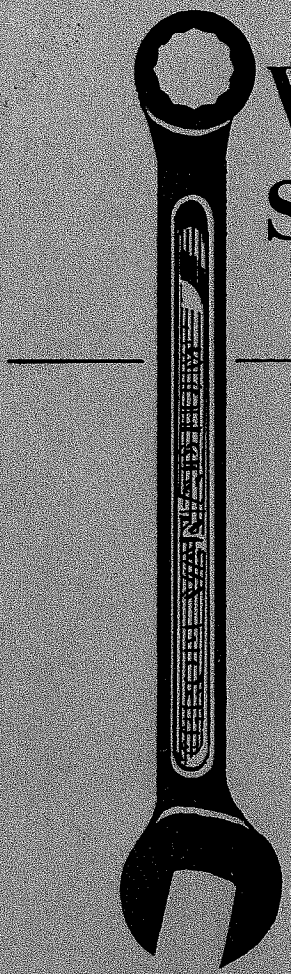
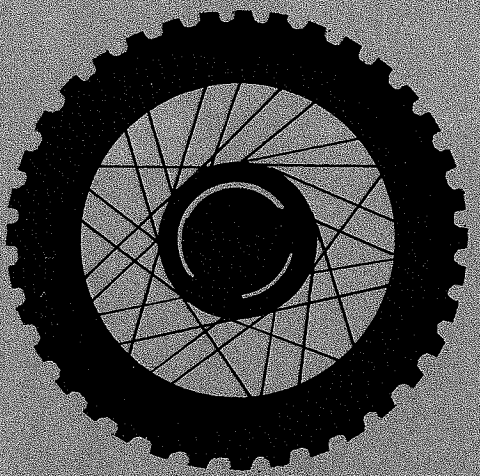
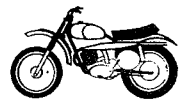
Workshop Service Manual





Husqvarna

Husqvarna Vapenfabriks Aktiebolag · Huskvarna



Instruktion - Servicepärm

Vår servicepärm har ett register från 0 - 9. Varje servicemeddelande ska sättas in under den flik som anges längst ner till höger på arket. Se bild 1. Detta är nödvändigt för att man ska kunna hålla isär avsnitten.

EXEMPEL:

Du reparerar elsystemet och vill se på ett kopplingsschema. Gå då tillväga på följande sätt:

1. Slå upp försättsbladet och leta upp "Electrical system" och avläs där fliknumret, i detta fallet flik 4. Se bild 2.
2. Slå upp flik 4 och leta där upp kopplingsschemat.

Flik nr 8 saknar rubricering, därför kommer vi aldrig att distribuera servicemedmedlande, avsedda att sättas in här.

Denna flik kan i stället användas för mera privat bruk.

Instructions - service binder

Our service binder features an index numbered from 0 to 9. Insert each service bulletin under the tab indicated in the bottom right-hand corner of the page. See Fig. 1. This is necessary in order to keep the different sections separate.

EXAMPLE:

You are engaged in repairing an electrical system and wish to consult the wiring diagram. Proceed as follows:

1. Turn to the index sheet, look for "Electrical systems" and read off the tab number against this entry - in this case tab number 4. See Fig. 2.
2. Open the binder at tab 4 and look for your wiring diagram in this section.

Tab number 8 has no index entry as we do not intend to issue service bulletins for insertion here.

Instead, you may file your own personal and private papers under this tab.

Anweisungen für die Service-Mappe

Unsere Service-Mappe hat ein Register von 0 - 9. Jedes Rundschreiben ist in die Mappe einzuheften, und die Reihenfolge geht aus der Nummer ganz unten rechts dieses Schreibens hervor. Siehe Abb. 1. Auf diese Art können Sie die verschiedenen Abschnitte leichter auseinanderhalten.

BEISPIEL:

Sie reparieren die elektrische Anlage und möchten gern den Schaltplan zur Hand haben:

1. Schlagen Sie das Registerblatt auf und suchen Sie die „Elektrische Anlage". Dort steht die Abschnitt-Nummer, in diesem Falle 4. Siehe Abb. 2.
2. Schlagen Sie den Abschnitt 4 auf, und dort finden Sie den Schaltplan.

Abschnitt 8 hat keine Überschrift, und hier werden auch keine Rundschreiben eingeheftet. Dieser Abschnitt ist statt dessen für Ihre persönlichen Notizen vorgesehen.

10 17 050-97

2. 2-71

To be inserted under tab.nr	
Register	0
Index	

Instruction - Classeur de Service

Notre classeur de Service comporte un registre numéroté de 0 à 9. Chaque Note de Service doit être classée dans la section dont le numéro est indiqué à l´angle droit inférieur de la Note, voir figure 1. Cette classification est absolument nécessaire, si l´on veut bien distinguer les différentes sections les unes des autres.

EXEMPLE:

Vous faites des réparations sur le système électrique et avez besoin de regarder un schéma de câblage. Procédez de la façon suivante:

1. Prenez la feuille de garde, repérez l´indice "Système électrique" et notez le numéro de la section qui, en l´occurence, est le No 4, voir figure 2.
2. Ouvrez la section 4 et cherchez-y le schéma de câblage.

La section 8 n´a pas de titre, donc aucune Note de Service ne sera envoyée pour être classée dans cette section.

Vous pouvez réserver cette section pour vos notes personnelles.

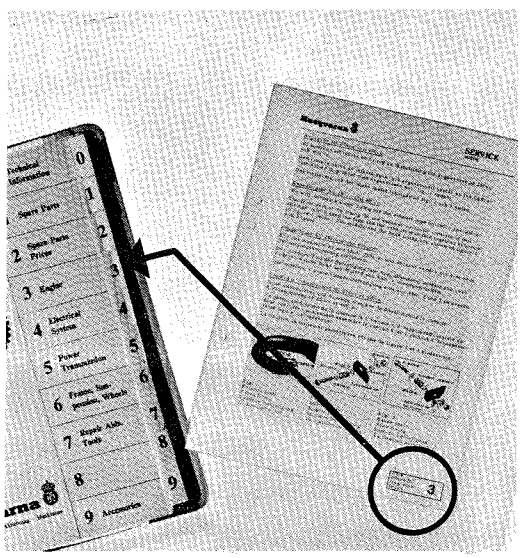


Fig. 1

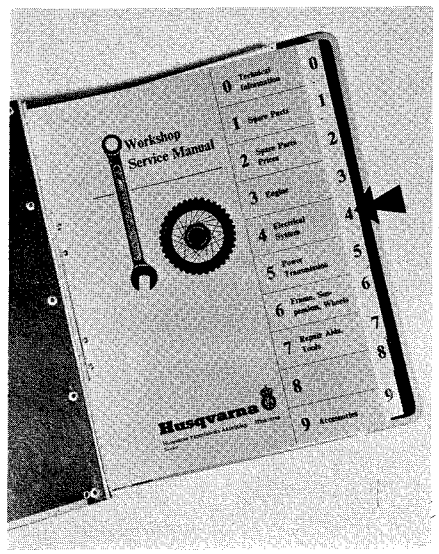
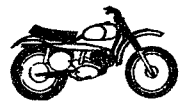


Fig. 2

Instructions for applying chemical aids when fitting certain joints on MH and SH.

Description	Part number	Action	Applicable for	
			MH	SH
Screws for air filter connection	20 06 371-12	Locked with locking fluid	x	x
Valve body on fork legs	15 12 153-01	Locked with locking fluid	x	x
Bottom piece on fork legs	15 12 104-01	Sealed with gasket cement	x	x
Scraper sleeve on front fork	15 12 151-01	Filled with graphite grease	x	x
Fork legs of front fork		Filled with 200 cc (12 cu.in.) SAE 20/20 W	x	x
Ball bearings on hubs		Lubricated with ball bearing grease	x	x
Brake cams on front and rear hubs		Lubricated with graphite grease	x	x
Footbrake pedal		Lubricated with graphite grease	x	x
Exhaust system		Sealed at expansion sleeve and tailpipe with heat-resistant sealing compound		x
Front hub spindle (nut)	15 16 077-01	Locked with locking fluid	x	
Control cables	all	Lubricated with oil	x	x
Rubber hand-grips on handlebar		Stuck with rubber cement	x	x
Ball rings on steering head		Lubricated with graphite grease	x	x
Sleeve on bevel gear drive	15 17 006-01	Locked with locking fluid		x
Electrical equipment	all contacts	Coated with contact fluid	x	x



REPAIRS, GENERAL

LOCTITE LOCKING AND SEALING FLUID

General description

Loctite is a liquid locking and sealing agent which hardens (dries) when it comes into contact with metal, providing that air is excluded. It is a plastic material of which there are various qualities and two main types. One of these requires that the parts are first washed with a special activating fluid and the other requires that the parts are cleaned with normal washing fluids, i.e. grease removers.

TECHNICAL INFORMATION

Hardening time

Loctite begins to harden when applied between two surfaces at room temperature after about two minutes. 85 % of the final strength of the joint is reached within 4 - 12 hours, depending on the material, at a temperature of 22°C (70°F). Full hardening is reached within 24 hours. Heat accelerates the hardening process. At 100°C (212°F), full strength is obtained in 10 minutes and at 175°C (347°F), in 5 minutes.

Storage

Loctite can be kept in bottles at normal room temperature for at least a year. The bottle should be well sealed when not in use. Loctite must not be permitted to come into contact with metal dust or Loquic Activator. If Loctite is to be transferred from one container to another, a plastic bowl or plastic bottle must be used.

Warning: Do not allow Loctite to come into contact with moving parts. Test before using Loctite on painted surfaces.

Solubility

Liquid Loctite is soluble in trichlorethylene and in most detergent fluids. Hardened Loctite is insoluble and withstands oil, water, petrol, jet fuel, ordinary and synthetic lubricating oils, hydraulic fluids and most chemicals.

Care when using

Loctite must not be allowed to come into contact with painted or lacquered surfaces, as these will immediately soften. Enamelled surfaces which are in contact with Loctite for a few hours are not affected. Parts treated with Loctite which are to be painted must be degreased before painting. Loctite does not attack hard plastics, natural rubber, neoprene, nylon or polyethylene. It softens polystyrene, cellulose plastics, vinyl plastics, lacquered and varnished surfaces. Spilt Loctite should be wiped up immediately.

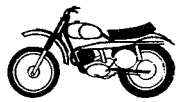
Poisonousness

Loctite is not poisonous. No harmful effects whatever have been discovered.

Heat properties

Range of use: $-55^{\circ}C$ to $+150^{\circ}C$ ($-67^{\circ}F$ to $+302^{\circ}F$).

Heat exchanging properties: In laboratory tests Loctite-treated joints have been subjected to heat exchanging between $-55^{\circ}C$ ($-67^{\circ}F$) and $+175^{\circ}C$ ($-347^{\circ}F$) without any significant reduction of the locking properties having been observed.



APPLYING LOCTITE

With applicator for individual parts

As a rule no special treatment is required for parts to be sealed with Loctite providing they are clean. However, Loctite hardens very slowly on galvanized, cadmium plated and anodized surfaces.

Loctite can be applied to screw threads before fitting by dipping the thread in a bowl of Loctite or by holding the spout of the applicator against the part of the thread to be screwed in.

Bearings

The best results are obtained on clean and grease-free surfaces. Any thick deposits of oil and grease must be removed with a detergent.

Loctite is applied in an even layer round the bearing housing and/or shaft. The bearing is installed with a moving fit. After fitting, a few more drops of Loctite are applied to the surfaces to be locked together until a thin ring of Loctite remains visible as evidence that the clearance gap between the surfaces is completely filled.

Loctite prevents bearing slip and protects against contact corrosion.

Clearance. The clearance is of little significance as far as the strength of the Loctite joint is concerned. Loctite can also be used in the case of press fits, improving the "grip" and making all spaces between the shaft and inner ring leakproof.

Pressure-tight joints

Loctite should be applied on threaded joints before fitting.

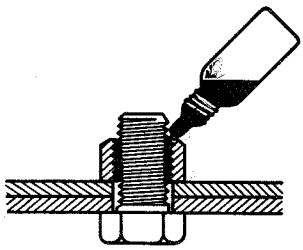
Overlapping pipe joints are treated with Loctite after the pipes have been joined together. If possible, the fitted parts should be turned backwards and forwards a few times in order to facilitate even distribution of the Loctite.

Service packages

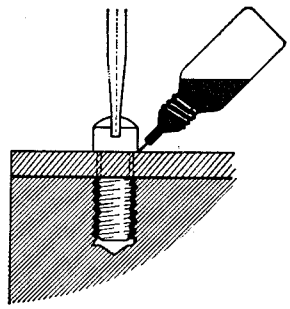
We have introduced a Loctite service package (10 grammes) of the type which does not require any activator. The tube contains sufficient material for locking about 400 screwed joints. The order number is 50 11 127.

Report No.	Sheet No.
690620/2	0

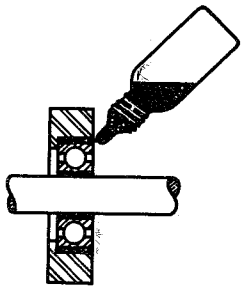
Uses



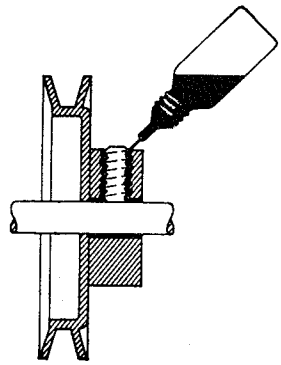
Makes every threaded part self-locking.



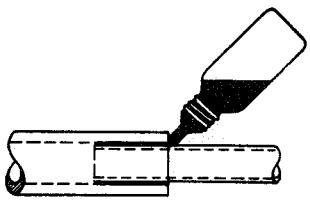
Simplifies servicing.



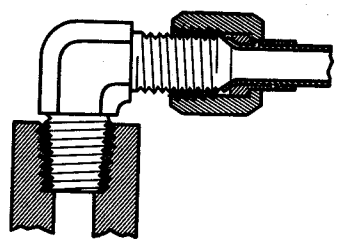
Facilitates bearing replacement.



Reconstitutes the fit of loose mechanical parts.



Simplifies joining of pipes.



Prevents leakage in high-pressure hydraulic lines.

Applications (motor):

Part	Loctite type
Flywheel cone, crankshaft 16 10 868-01	AA
Draw bolt cylinder	AA
Flange screw 20 63 327-01	AA
Screw exhaust manifold	AA
Screw anchor plate	AA

Bränsletank SI

P. g. a. kvalitetsförbättring på vår bränsletank för Enduro (tidigare best. nr 15 14 034-01) ändrar vi best. nr till nedanstående.

Nytt best. nr bränsletank SI 15 14 042-01

Fuel tank SI

Owing to a quality improvement of our fuel tank for Enduro (previous order no. 15 14 034-01), we will change the order no. to the no. given below.

New order no. for fuel tank SI 15 14 042-01

Kraftstofftank SI

Infolge einer Qualitätsverbesserung unseres Kraftstofftanks für Enduro (frühere Bestellnr. 15 14 034-01) werden wir die Bestellnr in die untenstehende ändern.

Neue Bestellnr. für Kraftstofftank SI 15 14 042-01

Réservoir de carburant SI

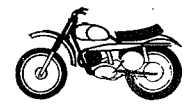
A cause d´une amélioration de qualité de notre réservoir de carburant pour Enduro (no. de commande ancien 15 14 034-01) nous allons changer le no. de commande à ce qui suit.

Nouveau no. de commande pour le réservoir de carburant SI 15 14 042-01

10 17 067-97

3.5 8-71

To be inserted under tab. nr
Register Index 1



Changes for spare parts catalogue M 18805 and M 18806

After the catalogue above have been printed, the following changes of numbers and details have been introduced:

Catalogue M 18805-1

Chain guard: Page 33, New details 15 18 218-01 Wearing washer
20 62 327-11 Screw
25 80 132-01 Nut

Crank mechanism: Page 53, Fig 14, Piston ring 1st oversize 16 10 859-03
Page 54, " " 2nd oversize 16 10 859-04
" , Fig.15, Piston 1st oversize 16 10 857-03
" , " , Piston 2nd oversize 16 10 857-04

Flywheel magneto: Page 81, Fig 23a, Spacing ring flywheel/nut 16 14 678-01

Catalogue M 18806-1

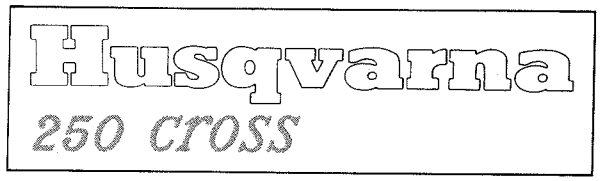
Chain guard: Page 30, new details 15 18 218-01 Wearing washer
20 62 327-11 Screw
25 80 132-01 Nut

Flywheel magneto: Page 82, Fig 23a, Spacing ring, flywheel/nut 16 14 678-01

To avoid misunderstanding we ask you kindly to enter without delay the changes in the respective catalogue.

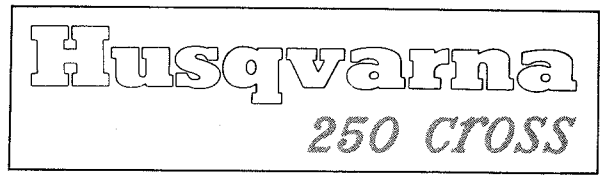
TANKDEKALER FÖR HUSQVARNA MC
TANK DECALS FOR HUSQVARNA MC

Vänster
Left

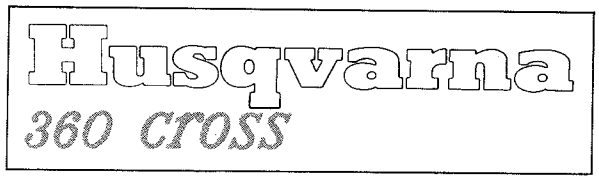


Best.nr/Part nr 15 19 027-01

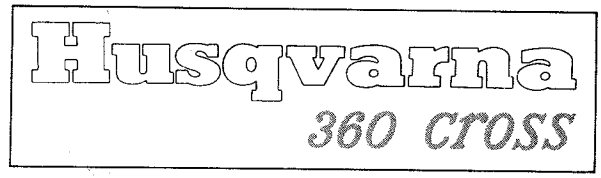
Höger
Right



Best.nr/Part nr 15 19 026-01

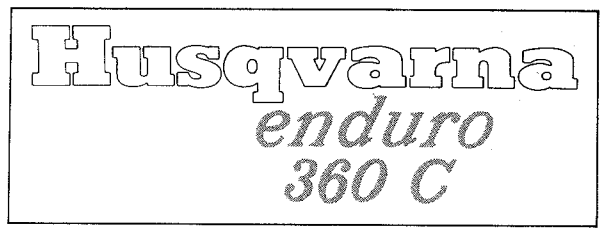


Best.nr/Part nr 15 19 031-01

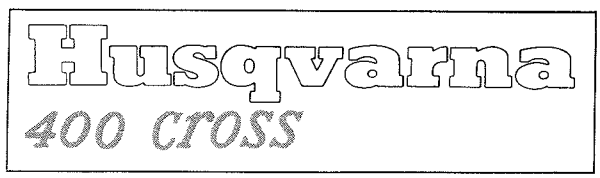


Best.nr/Part nr 15 19 030-01

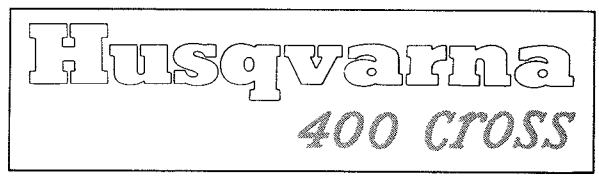
Best.nr/Part nr 15 19 023-01



Best.nr/Part nr 15 19 022-01



Best.nr/Part nr 15 19 029-01



Best.nr/Part nr 15 19 028-01

Reservdelar till hastighetsmätareanläggning MH och MI
Spare parts for speedometer set-up MH and MI

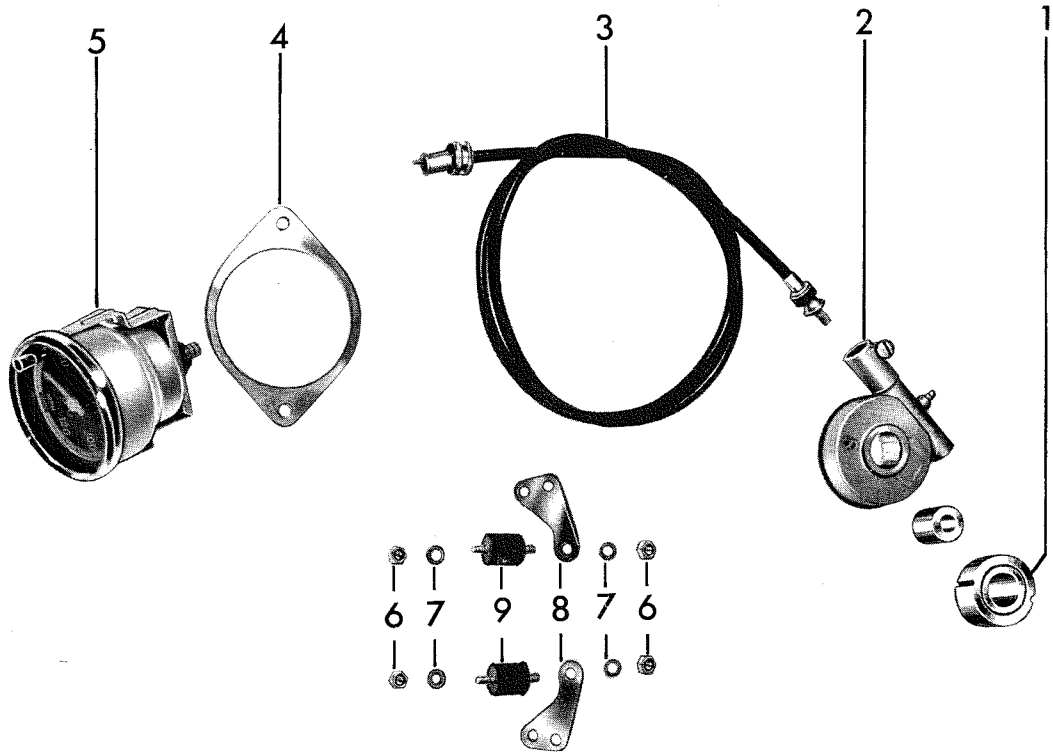
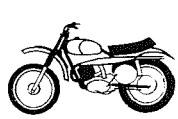


Bild nr Fig. nr	Det. nummer Part number	Antal Quantity	Benämning Description
1	15 17 177-01	1	Medbringare Driver, angle gear
2	15 17 175-01	1	Vinkelväxel Angle gear
3	15 17 171-01	1	Böjlig axel Flexible shaft
4	15 17 096-01	1	Fästplåt Mounting plate
5	15 17 001-01	1	Hastighetsmätareklocka (km/tim) Speedometer head (km/hour)
5	15 17 001-02	1	Hastighetsmätareklocka (miles/tim) Speedometer head (miles/hour)
6	25 80 142-01	4	Låsmutter Locking nut
7	28 01 350-01	4	Bricka Washer
8	15 17 094-01	2	Fästjärn Fastening iron
9	15 17 090-01	2	Vibrationsdämpare Shock absorber



MI 250cc, 360cc och SI 360cc

Vi har för dessa maskiner ersatt muttern för drivhjulet (25 11 380-01) med en mutter med bättre hållfasthetsegenskaper.

Den nya mutterns best.nr är 25 11 387-01.

V.g. inför detta i Er katalog.

MI 250cc, 360cc and SI 360cc

On the above models we have replaced the nut for the drive gear (25 11 380-01) by a nut of better physical properties.

The ref.no for this new nut is 25 11 387-01.

Please make this corresponding alterations in your catalogue.

MI 250ccm, 360ccm und SI 360ccm

Wir haben bei diesen Modellen die Mutter für den Antrieb (25 11 380-01) durch eine Mutter mit besserer Haltbarkeit ersetzt.

Neue Mutter Bestellnummer 25 11 387-01.

Im Katalog bitte entsprechende Änderung eintragen.

MI 250cc, 360cc et SI 360cc

Pour ces machines nous avons remplacé l´écrou pour le pignon (25 11 380-01) par un écrou avec de meilleures qualités de résistence.

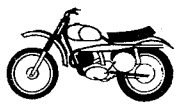
Le numéro d´ordre du nouvel écrou est 25 11 387-01.

Noter ce numéro dans votre catalogue.

10 17 051-97

2. 2-71

To be inserted under tab.nr Register Index **1**



Vevhusskruv - MC

Vi ersätter de nuvarande vevhusskruvarna (20 62 378-11 och 20 56 327-01) med insexskruv.

Följande gäller för de nya skruvarna:

Vevhusskruv (den långa): 20 24 381-12
Vevhusskruv (den korta): 20 24 378-12

Åtdragningsmoment: 0, 7 kpm.

Crankcase screw - MC

We are now replacing the present crankcase screws (20 62 378-11 and 20 56 327-01) with hexagon socket screws.

The following applies to the new screws:

Crankcase screw (long): 20 24 381-12
Crankcase screw (short): 20 24 378-12

Tightening torque: 0. 7 kgf m

Kurbelgehäuseschraube - MC

Wir ersetzen die jetzigen Kurbelgehäuseschrauben (20 62 378-11 und 20 56 327-01) mit Innensechskantschrauben.

Folgendes ist dabei zu beachten:

Kurbelgehäuseschraube (lange) 20 24 381-12
Kurbelgehäuseschraube (kurze) 20 24 378-12

Anziehmoment: 0, 7 mkp

Vis de carter moteur - MC

Nous remplaçons les vis (20 62 378-11 et 20 56 327-01) du carter moteur par des vis à 6 pans intérieur.

Concernant ces nouvelles vis, il convient de noter qui suit:

Vis de carter moteur (longue): 20 24 381-12
Vis de carter moteur (courte): 20 24 378-12

Couple de serrage: 0, 7 m. kg

10 17 056-97 A

2. 6-71

To be inserted under tab. nr
Register
Index
1

Gummihandtag - överväxel

För att få ökad hållfasthet och slitstyrka ersätter vi gummihandtaget (12 25 426-01) på överväxelns handreglage med ett handtag av bättre kvalitet.

Best. nr för det nya handtaget: 16 12 813-01.

Rubber handle - overdrive

To improve strength and wear resistance, we are replacing the rubber handle (12 25 426-01) on the overdrive hand control with one of higher quality.

Part No. of the new handle: 16 12 813-01.

Gummihandgriff - Overdrive

Um eine höhere Festigkeit und Langlebigkeit zu erzielen ersetzen wir den Gummihandgriff (12 25 426-01) am Handregler des Overdrives mit einem Handgriff besserer Qualität.

Bestellnummer des neuen Handgriffs: 16 12 813-01.

Poignée caoutchouc - surmultiplicateur

Pour en assurer une plus grande résistance à l´usure, nous avons remplacé la poignée caoutchouc (12 25 426-01) sur la commande à main du surmultiplicateur par une poignée nouvelle de meilleure qualité.

No de référence pour la commande de la nouvelle poignée: 16 12 813-01.

Gashandtag

P. g. a. ändringar hos vår leverantör ändrar vi numret på gashandtag (tidigare nr 15 15 206-01).

Vi kommer även att lagerföra själva gummiskyddet.

Gashandtag kompl. nytt nr	15 15 218-01
Gummiskyddet nr	15 15 219-01
Gaswiren nr	15 15 220-01

Throttle twist-grip

Due to changes made by our supplier, we are altering the part No. of the throttle twist-grip (previously No. 15 15 206-01).

We shall also be stocking the rubber grip.

Throttle twist-grip, complete, new part No.	15 15 218-01
Rubber grip, part No.	15 15 219-01
Throttle cable No.	15 15 220-01

Gashebelhandgriff

Aufgrund durchgeführter Änderungen bei unserem Lieferanten sind wir gezwungen worden die Bestellnummer des Gashebelhandgriffes 15 15 206-01 zu ändern.

Wir werden auch den Gummischutz hierzu auf Lager führen.

Gashebelhandgriff, komplett, neue Bestellnummer:	15 15 218-01
Gummischutz Nr.	15 15 219-01
Gasseilzug Nr.	15 15 220-01

Poignée de commande des gaz

Par suite des modifications effectuées chez notre fournisseur, nous avons remplacé le numéro de référence de la poignée de commande des gaz mentionnée (ancien numéro: 15 15 206-01).

Nous allons livrer également le caoutchouc de protection nous-mêmes.

Poignée de commande des gaz complète No	15 15 218-01
Caoutchouc de protection	15 15 219-01
Câble de commande	15 15 220-01

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Nya dekaler för fastsättning på luftfilterkåpan.

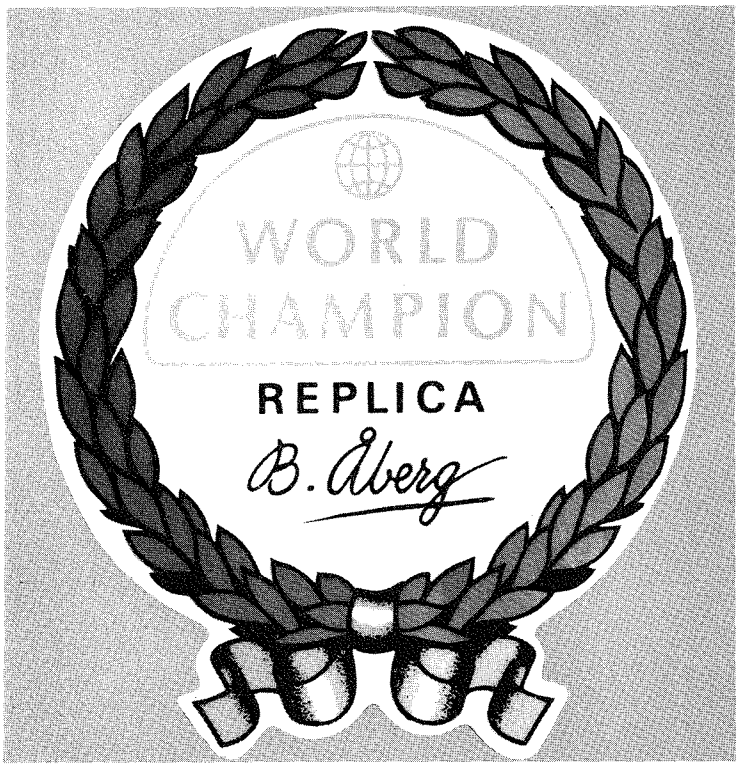
New decals for attaching on the air filter cover.

Neue Abzieh bilder zum Befestigen auf dem Luftfiltermantel.

Nouvelles d´ecalcomanies pour attacher an capuchon du filtre à air.

400 cc

Det. nummer	15 19 036-01
Part number	15 19 036-01
Teilnummer	15 19 036-01
No de piéce	15 19 036-01



250 cc

Det. nummer	15 19 037-01
Part number	15 19 037-01
Teilnummer	15 19 037-01
No de piéce	15 19 037-01

Byte av stoppskruv i tryckskiva

För att höja kvaliteten på stoppskruven för kopplingen (22 36 448-06) ersätter vi den med en skruv med nedanstående nr:

Nytt nr för stoppskruv: 16 11 127-01.

New pressure plate set screw

To improve the quality of the set screw (22 36 448-06) for the clutch, a screw with the following part number is now fitted:

New part number for set screw: 16 11 127-01.

Neue Anschlagschraube in der Druckscheibe

Die Kupplung 22 36 448-06 ist mit einer qualitätsmässig bessere Anschlagschraube versehen worden.

Die neue Schraube hat die Bestellnummer 16 11 127-01.

Remplacement de la vis d´arrêt du plateau de pression

Dans un but d´amélioration de la qualité de nos produits, nous avons remplacé la vis d´arrêt (22 36 448-06) de l´embrayage par une nouvelle vis de No: 16 11 127-01.

Numéro de nouvelle vis d´arrêt: 16 11 127-01.

10 17 070-96

3.5 10-71

Printed in Sweden

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Förgasare Bing 36 mm

Vi kommer att införa ett nytt tomgångsmunstycke i produktionen för våra Bingförgasare enligt nedan.

Tomgångsmunstycke nr 45 16 13 216-01

Bing 36 mm carburetter

We plan to introduce into production a new idling jet for our Bing carburetters as below.

Idling jet No. 45 16 13 216-01

Vergaser Bing 36 mm

Wir werden in unsere Produktion eine neue Leerlaufdüse für unseren Bing-Vergaser wie folgt einführen.

Leerlaufdüse Nr. 45 16 13 216-01

Carburateur Bing 36 mm

Nous allons monter un nouveau gicleur de ralenti aux carburateurs Bing en production d´après ce qui suit:

Gicleur de ralenti No 45 16 13 216-01

10 17 083-97

4.5 4-72

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ASSEMBLY INSTRUCTIONS FOR 125 cc ENGINE

1. Put circlips, washers, 5 th and 6 th gear pinion on the sprocket shaft.

N.B. See to it that the circlips really is attached and that the washer is not in the trace.

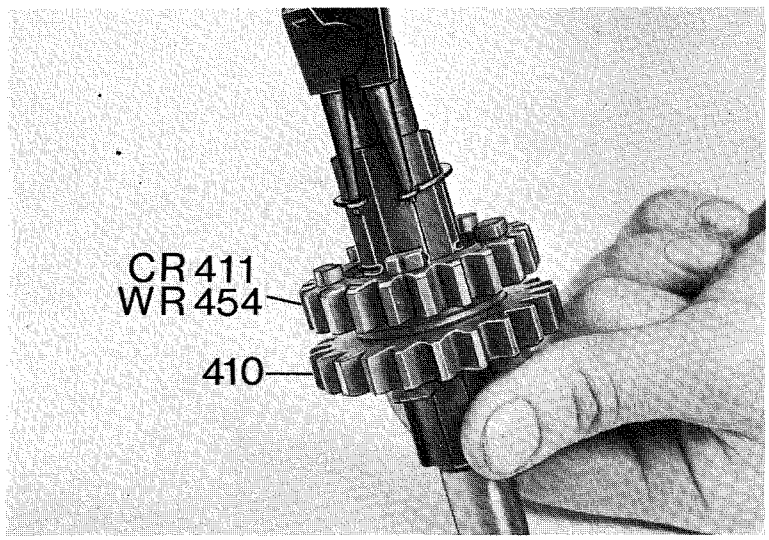
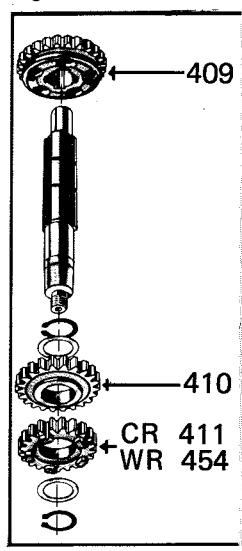


Fig. 1

2. Put the 4 th gear pinion on the sprocket shaft.



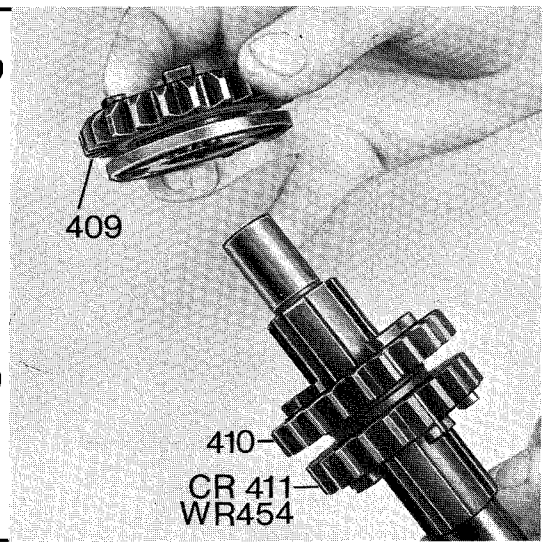
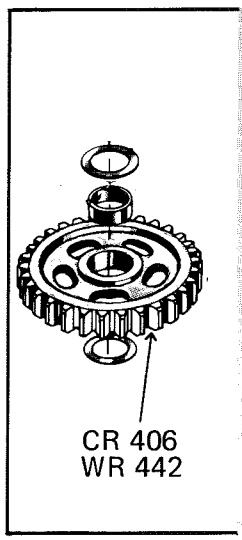


Fig. 2

3. Put the following on the sprocket shaft:
a. Washer b. Bushing
c. The 1 st gear pinion d. = a. Washer



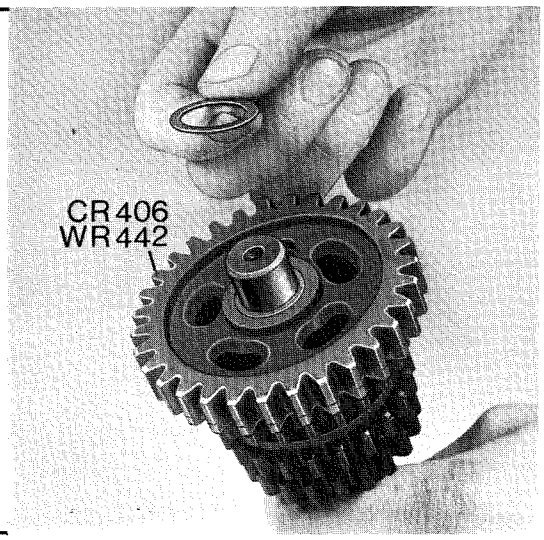


Fig. 3

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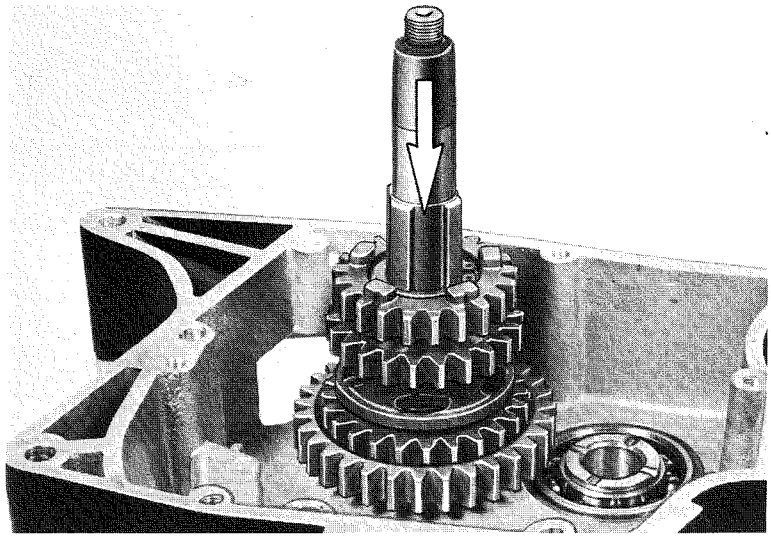

Fig. 4

4. Put sprocket shaft complete with gear pinions in the bearing of the crankcase.

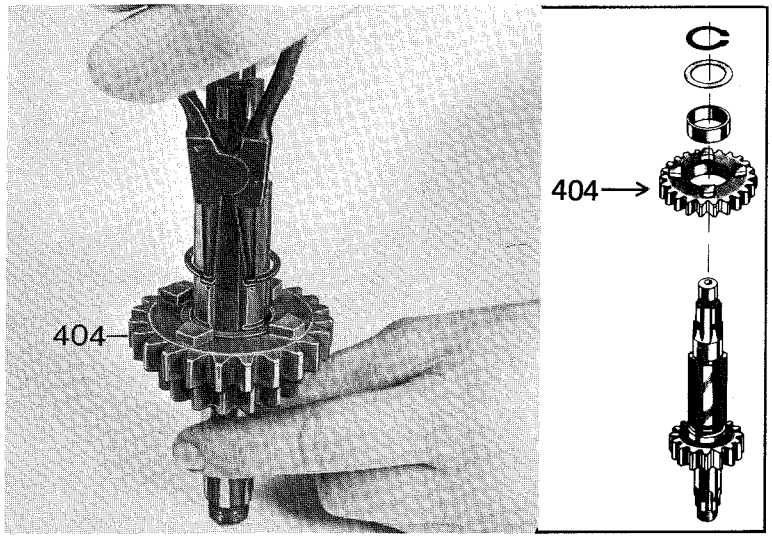

Fig. 5

5. Put the following on the clutch shaft:

a. Bushing
b. The 4 th gear pinion
c. Washer
d. Circlip

N.B. See to it that the circlip really gets on place.

