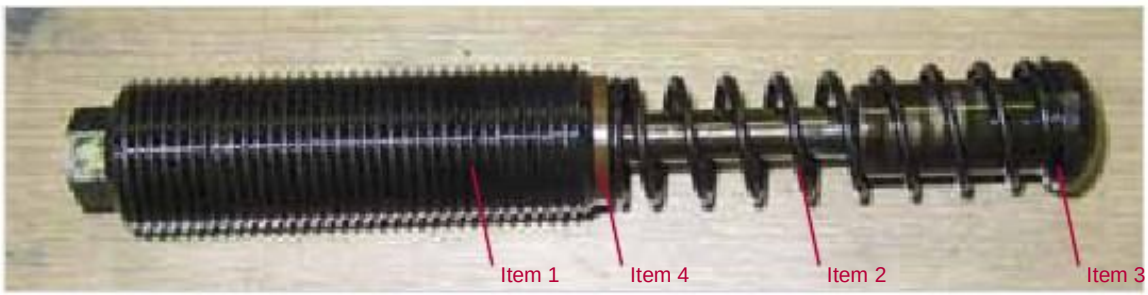

Figure 1-22: Clamping mechanism

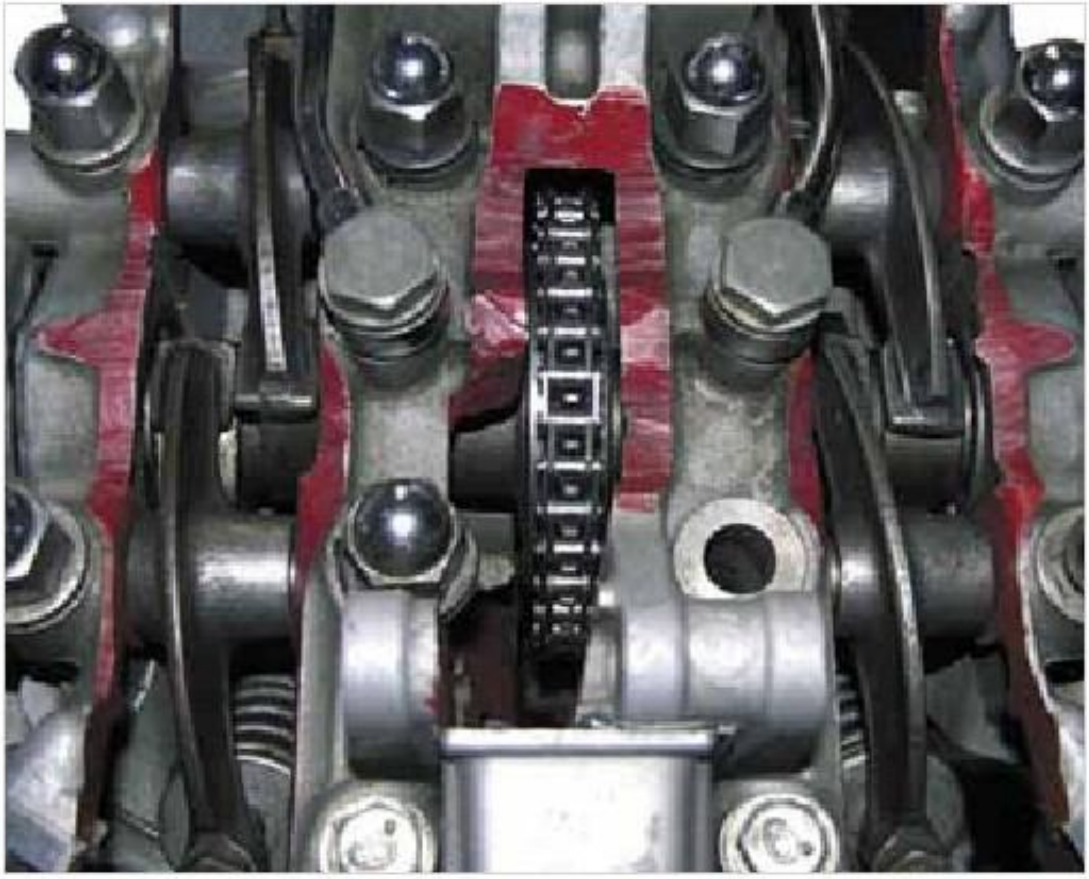

Figure 1-23: Camshaft and valve train valves

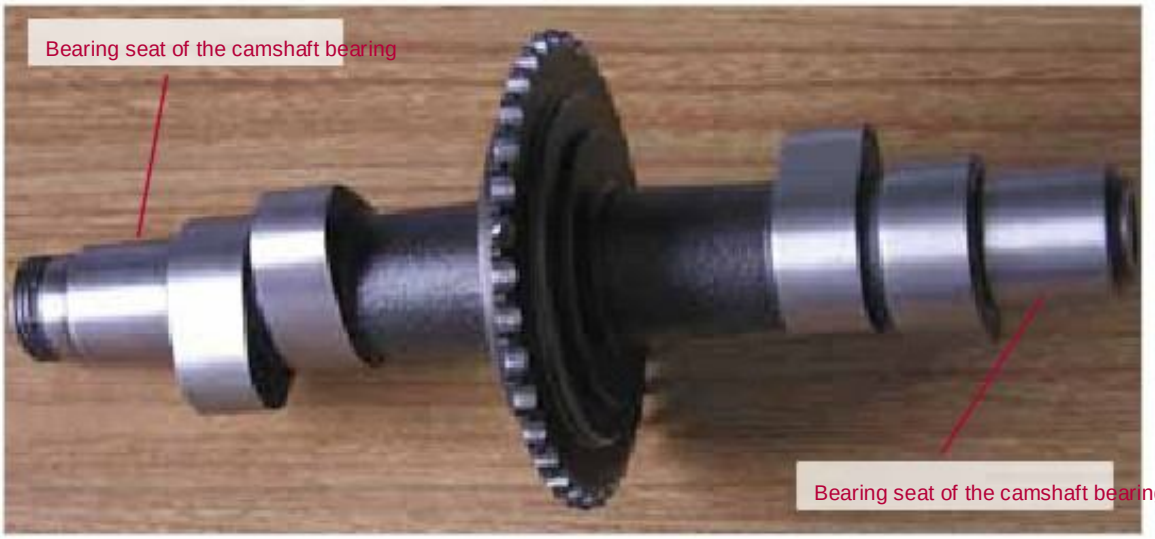

Figure 1-24: Camshaft