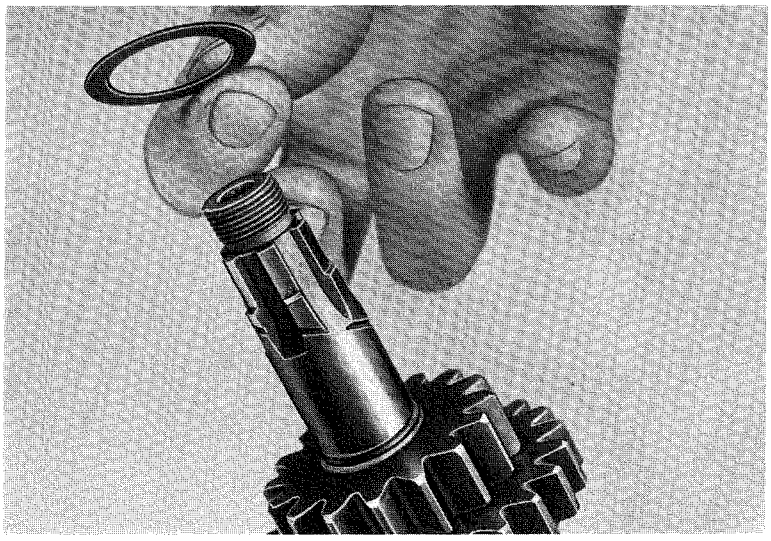

Fig. 6

6. Put the washer towards the bushing on the clutch ring.

7. Mount the clutch shaft in the bushing of the crankcase.

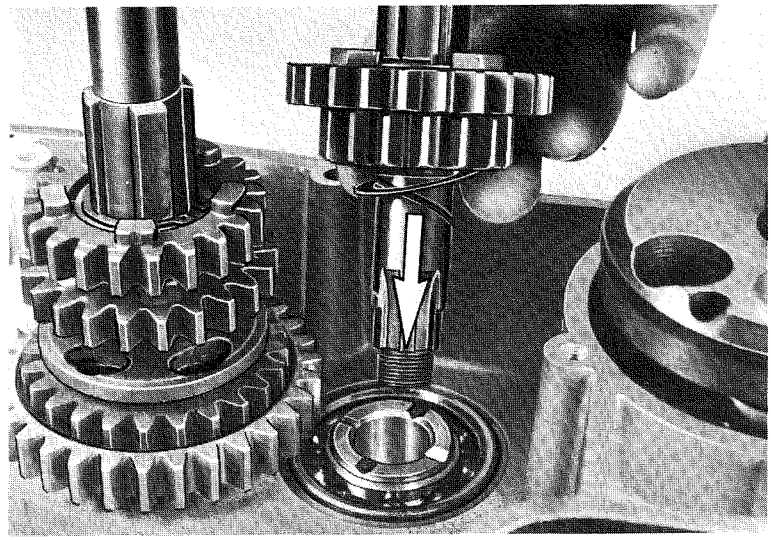

Fig. 7

8. Put the 5–6 th gear pinion on the clutch shaft.

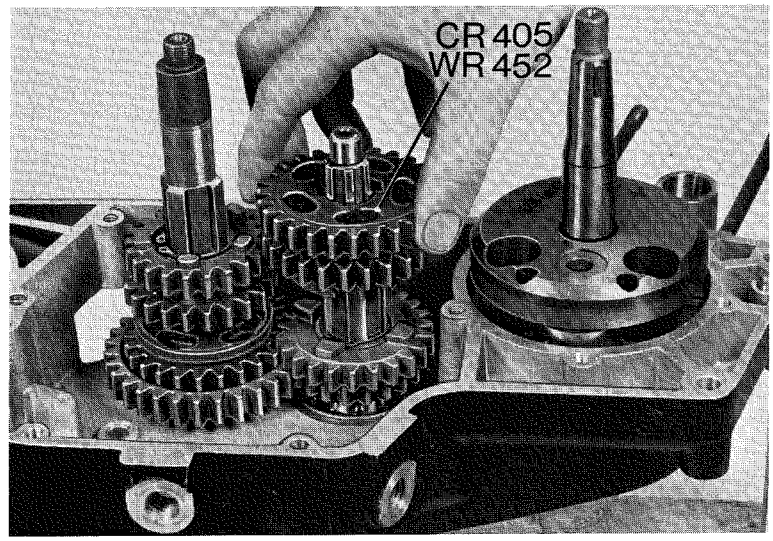

Fig. 8

9. Put the shifting fork of the 5–6 th gear pinion on the clutch shaft.

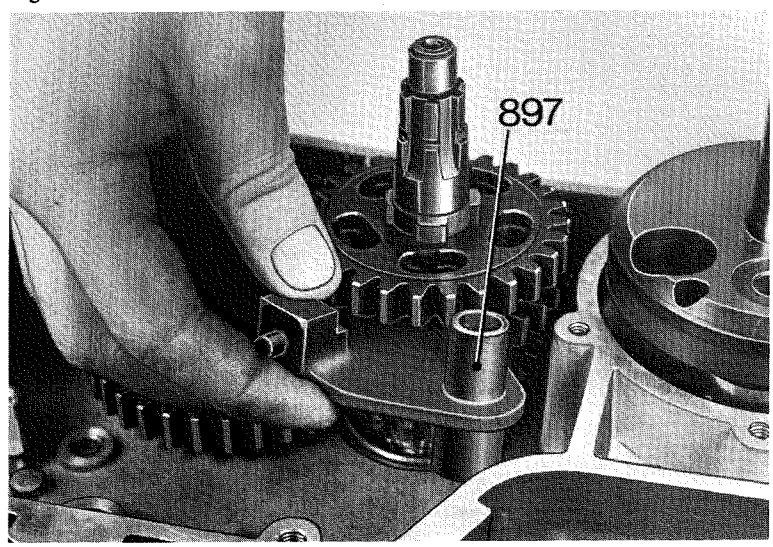

Fig. 9

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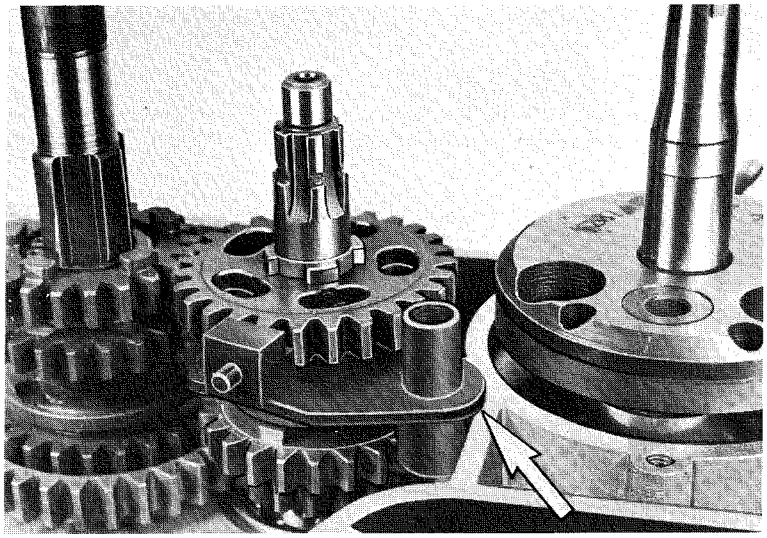

Fig. 10

10. Lift the gear pinion and hang up the shifting fork on the crankcase edge to facilitate the assembly of the shifting drum.

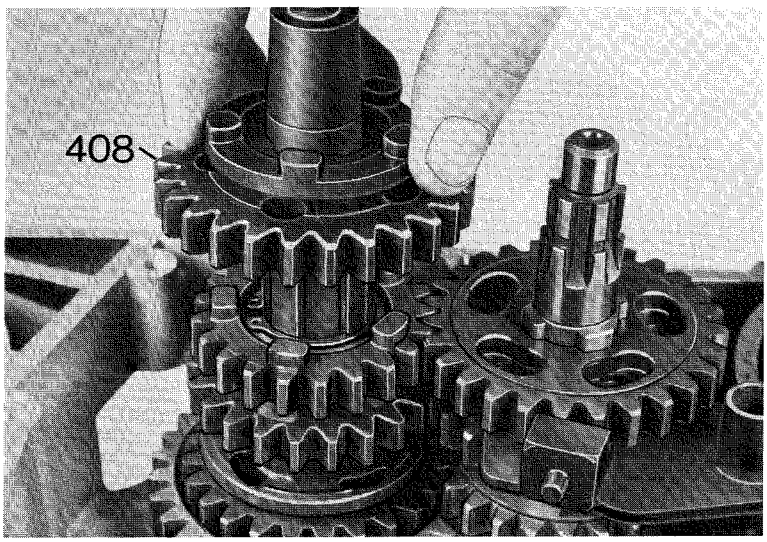

Fig. 11

11. Mount the 3rd gear pinion on the sprocket shaft.

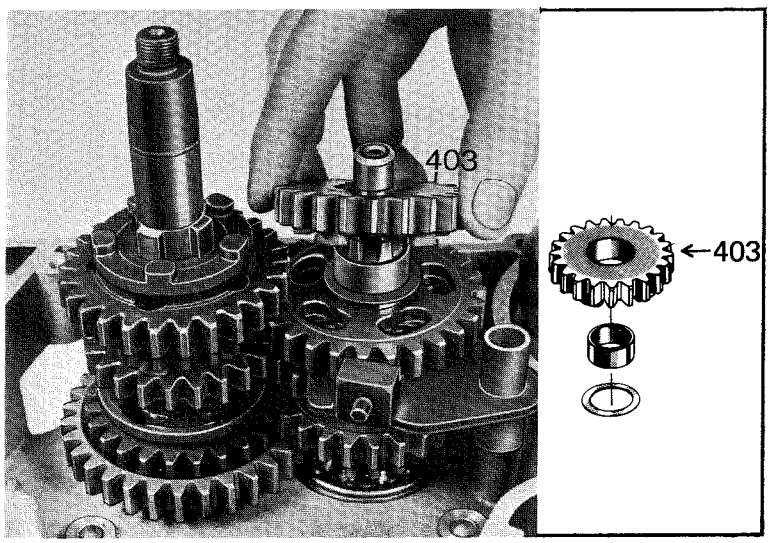

Fig. 12

12. Put the following on the clutch shaft:
a. Washer b. Bushing
c. 3rd gear pinion

13. Mount distance ring and 2nd gear pinion on the clutch shaft.

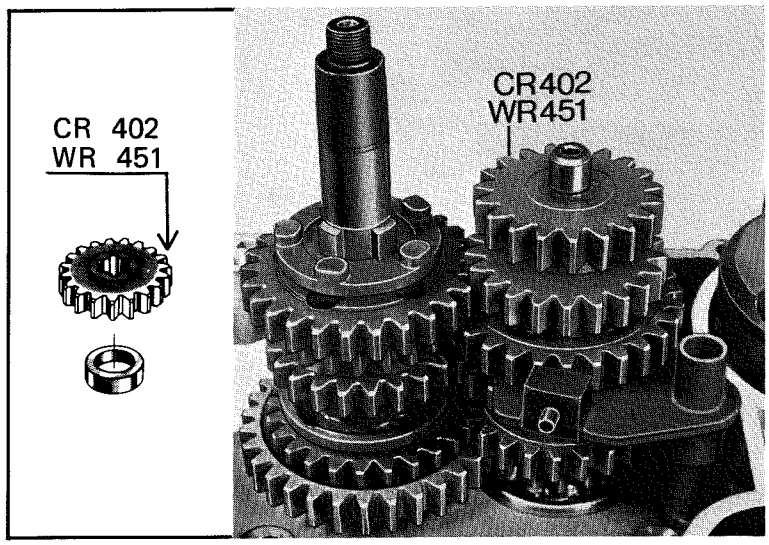

Fig. 13

14. Put the following on the sprocket shaft:
a. Washer
b. Bushing
c. 2nd gear pinion
d. = a. Washer

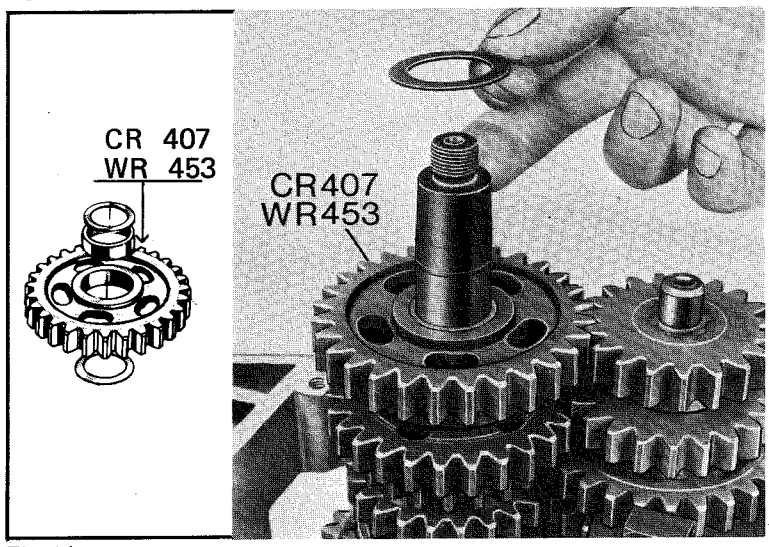

Fig. 14

15. Put the two shifting forks on the sprocket shaft gear pinions. Turn the shifting forks backwards according to the arrow.

N.B. the round one on the top and the square on at the bottom.

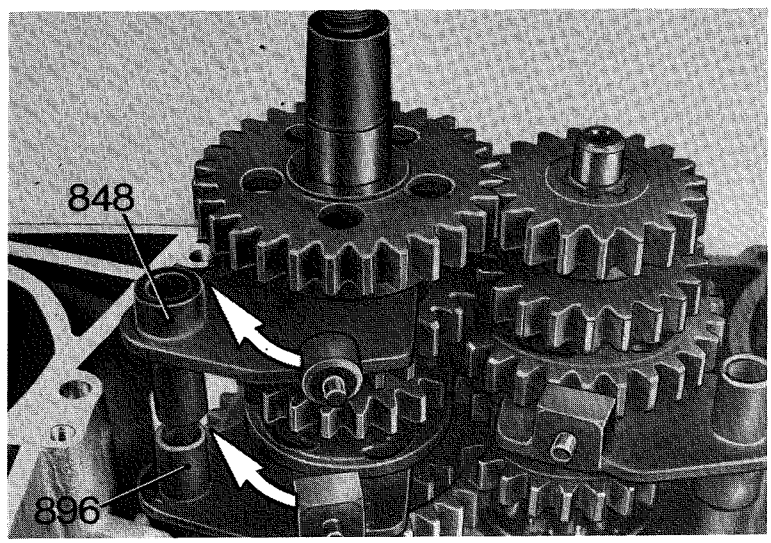

Fig 15

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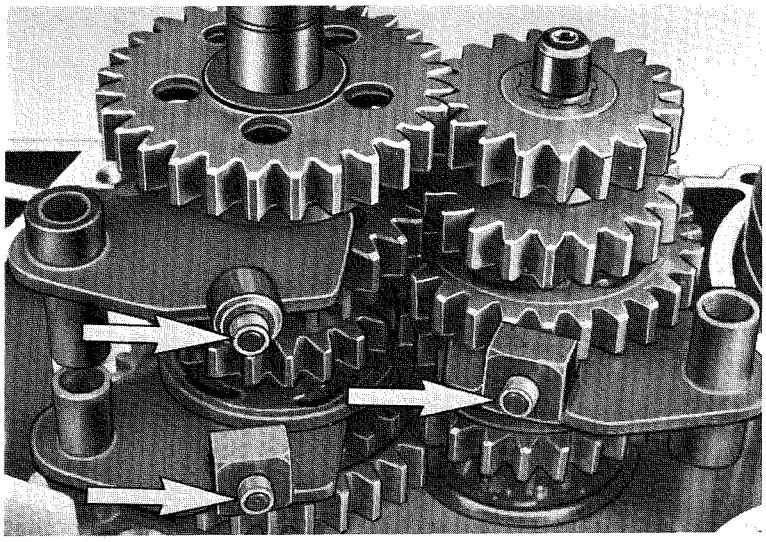

Fig. 16

16. Put the guide rollers on the dowels of the shifting forks.

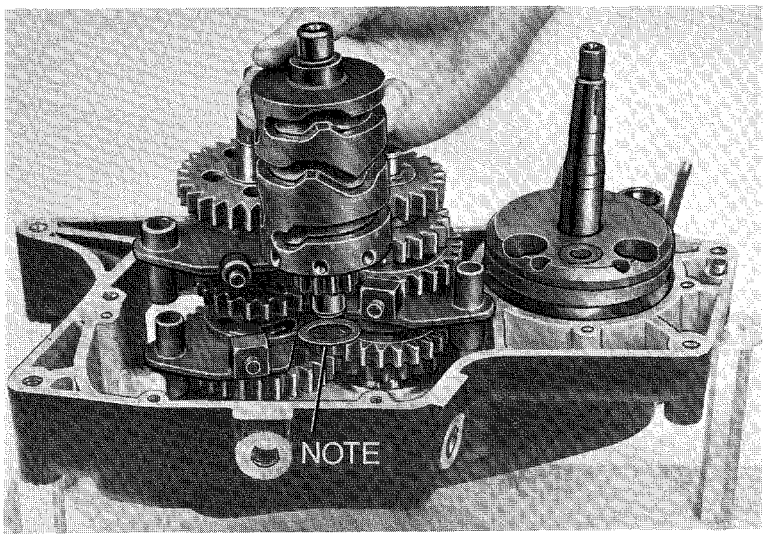

Fig. 17

17. Insert the shifting drum with the washer at the bottom.

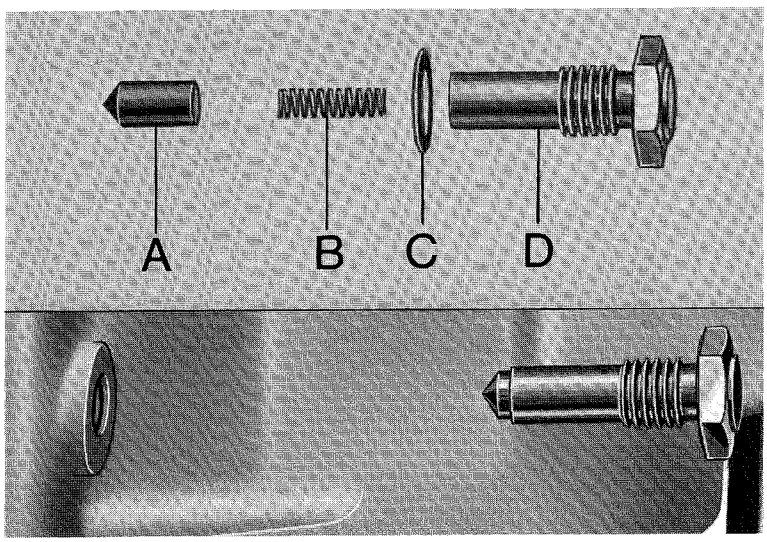

Fig. 18

A: Ratchetsleeve
B: Spring
C: Gasket
D: Ratchetscrew

18. Fit the shifting drum ratchet sleeve in position.

19. The shifting drum is held in the various gear positions by means of its ratchet sleeve. The various locating positions of ratchet sleeve on the shifting drum will be evident from Fig. 19.

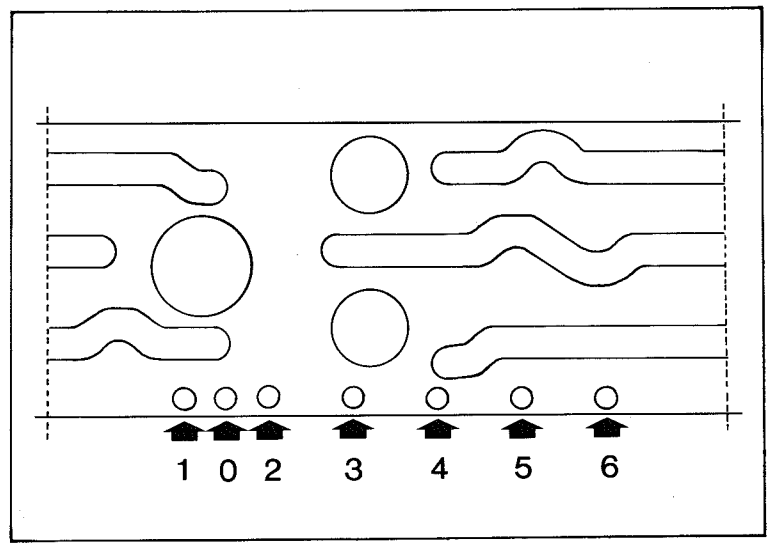

Fig. 19

20. Adjust the shifting drum until it is in the 4 th gear position and let it be there during the rest of assembly.

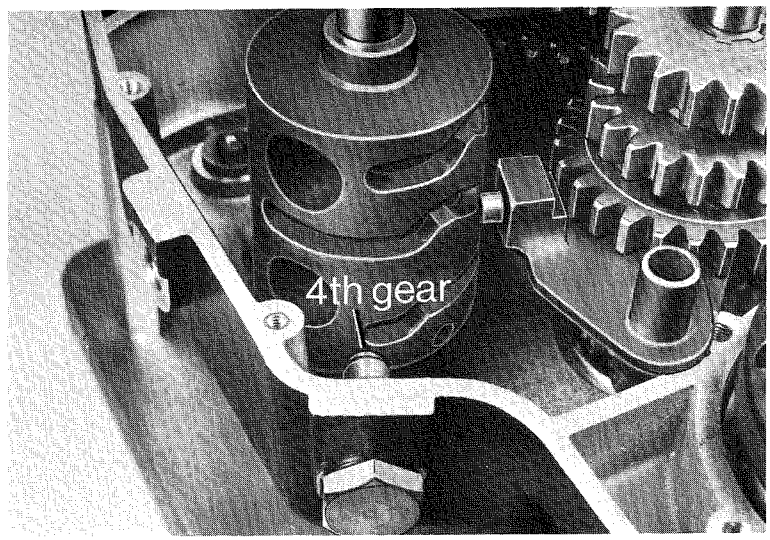

Fig. 20

21. Engage the shifting fork of the clutch shaft with the centre trace of the shifting drum.

Facilitate by turning the shifting drum some backwards and forwards.

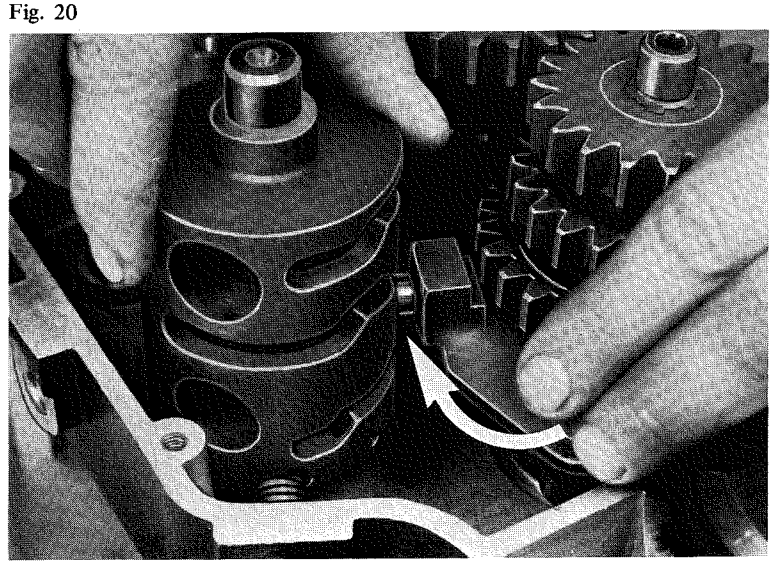

Fig. 21

22. Mount the shaft of the shifting fork.

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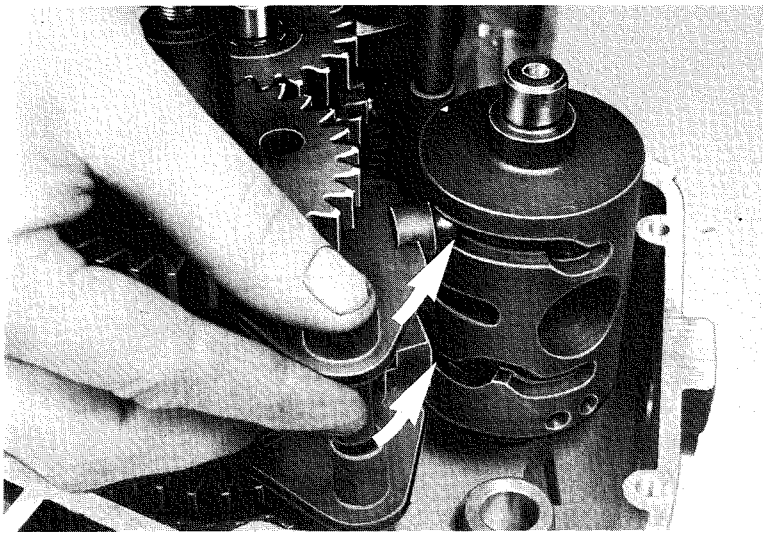

Fig. 23

23. Engage the two shifting forks of the sprocket shaft with the outer traces of the shifting drum.

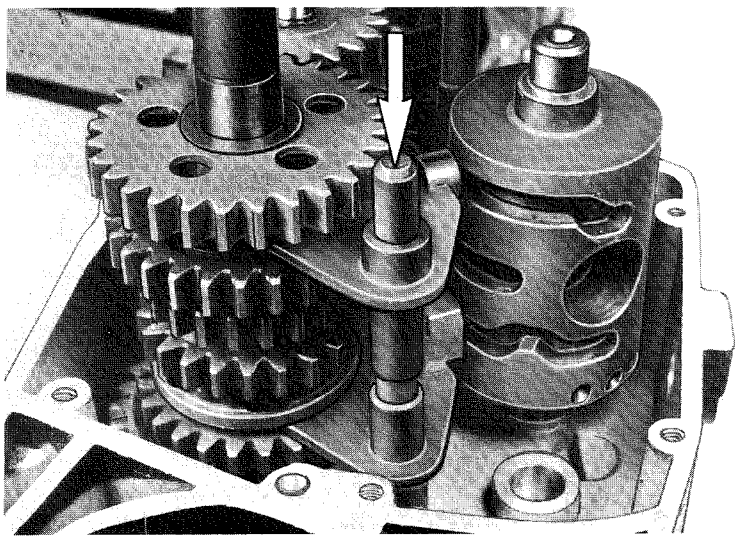

Fig. 24

24. Mount the shaft of the shifting forks.

Grease with a little oil.

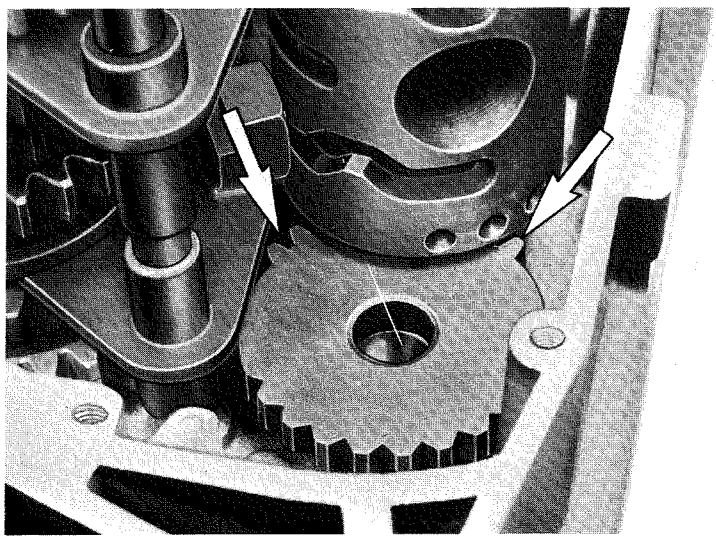

Fig. 25

25. Engange the stepfeeder so that two cogs are visible to the left and one cog to the right of the shifting drum when the **4 th** gear is engaged for the **6-speed** gearbox.

26. Fit the ratchet sleeve and spring for the pawl in position.

N.B. Use the new ratchet sleeve with a groove.

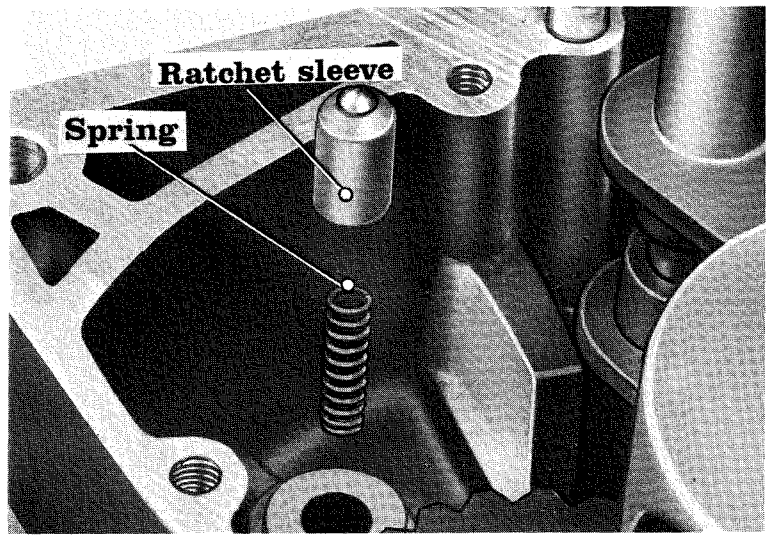

Fig. 26

27. Put the pawl on the shifting shaft.

N.B. Locate the recess in the pawl against the ratchet sleeve.

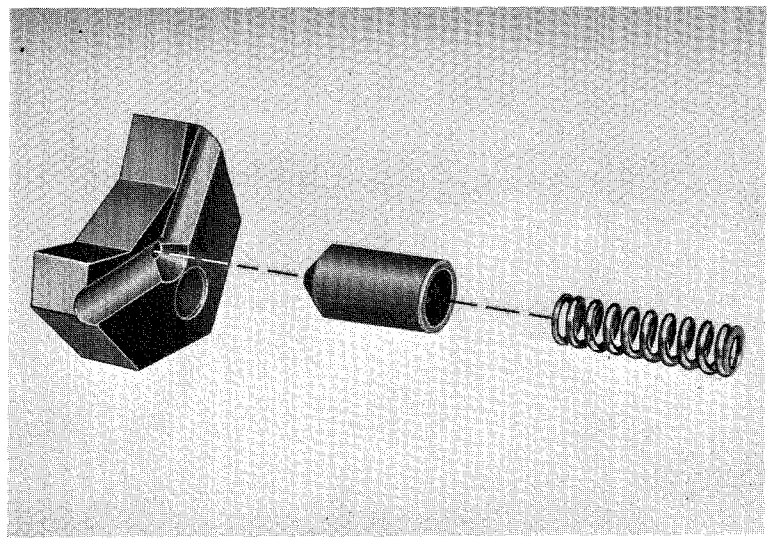
Fig. 27

28. Check that the distance ring on the right side of the crank shaft is in position.

29. Put on a gasket and right crankcase half. Remaining assembly is to be done according to what is applicable to the 250 cc – 450 cc machines.

30. The following tightening torques are applicable for the 125 cc engine:

Flywheel nut	50 lb. ft. (7 kpm)
Sprocket	50 lb. ft. (7 kpm)
Drive gear nut	29 lb. ft. (4 kpm)
Clutch hub nut	29 lb. ft. (4 kpm)
Cylinder head nuts	18 lb. ft. (2,5 kpm)
Crankcase screw	6 lb. ft. (0,8 kpm)

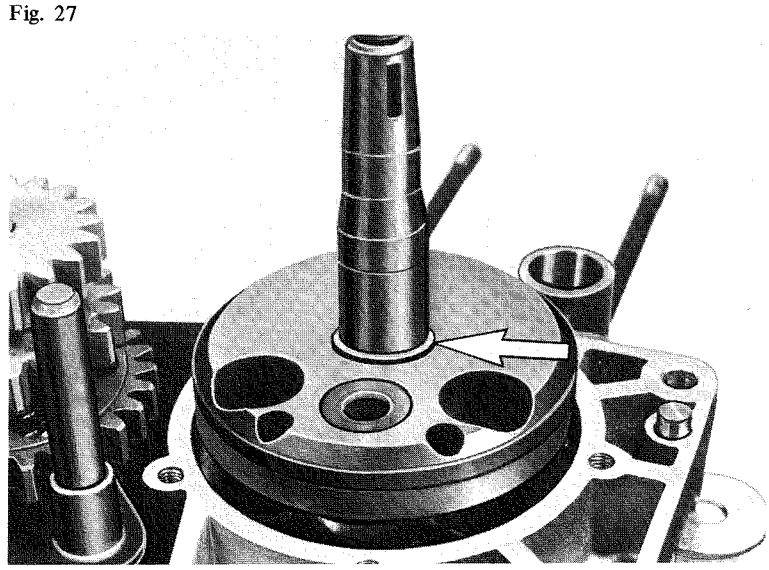
Fig. 28

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DISASSEMBLY OF ENGINE

1. Disassemble the clutch with drive gear, flywheel and piston with cylingder and covers.

Remove the piston pin with the aid of drift
No. 15 19 249-01 for 250 cc angines
15 19 250-01 for 400 cc and 450 cc engines
See Fig. 1.

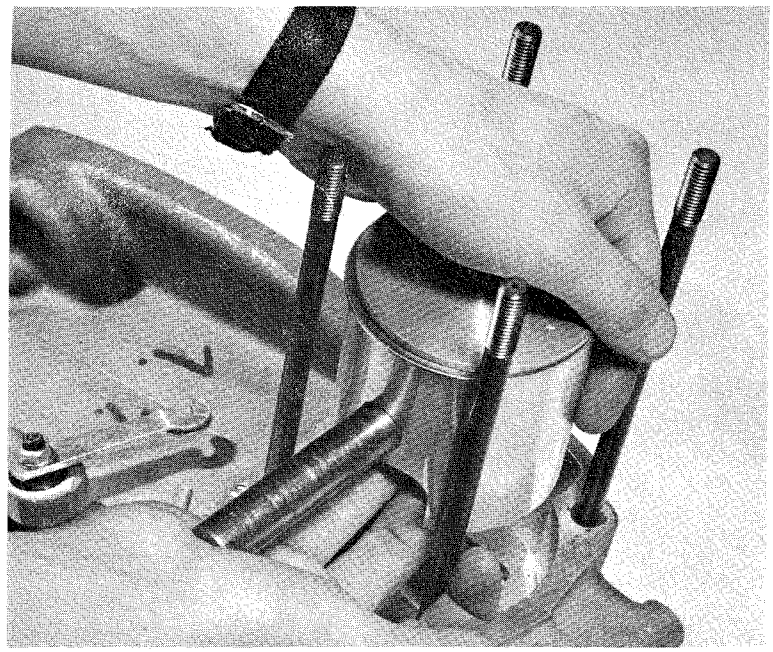

Fig. 1

2. Remove the sprocket with aid of holding-up tool No. 15 19 278-01, a 7/8" (22 mm) spanner and puller No. 12 24 816-01.

3. Remove the crankshaft seal holder on the magneto side.

4. Back off the 11 cap head screws, 2 on the left-hand side and 9 on the right-hand side. See Figs. 4a and 4b.

Use a 5-mm Allen key (if not available a 3/16" spanner may be used instead.)

NOTE! Clean the holes in the bolts before disassembly.

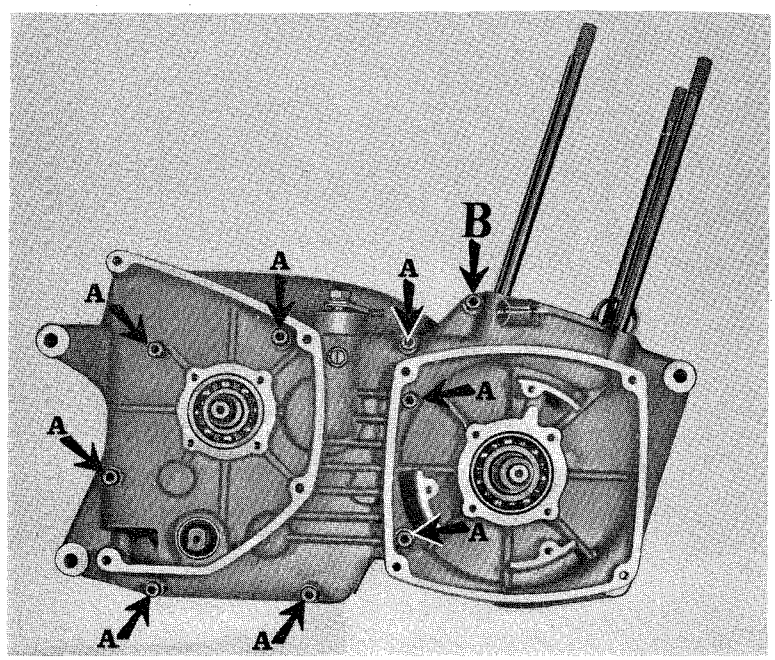

Fig. 4 a

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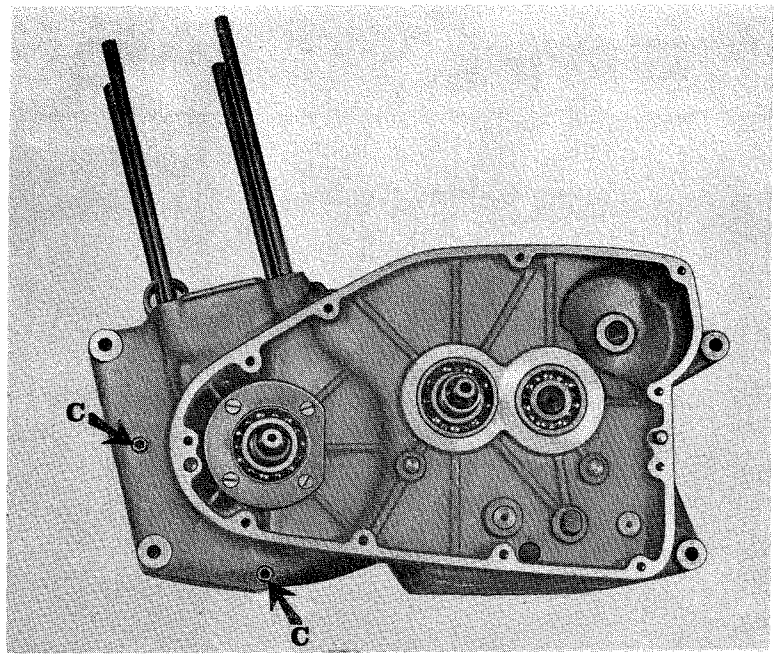


Fig. 4 b

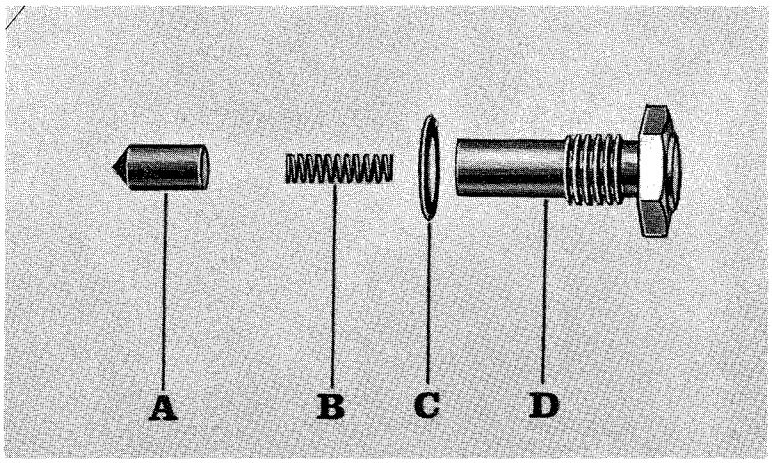


Fig. 5

5. Remove the holder for the selector drum catch. See Fig. 5.

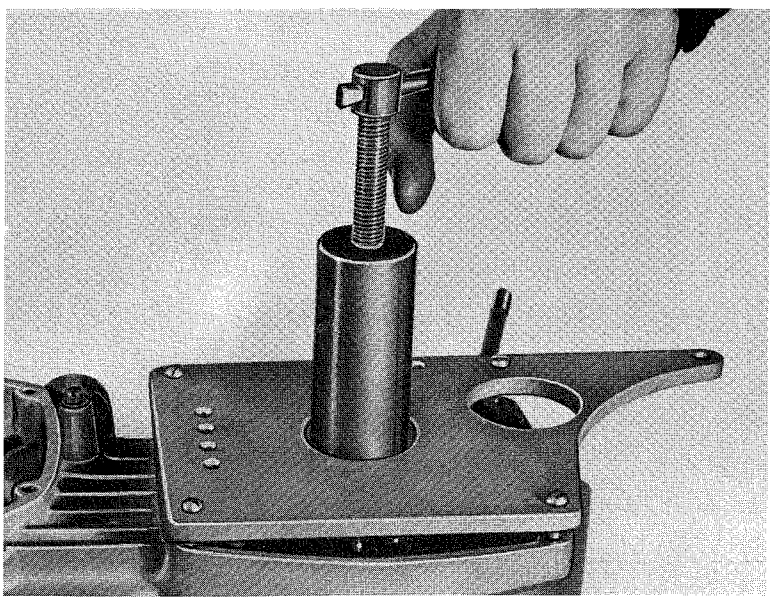


Fig. 6

6. Fit disassembly tool, No. 15 19 257-01 for the crankcase halves in the holes for the magneto cover. See Fig. 6.

7. Pull off the right-hand crankcase half. Using a plastic mallet or the like, knock the rear edge of the engine upwards while at the same time knocking the output shaft and countershaft downwards.
See Fig. 7.

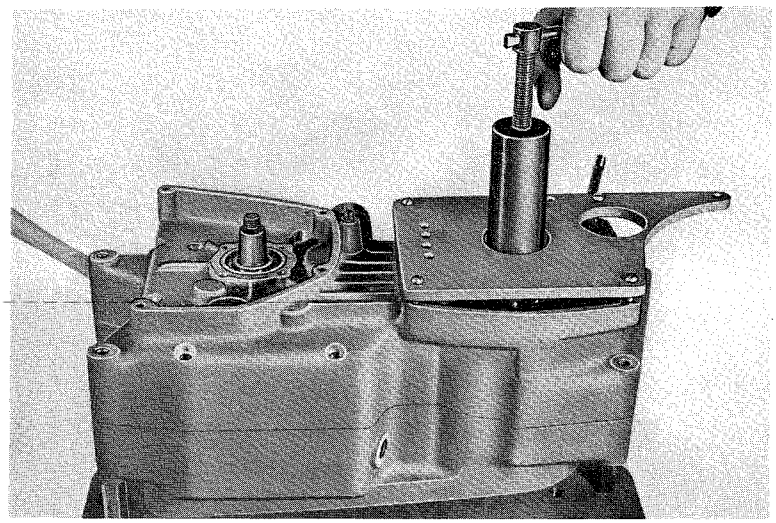


Fig. 7

8. Remove the parts of the gearbox.

Disassembly sequence:
a. countershaft
b. gear selector shafts
c. gear selector with selector drum
d. shafts and gears

9. Remove the crankcase half from the assembly stand and disassemble the crankshaft with the aid of the disassembly tool.

NOTE: Use the other hole in the plate. See Fig. 9.

Screw the puller in the screw holes for the kick starter cover.

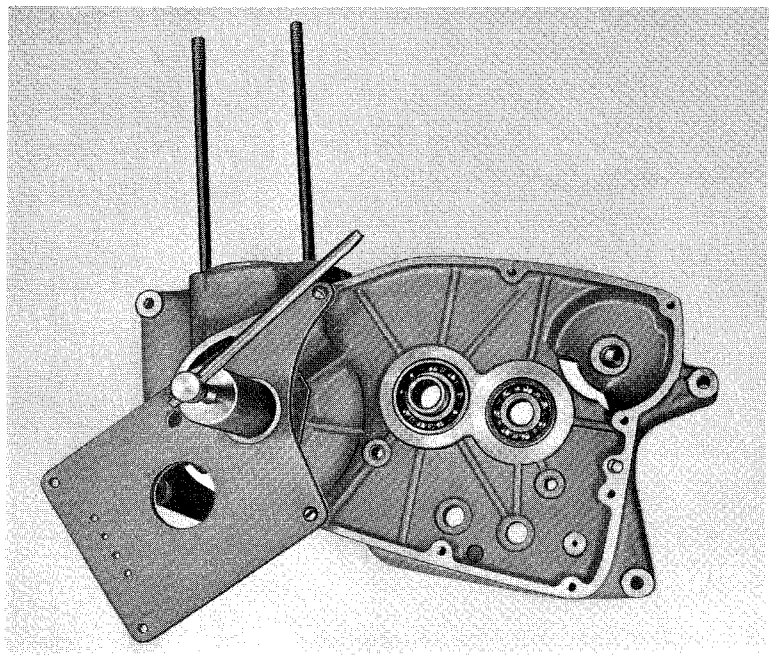


Fig. 9

ENGINE ASSEMBLY

1. Press the bronzebushing of the clutchshaft into place. See Fig. 1.

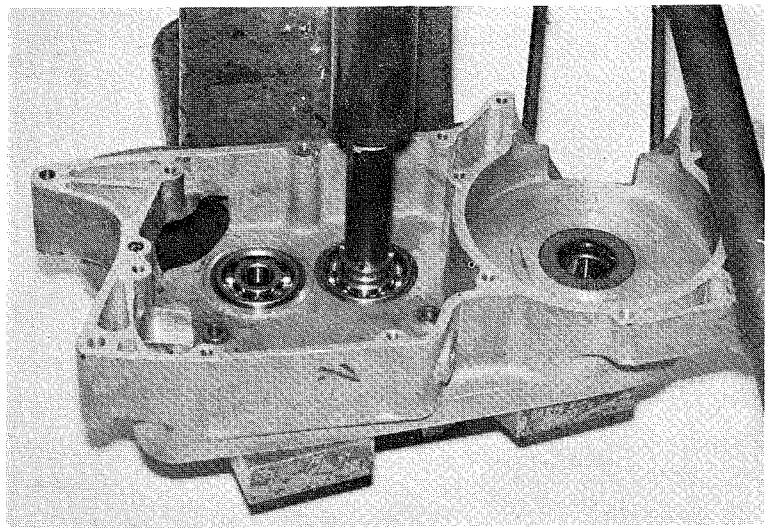


Fig. 1

2. Fit the crankshaft into the left-hand half of the crankcase, using assembly tool No. 15 19 251-01. See Fig. 2.

NOTE: Use some oil on the crankshaft before fitting.

NOTE: Ensure that the connecting rod is located in the opening for the cylinder barrel.

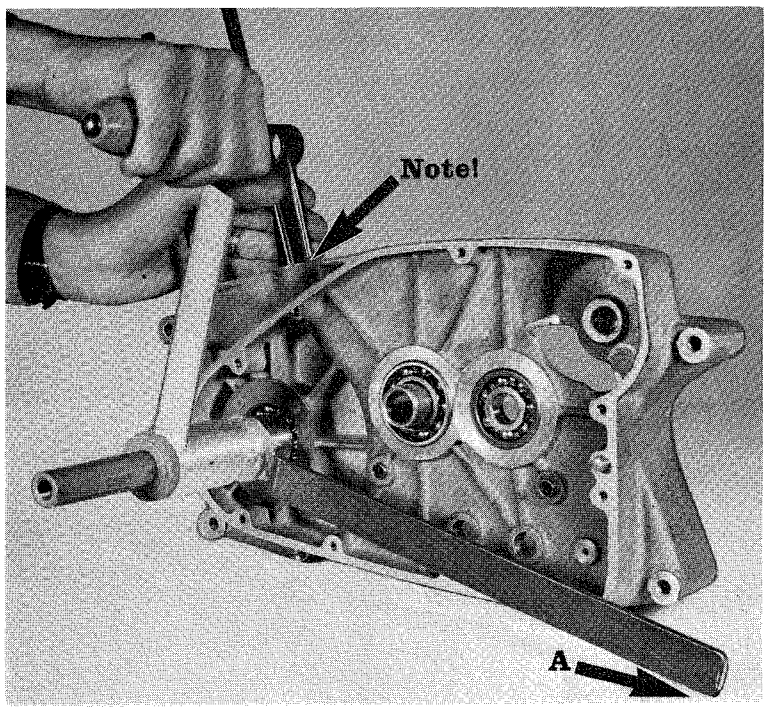


Fig. 2
A. Let the handle support against the bedding.

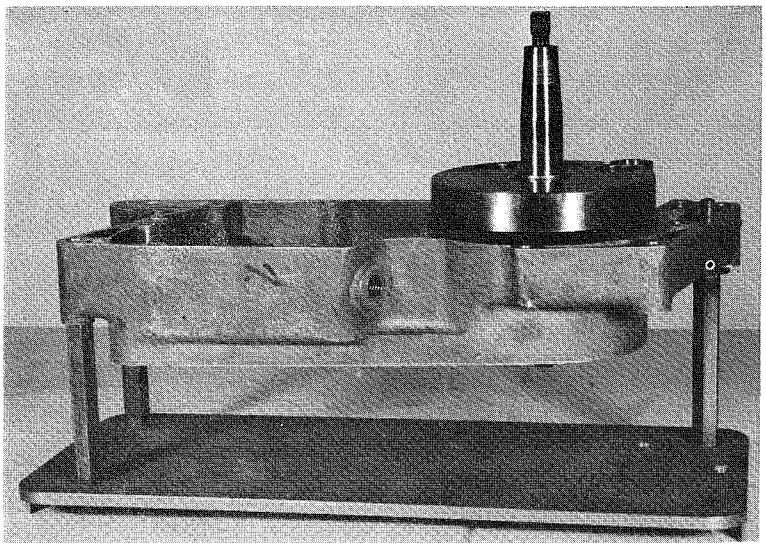


Fig. 3

3. Place the left-hand half of the crankcase in the assembly stand, No. 15 19 243-01. See Fig. 3.

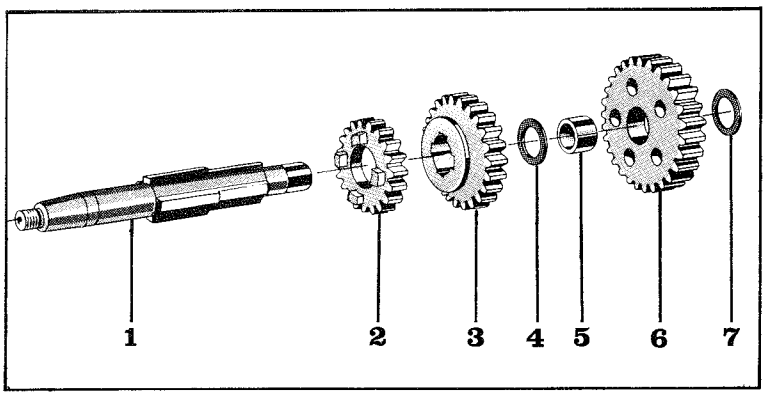


Fig. 4
1. Sprocket shaft
2. 5th gear
3. 3rd gear
4. Supporting washer
5. Bronze bushing
6. 1st gear
7. Supporting washer

4. Fit the 5th gear, 3rd gear and 1st gear pinions onto to sprocketshaft as well as the bushing and washers. See Fig. 4.

NOTE: All parts in the gearbox must accordingly be oiled before fitting!

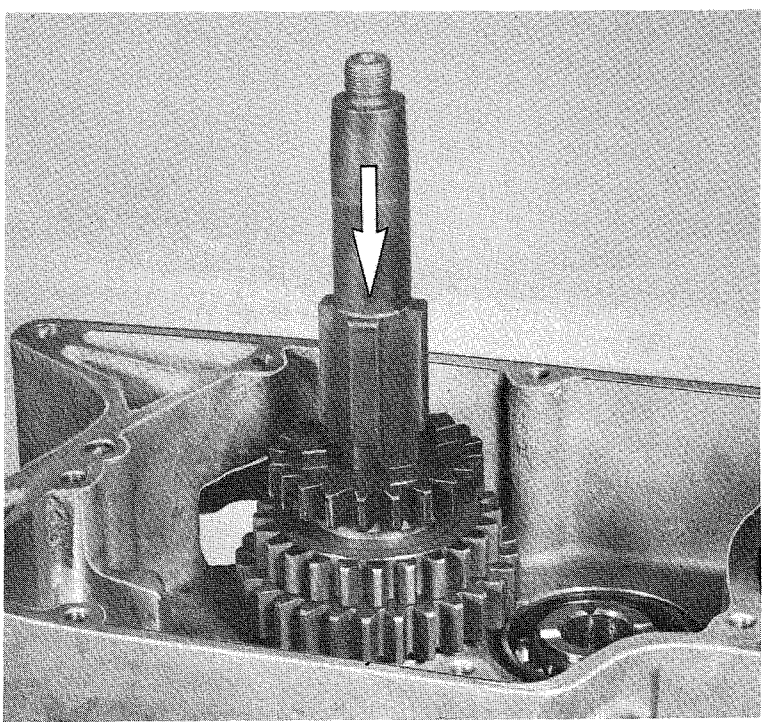


Fig. 5

5. Insert the sprocketshaft with pinions into the left-hand half of the crankcase. See Fig. 5.

6. Fit the 3rd pinion, bushing and washer onto the clutchshaft if these parts have been dismantled. See Fig. 6.

NOTE: Do not forget the circlip.

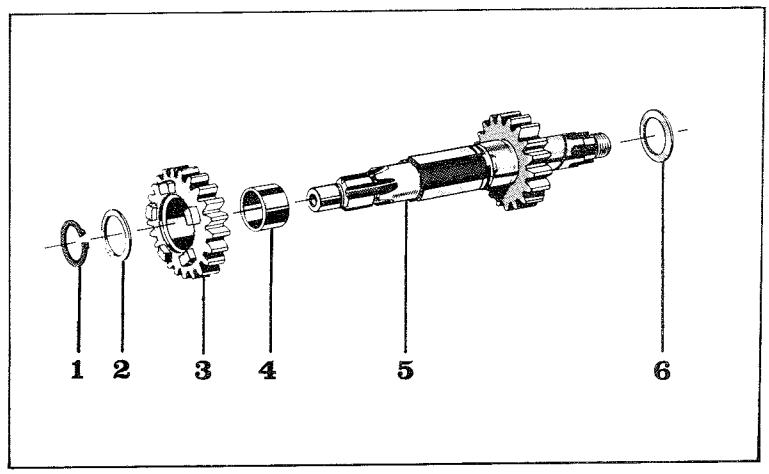


Fig. 6
1. Circlip
2. Supporting washer
3. 3rd gear
4. Bushing
5. Clutch shaft
6. Supporting washer (against the bushing in the bearing).

7. Fit the clutchshaft through the bronzebushing in the left-hand half of the crankcase. See Fig. 7.

NOTE: Do not forget the washer adjacent the bronzebushing.

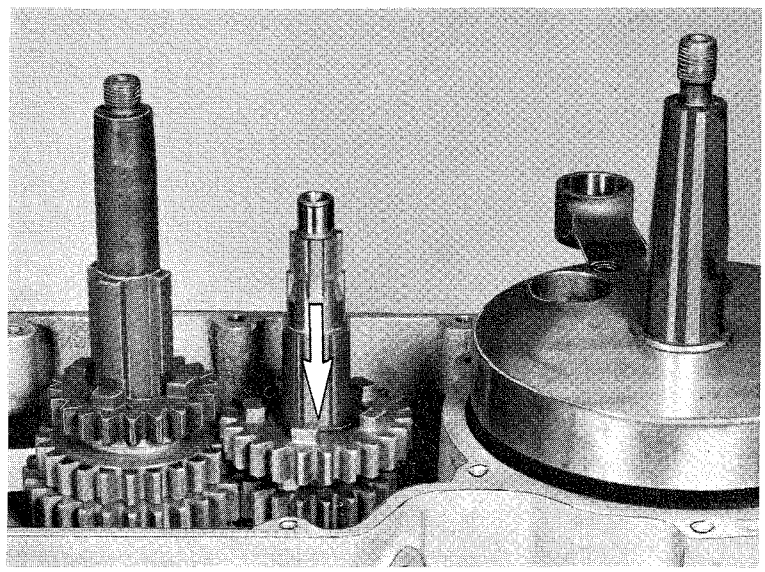


Fig. 7

8. Fit the 5th gear pinion on the clutchshaft. See Fig. 8.

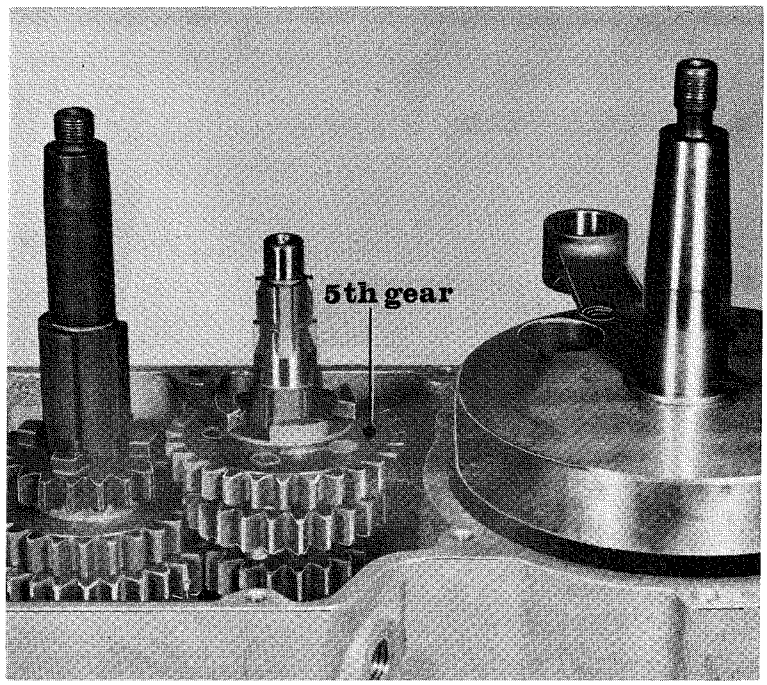


Fig. 8

9. Fit the 5th gear pinion shiftingfork onto the clutchshaft.

NOTE: Rest the shiftingfork on the side of the crankcase half to facilitate assembly of the shifting drum. See Fig. 9.

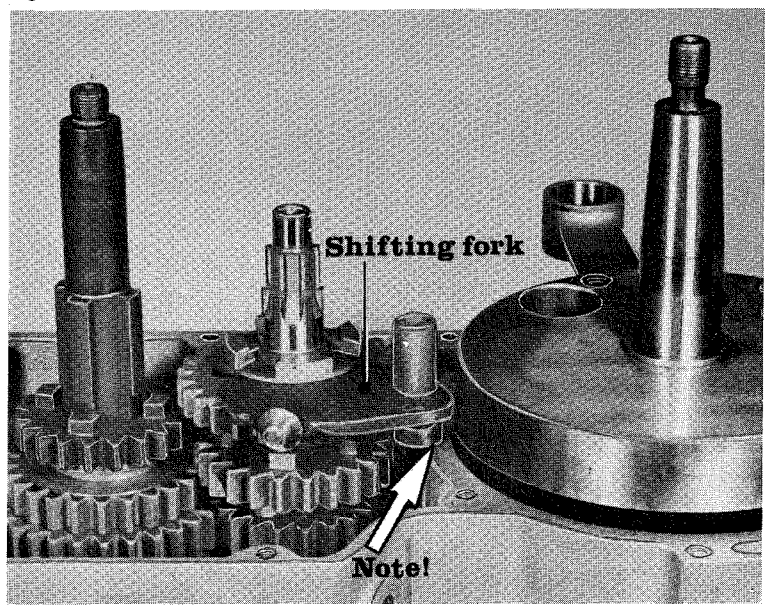


Fig. 9

10. Fit the 4th gear pinion onto the sprocketshaft. See Fig. 10.

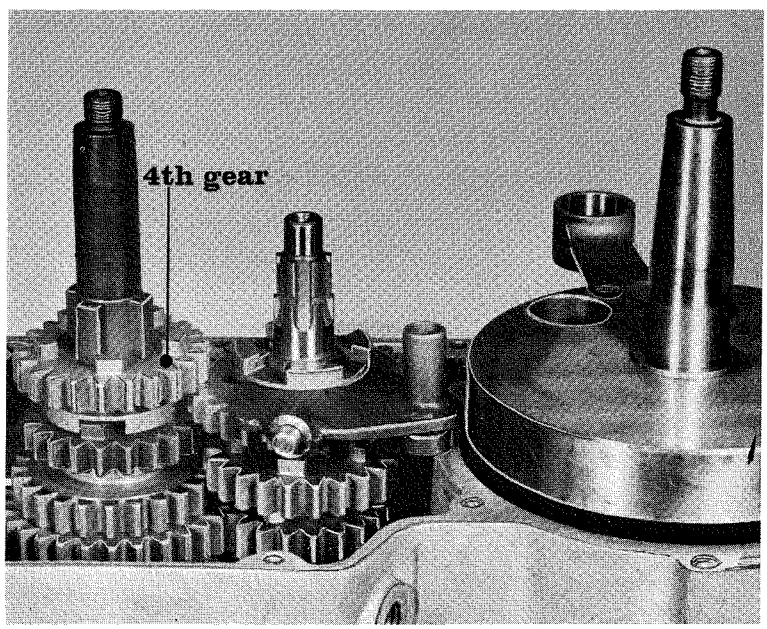
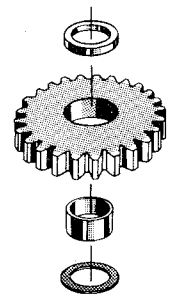


Fig. 10

11. Fit the 4th gear pinion onto the clutchshaft with:
a. washer
b. bushing
c. spacer
See Fig. 11.



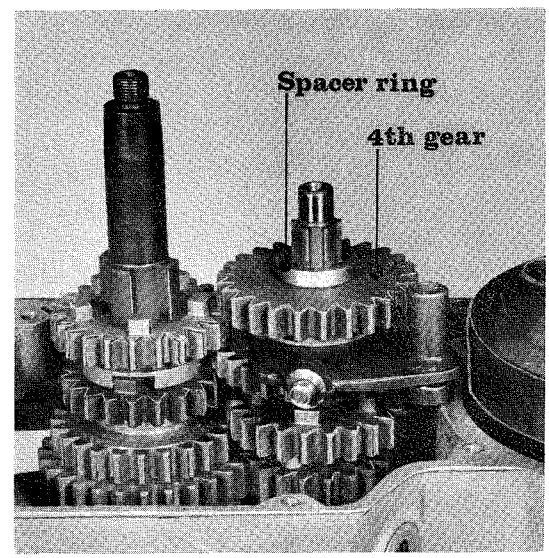


Fig. 11

12. Fit the 2nd gear pinion onto the clutchshaft. See Fig. 12.

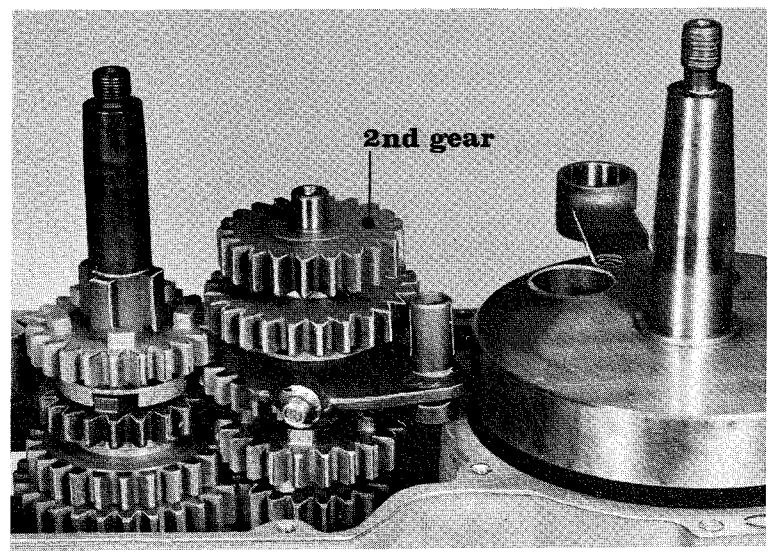
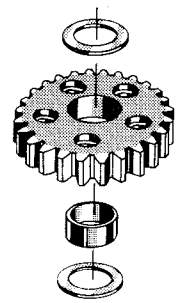


Fig. 12

13. Fit the 2nd gear pinion onto the sprocketshaft with:
a. washer
b. bushing
c. washer
See Fig. 13.



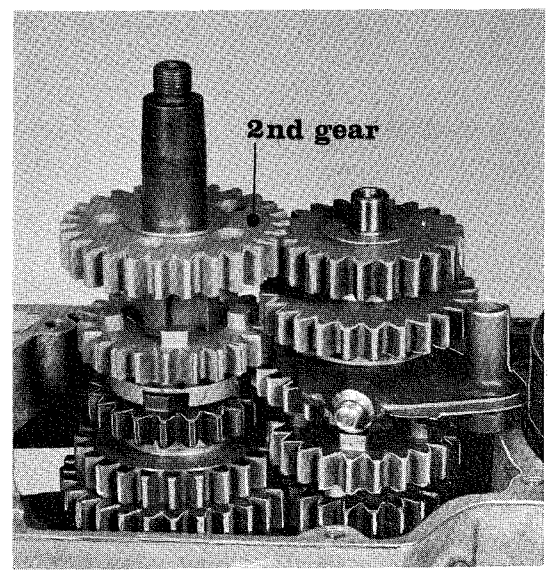


Fig. 13

14. Fit the two shiftingforks on the sprocketshaft pinions.

NOTE: The shiftingfork with the square part should be uppermost. See Fig. 14.

NOTE: The two short ends of the shiftingforks should face each other. See Fig. 14

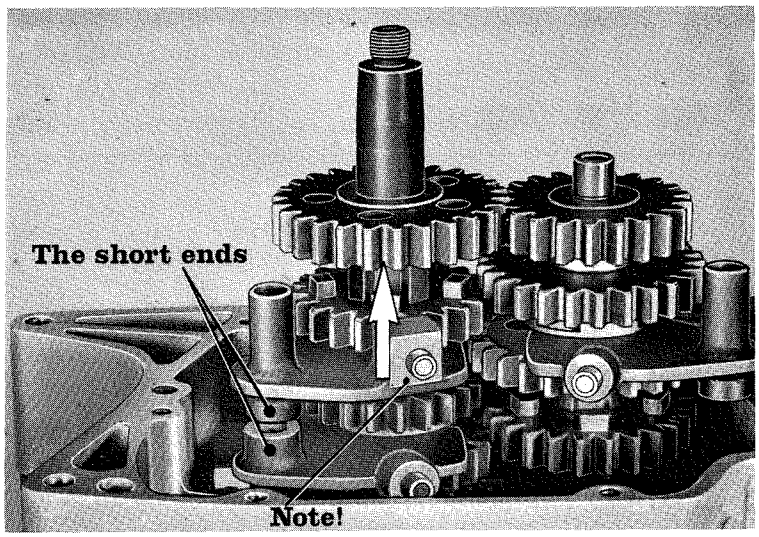


Fig. 14

15. Move the shiftingforks to the left (rearwards) in order to facilitate assembly of the shifting drum. See fig. 15

NOTE: Ensure that all rollers are in position. See Fig. 15.

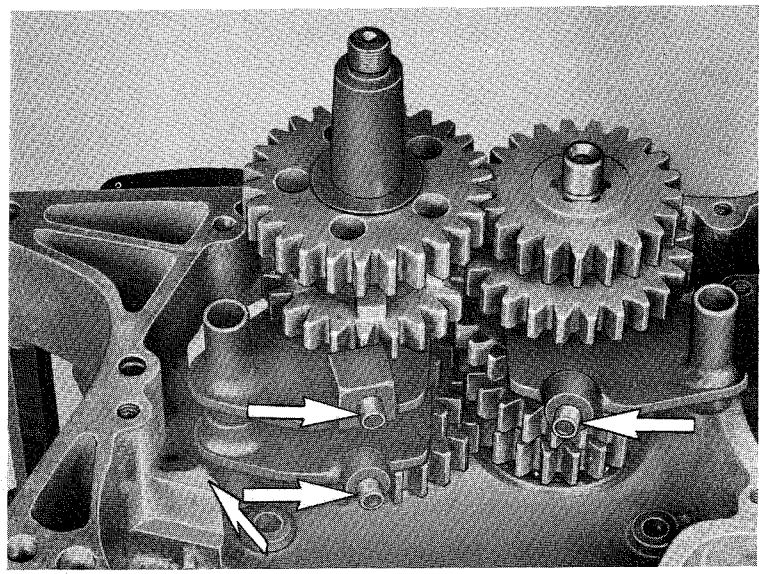


Fig. 15

16. Fit the shifting drum in place with the washer underneath. See Fig. 16.

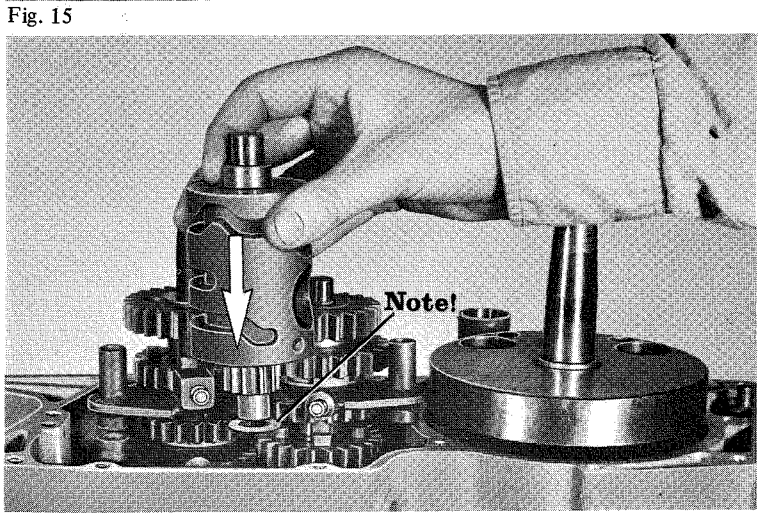


Fig. 16

17. The shifting drum is held in the various gear positions by means of its ratchet sleeve. The various locating positions of ratchet sleeve on the shifting drum will be evident from Fig. 17.

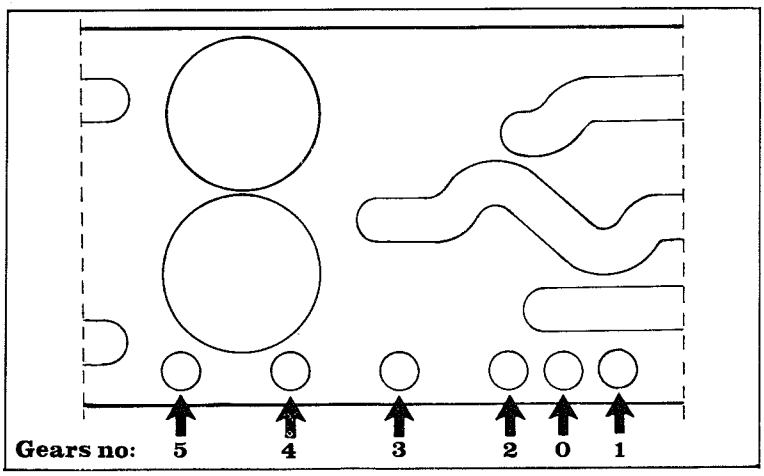


Fig. 17

18. Rotate the shifting drum until it is midway between the 4th and 5th gear position. See Fig. 18.

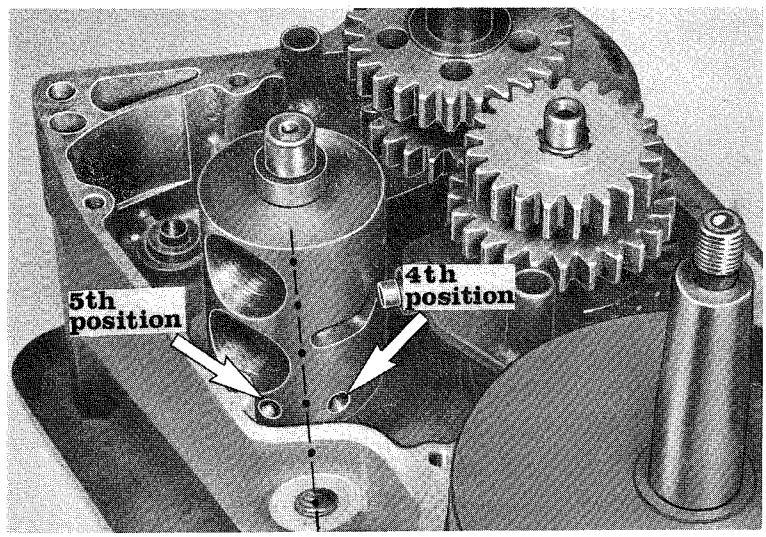


Fig. 18

19. Move the clutchshaft shifting fork so that the pin and roller slide into the centre groove of the shifting drum. See Fig. 19.

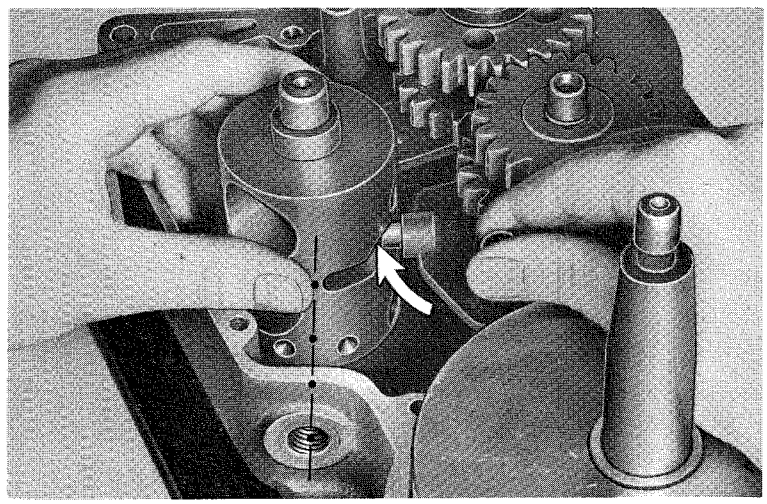


Fig. 19

20. Insert the front shifting fork shaft. See Fig. 20.

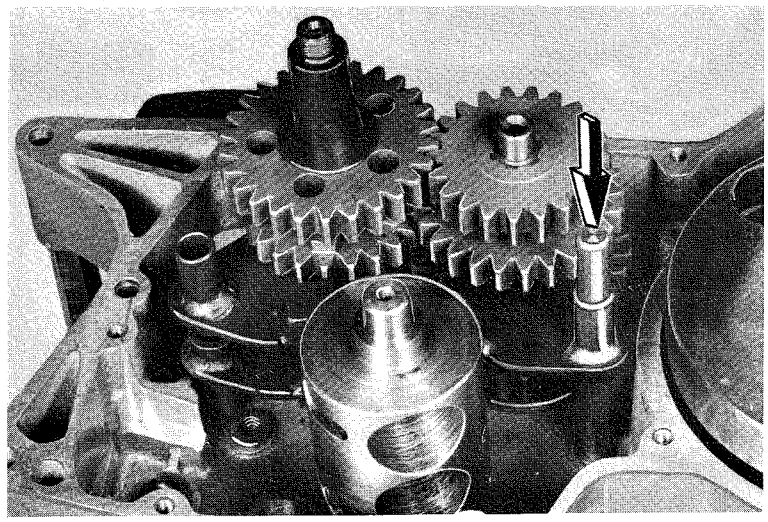


Fig. 20.

21. Slide the rear shifting forks and pinions up so that the pins and rollers can be inserted into the upper and lower grooves of the shifting drum. See Fig. 21.

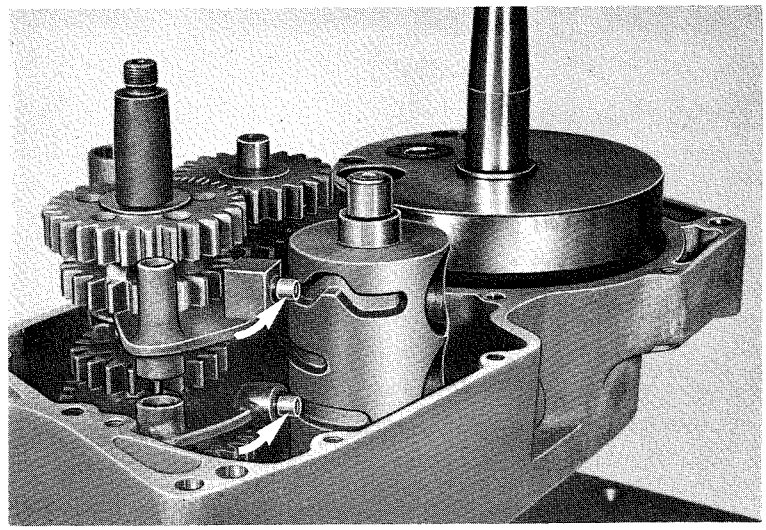


Fig. 21

22. Insert the rear shiftingfork shaft. See Fig. 22.

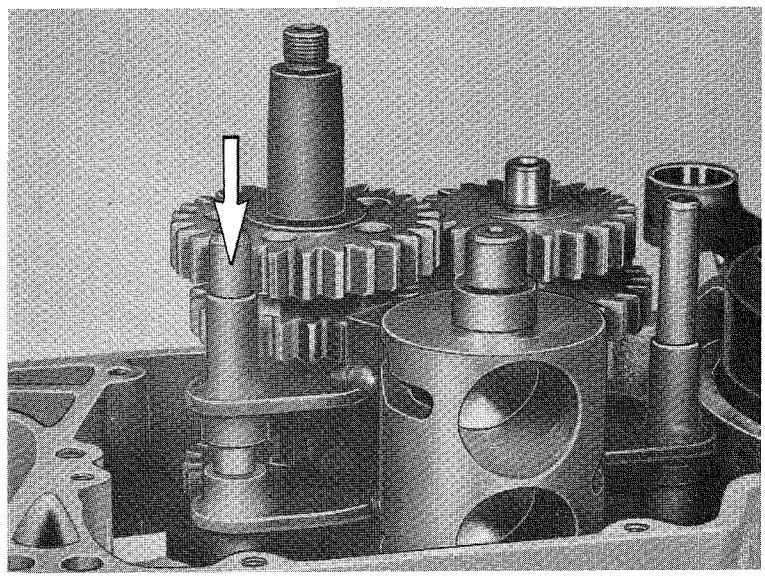


Fig. 22

23. Adjust the shifting drum until it is in the 3rd gear position. See Fig. 23.

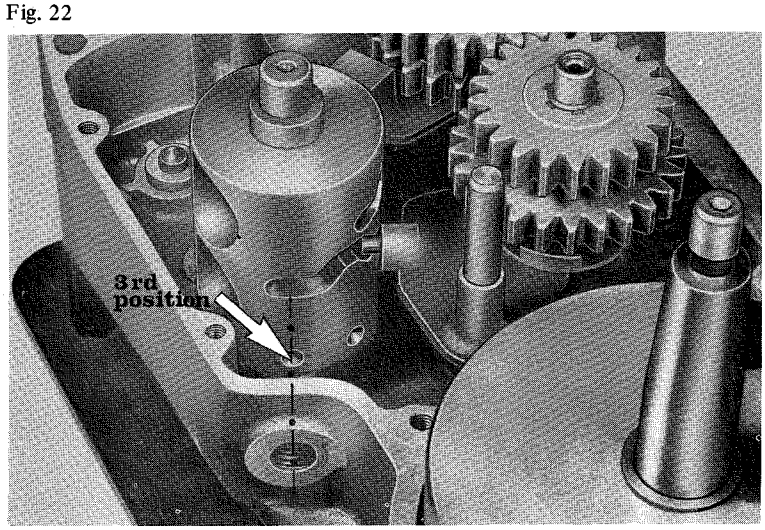


Fig. 23

24. When 3rd gear is engaged, the stepfeeder shall be in mesh so that one tooth is visible on the right sida and two teeth on the left side of the shifting drum. See Fig. 24.

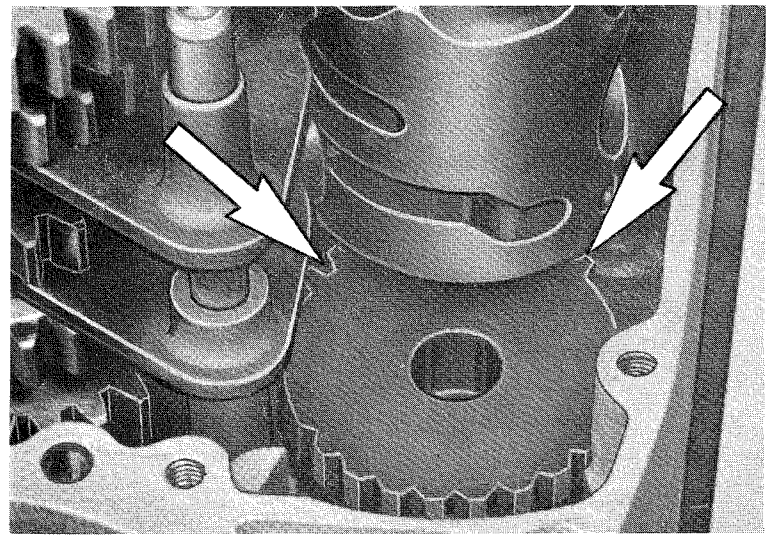


Fig. 24

25. Fit the ratchetsleeve and spring for the pawl in position. See Fig. 25.

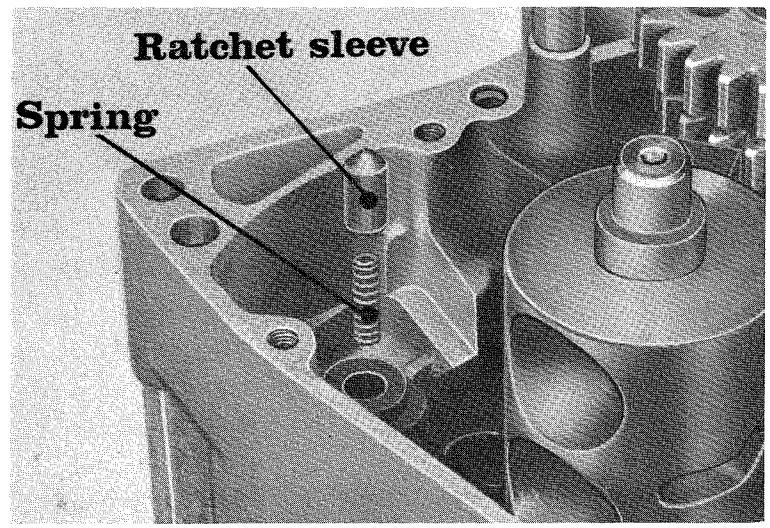


Fig. 25

26. Fit the shifting shaft with pawl in place. See Fig. 26 a.

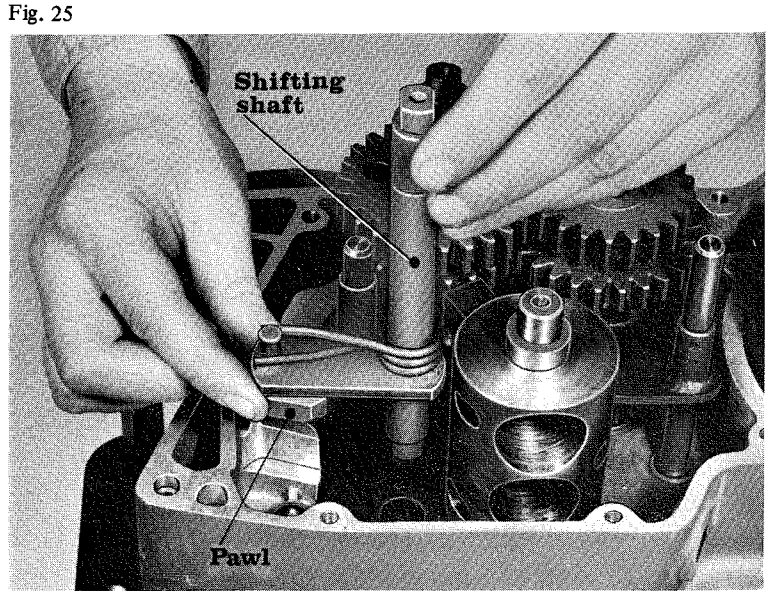


Fig. 26 a

NOTE: Locate the recess in the pawl against the ratchetsleeve. See Fig. 26 b.

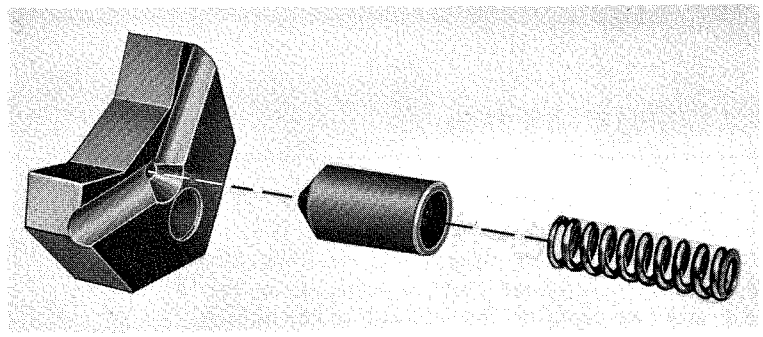


Fig. 26 b

27. Fit a new crankcase gasket and place the right-hand half of the crankcase in position. Tigthen the two crankcase halves, using assembly tool No. 15 19 251-01. See Fig. 27 a.

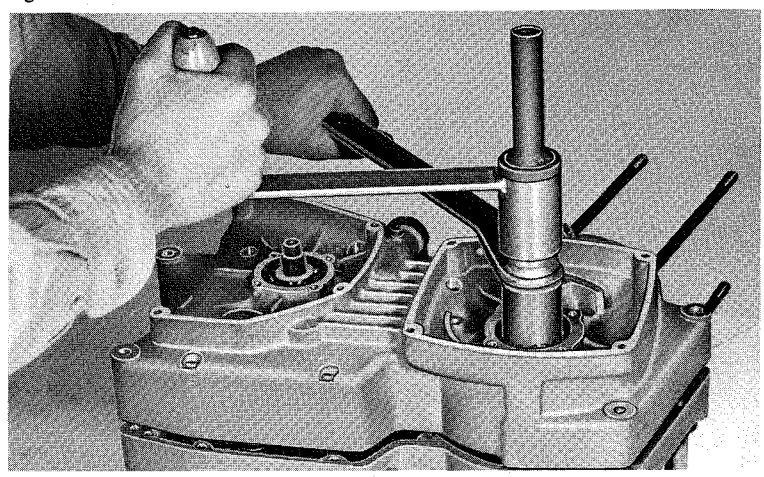


Fig. 27 a

NOTE: Using a plastic mallet or the like, tap on the rear part of the crankcase half while tightening it with the crank. This is to ensure that no stresses are imposed on the crank pin. See Fig. 27 b.

CAUTION: Do not turn the crank any further once the crankcase halves have been brought firmly together as this may damage the crankshaft (crank pin).

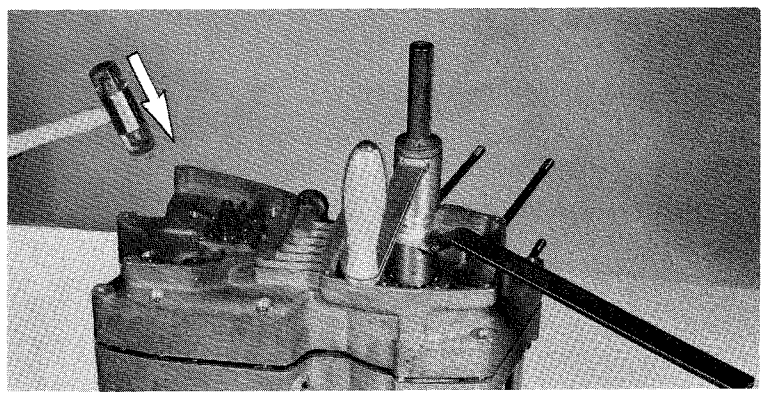


Fig. 27 b

28. Screw in the 11 cap screw and tighten the two crankcase halves.
Tightening torque: 5 lb. ft. (0,7 kpm)
See Figs. 28 a and 28 b.