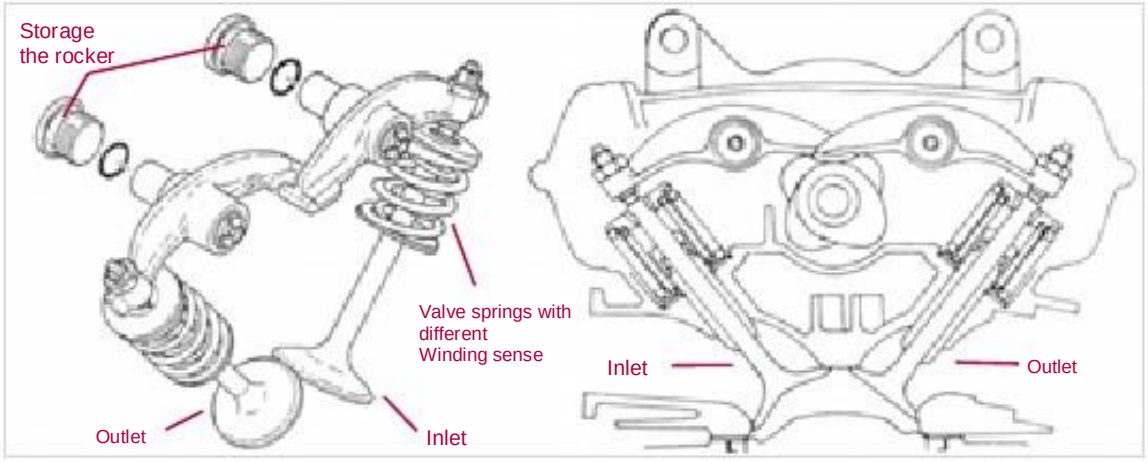

Figure 1-25: Valvetrain

in housing on the left side of the Cylinder head is connected. More Information to the camshaft is one on pages 105-109 in the originalen Workshop Manual.