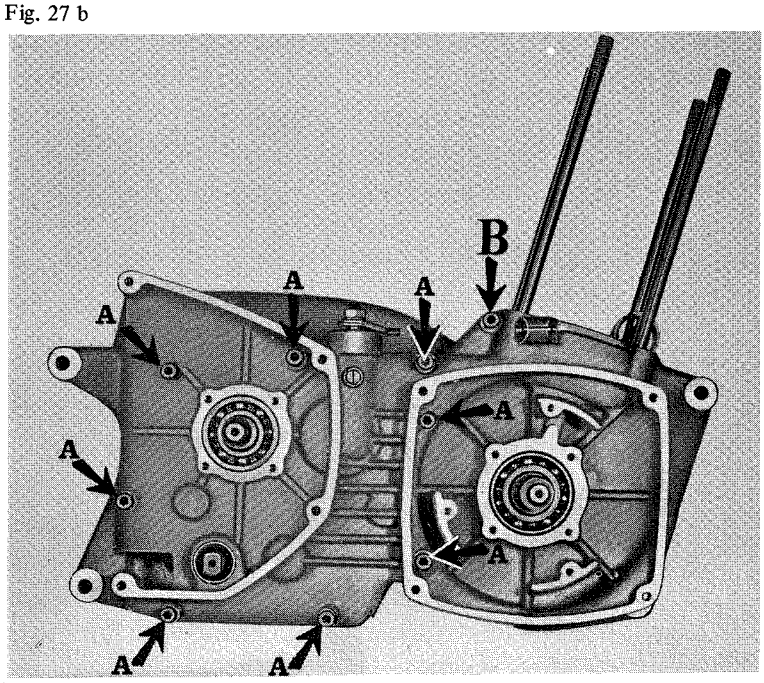


Fig. 28 a
A=6x70 mm. B=6x50 mm

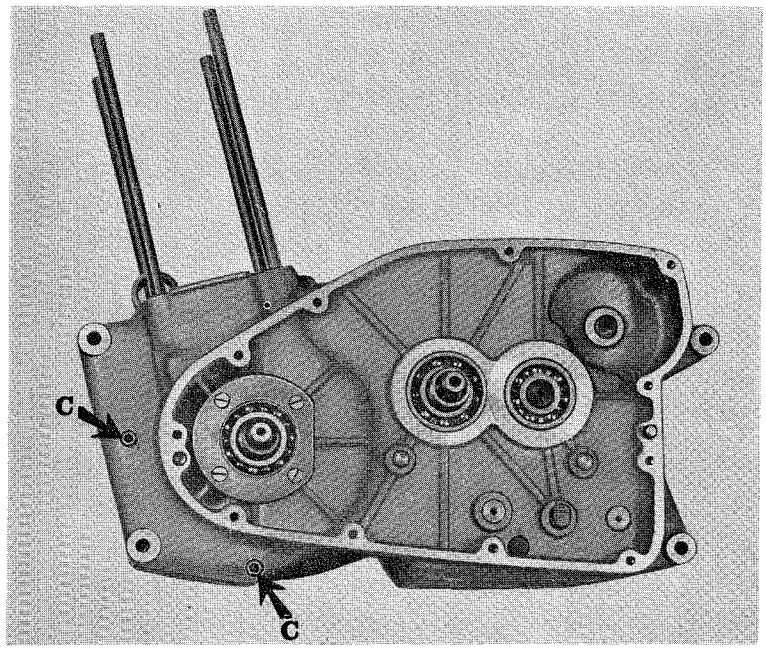


Fig. 28 b C= 6x40 mm

29. Fit the shittingdrum ratchetsleeve in position. See Fig. 29.

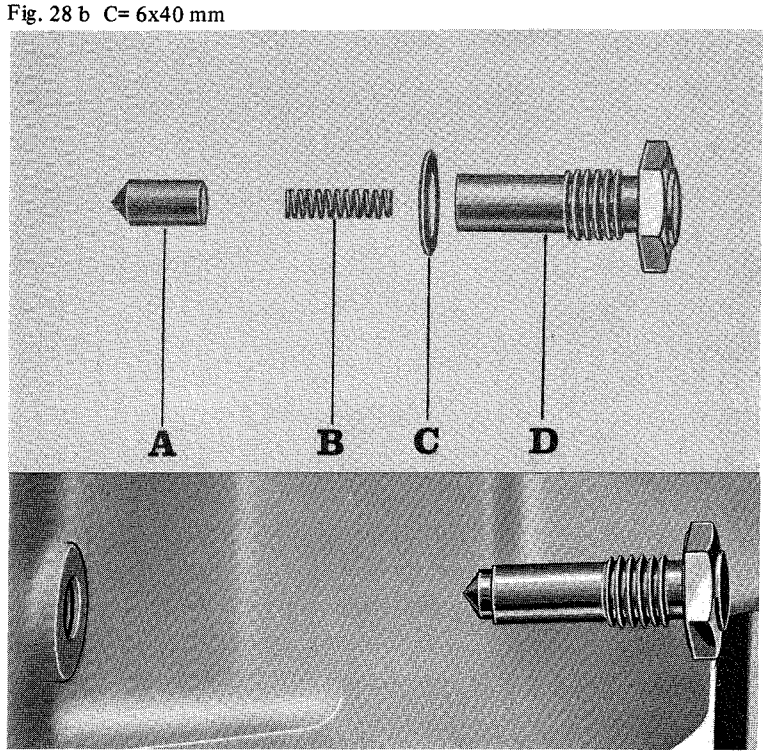


Fig. 29
A: Ratchetsleeve. B: Spring
C: Gasket D: Ratchetscrew

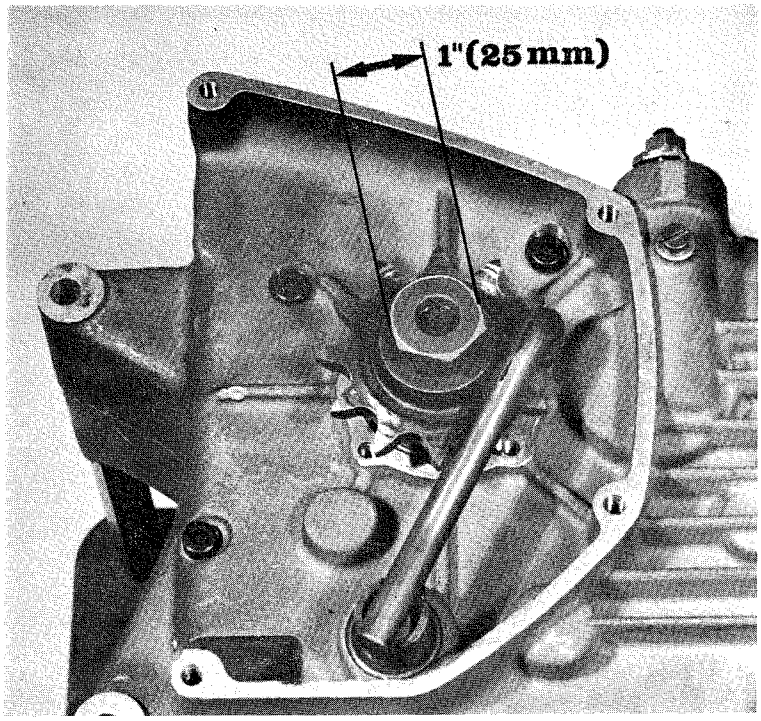


Fig. 30

30. Fit the charin sprocket, using tool No. 15 19 278-01 and 1" (25 mm) spanner. See Fig. 30.
Tightening torque: 50 lb. ft. (7 kpm)

DISASSEMBLY AND ASSEMBLY OF CLUTCH

If only the **clutch** is to be repaired, it is not necessary to drain the gearbox oil. It will suffice to lean the machine over (engine in frame) or mount the engine in the assembly stand.

1. Unscrew the left-hand engine cover (kick starter cover).

2. Disassemble: a) Adjusting nuts
b) Tab washers
c) Washers
d) Clutch springs
e) Pressure plate

See Fig. 2.

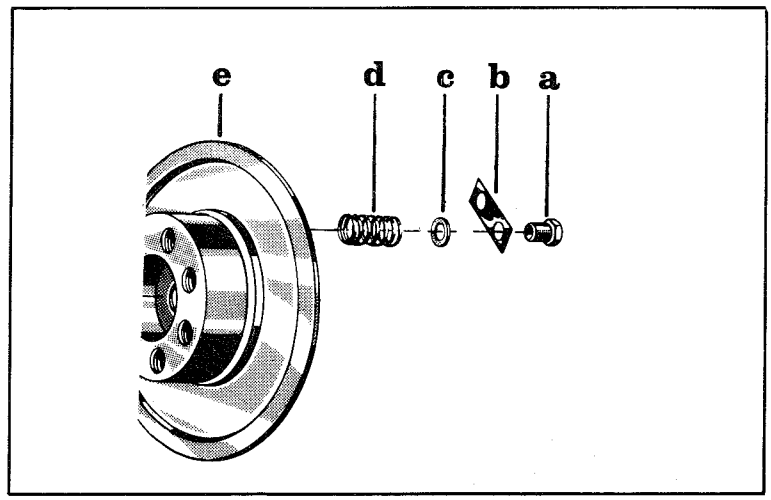


Fig. 2

3. Remove the clutch linings with the aid of a screwdriver, bent piece of wire or the like.

4. Fit holding-up tool No. 15 19 261-01 to the clutch centre and lock the drive gear and clutch ring with the gear segment as shown in Fig. 4 and back off the clutch centre nut.

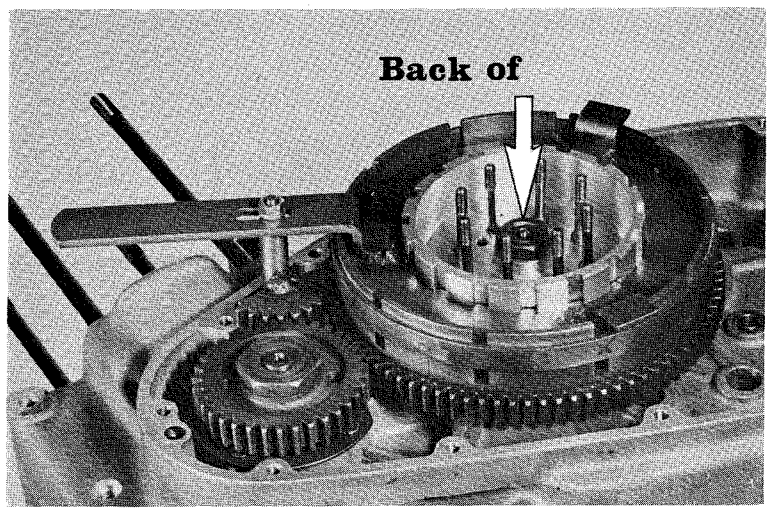


Fig. 4

5. Cange the holding up tool and back off the drive gear nut. See Fig. 5.

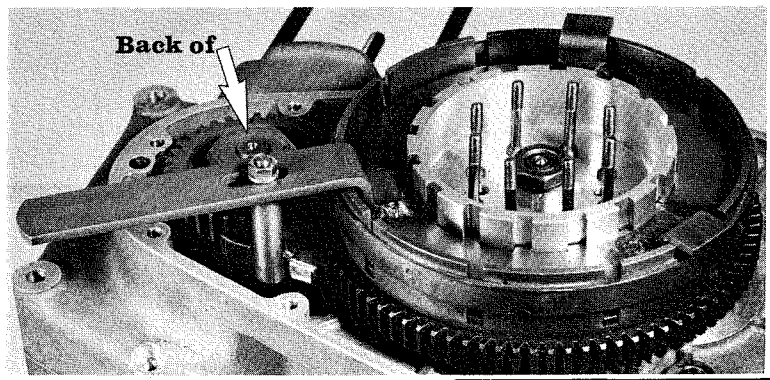


Fig. 5

To be inserted
under tab.nr
Register
Index **3**

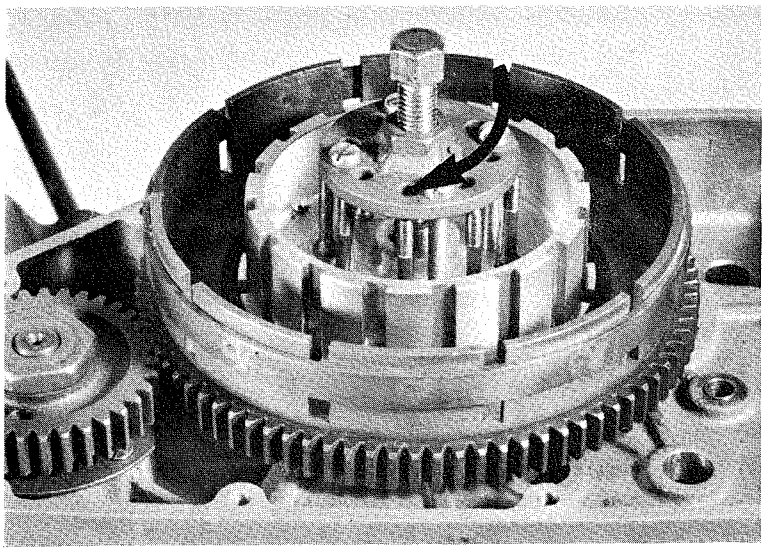


Fig. 6 a

6. Pull off the clutch centre and clutch ping, using puller No. 15 19 268-01.
See Figs. 6 a and 6 b.

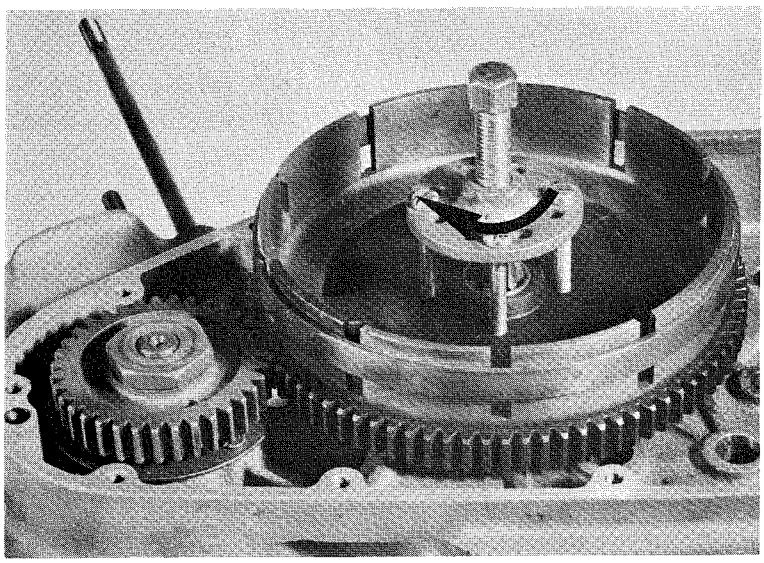


Fig. 6 b

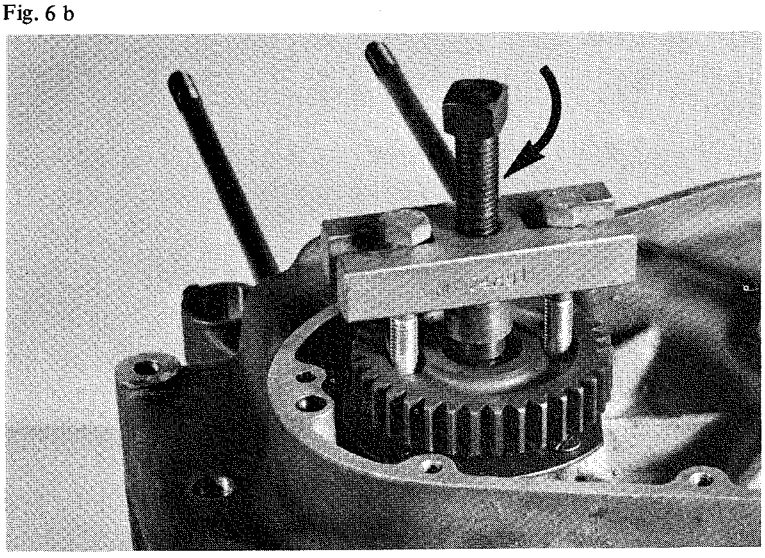


Fig. 7

7. Pull off the drive gear, using puller No. 15 19 275-01 (sprocket puller in which the jaws are replaced by two M8x50 bolts screwed into the gear). See Fig. 7.

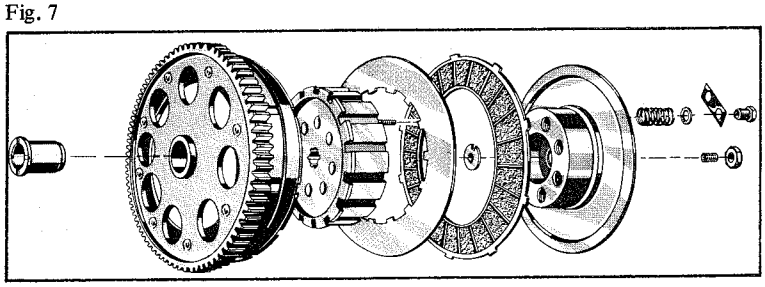


Fig. 8 a

8. Assemble in reverse order. See Fig. 8 a.

NOTE: Do not forget the washer between the clutch ring and clutch centre. See Fig. 8 b.

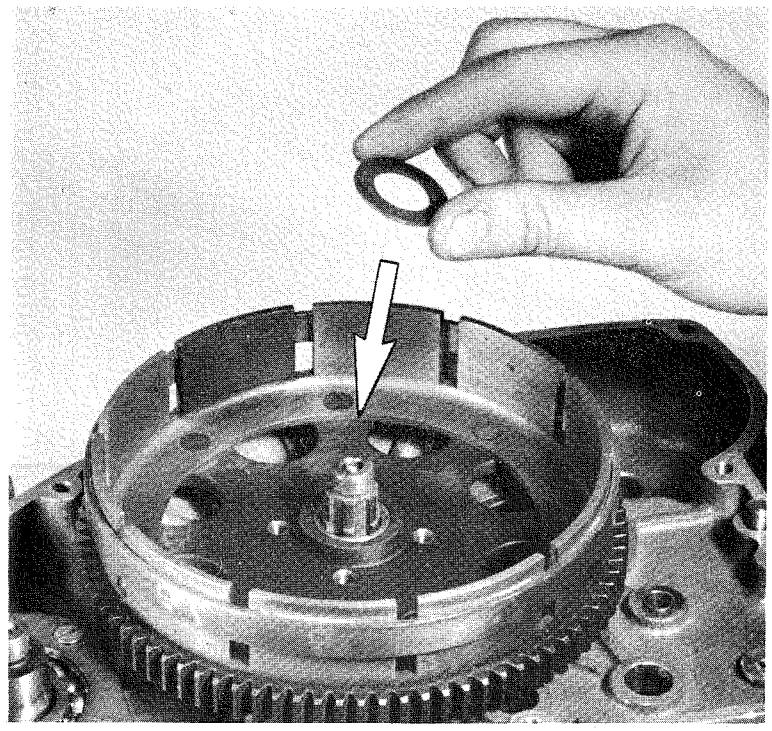


Fig. 8 b

Tightening torque: Drive gear nut: 4 kgfm
Clutch centre nut: 4 kgfm,
use locking fluid. See Fig. 8 c.

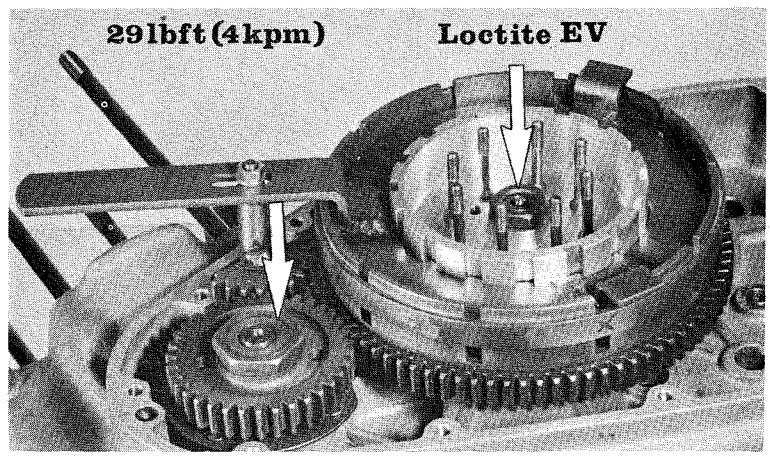


Fig. 8 c

9. Fit the clutch ring with the aid of assembly tool No. 15 19 251-01. See Fig. 9.

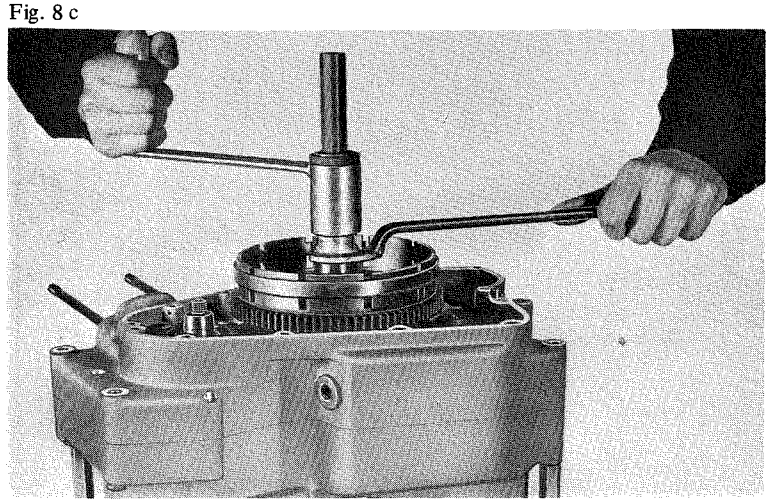


Fig. 9

10. Run on the pressure plate nuts about 8-9 turns when new linings are fitted. If the linings are worn, the nuts must be adjusted accordingly.

NOTE: Do not forget the washers between the springs and the tabs. Bend up the tabs.

11. Adjust the screw as shown in Fig. 11 a, using a screw-driwer and a 13-mm spanner until there is approx. 10-15 mm free play at the lever.

See Fig. 11 b.

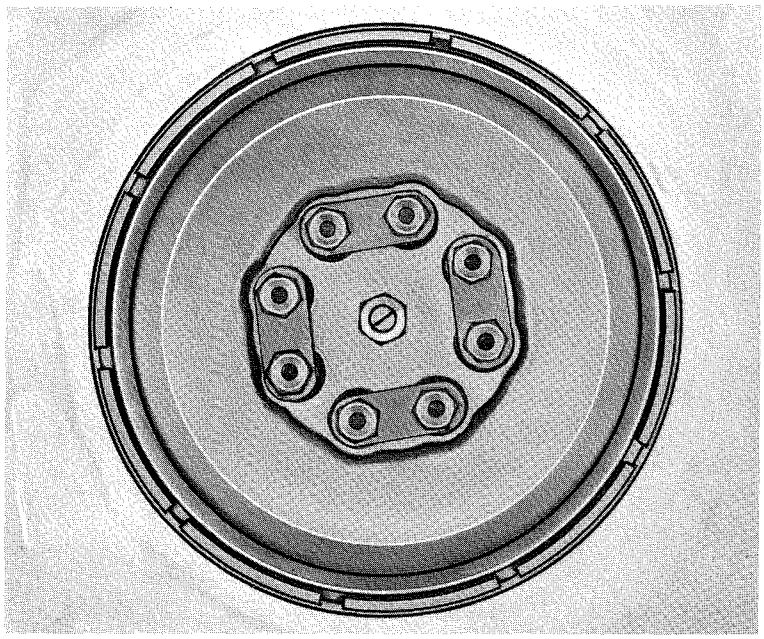


Fig. 11 a

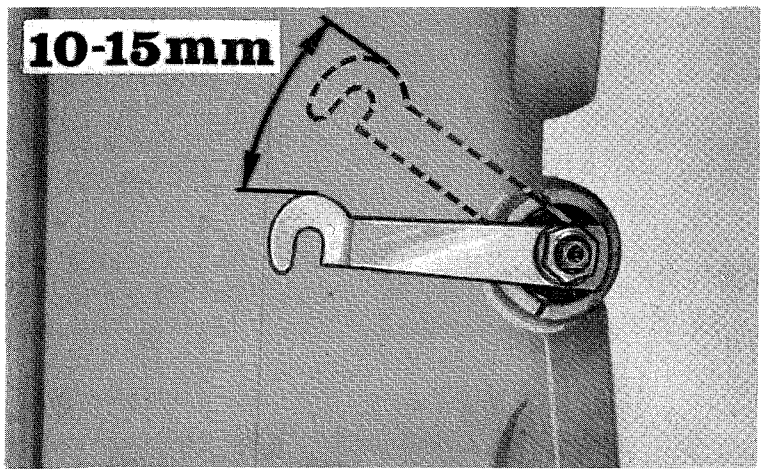


Fig 11 b

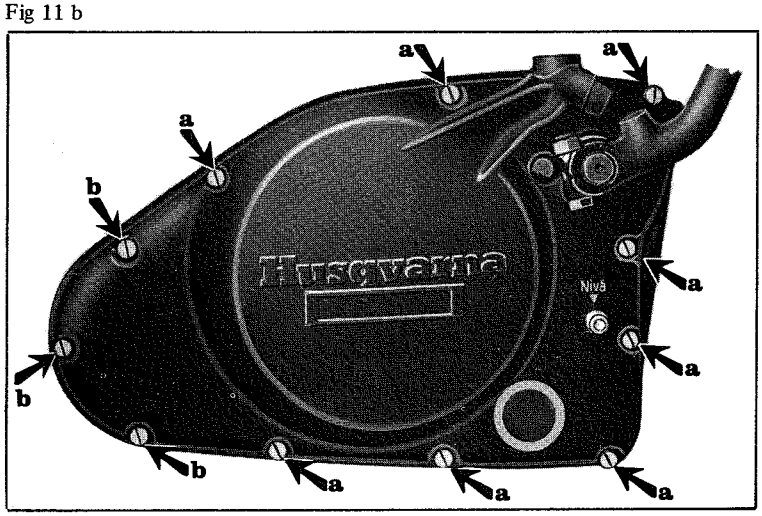


Fig. 12
a= M6x50 mm. b= M6x35 mm

12. Assemble the engine cover. Screws are of two different lengths and should be fitted as shown in Fig. 12.

CHANGING CRANKCASE BEARINGS

1. Disassemble the engine and press out the mainshaft bearin bush. See Fig. 1.

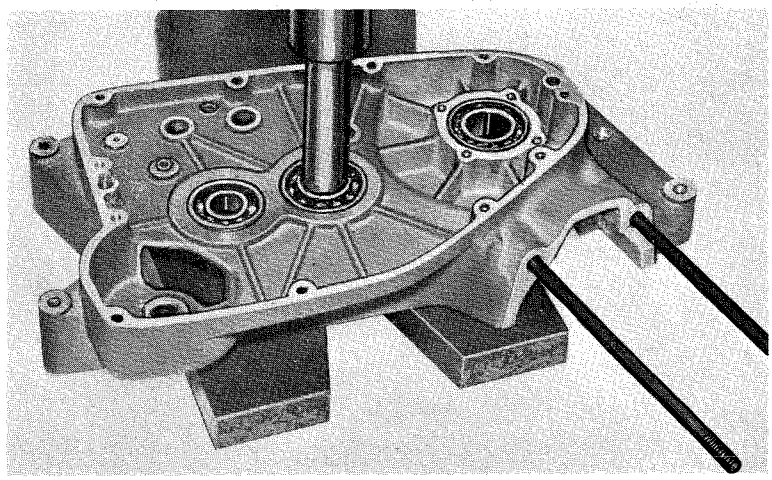


Fig. 1

2. Heat the crankcase half in an oven to approximately 130°C (270°F). A blowpipe or bunsen burner may also be used, Fig. 2 a, but it is then important to make sure that the halves are evenly heated.

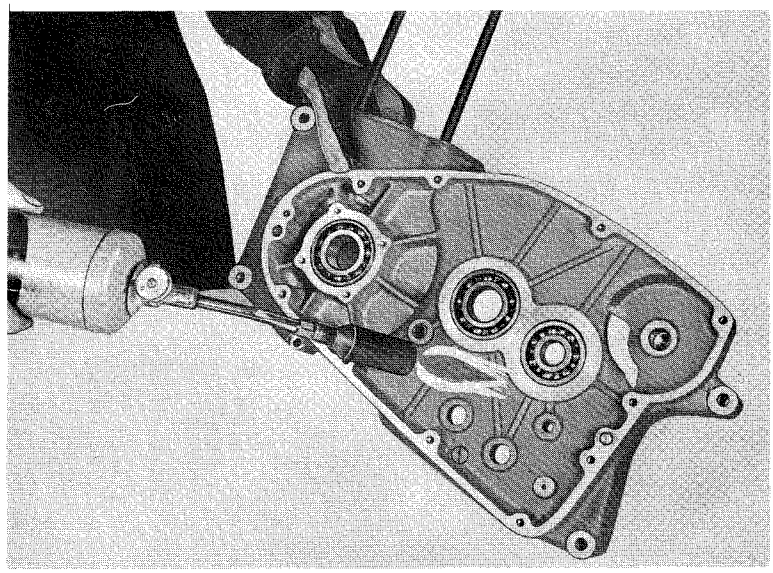


Fig. 2 a

When the above temperature has been reached the bearings will probably drop out of their seats. If not, tap the crankcase half against a block of wood or the like. See Fig. 2 b.

NOTE: Fit the new bearings while the crankcase half is still hot.

NOTE: Never disassemble or assemble bearings when the crankcase is cold. This will ruin the fit of the bearings and they will be looser each time.

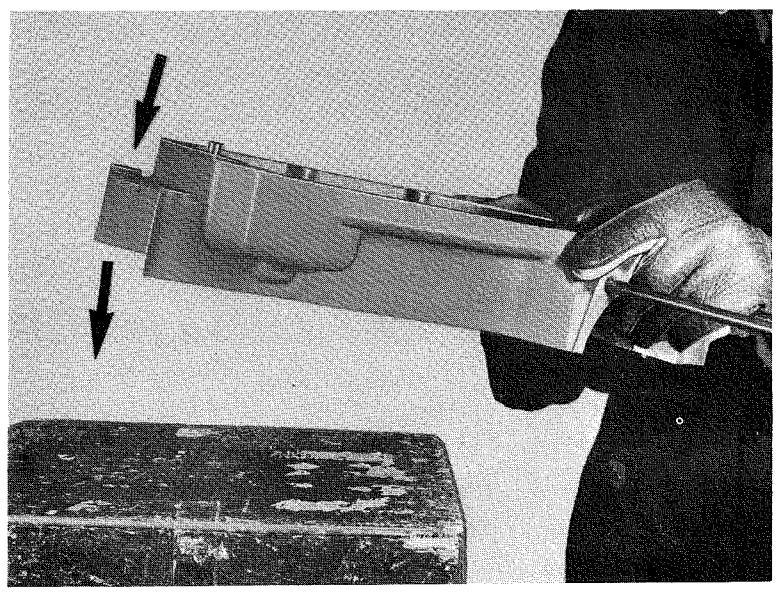


Fig. 2 b

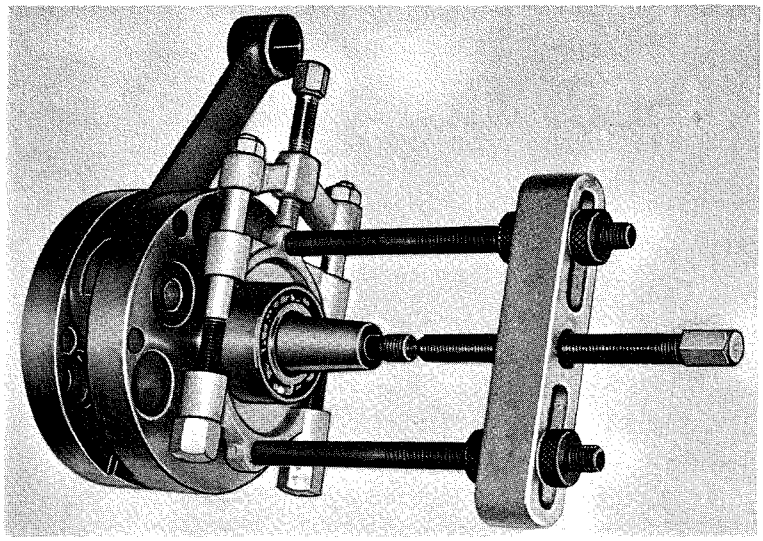
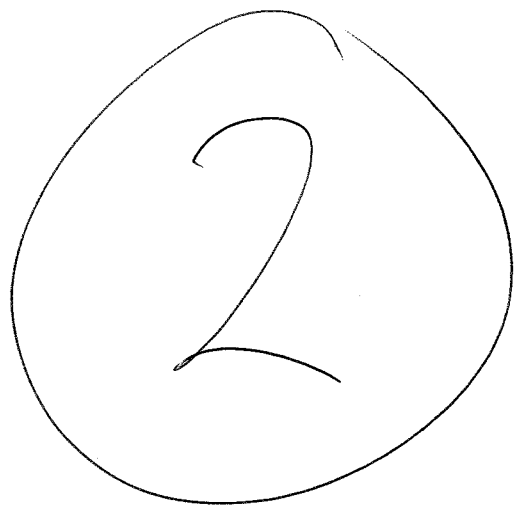


Fig. 3

3. If the crankshaft bearings jam on the crankshaft during disassembly they can be removed with the aid of an external ball-bearing puller. See Fig. 3.



MH 400 cc

Vid montering av cylinder och cylinderlock på 400 cc är det av stor vikt att rätt cylinderpackning användes och att rätt åtdragningsmoment appliceras på cylinderlocksmuttrarna. I annat fall finnes risk för att kolven slår mot toppen.

Cylinderpackning för 400 cc: 16 10 896-01. (Förväxla den inte med 16 10 981-01).

Åtdragningsmoment, cylinderlocksmuttrar: 3,0 - 3,5 kpm vid kall motor.

Reklamationer av ovannämnda orsaker kommer i fortsättningen att avvisas.

MH 400 cc

When fitting the cylinder and cylinder head on the 400 cc model it is very important that the correct cylinder gasket is used and that the cylinder head nuts are tightened to the correct torque, as otherwise there is a risk that the piston will strike the cylinder head.

Cylinder gasket for 400 cc: 16 10 896-01. (Don´t mix it up with 16 10 981-01).

Tightening torque, cylinder head nuts: 3,0 - 3,5 kpm (25 lb.ft.) at cold engine.

No claims resulting from the above-mentioned reasons will be accepted in future.

MH 400 ccm

Beim Einbau von Zylinder und Zylinderkopf beim 400 ccm ist es von grösster Bedeutung, dass die richtige Zylinderdichtung verwendet wird und dass die Zylinderkopfmuttern mit dem richtigen Anziehmoment angezogen werden. Sonst besteht die Gefahr, dass der Kolben gegen den Zylinderkopf stösst.

Die Zylinderdichtung für den 400 ccm hat die Ersatzteilnummer 16 10 896-01. (Sie nicht mit 16 10 981-01 verwechseln).

Das Anziehmoment für die Zylinderkopfmuttern beträgt 3,0 - 3,5 mkp bei kaltem Motor.

Beanstandungen, die uns aufgrund der obigen Störung zugesandt werden, müssen wir auch in Zukunft unbeachtet lassen.

MH 400 cm^3

Lors du montage des cylindres et culasses sur les moteurs de 400 cm^3, il importe de veiller à ce que les joints de cylindres employés soient justement ceux qui conviennent à ces moteurs et à ce que les écrous de culasses soient serrés au couple requis. Dans le cas contraire, les pistons risquent de cogner contre les culasses.

Référence de joint de cylindres pour moteur 400 cm^3: 16 10 896-01. (Ne la pas confondre avec 16 10 981-01).

Couple de serrage d´écrous de culasses: 3,0 - 3,5 m.kg au moteur froid.

Nous n´accepterons désormais aucune réclamation concernant les défauts résultant d´une non-observation de ce qui est mentionné ci-dessus.

Bingförgasare 36 mm

För denna förgasare rekommenderas följande grundinställning, med vissa avvikelser beroende på temperatur, klimat och körförhållande.

Huvudmunstycke	Nr 180	(16 13 500-01)
Nålmunstycke:	2,85	(16 13 987-01)
Tomgångsmunstycke:	Nr 35	(16 13 505-01)
Nål:	1,5 x 28	(16 13 995-01)

Nålläge: 3 (nålen i översta läget)
Tomgångsskruv (lilla skruven): Öppnas 1,5 varv från bottenläget.

Bing carburettor 36 mm

For this carburettor the following main adjustments are recommended, with certain divergences depending on the temperature, climate and racing circumstances.

Main jet:	Nr 180	(16 13 500-01)
Needle jet:	2,85	(16 13 987-01)
Idle Jet:	Nr 35	(16 13 505-01)
Needle:	1,5 x 28	(16 13 995-01)

Needle position: 3 (the needle in the upper position)
Idle screw (the small screw) is opened 1,5 turns from bottom position.

Bingvergaser 36 mm

Für diesen Vergaser wird folgende Grundeinstellung empfelen, mit gewissen Abweichungen abhängig von der Temperatur, dem Klima und der Fahrverhältnissen.

Hauptmundstück:	Nr 180	(16 13 500-01)
Nadelmundstück:	2,85	(16 13 987-01)
Leerlaufsmundstück:	Nr 35	(16 13 505-01)
Nadel:	1,5 x 28	(16 13 995-01)

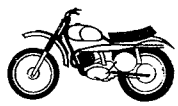
Nadellage: 3 (Nadel in der höchsten Lage)
Leerlaufsschraube (kleine Schraube): Wird 1 1/2 Umdrehungen von der Bodenlage geöffnet.

Carburateur Bing 36 mm

Pour ce carburateur, nous recommandons le réglage fondamental suivant (avec certaines déviations, compte tenu de la temperature, du climat et des conditions de conduite):

Gicleur principal:	No. 180	(16 13 500-01)
Buse de pointeau:	2,85	(16 13 987-01)
Gicleur de ralenti:	No. 35	(16 13 505-01)
Pointeau:	1,5 x 28	(16 13 995-01)

Position du pointeau: 3 (le pointeau dans la position supérieure)
Vis de ralenti (la petite vis): Tourner 1,5 tours de la position serrée.



MC-Motor

För att få bättre och säkrare funktion på startmekanismen har en bussning införts på startmekanismens kugghjul.

Bussningens best. nr är 12 25 713-01.

Kugghjul + bussning får samma komplettnummer som det tidigare kugghjulet.

MC Engine

In order to get a better and more secure function of the starting mechanism a bushing has been introduced on the pinion of the starting mechanism.

Order Number of the bushing is 12 25 713-01.

Pinion and bushing have the same complete number as the earlier pinion.

MC-Motor

Um eine bessere und sicherere Funktion der Startervorrichtung zu erzielen ist am Zahnrad eine Buchse eingeführt worden.

Best. Nr. 12 25 713-01.

Zahnrad + Buchse haben die selbe Best. Nr. wie früher das Zahnrad.

Moteur de motocyclette

Afin que le dispositif de démarrage fonctionne mieux et plus efficacement, une douille a été ajoutée à son pignon.

Numéro de référence de la douille: 12 25 713-01.

Le numéro de référence du pignon + la douille est le même que celui du pignon précédent.

Gäller MH 250cc och 360cc samt SH

Under mars 1970 infördes Bingförgasaren, best.nr: 16 13 964-01, i produktionen även på våra 250cc och 360cc-motorer. Den tidigare översända reservdelsförteckningen för 400cc-motorn gäller utan ändring nu även för 250cc- och 360cc-motorerna, vilka är utrustade med Bingförgasare.

I samband med detta utbytes också följande delar till resp. nummer:

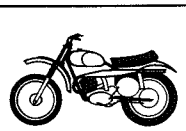
Benämning	Nytt Best.nr	Anmärkning
Bränsleslang	50 10 595-09	Bytes från plast till gummi
Gaswire	15 15 217-01	Bytes för att passa på Bingförgasaren
Insugningsrör 360cc	16 10 554-01	
Insugningsrör 250cc	16 10 640-01	
Luftfilteranslutning	16 13 963-01	
Distanshylsa	16 13 968-01	
Tätningsring	16 13 966-01	
Bränsletank endast MH 360cc	15 14 031-03	

Valid for MH 250cc, 360cc and SH

During March 1970 the Bing carburettor, Part No: 16 13 964-01, was also incorporated in the production of our 250cc + 360cc engines. The spare parts list for the 400cc which was sent to you previously is now even valid for the 250cc and 360cc engines, as they are equipped with Bing carburettors.

In connection with the change the following parts have now changed part number.

Description	New Part No	
Petrol hose	50 10 595-09	Altered from plastic to rubber
Gas wire	15 15 217-01	Alteret to suit Bing Carburettor
Suction pipe 360cc	16 10 554-01	
Suction pipe 250cc	16 10 640-01	
Air filter connection	16 13 963-01	
Spacing sleeve	16 13 968-01	
Troat ring, air filter	16 13 966-01	
Fuel tank, only MH 360cc	15 14 031-03	



Betr. MH 250ccm und 360ccm sowie SH

Im März 1970 sind Bing-Vergaser, Best. Nr 16 13 964-01, auch für die 250ccm und 360ccm-Motoren in die Produktion aufgenommen worden. Die früher ausgesandten Ersatzteillisten für 400ccm-Motoren gelten ohne Änderung jetzt auch für 250ccm und 360ccm-Motoren, welche mit Bing-Vergasern ausgerüstet sind.

Hiermit im Zusammenhang werden folgende Teile ausgetanscht:

Bezeichnung	Neue Best. Nr.	Anmerkung
Benzinschlauch	50 10 595-09	Plastik gegen Gummi ausgetanscht
Gaszug	15 15 217-01	Für Bing-Vergaser passend ausgetanscht
Einsaugrohr 360ccm	16 10 554-01	
Einsaugrohr 250ccm	16 10 640-01	
Luftfilteranschluss	16 13 963-01	
Abstandshülse	16 13 968-01	
Dichtungsring	16 13 966-01	
Benzintank, nur MH 360ccm	15 14 031-03	

MC-motor

För att erhålla säkrare funktion samt enklare montering och demontering av cylinderlock, kommer den nuvarande anordningen med mutter och bricka att bytas ut mot en 6-kantmutter med fläns.

Den nya mutterns best.nr är 25 46 120-14.

MC Engine

In order to get a more secure function and also an easier mounting and dismounting of the cylindercover, the present arrangement with nut and washer will be exchanged for a hexagon nut with flange.

The order number of the new nut is 25 46 120-14.

MC Motor

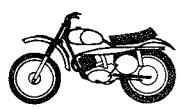
Um sicherere Funktion sowie einfacherere Montage und Demontage des Zylinderdeckels zu gewährleisten, wird die gegenwärtige Lösung mit Mutter und Scheibe gegen 6-kant Mutter mit Flansch ausgetauscht.

Best.Nr. der neuen Mutter: 25 46 120-14.

Moteur de motocyclette

Afin d´améliorer le fonctionnement et de simplifier le montage et démontage de la culasse, nous remplacerons l´arrangement présént (écrou + rondelle) par un écrou hexagonal avec bride.

Le numéro de référence du nouvel écrou est 25 46 120-14.



Avgasrör MI 250cc och 400cc

Vi kommer att införa en ny typ av fastsättning för avgasröret på 250cc och 400 cc.

Den främre delen av infästningen (vid avgasstoset) består av två fjädrar som håller ihop röret med avgasstosen enl. fig. 1 nedan.

Det mellersta och det bakre fästet framgår av fig. 2 och 3 nedan.

Exhaust pipe MI 250cc and 400cc

We will introduce a new fixing for the exhaust pipe on 250cc and 400cc.

The front part of the fixing (by the exhaust manifold) consists of two springs, which keep the pipe and the exhaust manifold together according to figure 1 below. The middle and the back fixing are shown on figure 2 and 3 below.

Auspuffrohr MI 250ccm und 400ccm

Für das Auspuffrohr der Mod. 250ccm und 400ccm werden wir eine neue Befestigungsanordnung einführen.

Der vordere Teil der Befestigung (am Auspuffstutzen) besteht aus zwei Federn, welche Rohr und Stutzen wie Abb. 1 zusammenhalten.

Die mittlere - sowie hintere Befestigung sind aus Abb. 2 und 3 zu ersehen.

Conduit d´échappement MI 250cc et 400cc

Nous introduirons une nouvelle manière de fixation pour le conduit d´échappement de 250cc et 400cc.

La partie antérieure de la fixation (à l´embout d´échappement) consiste de deux ressorts qui tiennent ensemble le conduit avec l´embout d´échappement selon figure 1 ci-dessous.

La fixation du milieu et postérieure résulte de figure 2 et 3 ci-dessous.

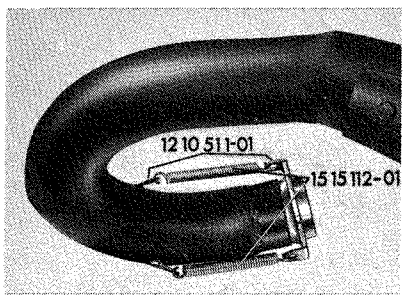


Fig. 1
Främre fäste
Front fixing
Vordere Befestigung
La fixation avant

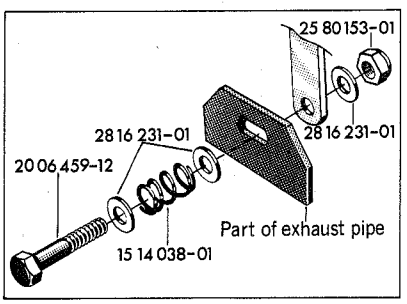


Fig. 2
Mittre fäste
Middle fixing
Mittlere Befestigung
La fixation du milieu

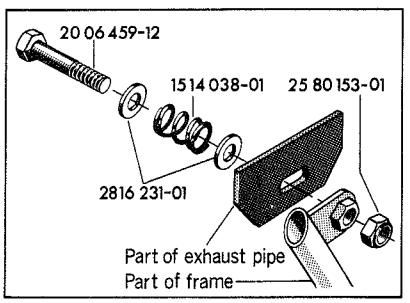


Fig. 3
Bakre fäste
Rear fixing
Hintere Befestigung
La fixation postérieure

Tändanläggning 250 cc, MI

På MI 250 cc kommer vi att införa svänghjulsmagnet 16 14 691 01. Detta innebär att 250 cc, 360 cc och 400 cc får samma magnet. Beträffande reservdelsförteckning på denna magnet, se tidigare utsänd förteckning över 400 cc:s magnet.

I samband med detta byte måste vi också införa en ny högeraxel, vevaxel.

Nya delar på 250 cc med Femsa-magneten:

Vevaxel, höger	16 10 868 01
Vevparti kompl. utan kolv	16 10 617 01
Femsa svänghjulsmagnet	16 14 691 01

Ignition unit 250 cc, MI

We will be introducing a flywheel ignition unit for the MI 250 cc model. The order no. for this new ignition unit is 16 14 691 01. This means that the 250 cc, 360 cc and 400 cc engines will have the same ignition. Concerning parts numbers for this ignition kit, please see our earlier published list for the 400 cc ignition kit.

This modification means that we must also introduce a new right-hand journal for the crankshaft.

New parts on the 250 cc with Femsa ignition are:

Crankshaft, right-hand	16 10 868 01
Connecting rod compl. without piston	16 10 617 01
Femsa flywheel ignition	16 14 691 01

Zündung 250 ccm, MI

Wir werden den Schwungradmagnet 16 14 691 01 bei der MI 250er-Maschine einführen. Das bedeutet, dass die Maschinen 250 ccm, 360 ccm und 400 ccm Cross den gleichen Magnet erhalten. Was das Ersatzteil-verzeichnis für dieses Magnet anbelangt, verweisen wir auf das frühere verteilte Verzeichnis über den Magnet für die Maschine 400 ccm.

In Verbindung mit diesem Austausch müssen wir auch eine neue rechte Kurbelwelle einführen.

Folgende Teile sind neu an der Maschine 250 ccm mit Femsa-Magnet:

Kurbelwelle, rechts	16 10 868 01
Kurbeltrieb, kpl., ohne Kolben	16 10 617 01
Femsa-Schwungrad-Magnet	16 14 691 01

Dispositif d´allumage 250 cm^3, MI

Nous allons monter le volant magnétique 16 14 691 01 sur les machines de 250 cm^3 MI. Ceci veut dire que les machines de 250 cm^3, 360 cm^3 et 400 cm^3, version "cross" auront le même volant magnétique. Concernant la liste de pièces de rechange de ce volant magnétique, on est prié de se référer à celle envoyée antérieurement pour le volant magnétique équipant les machines de 400 cm^3.

Parallèlement au montage de ce nouveau volant magnétique, nous montons également un nouvel arbre de droite, vilebrequin.

Les nouvelles pièces des machines de 250 cm^3 équipées de la magnéto Femsa sont les suivantes:

Vilebrequin, droite	16 10 868 01
Carter vilebrequin complet, sans piston	16 10 617 01
Volant magnétique Femsa	16 14 691 01

Avgasrör - Enduro

För att erhålla effektivare fastsättning av bakre ljuddämparen har vi fr.o.m. nov. infört en längre skruv med låsmutter för avgassystemets bakre fastsättning på SH- och SI-maskinerna.

Skruv best.nr 20 06 459-12
Mutter best.nr 25 80 152-01

Enduro exhaust pipe

For better securing of the rear muffler, we have introduced a longer bolt with locknut for the rear fixing of the exhaust system on SH and SI machines. The change is effective from November 1970.

Bolt Part No. 20 06 459-12
Nut Part No. 25 80 152-01

Auspuffrohr - Enduro

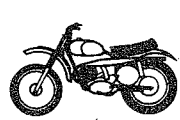
Um eine bessere Befestigung des hinteren Schalldämpfers zu erzielen, haben wir ab November eine längere Schraube mit Sicherungsmutter für die hintere Halterung der SH- and SI-Maschinen eingeführt.

Schraube Bestellnummer 20 06 459-12
Mutter Bestellnummer 25 80 152-01

Tuyau d´échappement - Enduro

Afin d´obtenir une meilleure fixation du pot d´échappement arrière, nous avons monté à partir du mois de novembre une vis plus longue, munie d´un contre-écrou, à la fixation arrière du système d´échappement des machines SH et SI.

Vis Numéro de référence pour la commande 20 06 459-21
Ecrou Numéro de référence pour la commande 25 80 152-01



Meddelande om momentvärden för MC-motor

Förband	Åtdragningsmoment
Svänghjulsmutter	7 kpm/50 lb. ft.
Cylinderlocksmutter	3,5 kpm/25 lb. ft.
Kedjedrevsmutter	7 kpm/50 lb. ft.
Mutter för drivhjul (vevaxeln vä sida)	4 kpm/29 lb. ft.

Notice

Tightening torques for MC engines

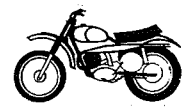
Location	Tightening torque
Flywheel nut	7 kgf m/50 lb. ft.
Cylinder head nut	3.5 kgf m/25 lb. ft.
Sprocket nut	7 kgf m/50 lb. ft.
Pinion nut (left-hand side of crankshaft)	4 kgf m/29 lb. ft.

Anziehmomente eines Motorradmotors

Verband	Anziehmoment
Schwungradmutter	7 mkp
Zylinderkopfmutter	3,5 mkp
Kettenantriebsmutter	7 mkp
Mutter für das Antriebsrad (Kurbelwelle linke Seite)	4 mkp

Couples de serrage pour moteurs MC

Assemblages	Couples de serrage
Ecrou de volant	7 m. kg/50 lb. ft.
Ecrou de culasse	3,5 m. kg/25 lb. ft.
Ecrou de pignon de chaîne	7 m. kg/50 lb. ft.
Ecrou de pignon de commande (vilebrequin, côté gauche)	4 m. kg/29 lb. ft.



Renovering av vevstakslager

I fortsättningen kommer vi ej att lagerföra vevstake och vevtapp separat. Dessa kommer att säljas i kompletta färdigklassificerade renoveringssatser innehållande vevstake, vevtappslager och vevtapp.

Följande beställningsnummer gäller för de olika renoveringssatserna:

Renoveringssats vevstake	250 cc:	16 10 641-01
" "	360 cc:	16 10 642-01
" "	400 cc:	16 10 642-01

Vidare har vi för vevtappslagren infört ett separat best.nr för varje klass. Se nedan.

Klass I	16 10 926-01
" II	16 10 926-02
" III	16 10 926-03

Repair of Conn-rod bearings

In future we will not stock conn-rods and journals separately. These will instead be sold in complete and matched overhaul kits consisting of conn-rod, conn-rod bearing and conn-rod journal.

The following order numbers should be used when ordering overhaul kits:

Overhaul kit Connecting rod	250 cc:	16 10 641-01
" " " "	360 cc:	16 10 642-01
" " " "	400 cc:	16 10 642-01

Further we have now separate ref.nos. for the different conn-rod bearings in each class.

Class I	16 10 926-01
" II	16 10 926-02
" III	16 10 926-03

To be inserted under tab. nr
Register 3
Index

Überholung von Pleuellagern

In Zukunft werden wir keine Pleuelstangen und Pleuelzapfen separat auf Lager führen. Diese werden nur in kompletten, fertig klassifizierten Überholungssätzen, die Pleuelstange, Pleuellager und Pleuelzapfen enthalten, verkauft.

Folgende Bestellnummern sind für die verschiedenen Überholungssätze massgebend:

Überholungssatz Pleuelstange	250 ccm:	16 10 641-01
" "	360 ccm:	16 10 642-01
" "	400 ccm:	16 10 642-01

Ferner haben wir für die Pleuelstangelages jeder Klasse jeweilige Bestellnummern eingeführt:

Klasse I	16 10 926-01
" II	16 10 926-02
" III	16 10 926-03

Remise à neuf des paliers de bielles

Désormais, nous n´allons plus livrer les bielles et les manetons séparément. Ces pièces seront livrées ensemble sous forme d´un jeu complet de remise à neuf classifié, contenant chaucun une bielle, un palier de bielle et un maneton.

Liste de pièces faisant partie des différents jeux de pièces de remise à neuf:

Jeu de pièces de remise à neuf, bielle	250 cm^3:	16 10 641-01
" " " " " " " "	360 cm^3:	16 10 642-01
" " " " " " " "	400 cm^3:	16 10 642-01

Nous avons aussi introduit pour les paliers de bielle un numéro de commande séparé pour chaque classe. Voir ci-dessous!

Classe I	16 10 926-01
" II	16 10 926-02
" III	16 10 926-03

Cylinderlock MI 250 cc

Fr.o.m. att MI 250 cc kommer i produktion kommer vi att ändra cylinderlocket på densamma. Det nya cylinderlocket kommer att få 2 tändstiftshål.

Best.nr för det nya cylinderlocket, 250 cc är 16 10 607-01.

Cylinder Head MI 250 cc

Simultaneous to production start-up of the MI 250 cc will be made a modification to the subject cylinder head. The new cylinder head will have two (2) spark plug holes.

Order number for the new 250 cc cylinder head is 16 10 607-01.

Zylinderkopf MI 250 ccm

Mit der Einführung des Modells MI 250 ccm werden wir den Zylinderkopf ändern. Dieser Zylinderkopf wird jetzt zwei Zündkerzenlöcher erhalten.

Bestellnummer für den neuen Zylinderkopf 250 ccm ist 16 10 607-01.

Culasse MI 250 cm^3

Avec le commencement de la production des moteurs MI de 250 cm^3, nous allons modifier la culasse de ce moteur. La nouvelle culasse est munie de deux trous à bougies.

La nouvelle culasse porte le numéro de référence pour la commande 16 10 607-01.

TIME FOR REPAIRS - ENGINE

Big-end bearing

Replace this bearing when the radial play amounts to .003"-.004" (0.07-0.10 mm). Radial play can be measured by means of a vise and a dial indicator as per Fig. 1.

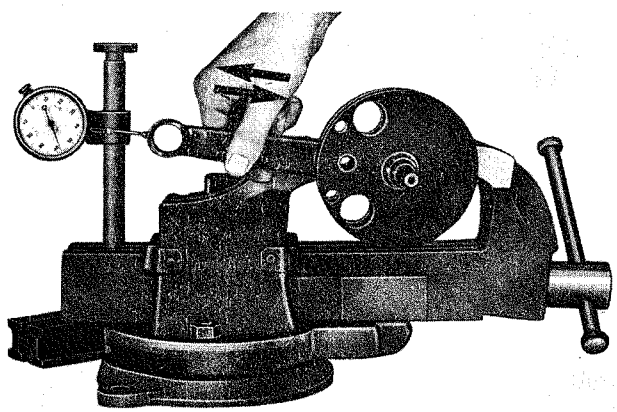


Fig. 1

Main bearings

Replace these bearings as soon as any play is detected.
Check for play by pulling at the two ends of the crank-shaft in the radial direction. See Fig. 2 and 3.

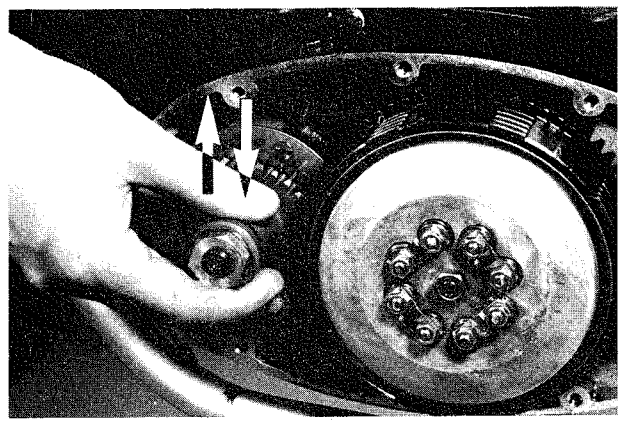


Fig. 2

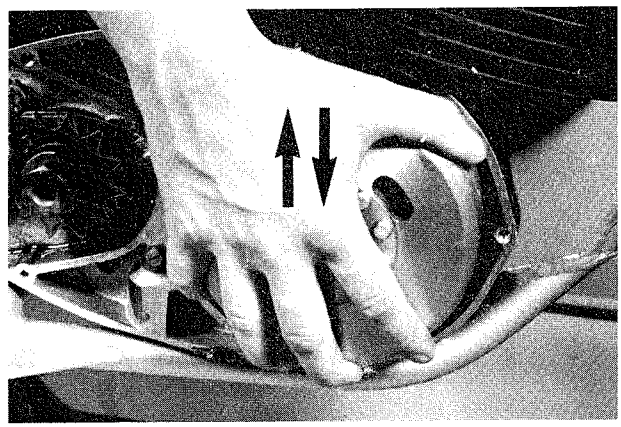


Fig. 3

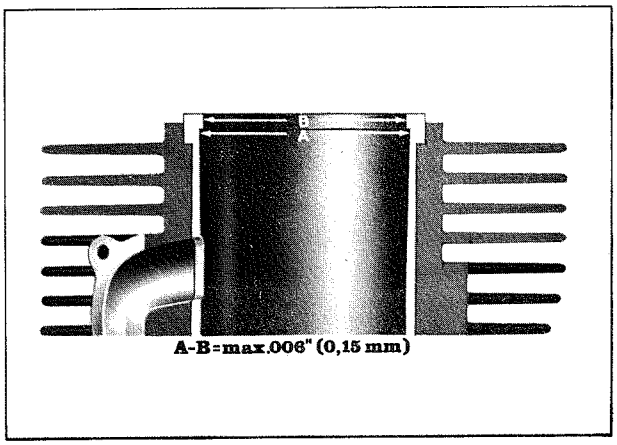


Fig. 4

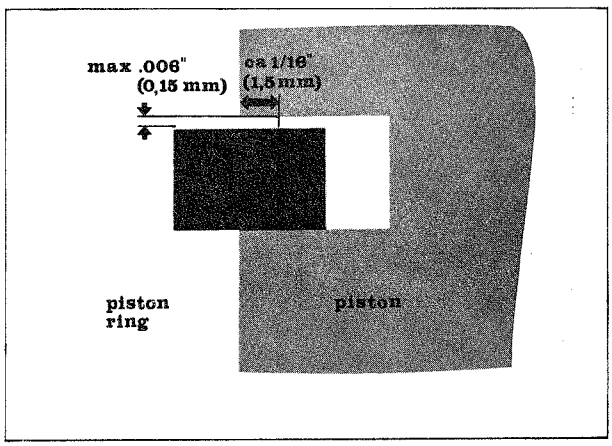


Fig. 5

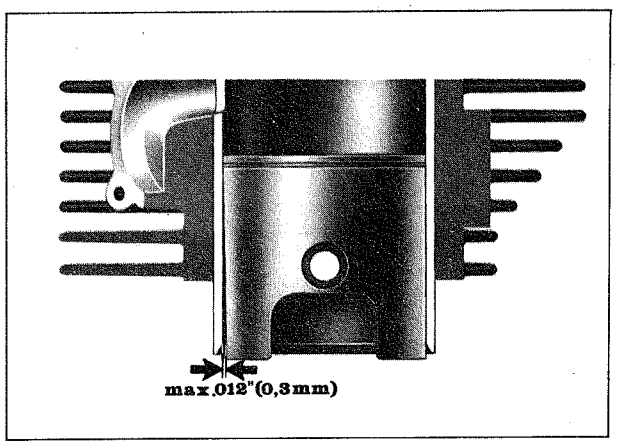


Fig. 6

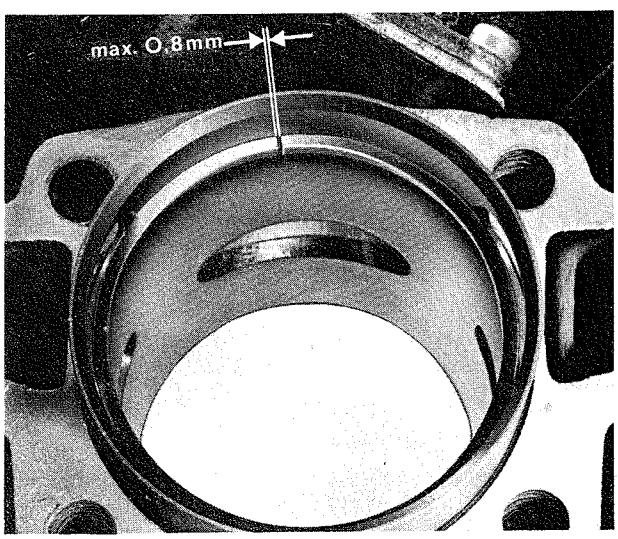


Fig. 7

Cylinder

The cylinder should be bored up to oversize when the wear on its top section amounts to .006" (0,15 mm). i.e. when the difference between measurements A and B in Fig. 4 amounts to 0.006 in.

Piston

The piston has two points of wear: its ring groove and its skirt.

A. When the play in the ring groove amounts to .006" (0.15 mm) to a depth of approx .06" (1,5 mm), replace the piston. See Fig. 5.

B. When the piston skirt is worn down so that a measurement of approx. .012" can be taken as illustrated in Fig. 6, scrap the piston.

Piston ring

Check the wear on the piston rings by placing them in the lower part of the cylinder bore. Measure the distance between the piston ring ends with a feeler gauge. If this exceeds 1/32" (0, 8 mm) it is recommended that new piston ring should be fitted, See Fig. 7.
Before fitting the piston ring, carefully remove any carbon deposits from the grooves in the piston.
Also scrape clean the piston crown and combustion chamber.

Bingförgasare 36 mm

Vår förgasarleverantör har gjort en del förbättringar på vår 36 mm Bingförgasare. Bl.a. tillverkas trotteln av annat material, som gör den mera motståndskraftig mot slitage.

Detta gör att vi måste ändra best.nr på komplett förgasare samt vissa förgasardelar enl. nedan:

Förgasare kpl.	16 13 133-01
Flottörhus	16 13 508-01
Trottel	16 13 994-01
Silhylsa	16 13 509-01

Bing Carburettor 36 mm

Our supplier of carburettors has made certain improvements on the 36 mm Bing Carburettor. Among other things the throttle is now made from another material making it more resistant to wear.

On account of the above the reference nos. for the complete carburettor and certain parts for the same have been changed as follows:

Carburettor complete	16 13 133-01
Float chamber	16 13 508-01
Throttle	16 13 994-01
Strainer sleeve	16 13 509-01

Bing-Vergaser 36 mm

Unser Vergaserlieferant hat an unserem 36 mm Bing-Vergaser eine Reihe Verbesserungen vorgenommen. U.a. wird die Drossel aus einem anderen Material hergestellt, wodurch der Verschleiss vermindert wird.

Die folgenden Bestellnummern müssen deshalb abgeändert werden:

Vergaser, kpl.	16 13 133-01
Schwimmergehäuse	16 13 508-01
Drossel	16 13 994-01
Siebhülse	16 13 509-01

Carburateurs Bing de 36 mm

Notre fournisseur de carburateurs a effectué sur les carburateurs Bing de 36 mm un certain nombre d´améliorations dont un papillon fait d´un nouveau matériau, plus résistant à l´usure.

Nous vous prions donc de noter les modifications suivantes concernant les numéros de commande des carburateurs complets comme de certaines pièces isolées:

Carburateur complet	16 13 133-01
Cuve à niveau constant	16 13 508-01
Papillon	16 13 994-01
Douille de crépine	16 13 509-01

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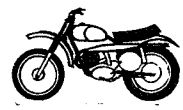

MH-, MI-, SH-, SI-machines

Replaces report nr 68 08 03/2

Combinations for big-end of connecting rod x)

Needle cage 16 10 926-01		Crank pin 16 10 923	Connecting rod
Class	Measure		
I	-0,001 3,5-0,003	I	I
I	-0,001 3,5-0,003	II	II
I	-0,003 3,5-0,003	III	III
II	-0,002 3,5-0,004	I	I
II	-0,002 3,5-0,004	II	II
II	-0,002 3,5-0,004	III	III
III	-0,003 3,5-0,005	II	I
III	-0,003 3,5-0,005	III	II

x) It is absolutly nessecary to follow the table for the big-end, otherwise there will be the risk of crank bearing seizure.

Combinations for small-end of connecting rod

Needle cage 16 10 933-01		Connecting rod
Class	Measure	
I	-0,000 2-0,002	III
II	-0,002 2-0,004	II
III	-0,004 2-0,006	I

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OVERHAULING OF CONN-ROD BEARING

A suitable pressing tool can be manufactured as per fig 1.

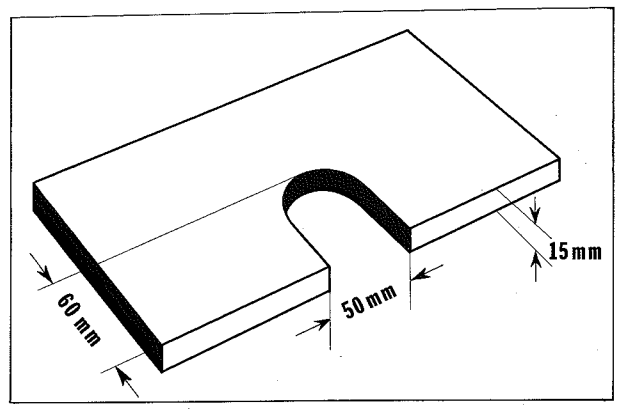

Fig. 1

1. First press out the crank pin from one of the crank discs by placing a support under the upper crank disc. See fig 2.

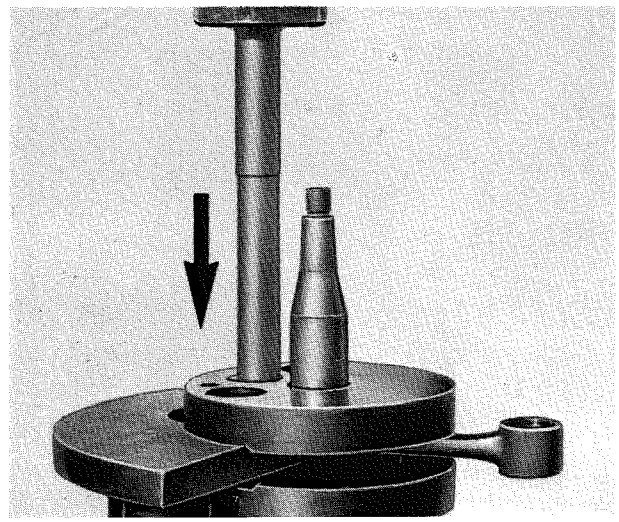

Fig. 2

2. Then press out the pin from the other crank disc in the same way. See fig 3.

N.B. In both cases the pin should be pressed inwards.

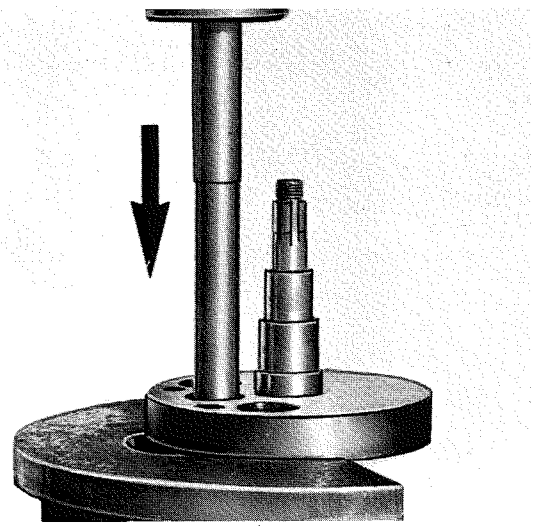

Fig. 3

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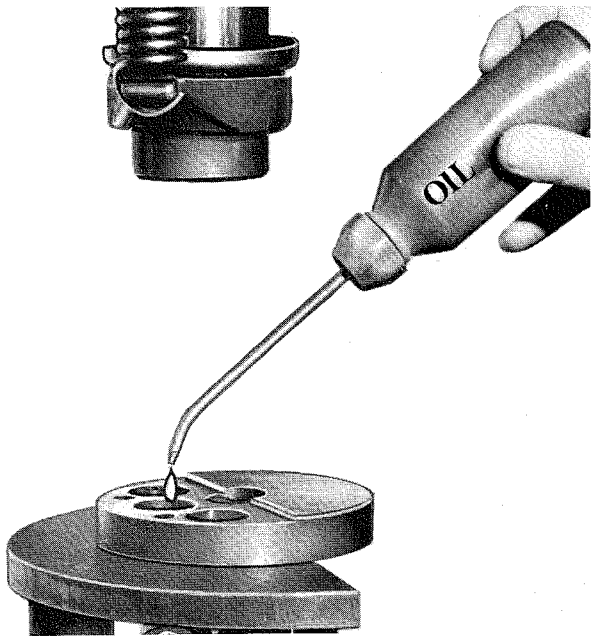


Fig. 4

3. Take out the new parts and lubricate the crank pin and the hole. See fig 4.

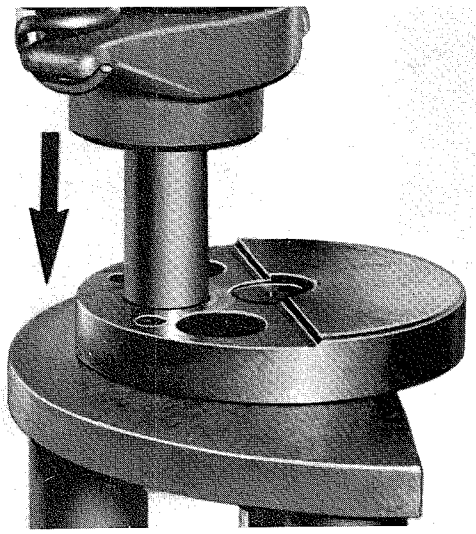


Fig. 5

4. Press the crank pin into one of the crank discs from inside. See fig 5.

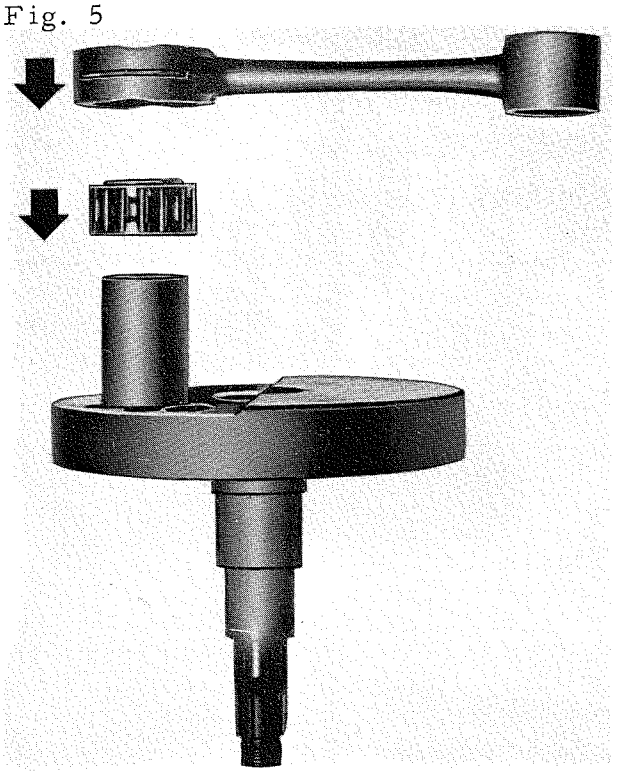


Fig. 6

5. Mount the needle bearing and the connecting rod. See fig 6. Lubricate the bearing somewhat.

6. Adjust the other crank disc by means of a rule. See fig 7.

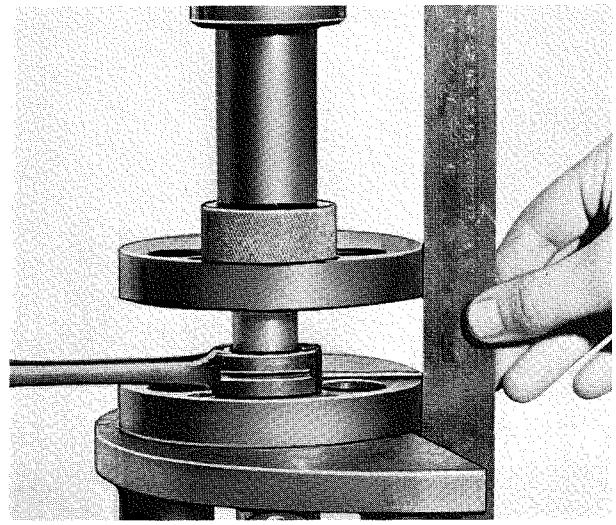


Fig. 7

7. Press on the crank disc until an end float as shown in the table below is obtained. See fig 8.

NOTE! Point 7 and 8 are only valid for the 360cc and 400cc. On the 250cc engine the connrod is guided by the piston, so that in this case the crank pin should be pressed in until it comes level with the outer edges of the crank discs.

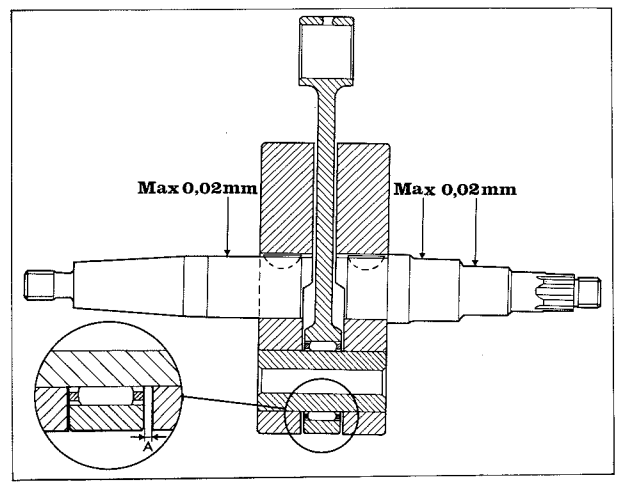


Fig. 8

8. The end float is measured with a feeler gauge as shown in fig 9.

Engine	End float (A) on connecting rod
250cc	As above
360cc	0.15 - 0.28 mm (0.006 - 0.011")
400cc	0.15 - 0.28 mm (0.006 - 0.011")

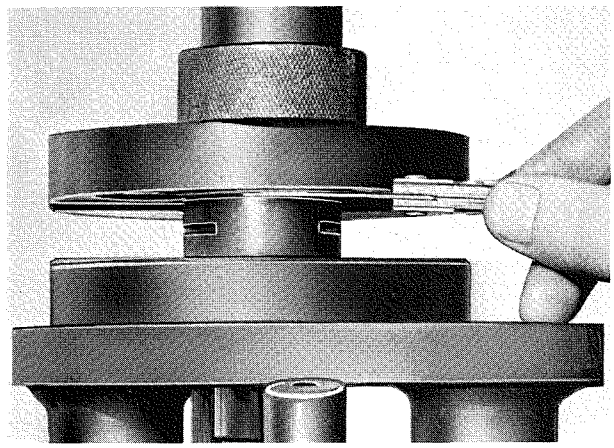


Fig. 9

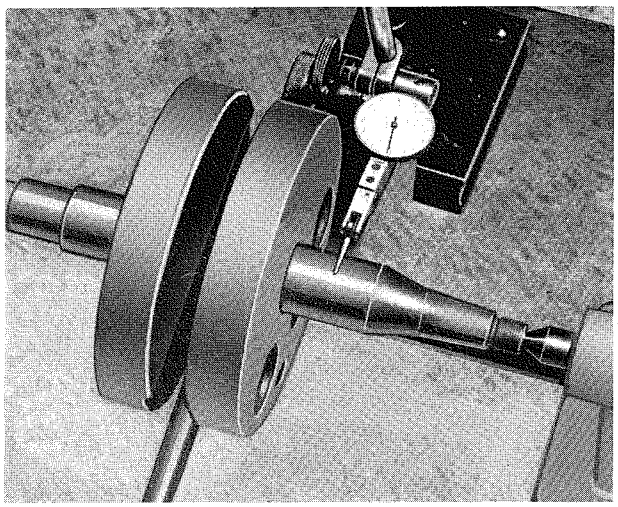


Fig. 10

9. Check the jerks of the crank shaft by means of an indicator clock. See fig 10 and 11.

   The jerks must not exceed 0,02 mm at the bearing positions according to fig 8.

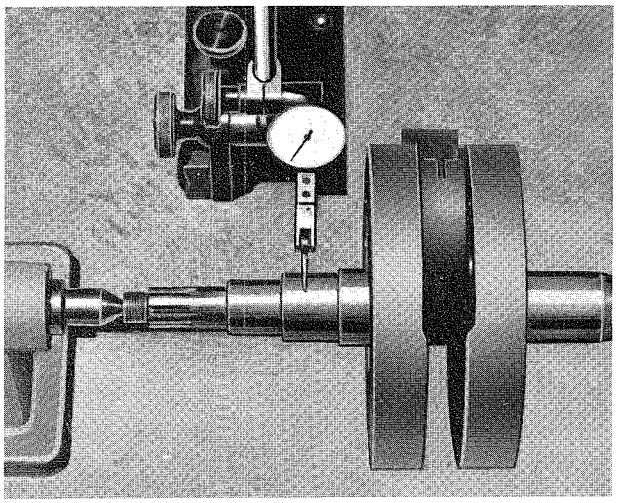


Fig. 11

10. The crank shaft can be tuned by knocking the crank discs by means of a plastic club or the like so that the discs are turning around the crank pin in the correct direction.

Special measures to observe when fitting new engine parts

Flywheel - crankshaft	1. Grind in the cone with grinding compound. 2. Clean with clean gasoline. 3. Secure with Loctite EV.
Cylinder head - cylinder	1. Grind in the mating surface with grinding compound. 2. Clean with clean gasoline.
Cylinder bolt - crankcase	Secure with Loctite AA.
Nut, clutch centre	1. Secure with Loctite AA. 2. Tightening torque 4 kgfm/29 lb. ft. 3. Secure with tab washer.
All bolts and screws in crankcase.	Secure with Loctite EV. Tighten crankcase screws with a torque of 0, 7 kgfm/5 lb. ft.

Loctite AA, ref. No. 50 11 127-01

Loctite EV, ref. No. 15 19 292-01

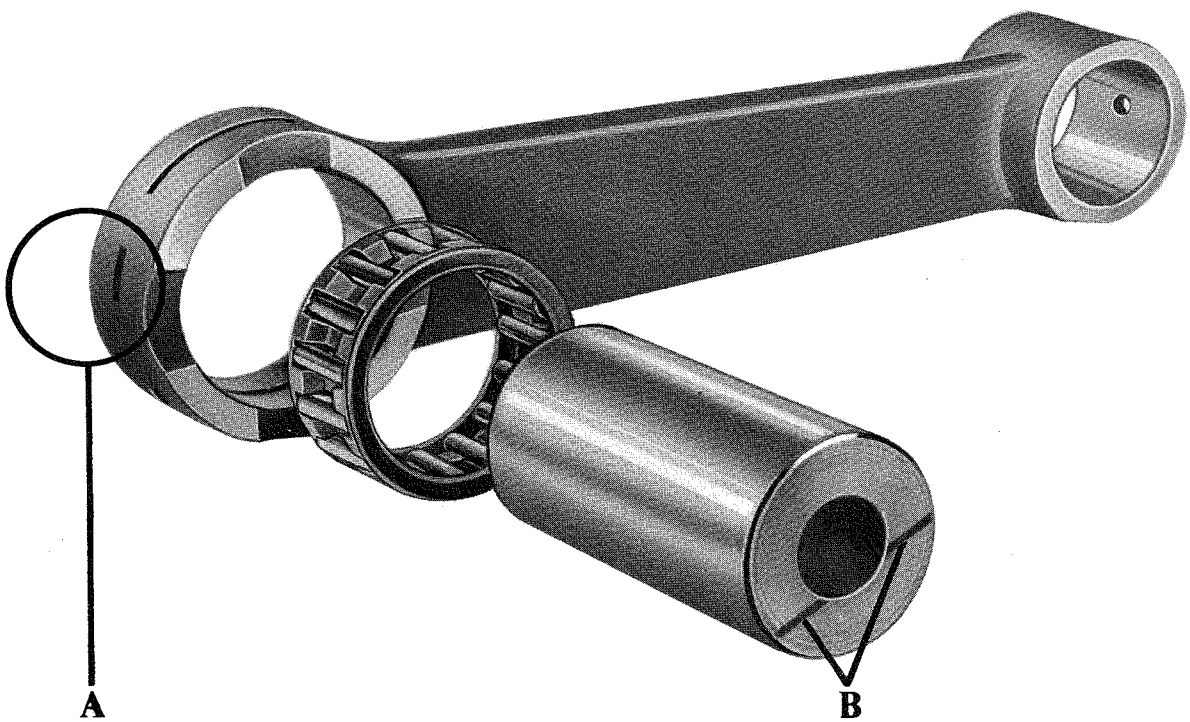
MH-, MI-, SH-, SI-machines

Replaces report no 68 08 03/2
and/or no 10 17 047-26

Combinations for big-end of connecting rod

Needle Cage			Crank pin	Connecting rod
Class	Number	Characteristic		
I I I	16 10 926- **01**	Big	I II III	I II III
II II II	16 10 926- **02**	Medium	I II III	I II III
III III	16 10 926- **03**	Small	II III	I II

The classes are marked as per the fig. below.



A = The class of the big end (in this case class I).
B = The class of the crank pin (in this case class I).
The size of the needle cages are only marked on the package.

Caution: Do not release the needle bearings for big-end from the package. In such a case you don´t know the class and you can´t use it.

Förgasare "Bing 36 mm"

Förgasarens funktion kommer att förbättras genom ändrad borrning för tomgångsbränsle samt annan spridare.

V.g. notera följande ändringar i reservdelskatalogen:

	äldre nr	nytt nr
Förgasare kpl.	16 13 133-01	16 13 212-01
Förgasarehus	16 13 970-01	16 13 214-01
Spridare	16 13 977-01	16 13 215-01

"Bing 36 mm" carburettor

The function of the carburettor has been improved by modification of the drilling for idling fuel and introduction of a new jet.

Please note the following amendments in the spare parts catalogue:

	Old number	New number
Carburettor, complete	16 13 133-01	16 13 212-01
Carburettor housing	16 13 970-01	16 13 214-01
Jet	16 13 977-01	16 13 215-01

Vergaser „Bing 36 mm"

Die Funktion des Vergasers wird durch eine geänderte Bohrung für den Leerlaufkraftstoff sowie durch eine Düse geänderter Ausführung verbessert.

Bitte notieren Sie folgende Änderungen im Ersatzteilkatalog:

	Ältere Ausführung	Neue Nummer
Vergaser, kpl.	16 13 133-01	16 13 212-01
Vergasergehäuse	16 13 970-01	16 13 214-01
Düse	16 13 977-01	16 13 215-01

Carburateur "Bing 36 mm"

Le fonctionnement de ce carburateur sera amélioré, par suite d´une modification de l´alésage du puits de ralenti et de l´emploi d´un nouveau gicleur.

Prière de noter les modifications suivantes dans votre Catalogue de pièces de rechange:

	Ancienne référence	Nouvelle référence
Carburateur complet	16 13 133-01	16 13 212-01
Corps de carburateur	16 13 970-01	16 13 214-01
Gicleur	16 13 977-01	16 13 215-01

DISASSEMBLY OF ENGINE

1. Disassemble the clutch with drive gear, flywheel and piston with cylingder and covers.

Remove the piston pin with the aid of drift
No. 15 19 249-01 for 250 cc angines
15 19 250-01 for 400 cc and 450 cc engines
See Fig. 1.