1.1.3 VALVE TRAIN

The valves are at an angle approximately 80 ° hanging in the cylinder head arranged net. The larger intake valve has a Diameter of 41 mm, while the Exhaust valve diameter Is 36 mm. Each valve are two as spiralf octahedra running springs agoseen the opposite with each other in directed winding sense installed are. Located under the valve springs a steel plate, a familiarization th of the valve springs in the aluminum prevents the cylinder head. At the upper Ren one end by the valves Valve plate with GE typical valve wedges . keep The Figure 1-25 shows the val-

Figure 1-26: Storage of the rocker shaft

Figure 1-27: Valve springs

tile along with the rocker arms and
the rocker shafts.

The bearing of the rocker arms in the upper part
the cylinder head is in the picture
1-26 shown by circles.

The Figure 1-27 shows the two
Valve springs per valve with its under-
differently wound coils, so-
as the valve by the valve wedges
left and right image in a pane,
an incorporation of the valve springs
the material of the aluminum cylinder
preventing head. In the picture
1-28, the various sizes
valves - above the smaller exhaust valve
and below the larger intake valve - to
. see Right next to Figure 1-29
shows an assembled valve with valve plate unit
faster and the valve collars.

On Figure 1-30 is a rocker
with a Ventileinstellschraube in
Shown from the top and side view.

Figure 1-28: Valves

Figure 1-29: Valve plate valve wedges

Figure 1-30: Rocker with Ventileinstellschraube

There are different types of input , adjusting screws with square or in- hexagon socket, the forth of the function However, the same.

The views in the upper and lower part the cylinder head are on the Figure tions 1-31 and 1-32 playing. Figure 1-31 shows the lower part of the Cylinder head with still mounted Camshaft and valves, with the Timing chain is already open. Right beside it, on the Figure 1-32, is the Upper part of the cylinder head with the La- gersitzen the camshaft bearings and the rocker arms shown.

Figure 1-33 shows the left using a Cutaway model of the front left valve tildeckels the upper part of a valve (Ven- tilteller) and the end of a rocker arm with the adjustment screw to adjust the valve clearance.

Figure 1-31: View of the lower part of the cylinder head

Figure 1-32: View in the upper part of the cylinder head

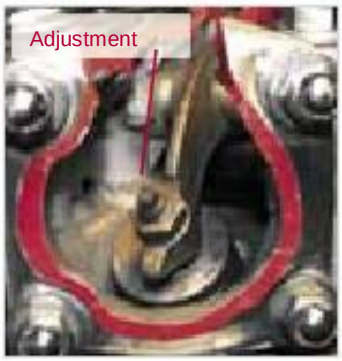

Figure 1-33: Insight into the left Auslaßventilgehäuse

1.2 POWER ON-ORDERED

The rotation of the crankshaft is on the primary drive, clutch, Gearbox and chain drive to the Rear transfer. In the following, who- the components to the chain sprocket Drive chain described.

1.2.1 PRIMARY DRIVE

The primary drive consists of geradver- toothed spur gears, of which the small nere with 27 teeth with a spline fit (Fig. 1-10 and 1-11) on the right Crankshaft stub is attached, the larger with 72 teeth on the back side of the clutch basket loaded rotatable gert's. The smaller gear of the Primary drive to the larger transmitted Torque is about 6 in peripheral direction-arranged Ruckdämpferfe countries (Figure 1-37 and 1-38) on the coupling ment transfer basket.