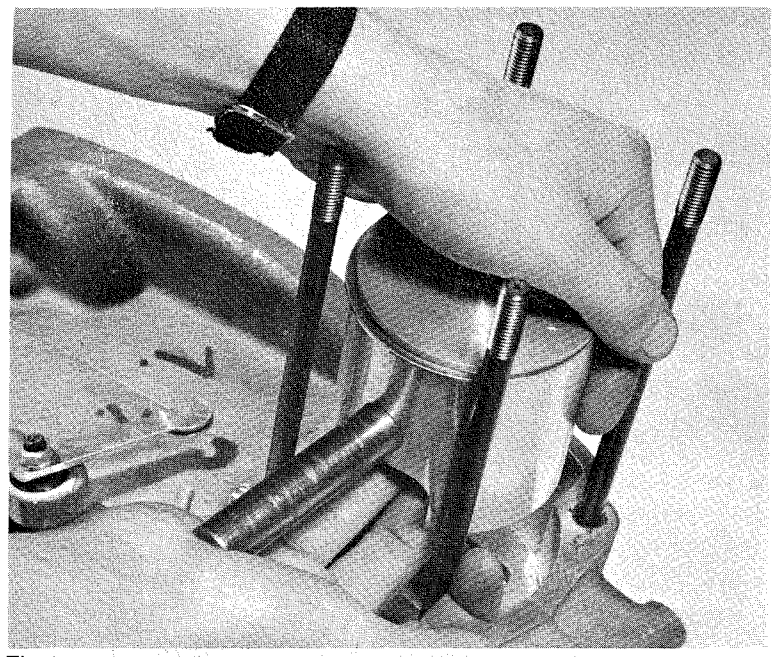


Fig. 1

2. Remove the sprocket with aid of holding-up tool No. 15 19 278-01, a 7/8" (22 mm) spanner and puller No. 12 24 816-01.

3. Remove the crankshaft seal holder on the magneto side.

4. Back off the 11 cap head screws, 2 on the left-hand side and 9 on the right-hand side. See Figs. 4a and 4b.

Use a 5-mm Allen key (if not available a 3/16" spanner may be used instead.)

NOTE! Clean the holes in the bolts before disassembly.

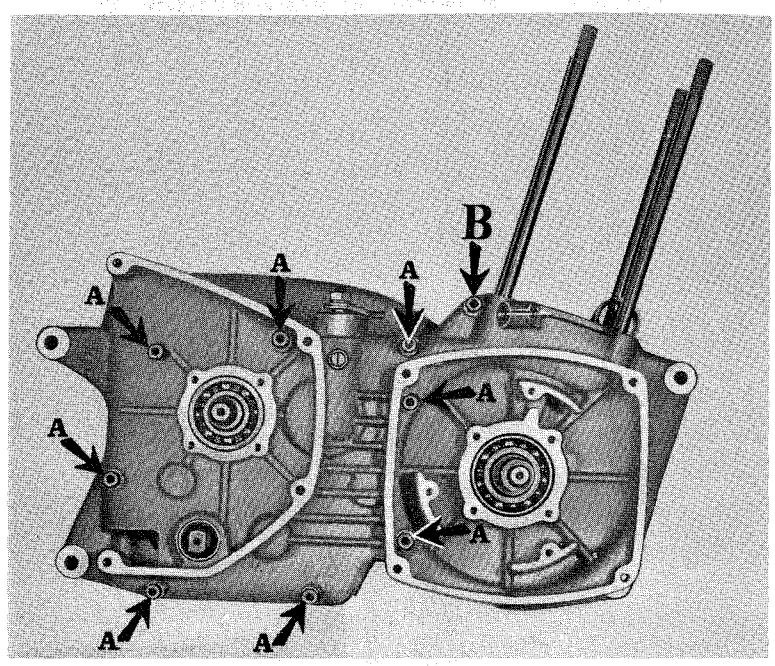


Fig. 4 a

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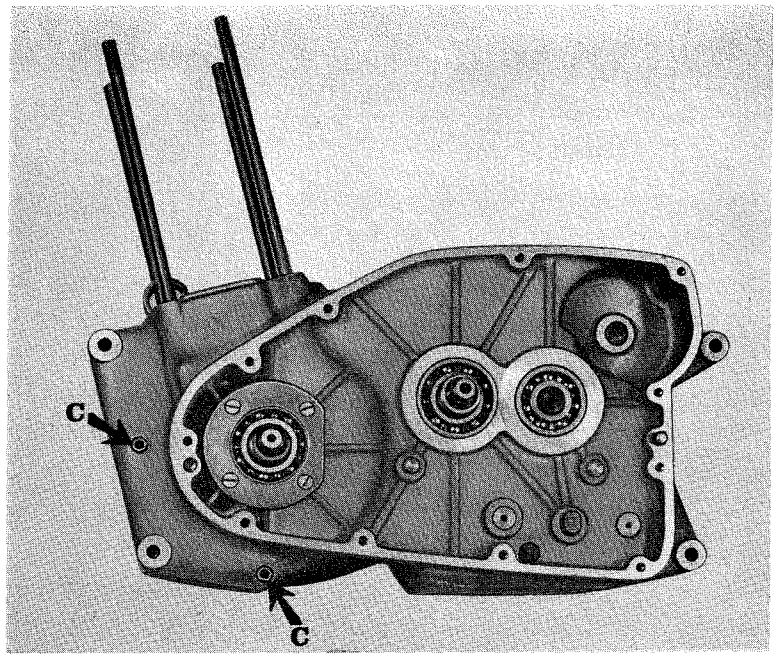


Fig. 4 b

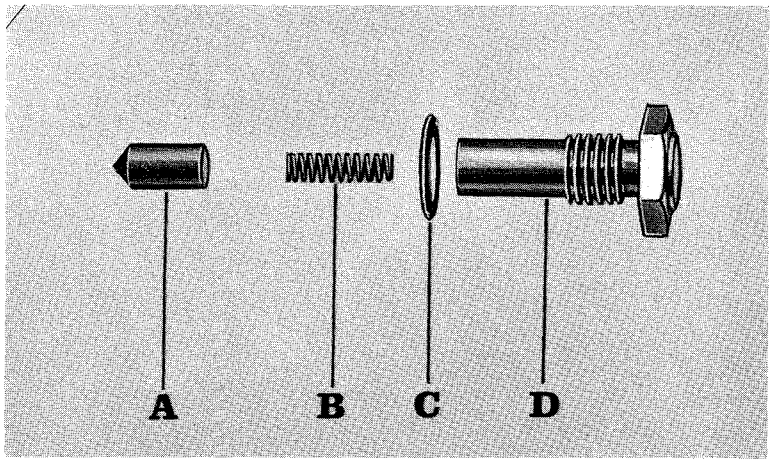


Fig. 5

5. Remove the holder for the selector drum catch. See Fig. 5.

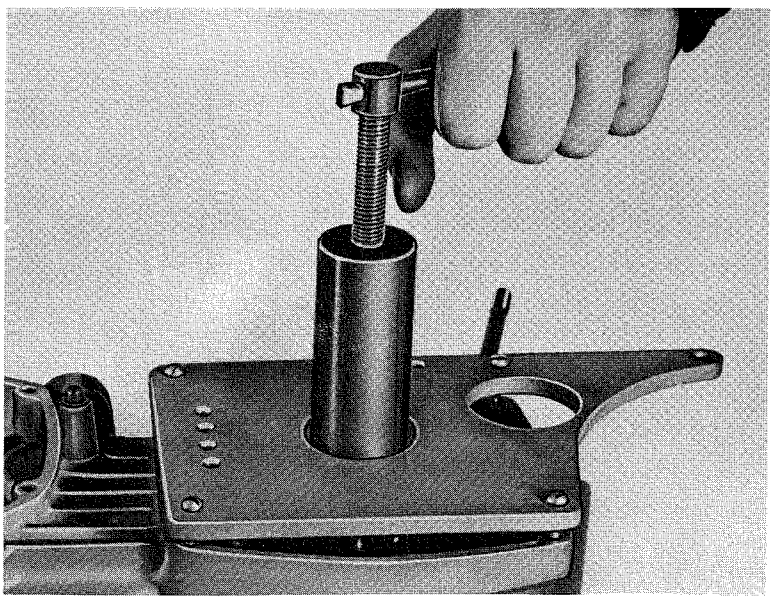


Fig. 6

6. Fit disassembly tool, No. 15 19 257-01 for the crankcase halves in the holes for the magneto cover. See Fig. 6.

7. Pull off the right-hand crankcase half. Using a plastic mallet or the like, knock the rear edge of the engine upwards while at the same time knocking the output shaft and countershaft downwards.
See Fig. 7.

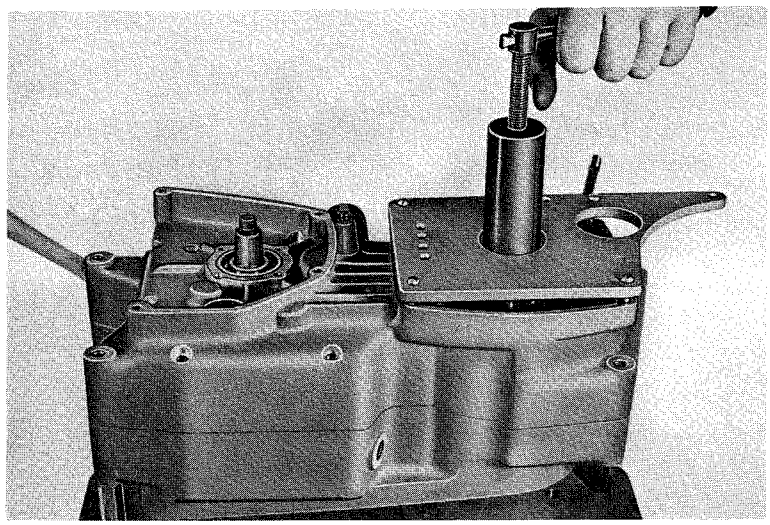


Fig. 7

8. Remove the parts of the gearbox.

Disassembly sequence:
a. countershaft
b. gear selector shafts
c. gear selector with selector drum
d. shafts and gears

9. Remove the crankcase half from the assembly stand and disassemble the crankshaft with the aid of the disassembly tool.

NOTE: Use the other hole in the plate. See Fig. 9.

Screw the puller in the screw holes for the kick starter cover.

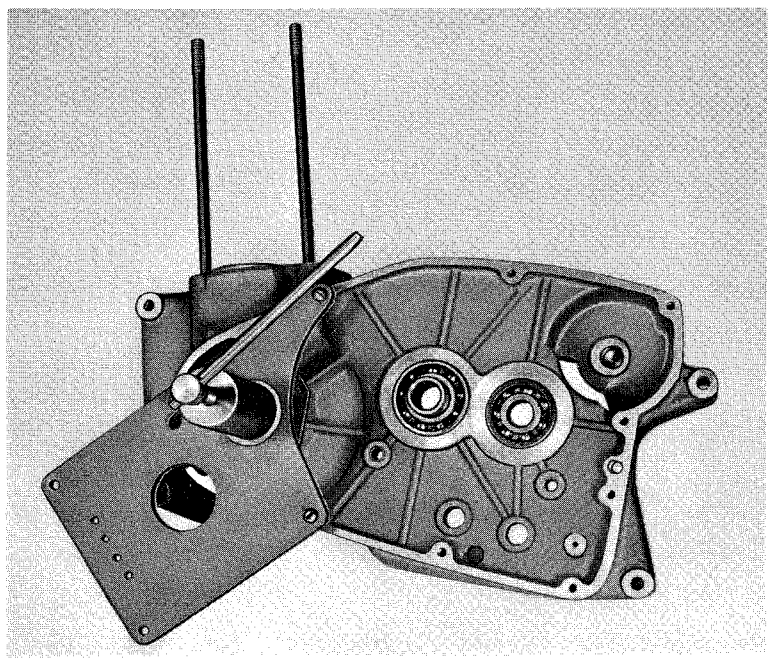


Fig. 9

ENGINE ASSEMBLY

1. Press the bronzebushing of the clutchshaft into place. See Fig. 1.

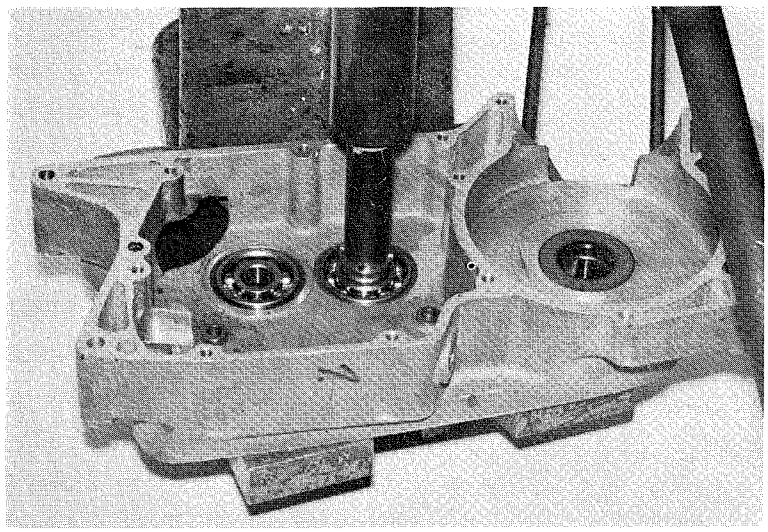


Fig. 1

2. Fit the crankshaft into the left-hand half of the crankcase, using assembly tool No. 15 19 251-01. See Fig. 2.

NOTE: Use some oil on the crankshaft before fitting.

NOTE: Ensure that the connecting rod is located in the opening for the cylinder barrel.

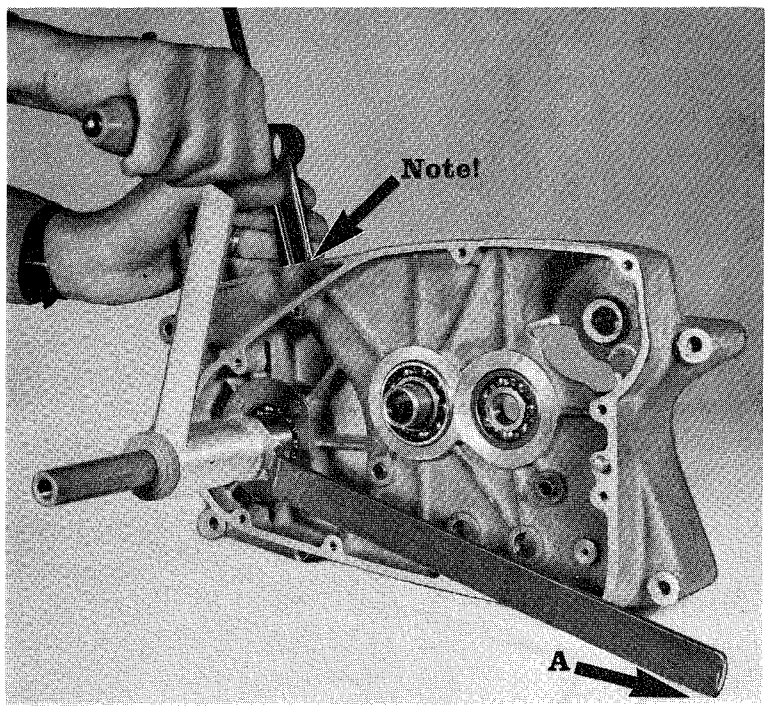


Fig. 2
A. Let the handle support against the bedding.

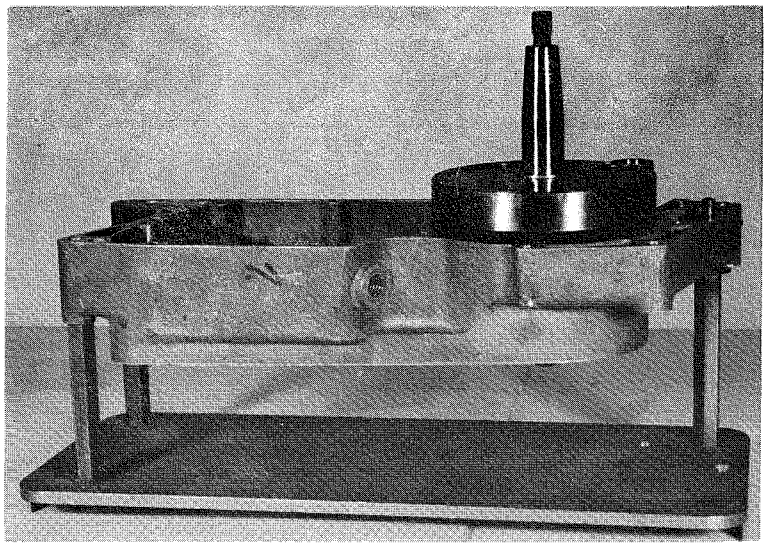


Fig. 3

3. Place the left-hand half of the crankcase in the assembly stand, No. 15 19 243-01. See Fig. 3.

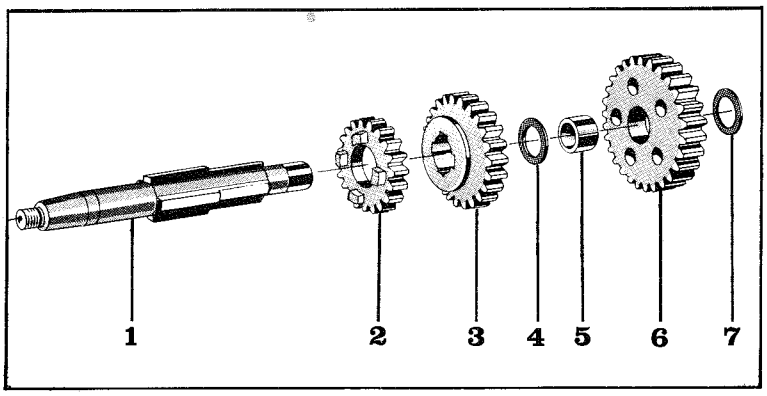


Fig. 4
1. Sprocket shaft
2. 5th gear
3. 3rd gear
4. Supporting washer
5. Bronze bushing
6. 1st gear
7. Supporting washer

4. Fit the 5th gear, 3rd gear and 1st gear pinions onto to sprocketshaft as well as the bushing and washers. See Fig. 4.

NOTE: All parts in the gearbox must accordingly be oiled before fitting!

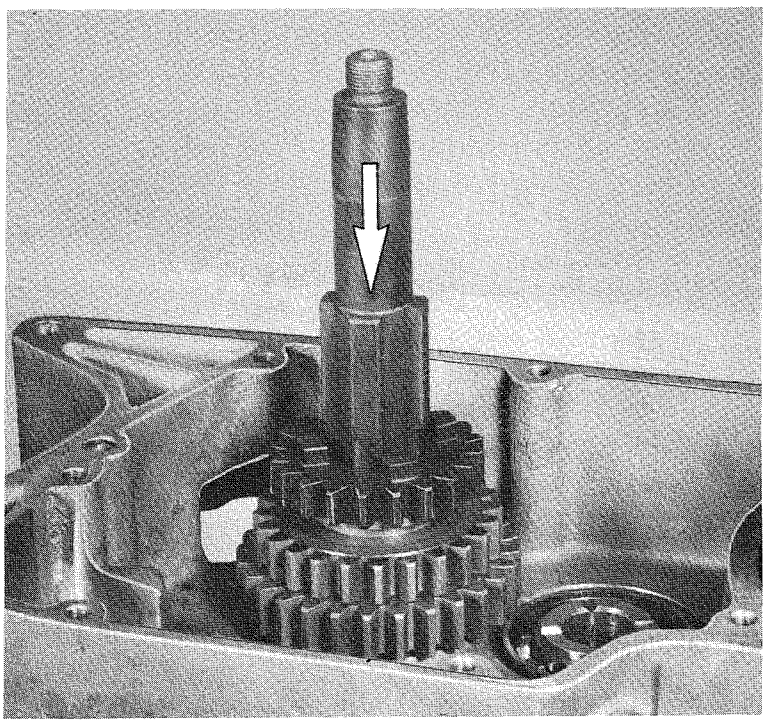


Fig. 5

5. Insert the sprocketshaft with pinions into the left-hand half of the crankcase. See Fig. 5.

6. Fit the 3rd pinion, bushing and washer onto the clutchshaft if these parts have been dismantled. See Fig. 6.

NOTE: Do not forget the circlip.

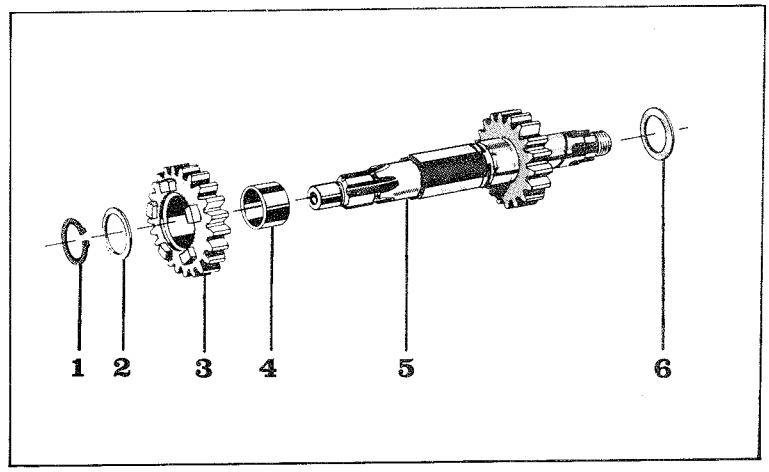


Fig. 6
1. Circlip
2. Supporting washer
3. 3rd gear
4. Bushing
5. Clutch shaft
6. Supporting washer (against the bushing in the bearing).

7. Fit the clutchshaft through the bronzebushing in the left-hand half of the crankcase. See Fig. 7.

NOTE: Do not forget the washer adjacent the bronzebushing.

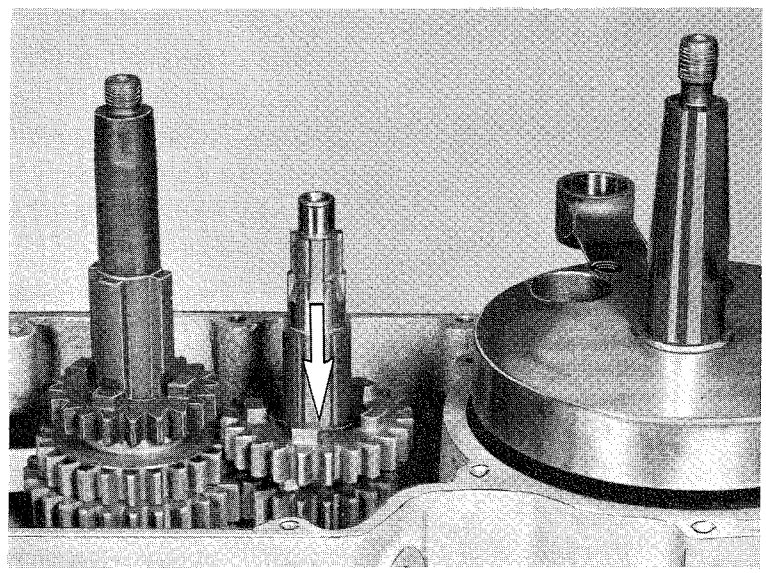


Fig. 7

8. Fit the 5th gear pinion on the clutchshaft. See Fig. 8.

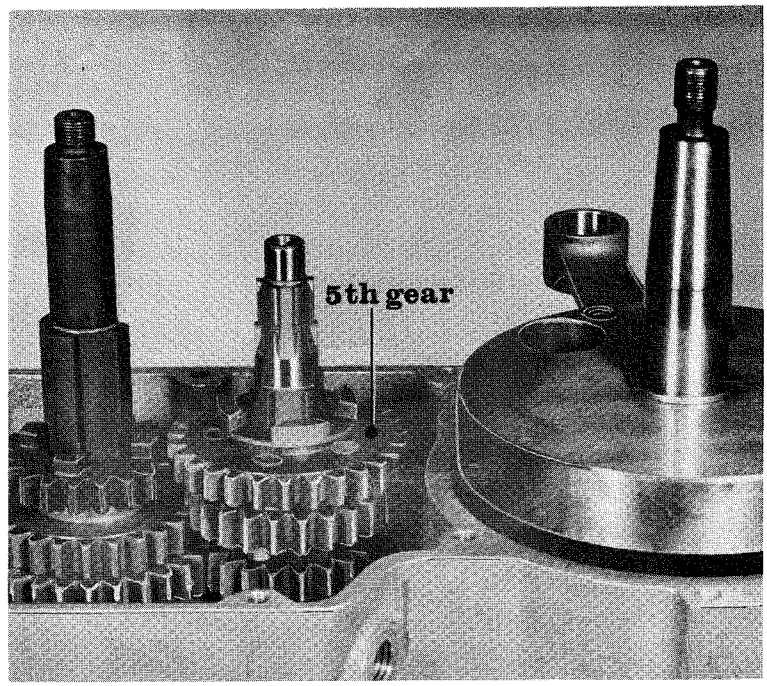


Fig. 8

9. Fit the 5th gear pinion shiftingfork onto the clutchshaft.

NOTE: Rest the shiftingfork on the side of the crankcase half to facilitate assembly of the shifting drum. See Fig. 9.

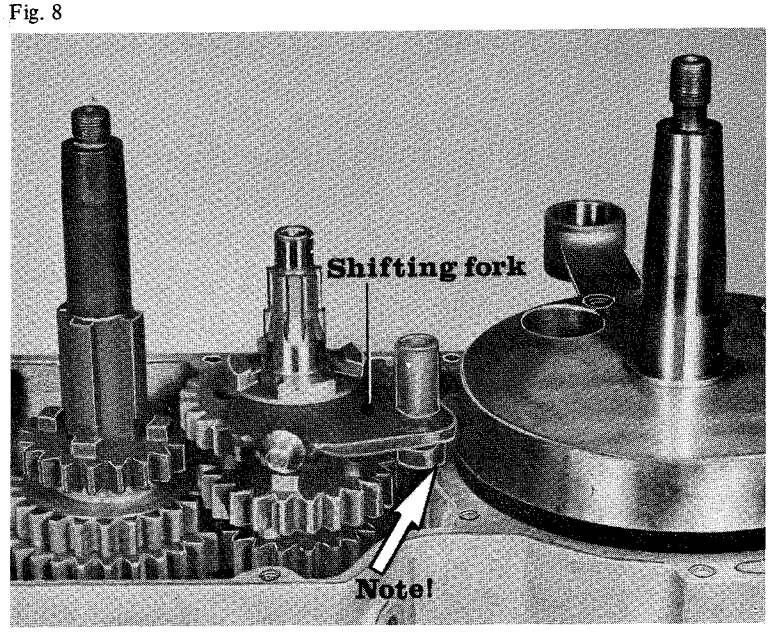


Fig. 9

10. Fit the 4th gear pinion onto the sprocketshaft. See Fig. 10.

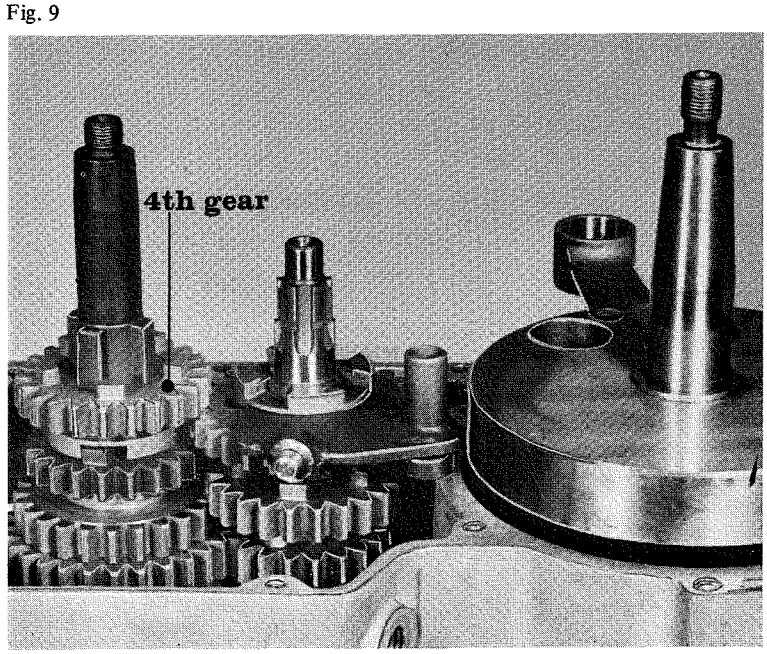
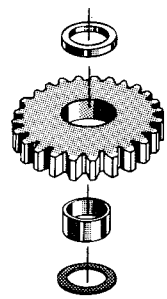


Fig. 10

11. Fit the 4th gear pinion onto the clutchshaft with:
a. washer
b. bushing
c. spacer
See Fig. 11.



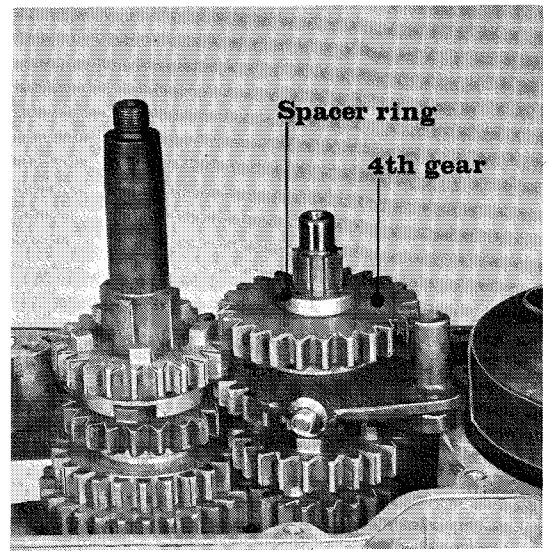


Fig. 11

12. Fit the 2nd gear pinion onto the clutchshaft. See Fig. 12.

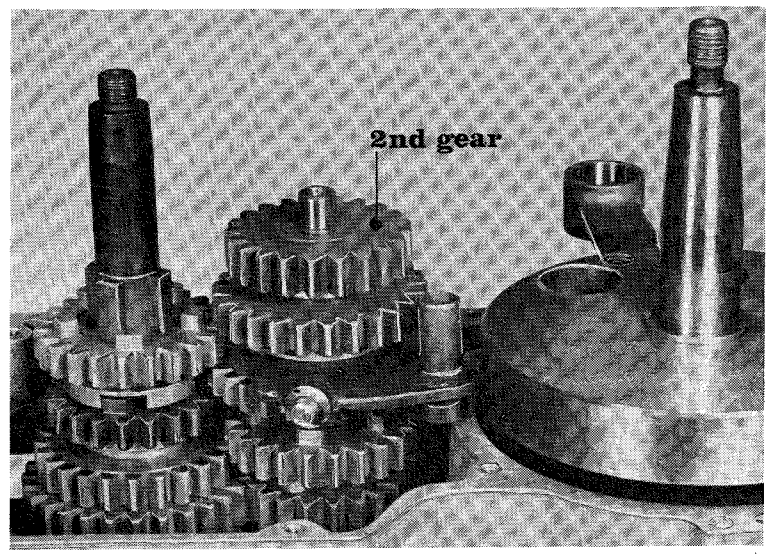
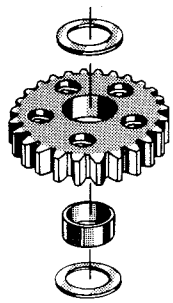


Fig. 12

13. Fit the 2nd gear pinion onto the sprocketshaft with:
a. washer
b. bushing
c. washer
See Fig. 13.



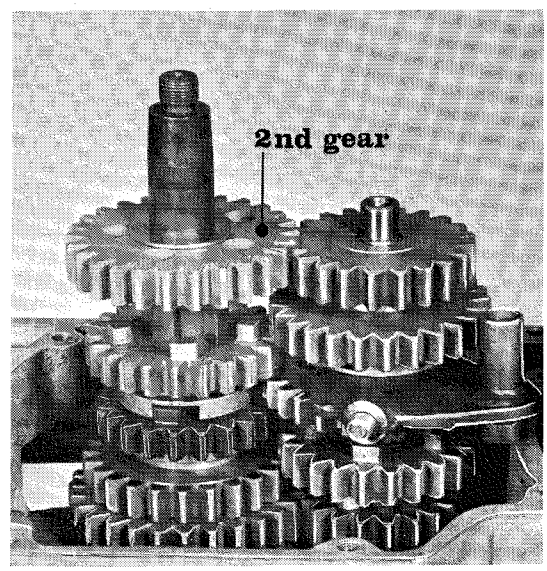


Fig. 13

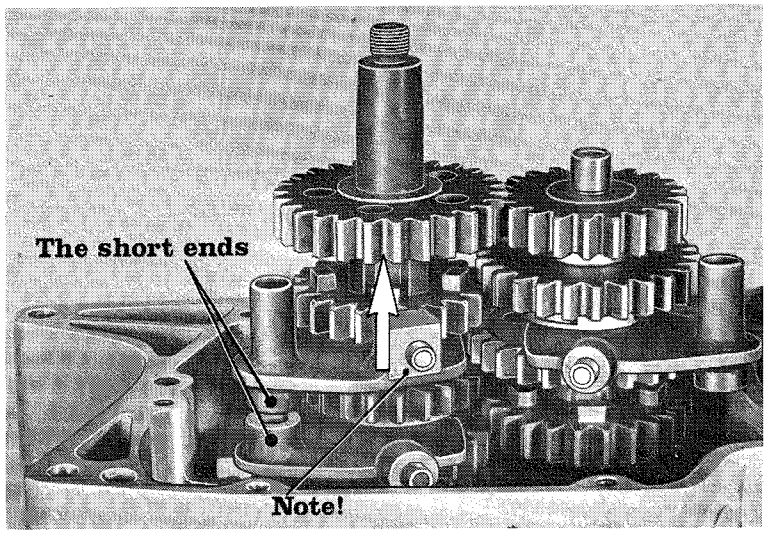


Fig. 14

14. Fit the two shiftingforks on the sprocketshaft pinions.

NOTE: The shiftingfork with the square part should be uppermost. See Fig. 14.

NOTE: The two short ends of the shiftingforks should face each other. See Fig. 14

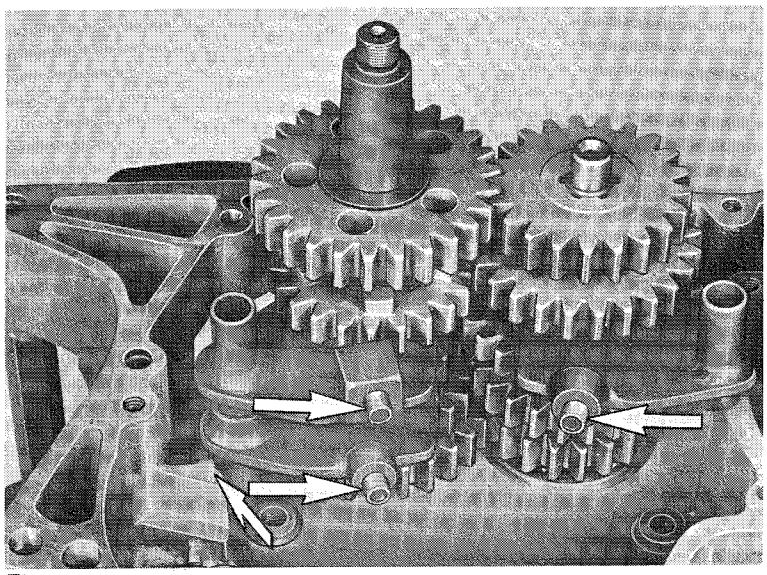


Fig. 15

15. Move the shiftingforks to the left (rearwards) in order to facilitate assembly of the shifting drum. See fig. 15

NOTE: Ensure that all rollers are in position. See Fig. 15.

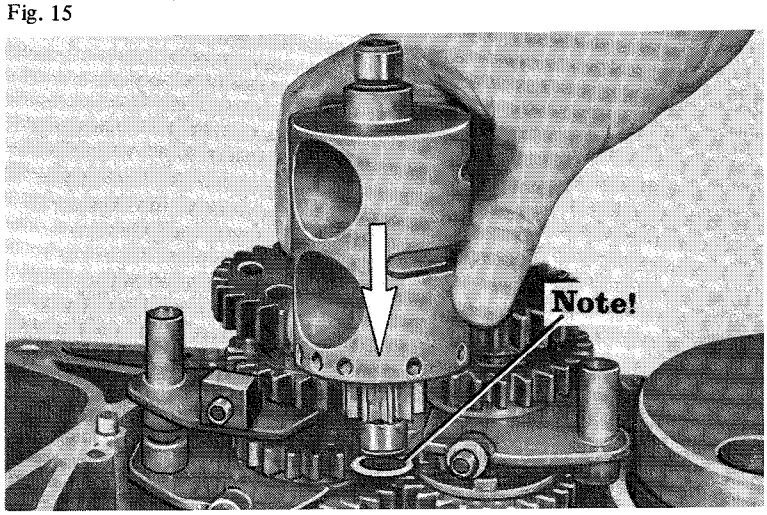


Fig. 16

16. Fit the shifting drum in place with the washer underneath. See Fig. 16.

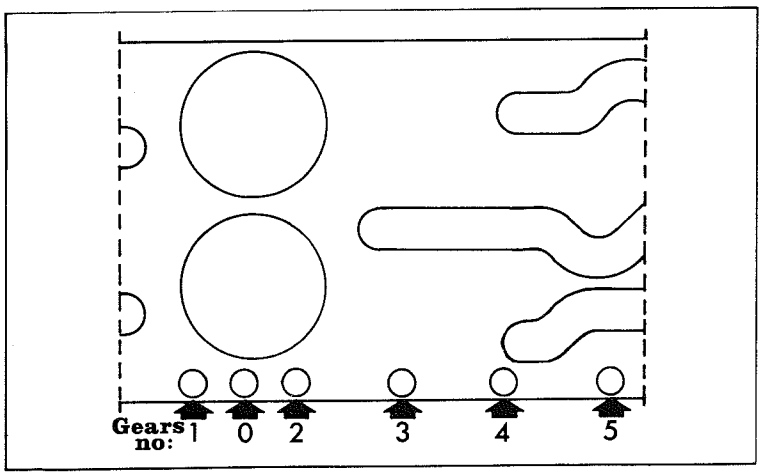


Fig. 17

17. The shifting drum is held in the various gear positions by means of its ratchet sleeve. The various locating positions of ratchet sleeve on the shifting drum will be evident from Fig. 17.

18. Rotate the shifting drum until it is midway between the 4th and 5th gear position. See Fig. 18.

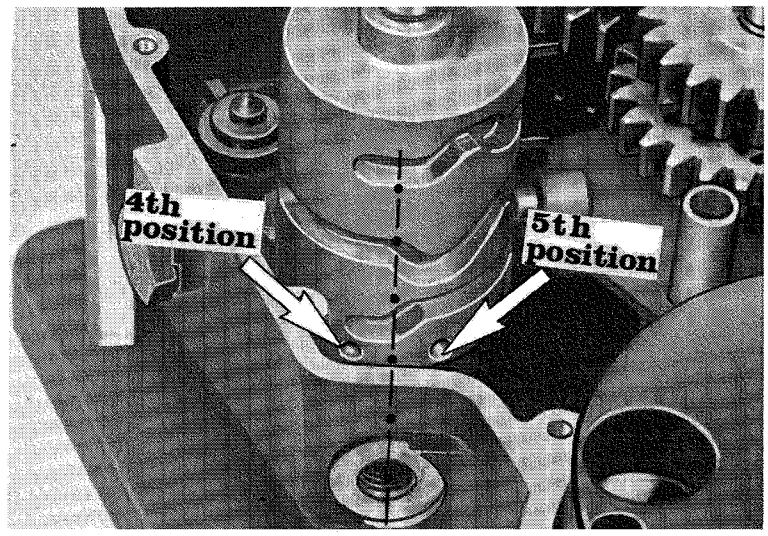


Fig. 18

19. Move the clutchshaft shifting fork so that the pin and roller slide into the centre groove of the shifting drum. See Fig. 19.

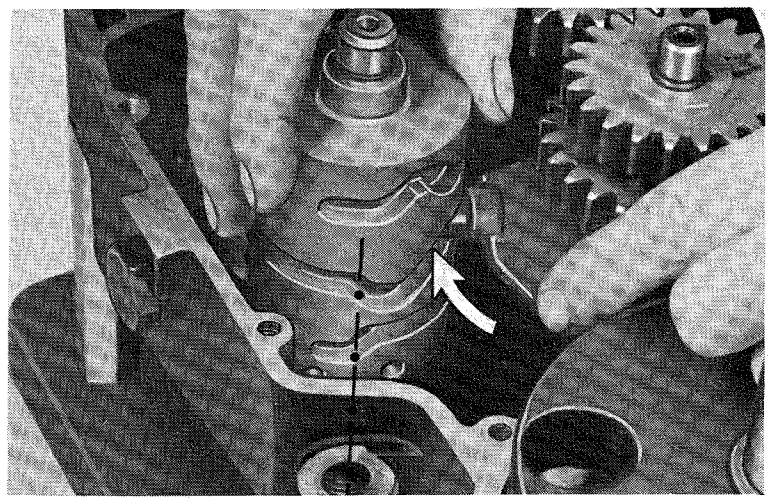


Fig. 19

20. Insert the front shifting fork shaft. See Fig. 20.

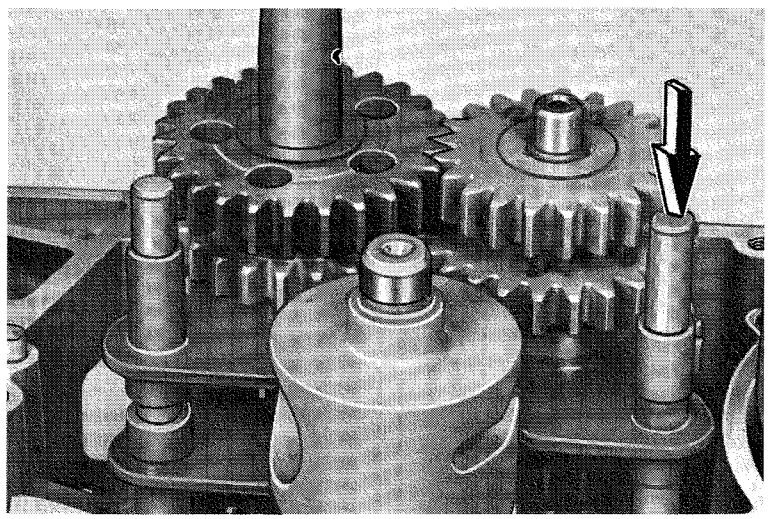


Fig. 20.

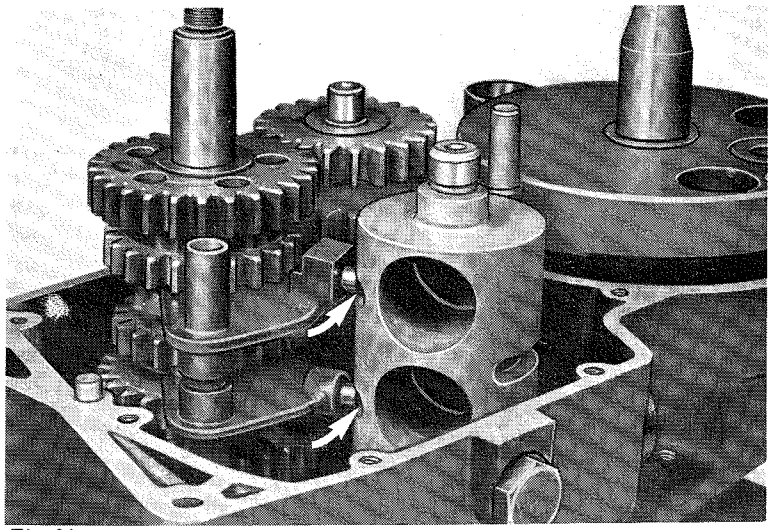


Fig. 21

21. Slide the rear shifting forks and pinions up so that the pins and rollers can be inserted into the upper and lower grooves of the shifting drum. See Fig. 21.

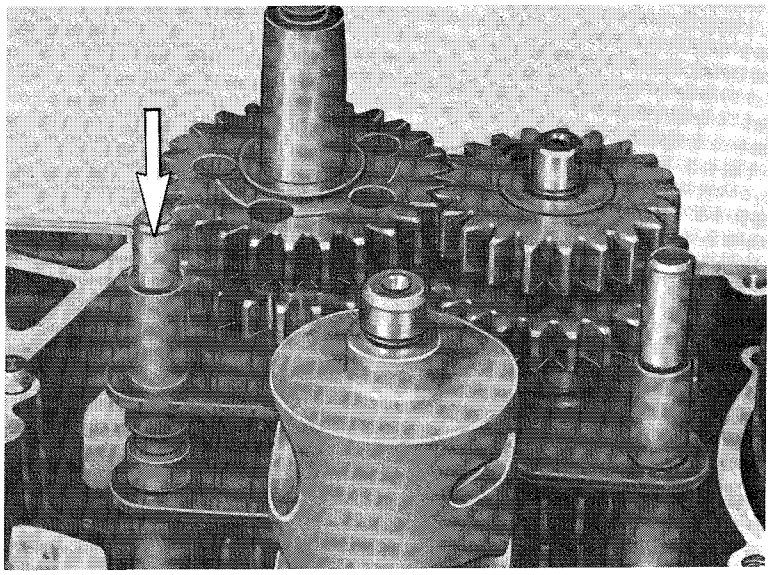


Fig. 22

22. Insert the rear shiftingfork shaft. See Fig. 22.

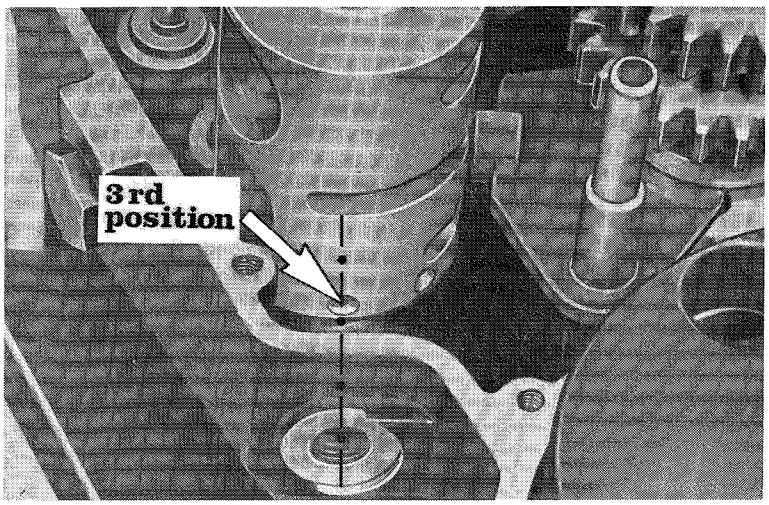


Fig. 23

23. Adjust the shifting drum until it is in the 3rd gear position. See Fig. 23.

24. When 3rd gear is engaged, the stepfeeder shall be in mesh so that one tooth is visible on the right sida and two teeth on the left side of the shifting drum. See Fig. 24.

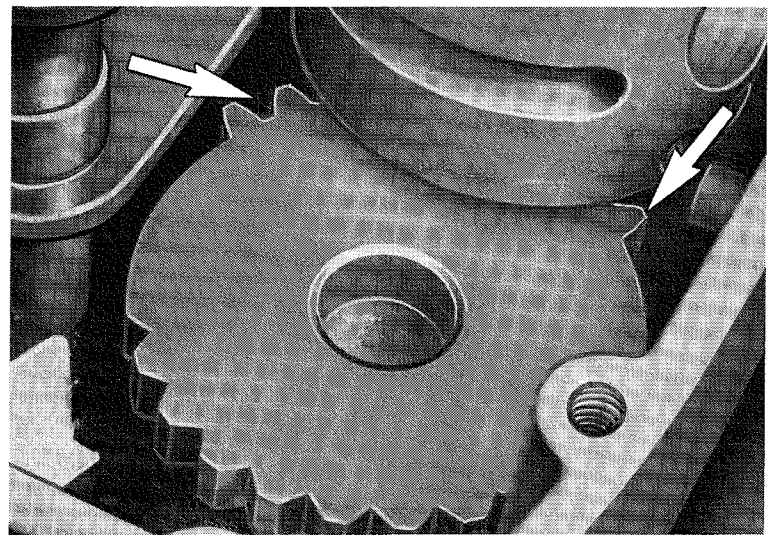


Fig. 24

25. Fit the ratchetsleeve and spring for the pawl in position. See Fig. 25.

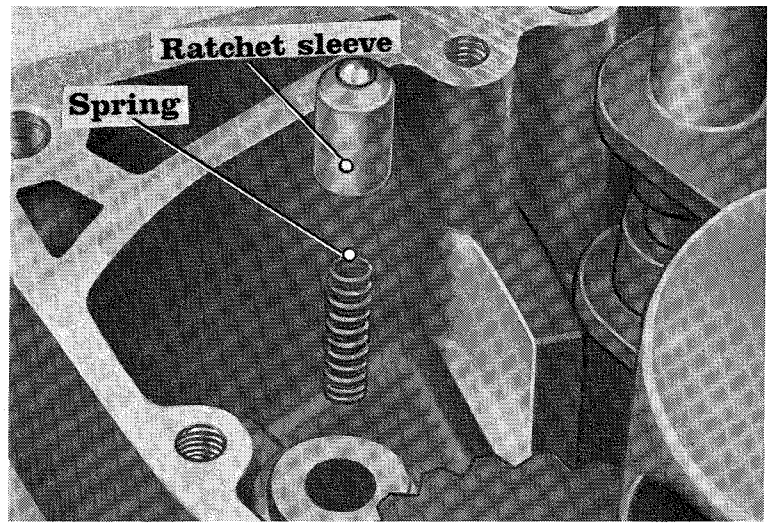


Fig. 25

26. Fit the shifting shaft with pawl in place. See Fig. 26 a.

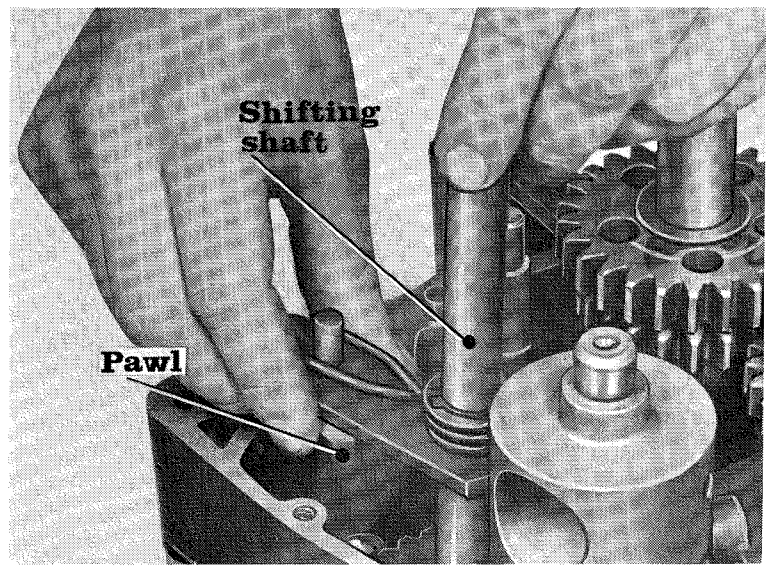


Fig. 26 a

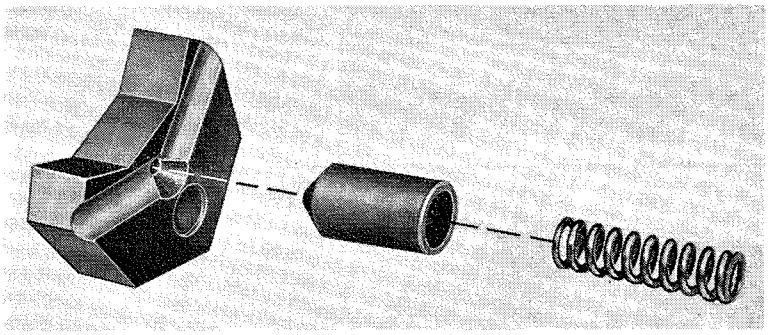


Fig. 26 b

NOTE: Locate the recess in the pawl against the ratchetsleeve. See Fig. 26 b.

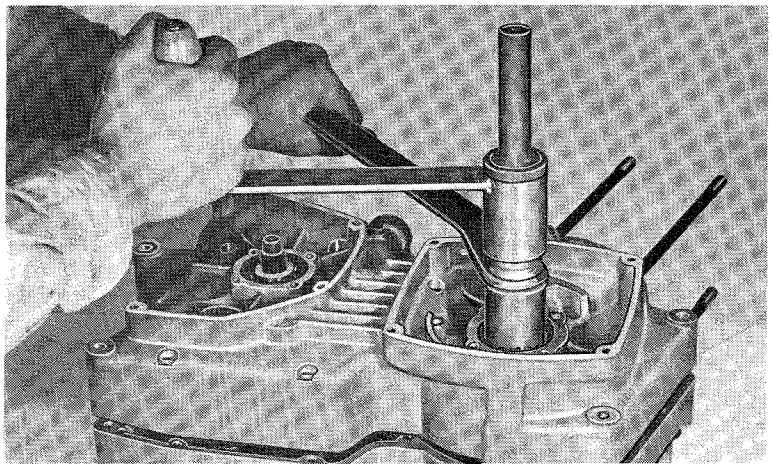


Fig. 27 a

27. Fit a new crankcase gasket and place the right-hand half of the crankcase in position. Tigthen the two crankcase halves, using assembly tool No. 15 19 251-01. See Fig. 27 a.

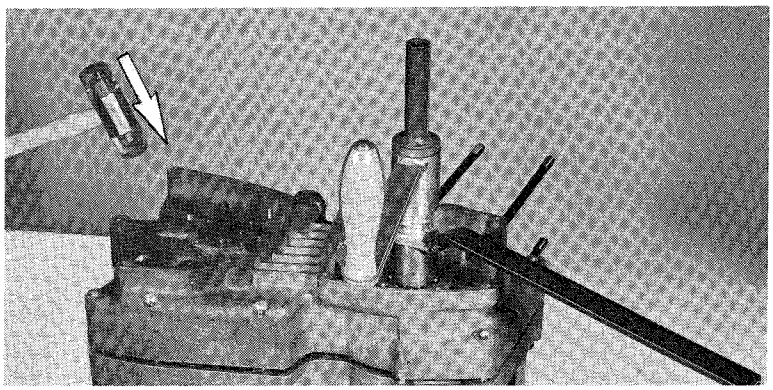


Fig. 27 b

NOTE: Using a plastic mallet or the like, tap on the rear part of the crankcase half while tightening it with the crank. This is to ensure that no stresses are imposed on the crank pin. See Fig. 27 b.

CAUTION: Do not turn the crank any further once the crankcase halves have been brought firmly together as this may damage the crankshaft (crank pin).

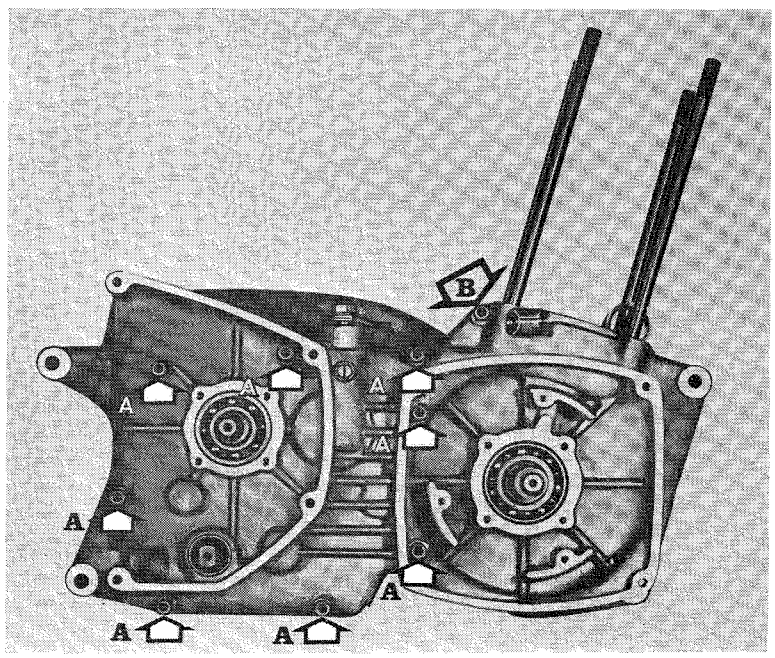


Fig. 28 a
A=6x70 mm. B=6x50 mm

28. Screw in the 11 cap screw and tighten the two crankcase halves.
Tightening torque: 5 lb. ft. (0,7 kpm)
See Figs. 28 a and 28 b.

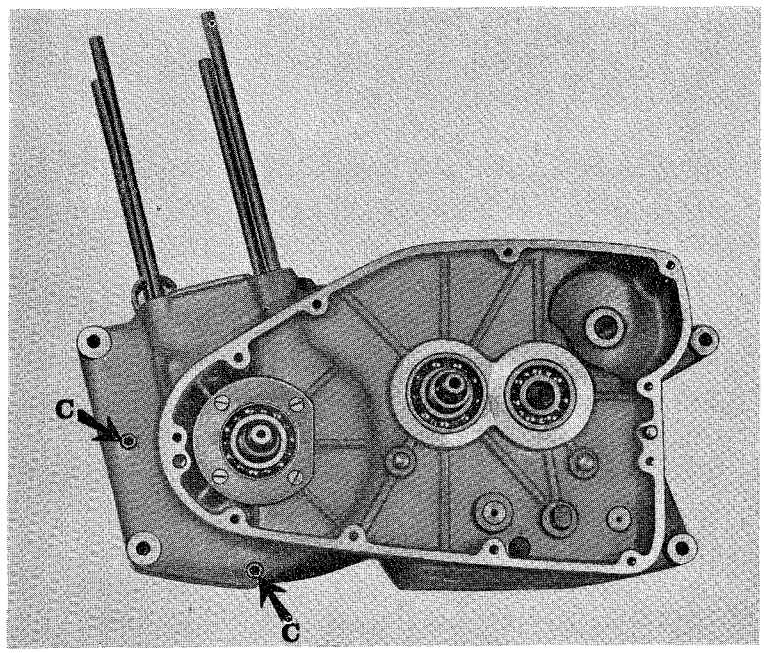


Fig. 28 b C= 6x40 mm

29. Fit the shittingdrum ratchetsleeve in position. See Fig. 29.

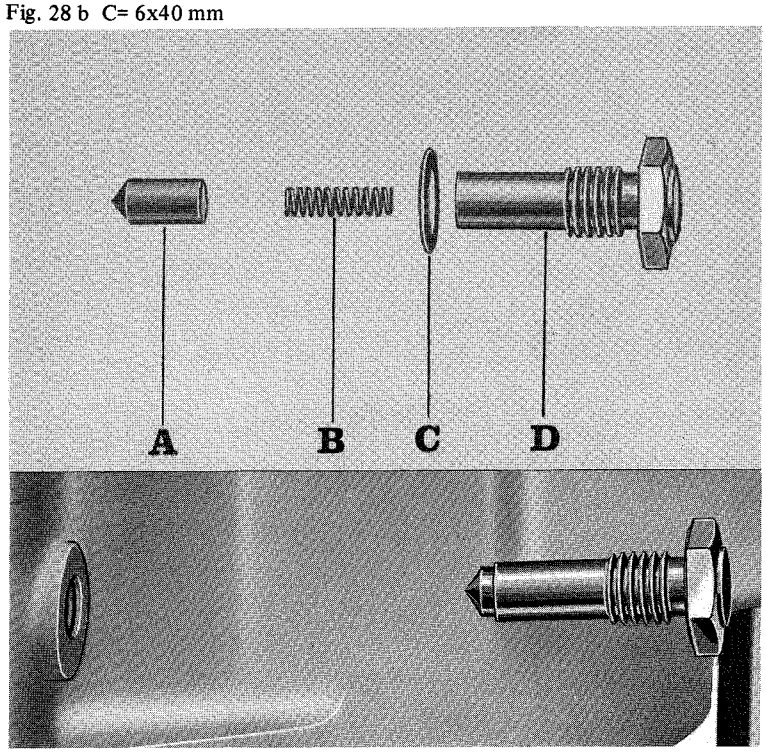


Fig. 29
A: Ratchetsleeve. B: Spring
C: Gasket D: Ratchetscrew

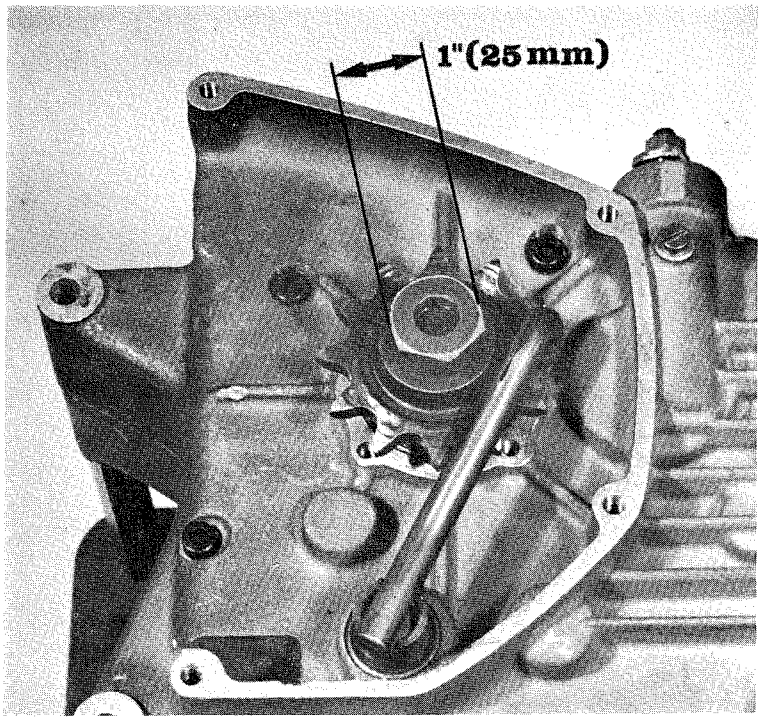


Fig. 30

30. Fit the charin sprocket, using tool No. 15 19 278-01 and 1" (25 mm) spanner. See Fig. 30.
Tightening torque: 50 lb. ft. (7 kpm)

DISASSEMBLY AND ASSEMBLY OF CLUTCH

If only the **clutch** is to be repaired, it is not necessary to drain the gearbox oil. It will suffice to lean the machine over (engine in frame) or mount the engine in the assembly stand.

1. Unscrew the left-hand engine cover (kick starter cover).

2. Disassemble:
   a) Adjusting nuts
   b) Tab washers
   c) Washers
   d) Clutch springs
   e) Pressure plate

See Fig. 2.

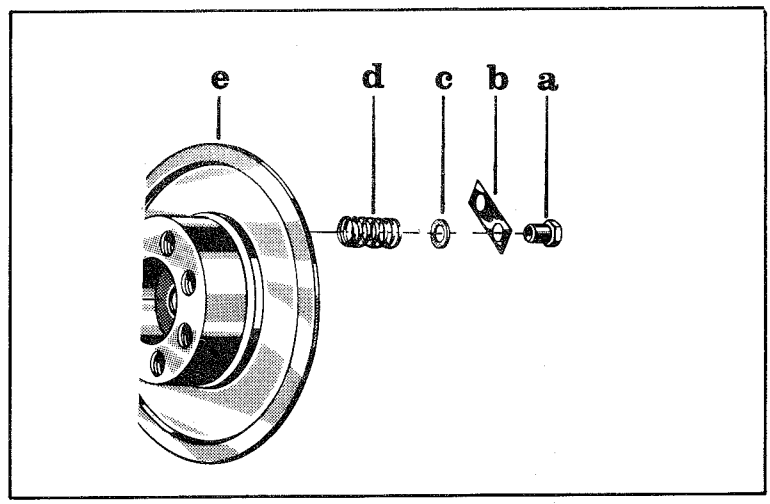


Fig. 2

3. Remove the clutch linings with the aid of a screwdriver, bent piece of wire or the like.

4. Fit holding-up tool No. 15 19 261-01 to the clutch centre and lock the drive gear and clutch ring with the gear segment as shown in Fig. 4 and back off the clutch centre nut.

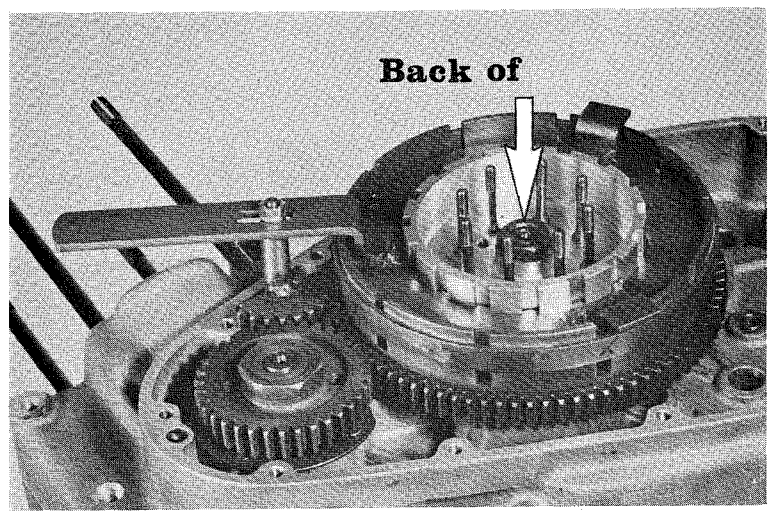


Fig. 4

5. Cange the holding up tool and back off the drive gear nut. See Fig. 5.

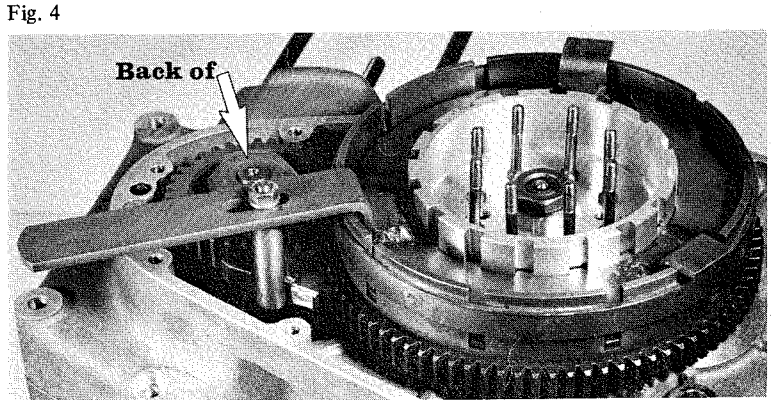


Fig. 5

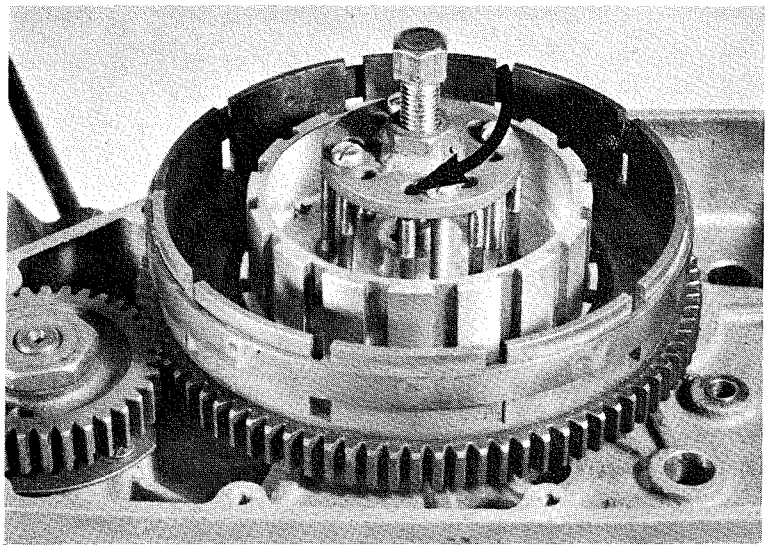


Fig. 6 a

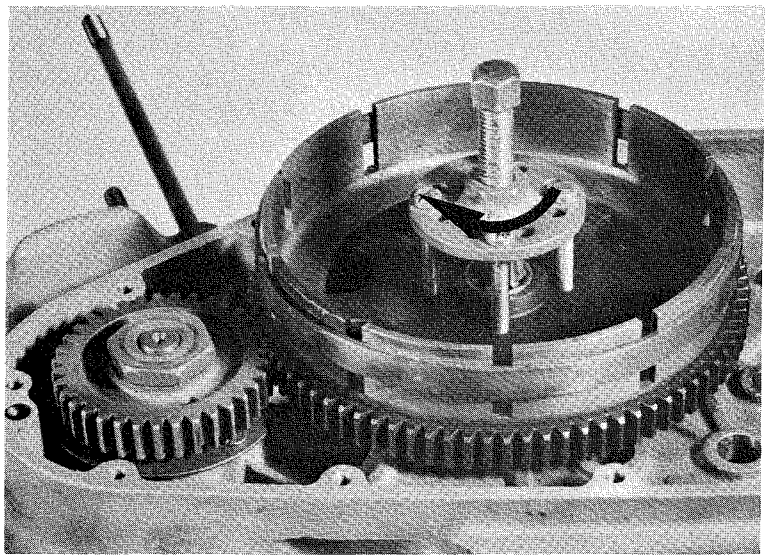


Fig. 6 b

6. Pull off the clutch centre and clutch ping, using puller No. 15 19 268-01.
See Figs. 6 a and 6 b.

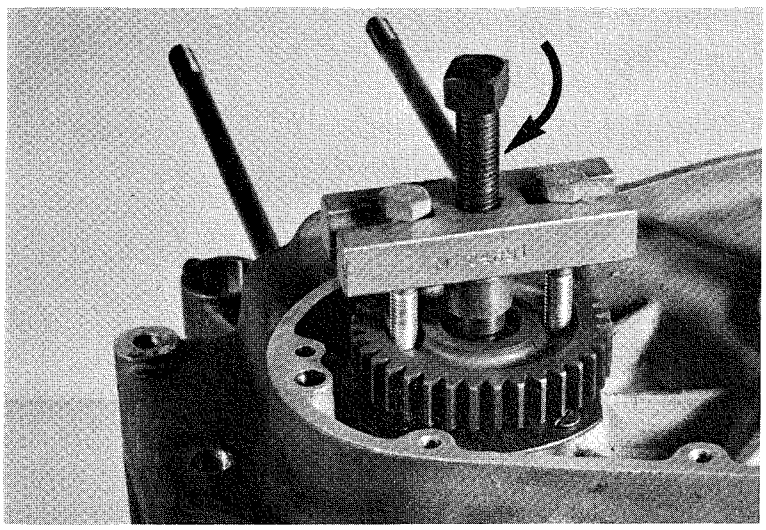


Fig. 7

7. Pull off the drive gear, using puller No. 15 19 275-01 (sprocket puller in which the jaws are replaced by two M8x50 bolts screwed into the gear). See Fig. 7.

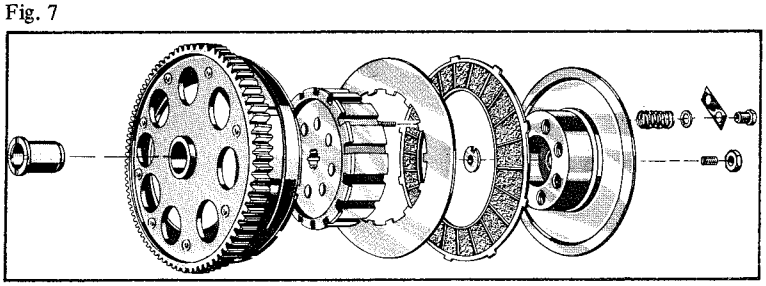


Fig. 8 a

8. Assemble in reverse order. See Fig. 8 a.

NOTE: Do not forget the washer between the clutch ring and clutch centre. See Fig. 8 b.

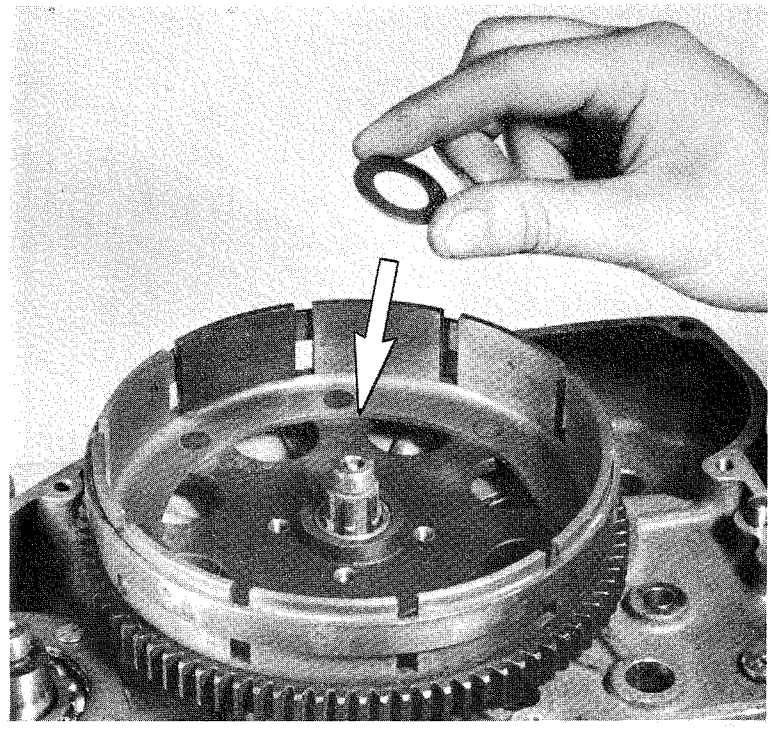


Fig. 8 b

Tightening torque: Drive gear nut: 4 kgfm
Clutch centre nut: 4 kgfm,
use locking fluid. See Fig. 8 c.

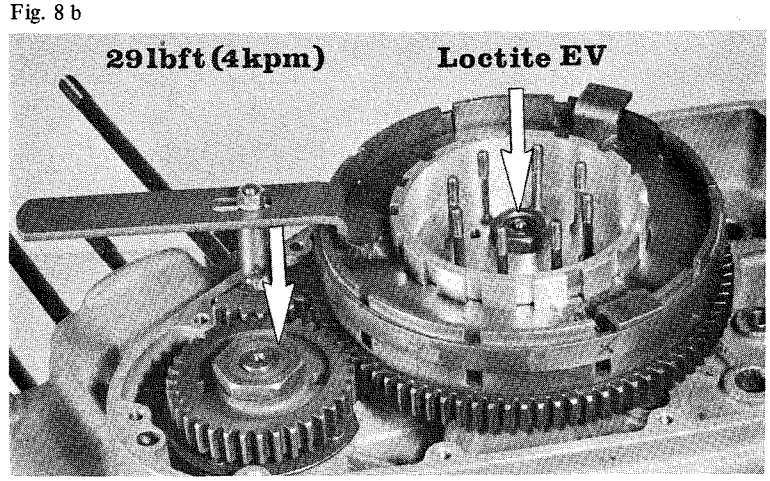


Fig. 8 c

9. Fit the clutch ring with the aid of assembly tool No. 15 19 251-01. See Fig. 9.

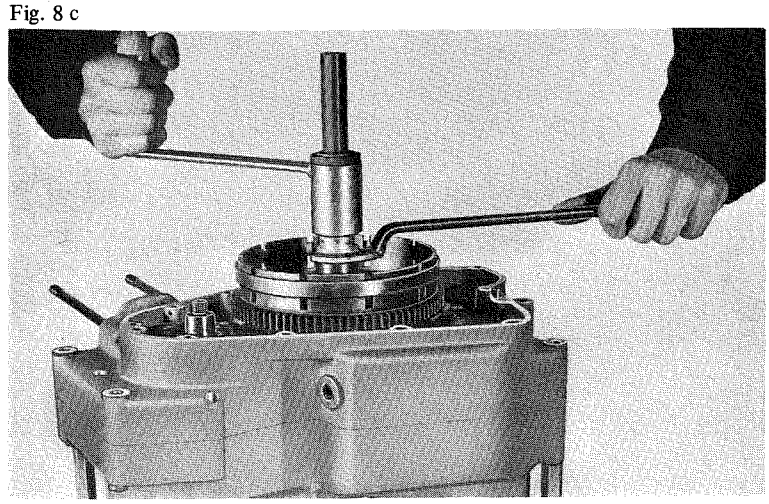


Fig. 9

10. Run on the pressure plate nuts about 8-9 turns when new linings are fitted. If the linings are worn, the nuts must be adjusted accordingly.

NOTE: Do not forget the washers between the springs and the tabs. Bend up the tabs.

11. Adjust the screw as shown in Fig. 11 a, using a screw-driwer and a 13-mm spanner until there is approx. 10-15 mm free play at the lever.

See Fig. 11 b.

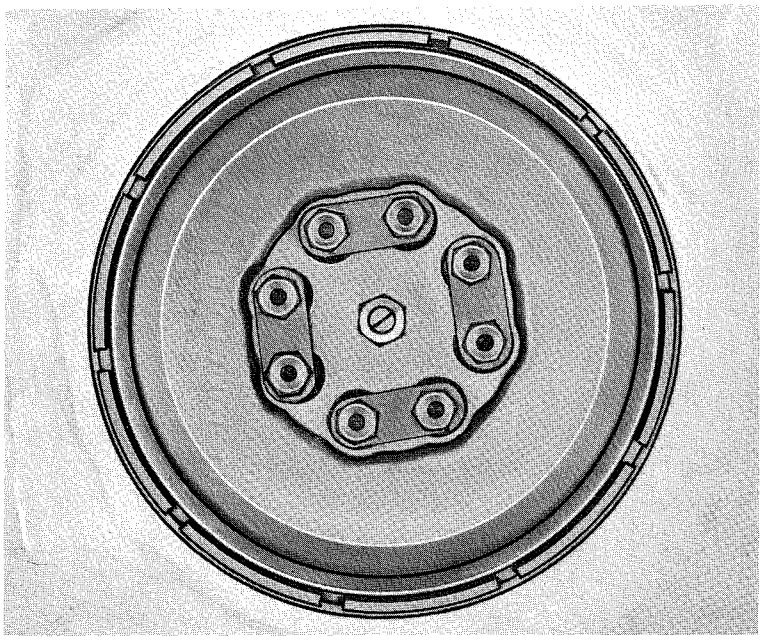


Fig. 11 a

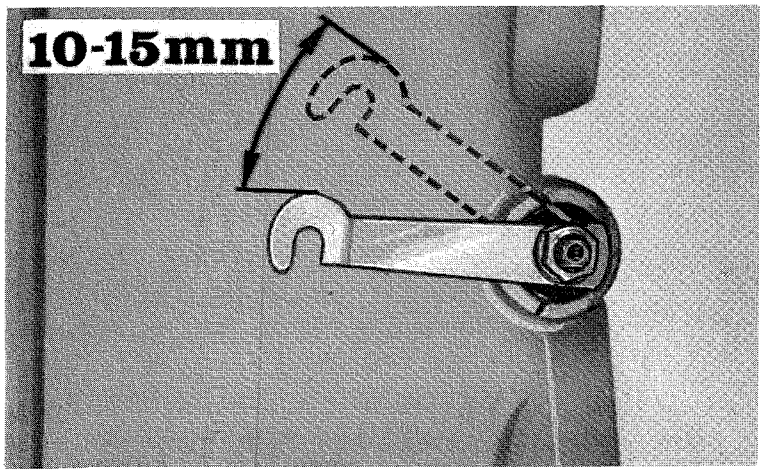


Fig 11 b

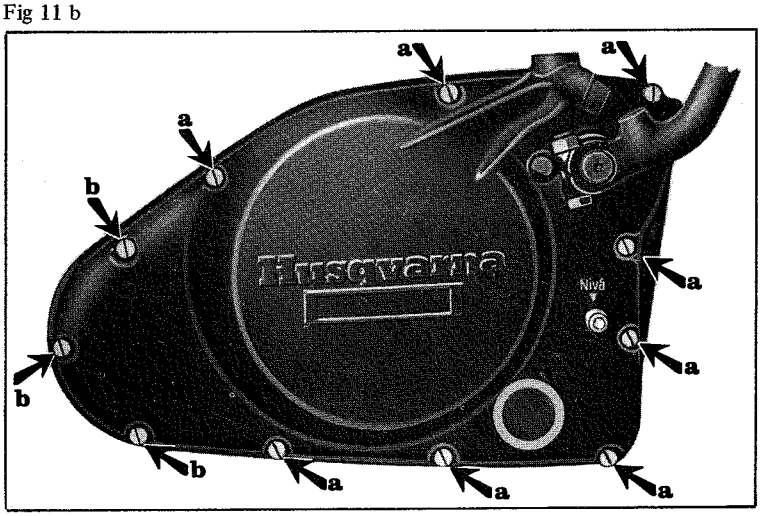


Fig. 12
a= M6x50 mm. b= M6x35 mm

12. Assemble the engine cover. Screws are of two different lengths and should be fitted as shown in Fig. 12.

CHANGING CRANKCASE BEARINGS

1. Disassemble the engine and press out the mainshaft bearin bush. See Fig. 1.

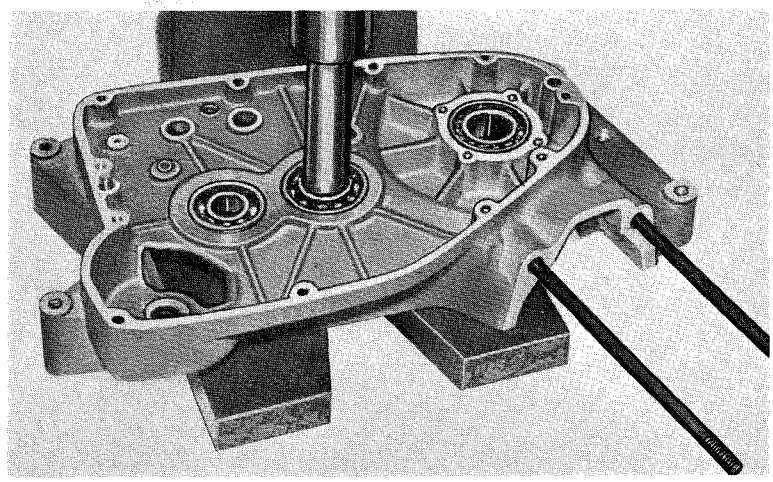


Fig. 1

2. Heat the crankcase half in an oven to approximately 130°C (270°F). A blowpipe or bunsen burner may also be used, Fig. 2 a, but it is then important to make sure that the halves are evenly heated.

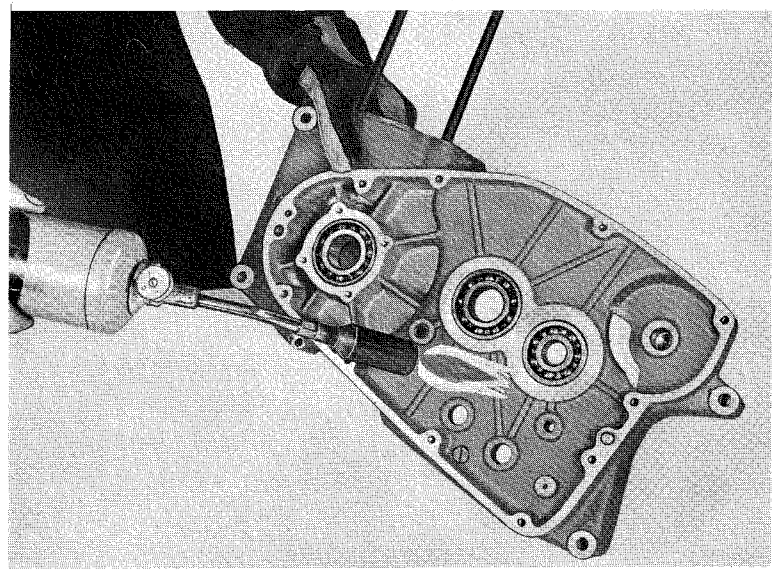


Fig. 2 a

When the above temperature has been reached the bearings will probably drop out of their seats. If not, tap the crankcase half against a block of wood or the like. See Fig. 2 b.

NOTE: Fit the new bearings while the crankcase half is still hot.

NOTE: Never disassemble or assemble bearings when the crankcase is cold. This will ruin the fit of the bearings and they will be looser each time.