1.2.2 CLUTCH

The coupling consists of an outer in part, the clutch basket, the six circumferentially arranged jerk torsion damper spring with the big- must spur connected the primary drive is. Is on the transmission input shaft of the

Figure 1-34: Primary drive

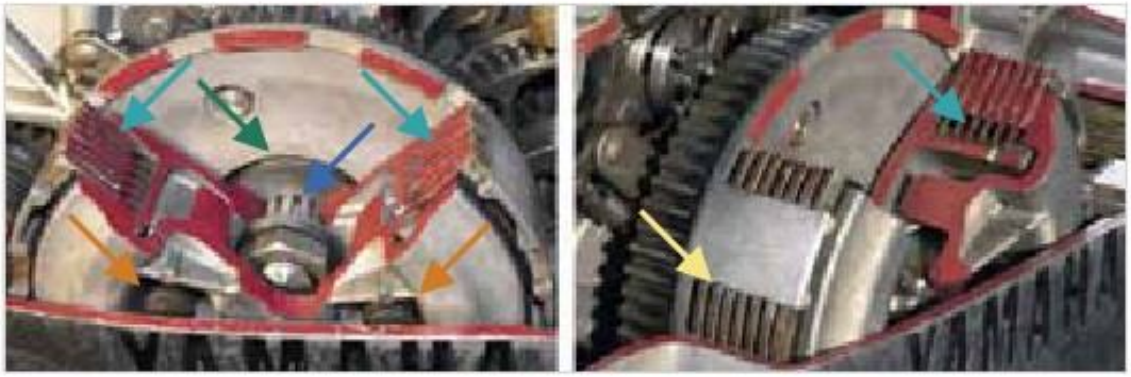

Figure 1-35: Coupling

Clutch basket by a brass
bushing rotatably mounted.

The inner part of the coupling with the
Transmission input shaft with an Au-
toothing is provided on the
Internal teeth of the inner part are
rotatably connected. In the outer part, the
Clutch basket, is the inner part with
a radial bearing rotatably mounted. The
blue arrow on the Figure 1-35 shows
the gearing of the transmission input
wave and the green arrow shows the outer
re of the radial bearing thrust washer.

There are couplings with 6 and 7 friction
, the discs of the function and
its construction, however, are the same. The
Friction of the clutch engage with
circumferentially disposed outside spigot
corresponding column in the clutch
cally in (yellow arrow in Figure 1-35).
Are between the friction plate
washers with internal teeth to-
arranged in the outer teeth
the inner part of the clutch engaged
(Turquoise arrows in Figure 1-35).
The power circuit is made by
the clutch springs (orangefar-
bene arrows on fig 1-35), the friction
and the metal discs discs together
. menpressen

The individual parts of the clutch are at-
hand of an exploded view of the
Parts list on the Figure 1-36
played back. An explosion in this
onszeichnung missing thrust washer
Figures 1-38 and is on an in-
Ner chart on page 100 reproduced.

Figure 1-37 shows the rear of the-
te with the clutch basket in the
Circumferentially arranged jerk
and the brass bush damper springs,
with the rotation of the clutch basket on
the transmission input shaft is mounted.

The Figure 1-37 to be seen on the
Tin plate with recesses for
arranged in the circumferential direction
Damper springs by means of the three
sighted in the image to rivet firmly attached to the
outer clutch hub connected.
Between the plate washer and the
the outer clutch basket can be rotated
The primary drive gear mounted.

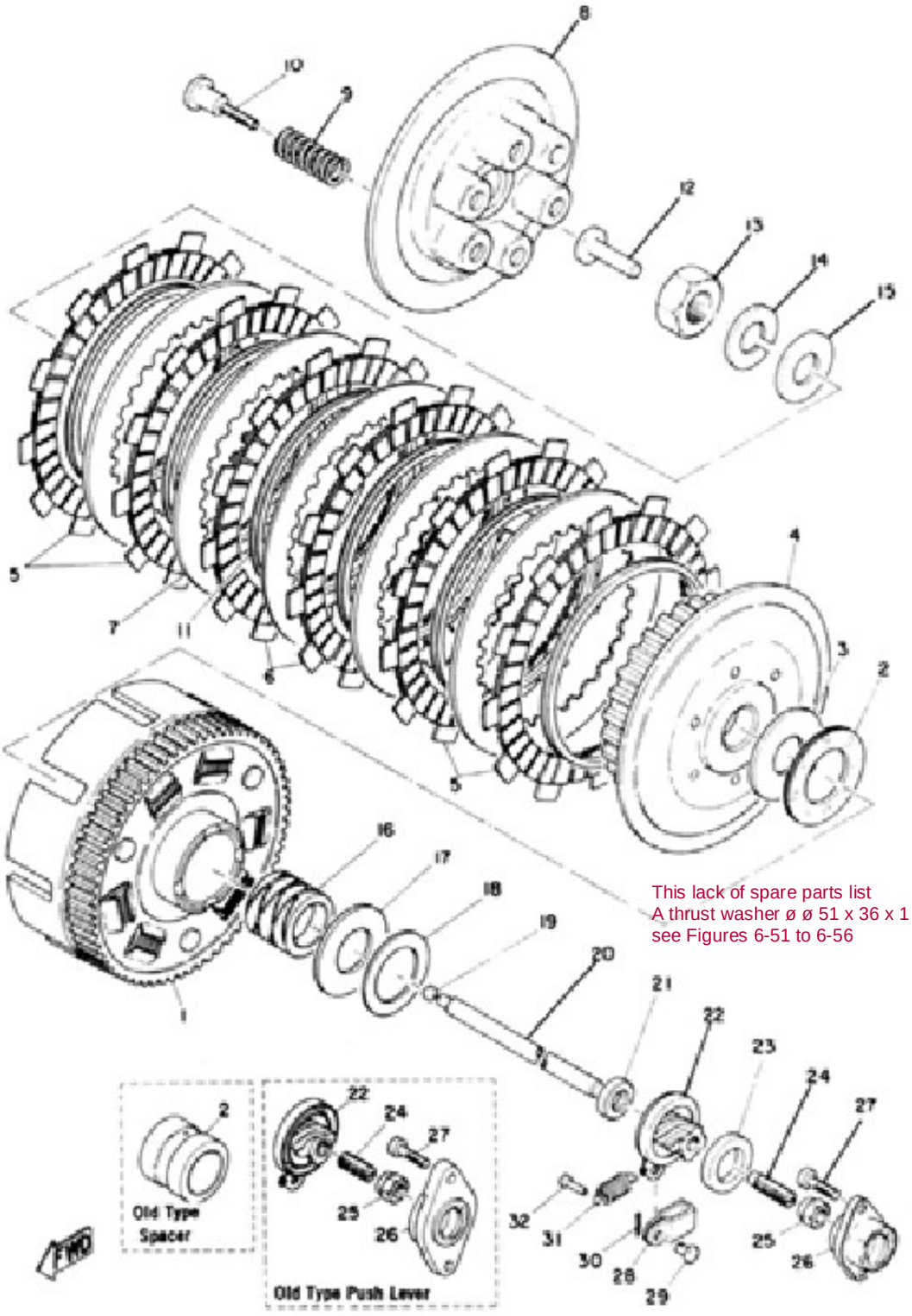

Figure 1-36: Coupling

Looking at the front end of a spring, then find the upper third of the Damper spring in the recess on Figure 1-37 to the sighted Plate glass. The middle third of Damper spring from a right-square cutout in the face of the The primary drive gear umschlos-. sen The lower third of Ruckdämp-ferfeder is then returned to a corresponding recess of the outer clutch basket.

Figure 1-38 is on the func-of operation of the clutch based on a Section drawing explained. The front faces te a shock absorber spring and its above-described arrangement is by a red paint mark highlighted . ben

The up-through blue color marking showed clutch basket by the Driven primary drive. Which also blue are the friction Clutch rotate together with the clutch basket. The inner part of the Coupling (yellow paint) is determined marked with orange Transmission input shaft.

Separately, the coupling by the Clutch push rod (light green color mark), located within the hollow-transmission input shaft drilled-being det, from left to right towards the yellow marked inner part of the coup-ment and thereby pushes the clutch compression springs and spans the same Pressure between the friction and picks up the sheet metal plates so that the clutch basket to the Can turn the inside of the clutch.

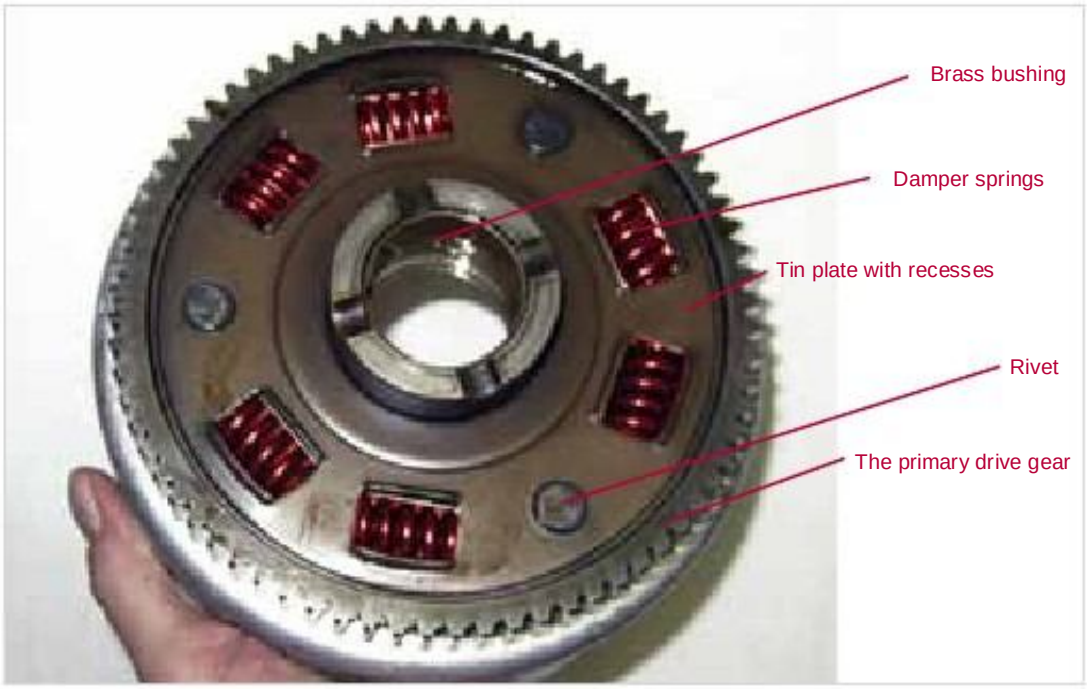

Figure 1-37: Outer clutch basket with 6 shock absorber springs

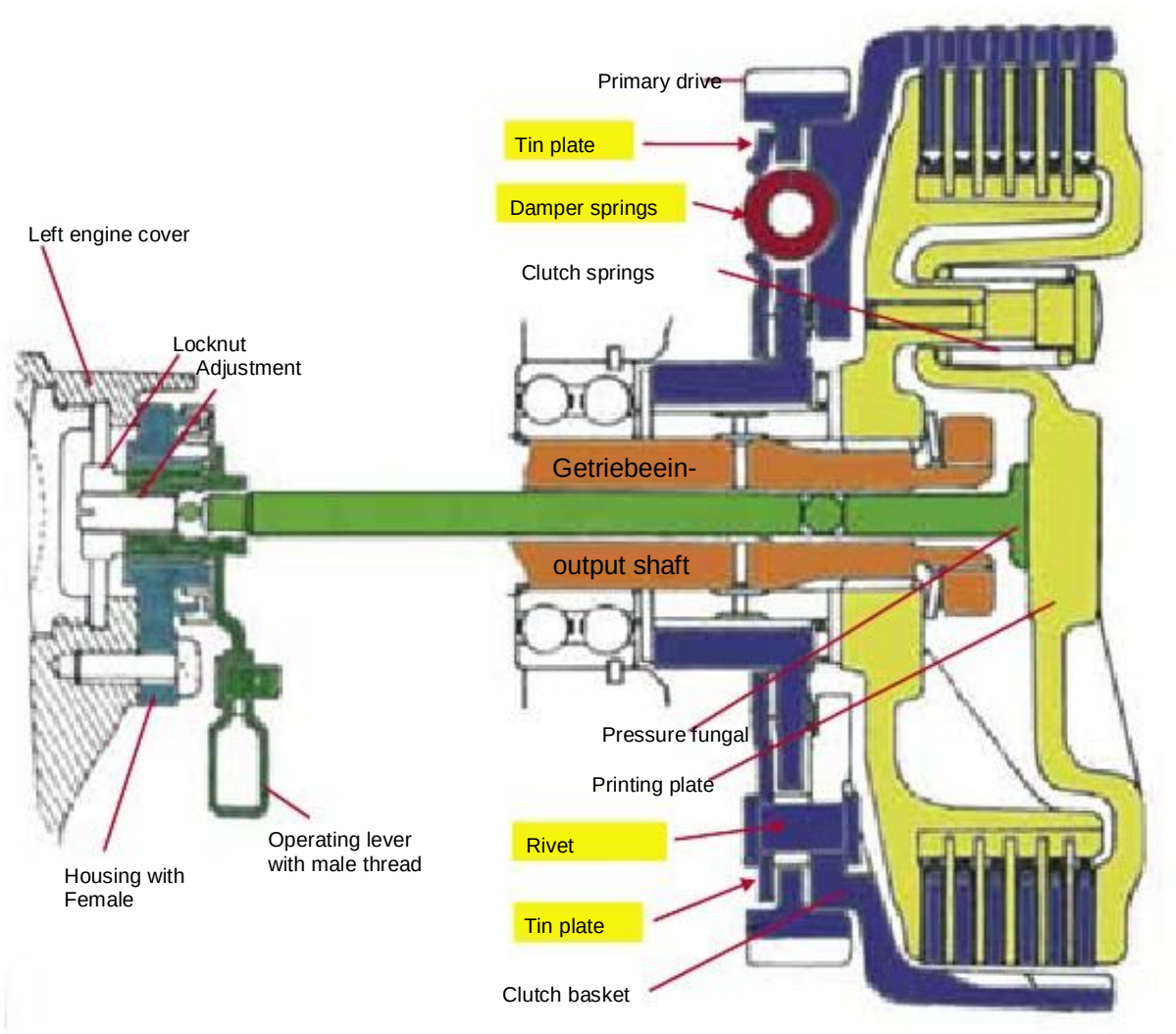

Figure 1-38: Clutch operation

1.2.3 CLUTCH CONTROL

With the hand lever on the left handlebar end is one of a Bowden cable Lever behind the left side of engine-nickel (Figure 1-39) twisted. A thread Long lead (red-Pfeilmarkie tion on the Figure 1-40) turns on actuation of the clutch lever in a parent thread, which in the lin-ken side engine cover is mounted (green-ne arrow mark). The blue arrow on Figure 1-39 shows the storage the clutch push rod in the lock-out mechanism.

Since the clutch push rod one fixed part (Ausrückmechanis-mus) is a rotating part (Print fungus) are connected between the pressure and the mushroom-Ausrückme mechanism as well as between the parts the clutch push rod balls in-assigns, the end faces of the rods point-like touch.

Some drivers will of the two-part celled clutch push rod against a one-piece replaced, so that one find one of two variants may, if one uses on a GE bought motor works. When the clutch ment does not separate properly, it is often a Bowden cable or sluggishness to an incorrect setting of the win-in Article between Bowden and the Lever of the release mechanism. Since the Force to disengage the clutch increasing road will also be greater, , the translation between the Hand lever and the Ausrückmechanis-mechanism with increasing path of the hand-lever "favorable" and are in very be drawn on the best hand lever. This is achieved when the angle between between Bowden and lever off back mechanism at all drawn Lever on the handlebars about 90 °.

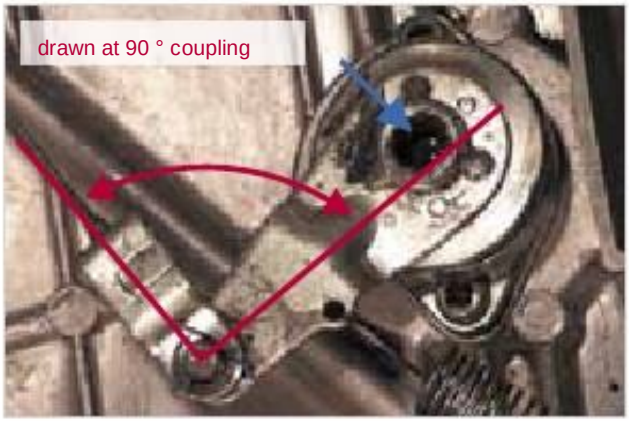

Figure 1-39: Disengaging the clutch in the built-in State

Figure 1-40: Disengaging the clutch in the dismantled State