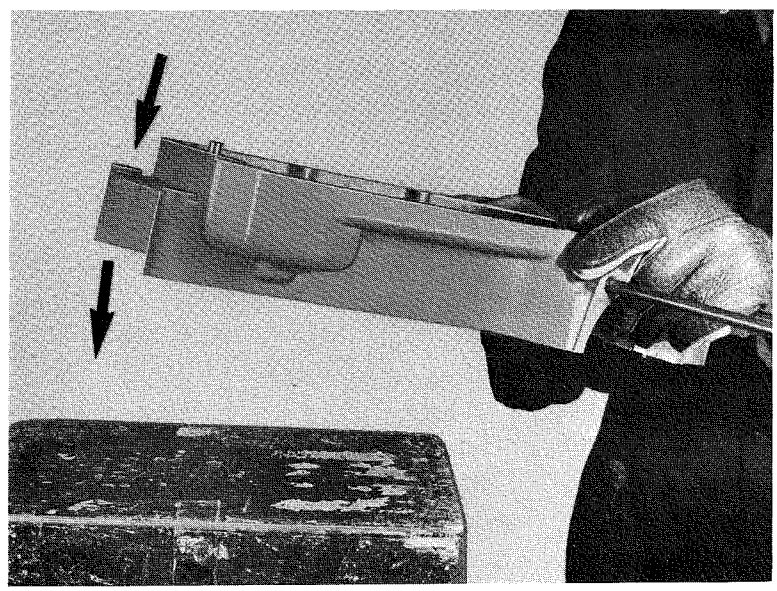


Fig. 2 b

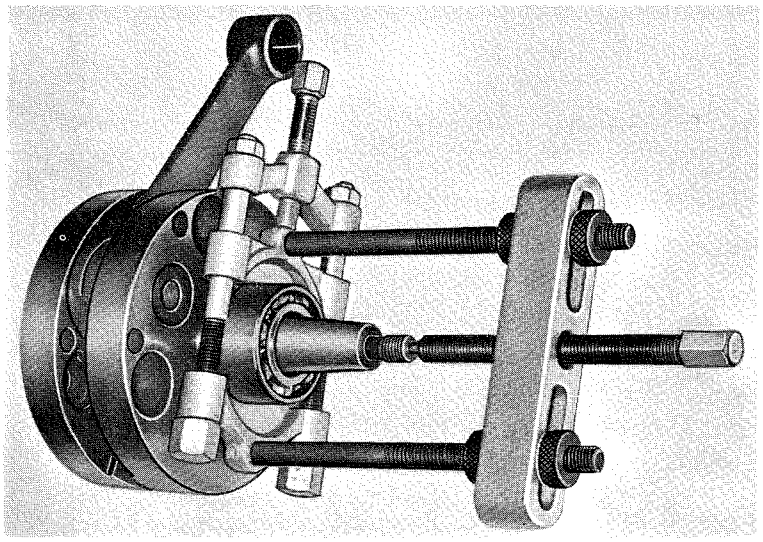
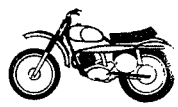
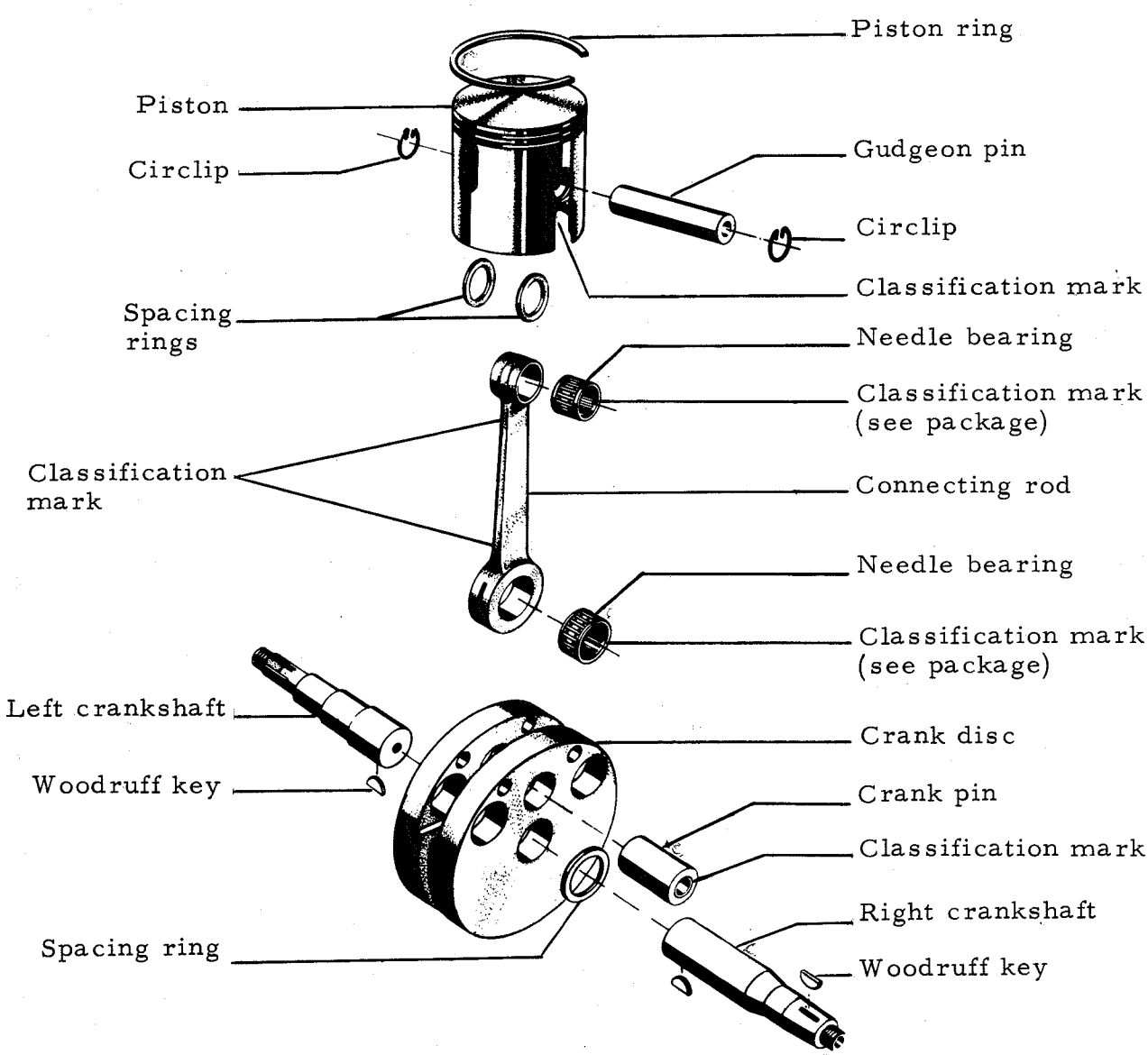


Fig. 3

3. If the crankshaft bearings jam on the crankshaft during disassembly they can be removed with the aid of an external ball-bearing puller. See Fig. 3.





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CHECKING PISTON RING WEAR

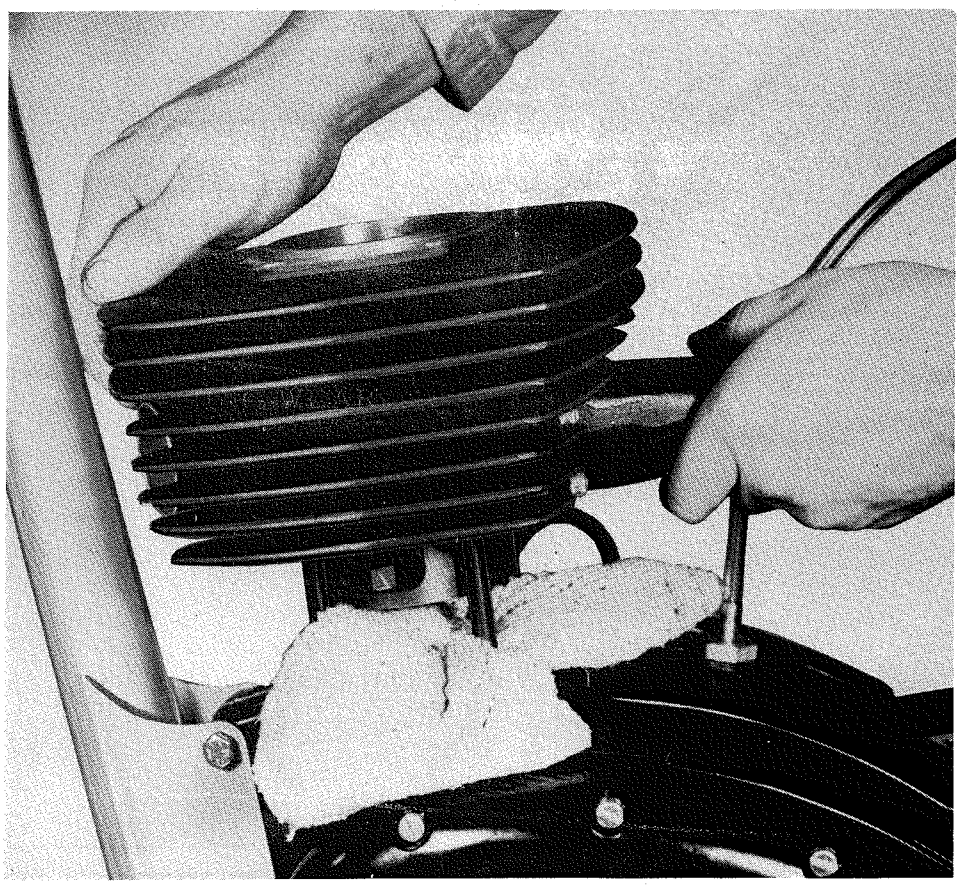
A good idea of the degree of piston ring wear can be obtained by looking at the rings through the exhaust port. If they are worn round at the edges they should be replaced.

The wear can also be checked by placing the rings in the lower part of the cylinder, when the gap between the ends of the rings must not exceed 0.8 mm (.032").

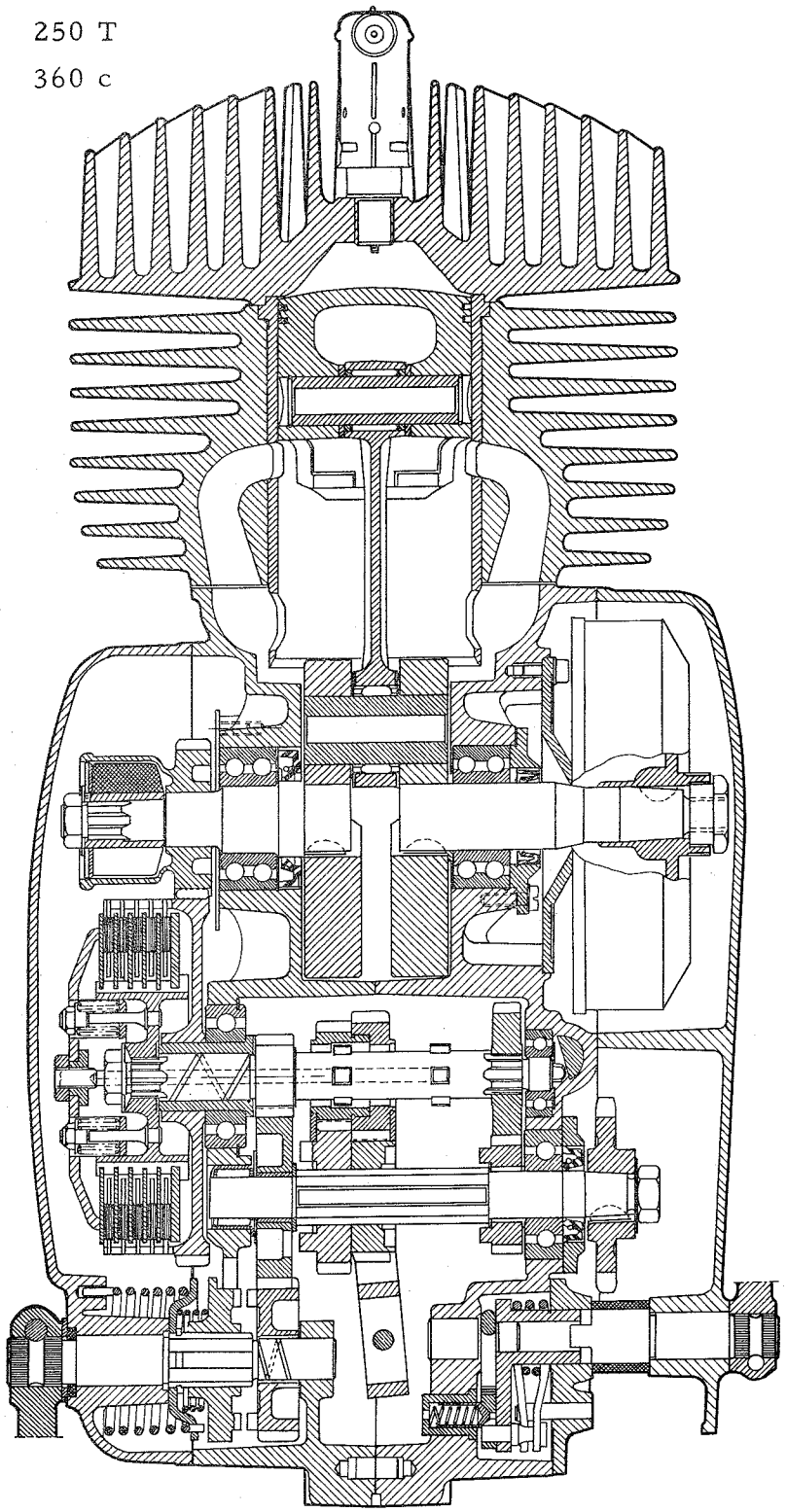
Since a piston ring takes a relatively long time to wear in, they should only be replaced in the event of noticeable wear or other defects.

CHANGING PISTON AND PISTON RINGS

1. Remove the air cleaner, carburettor and exhaust pipe, with silencer on Sportsman.
2. Disconnect the ignition lead from the sparking plug and loosen and remove the four cylinder head bolts. Lift off the cylinder head.
3. On 360 motocross: Remove the rear tankbolt and loosen the front bolt. Lift up the rear end of the tank about 7.5 cm (3") and place i.e. a spanner or screwdriver under it.
4. Lift up the cylinder about 5 cm (2") from the crankcase and place a piece of rag in the crankcase opening in order to prevent dirt from entering.



MOTO-CROSS 250
MOTO-CROSS 360
SPORTSMAN 250 T
SPORTSMAN 360 c



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5. Lift off the cylinder with gasket and remove the circlips for the gudgeon pin. Press out the gudgeon pin, remove the piston and spacing rings and remove the needle bearing from the small end of the connecting rod.
6. Remove the piston rings and thoroughly clean the piston ring grooves.
7. Clean the piston head and combustion chamber. If there is a ridge at the piston turning point it is advisable to rebore the cylinder and replace the piston.
8. Grind in the cylinder head against the cylinder with fine grinding paste. Assemble in the reverse order and tighten up the cylinder head bolts alternately with a torque wrench to 3.5 kpm (25.3 lb. ft.).

CHECKING BIG-END BEARING

The big-end bearing wear can be tested by grasping the connecting rod firmly as close to the bearing as possible and feeling whether there is any play in the longitudinal direction of the connecting rod. If so, the bearing should be replaced.

N.B. The big-end bearing has a certain amount of end float, which means that a little lateral play can be felt at the small end even with a new bearing.

CHECKING PISTON AND GUDGEON PIN

In order to simplify stockholding, the piston and connecting rod parts are grouped into three classes as shown in the tables on page 680803/2. The actual piston wear is very small, but when overhauling the engine the piston should, nevertheless, be inspected for security of the locking pin and wear against the cylinder, as well as the state of the piston ring grooves and fit of the gudgeon pin. There must not be any play in the piston ring grooves.

A piston, which has been exposed to foreign matter such as sand, etc., due to the engine having been run with a defective air cleaner, will be burnt grey and is generally worn out.

GENERAL

If the engine is pinking this can depend on several different reasons and - or a combination of these, ie:

Too small main jet, (the engine runs too hot).

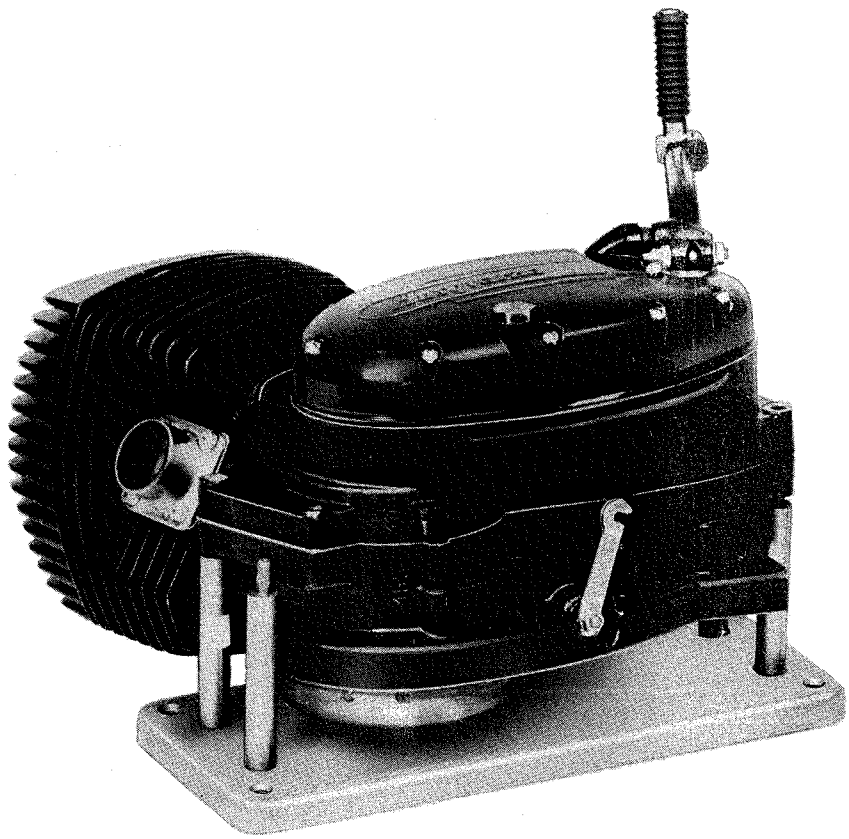
The sparkplug is too soft, try with a harder.

Too much ignition advance, check the ignition timing.

The combustion chamber and- or exhaust pipe and silencer is very carbonized.

Pinking is easiest noticeable when riding wide open in fourth gear uphills.

Pinking causes severe stresses on the piston and bearings, loss of power and can cause a piston seizure very fast. It must therefore be corrected immediately.



Engine placed on mounting stand

REMOVING ENGINE FROM FRAME

1. Remove the air cleaner and carburettor.
2. Open and remove the driving chain. Disconnect the ignition lead from the sparking plug. (Sportsman).
3. Loosen and remove the exhaust pipe, with the silencer on Sportsman.
4. Disconnect the clutch cable from the engine and the electric leads from the dynamo after removing the right-hand crankcase cover.
5. Remove the four engine mounting bolts with nuts and washers.
6. Lift the engine out of the frame. Place the engine on the mounting stand.

Installing is done in the reverse order.

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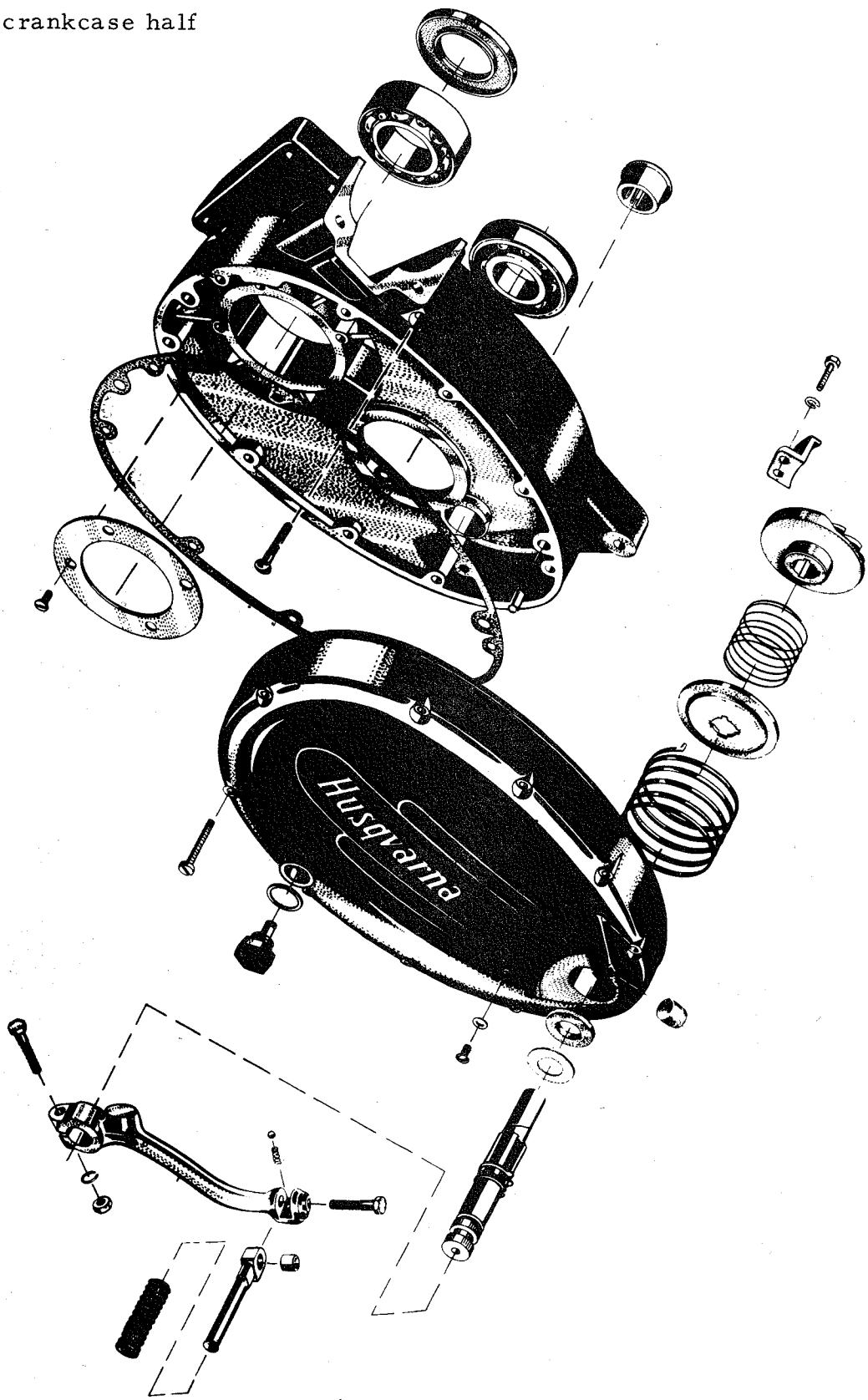
Left crankcase half



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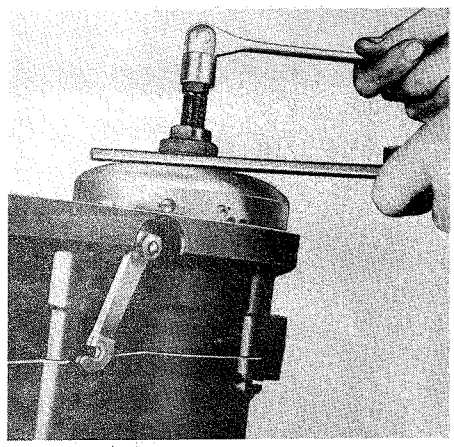
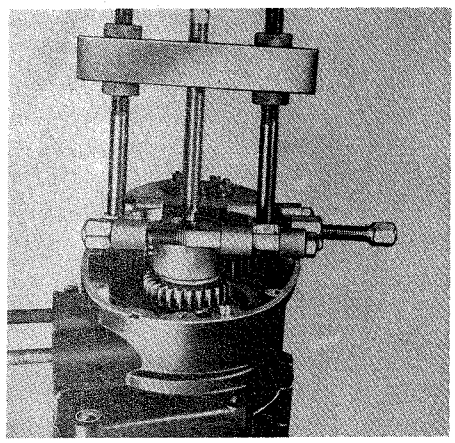
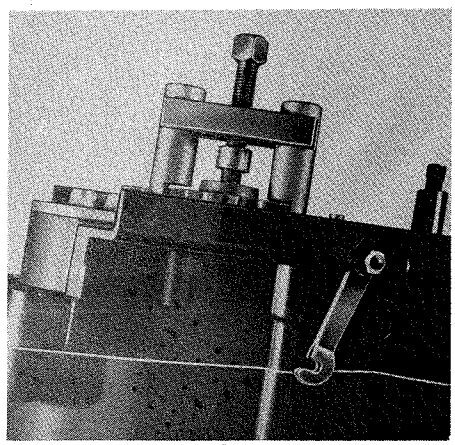
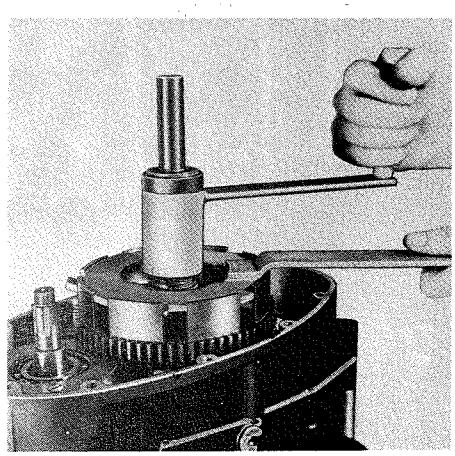
DISMANTLING THE ENGINE

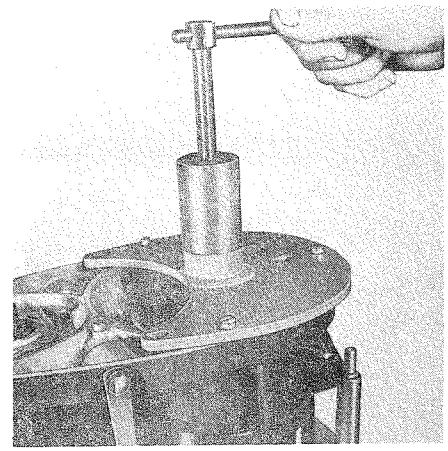
1. Remove the engine from the frame and take off the right-hand crankcase cover.
2. Remove the cylinder, gudgeon pin and piston.
3. Loosen the flywheel nut (lefthand thread) and pull off the flywheel.
4. Place the engine on the mounting stand and mark the position of the armature plate.
5. Remove the armature plate and turn the engine over (plug the crankcase breather so that the oil does not run out).
6. Take off the left-hand crankcase cover and kick-starter pinion, remove the gasket and pour out the oil.
7. Unscrew the eight nuts on the pressure plate. Remove the pressure plate, springs and clutch disc assembly.
8. Bend down the locking tabs on the drive gear and clutch hub and screw off the nuts. Remove the locking washers.
9. Take off the clutch hub and drive gear with the help of a puller.
10. Turn the engine round and take care of the clutch rods (one short and two long).
11. Bend down the locking tab on the drive sprocket nut. Unscrew the nut (left-hand thread) and pull off the drive sprocket with a puller.
12. Remove the drive sprocket key and unscrew the four screws of the oil seal retainer. Remove the oil seal retainer and gasket and the nine crankcase bolts.
13. Turn the engine round. Remove the crankcase bolt and separate the crankcase halves with the help of the dismantling tool. Remove the left-hand crankcase half and gasket.
14. Remove the countershaft needle bearing and the washers on both shafts. Remove the 1st speed pinion and the bushing and washer on the countershaft.
15. Remove the gear shifter and spring retainer.
16. Remove the mainshaft and guide with four gear wheels.
17. Remove the 4th speed pinion on the mainshaft, turn the crankcase half round and remove the countershaft oil seal retainer.
18. Remove the countershaft with pinion, bushing and two washers.

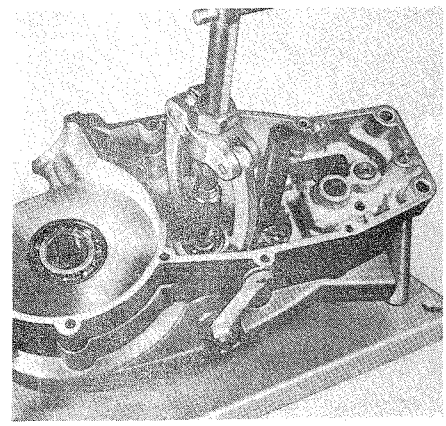




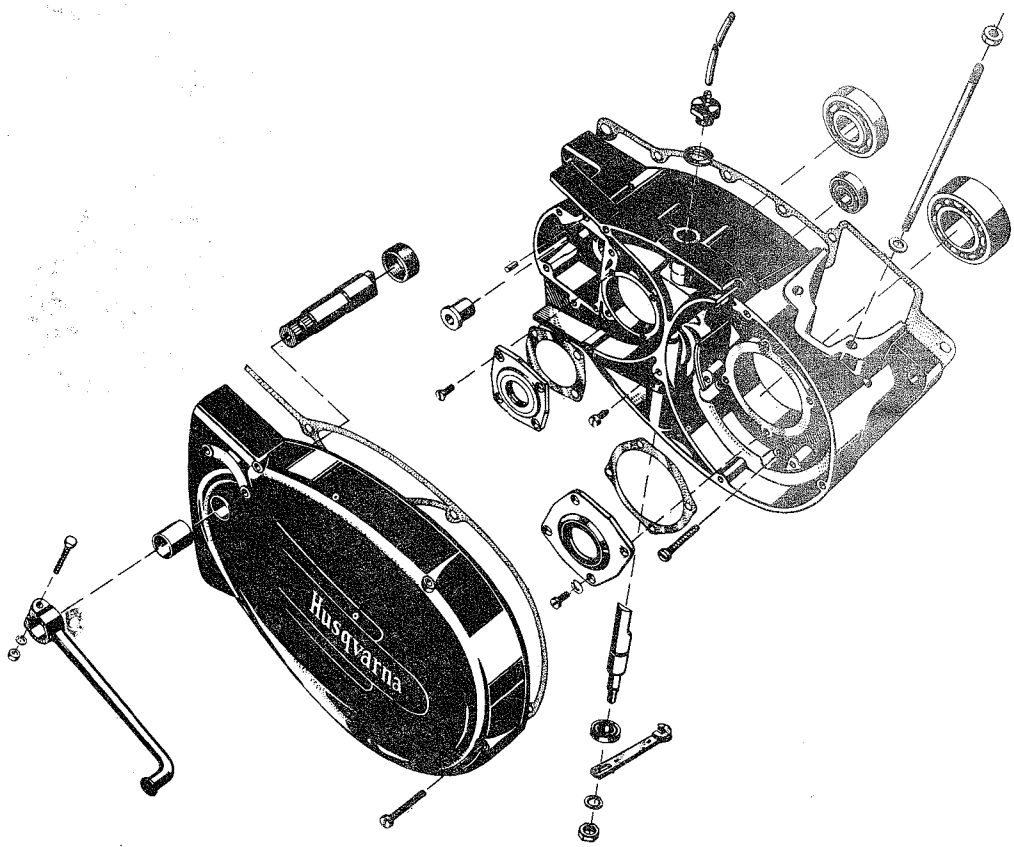








19. Remove the crankshaft with one washer from the crankcase. (The main bearing is removed by heating.)
20. Remove the cover for the gearshift mechanism with control link spring, gasket, pawl, step feeder and interlock sleeve with spring.
21. Unscrew the slotted screw and then remove the clutch shaft with lever and oil seal. Remove the oil filling plug.
22. Remove the shaft and interlock segment with spring and take out the bottom bearing for the mainshaft in the left-hand crankcase half.
23. Remove the clutch ring gear and dismantle the drive pinion (circlip, washer, hub and four rubber buffers). (Assembling drive pinion: Fit on the hub, two rubber buffers compressed, the other two rubber buffers, washer and circlip.)



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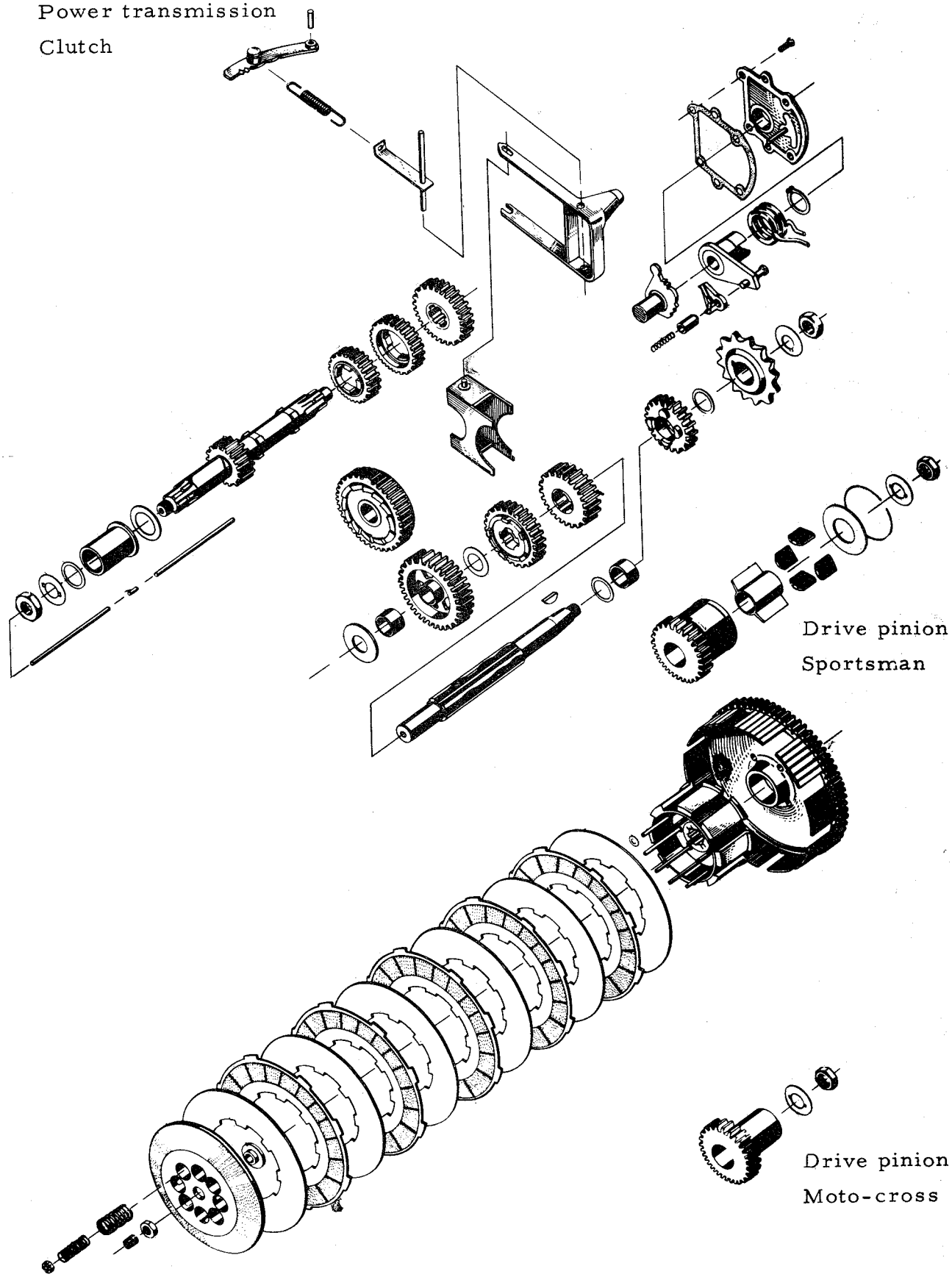
Gearshift mechanism

Gearbox

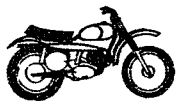
Power transmission

Clutch



Drive pinion
Sportsman

Drive pinion
Moto-cross



ASSEMBLING THE ENGINE

NOTE: All ball bearings, needle bearing sleeves and oil seal in left-hand crankcase half.

1. Fit the interlock segment with shaft, clutch shaft and oil seal, lever, washer, nut and set screw.
2. Then place on the interlock sleeve with spring, step feeder and gasket. Grease the pawl before fitting it.
3. Fit the control link with spring and circlip in the cover. Bolt on the cover.
4. Fit the gear shifter and gear lever with shaft for controlling the gear positions. If it is necessary to grind the control link, the gear shifter must be removed.
5. Place the right-hand crankcase half on the mounting stand and fit the crankshaft with washer. Fit the countershaft with 4th speed pinions, bushing and two washers. Check that the pinions move easily on the shaft.
6. Place the 4th speed pinions and the 2nd and 3rd pinion pair in the guide.
7. Fit the mainshaft.
8. Then place in the gear shifter with shaft and spring retainer.
9. Fit the washer, bushing and 1st speed pinion on the countershaft.
10. Place the washer and then the needle cage in this order on the same shaft.
11. Provide the mainshaft with a washer.
12. Fit on the crankcase gasket after greasing it and check the two guide pins on the left-hand crankcase half. Fit the left-hand crankcase half.
13. Screw in the crankcase bolt and turn the engine round. Fit the crankcase bolts (nine), oil seal retainer with oil seal and gasket (countershaft). N.B. Do not damage the oil seal against the keyway.
14. Attach with four bolts.
15. Fit on the oil seal flange with greased oil seal and gasket (crankshaft).

16. Turn the engine round. Fit the clutch ring gear, washer, clutch hub and drive pinion. Fit on the locking washers and nuts. Bend the locking tabs over the nuts.

17. Place in one long clutch rod with the rounded part downwards, then a short one and finally a long one with the rounded part upwards.

18. Place in the thick steel disc and then the complete disc assembly.

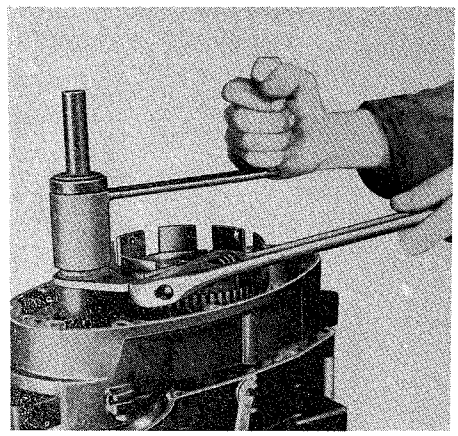
19. Fit on the pressure disc with 8 + 8 springs. Then fit on the washers and nuts and check that the pressure disc lifts evenly all round. Use Loctite on the nuts.

20. Fill up with 0.9 litre (1 5/8 Imp. pints) of oil and fit on the gasket after greasing it. Check the guide pins.

21. Fit on the ratchet wheel and the complete left-hand crankcase half. Attach with nine bolts and cut away projecting parts of the crankcase gasket.

22. Fit the needle bearing in the connecting rod. Fit on the cylinder pedestal gasket.

23. Fit the piston with piston rings, gudgeon pin and two washers and fit on the circlips.



24. Place on the cylinder after oiling it and fit the cylinder head with four washers and four nuts. Tightening torque: 3.5 kpm (25.3 lb.ft.)

25. Fit the woodruff key with obtuse part upwards.

26. Fit on the drive sprocket (left-hand thread) with locking washer and nut. Tightening torque: 6 kpm (43.3 lb.ft.). Bend over the locking tab.

27. Fit the amature plate in accordance with the mark previously made (three bolts). Place in the key and fit on the flywheel. (Grind the taper part with carborundum if necessary.) Tighten the nut to a torque of 6 kpm (43.3 lb.ft.) Sportsman 3.5 kpm, 25.3 lb.ft.).

    N.B. When fitting the armature plate make sure that the electric leads are not pinched.

28. Check the ignition.

REPLACING RUBBER BUFFERS FOR CRANKSHAFT PINION (SPORTSMAN)

1. Remove the left-hand crankcase cover and open the locking washer.
2. Place the ratchet wheel between the drive pinion and clutch ring gear.
3. Unscrew the nut and remove the drive pinion complete.
4. Separate the hub and outer sleeve.
5. Change the four rubber buffers. (When fitting, the rubber buffers must be compressed.)
6. Oil the hub and outer sleeve and press them together.

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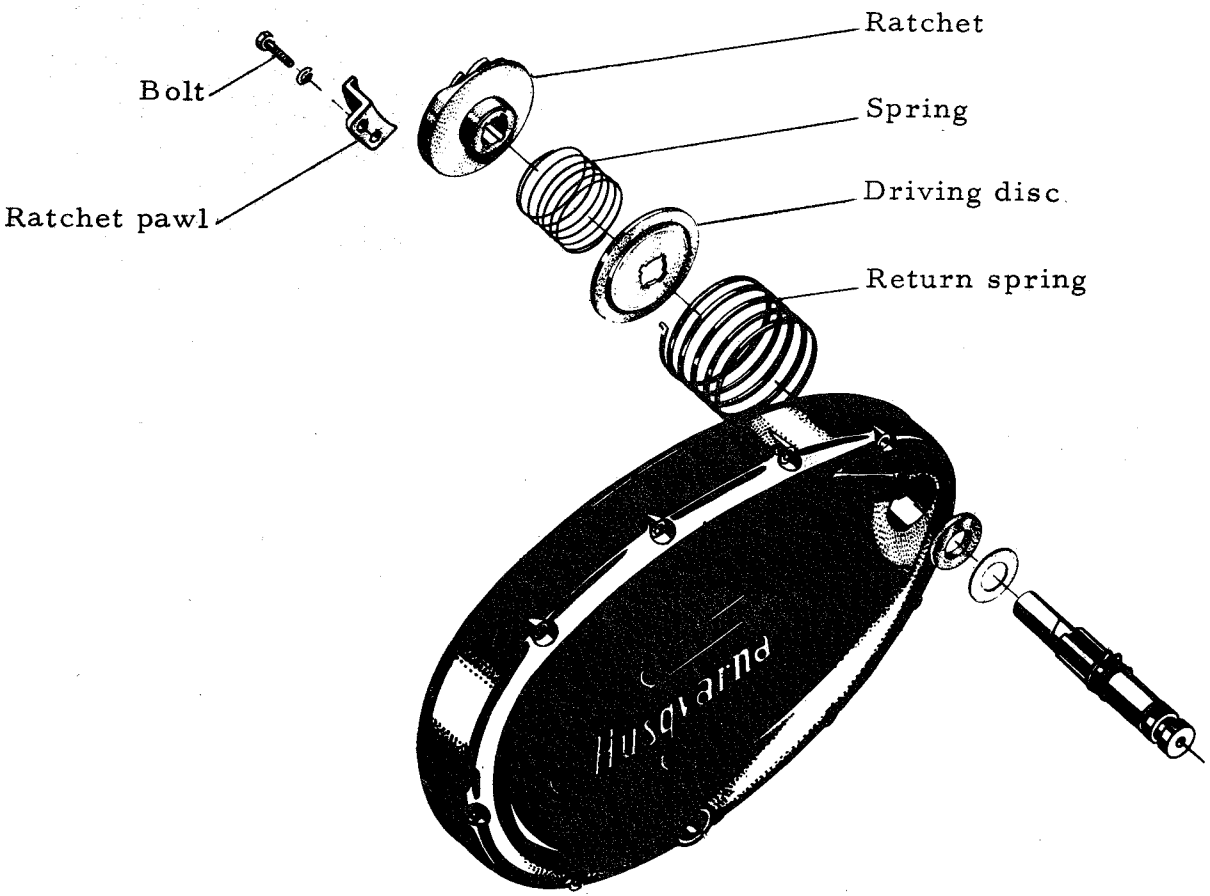
REPLACING THE KICK-STARTER SPRING

1. Remove the left-hand crankcase cover.
2. Remove the ratchet wheel.
3. Unscrew the two bolts and remove the pawl and ratchet.
4. Remove the spring and circlip and then the driving disc and return spring.

Assemble in the reverse order



FUEL SYSTEM

Carburettor

	Sportsman	Moto-cross	
		250	360
BING	1/32/5	1/32/14	1/32/14
Venturi	32 mm (1.26")	32 mm (1.26")	32 mm (1.26")
Main jet	155 (160)	160	160
Idling jet	30	30	30
Needle jet	1710	1710	1710
Carburettor needle No.	3	3	3

MAIN JET

The jet is not adjustable. If any alteration is necessary, the jet should be replaced with one of another size. The main jet is fitted in the needle jet and is accessible after the bottom screw has been removed.

NEEDLE JET

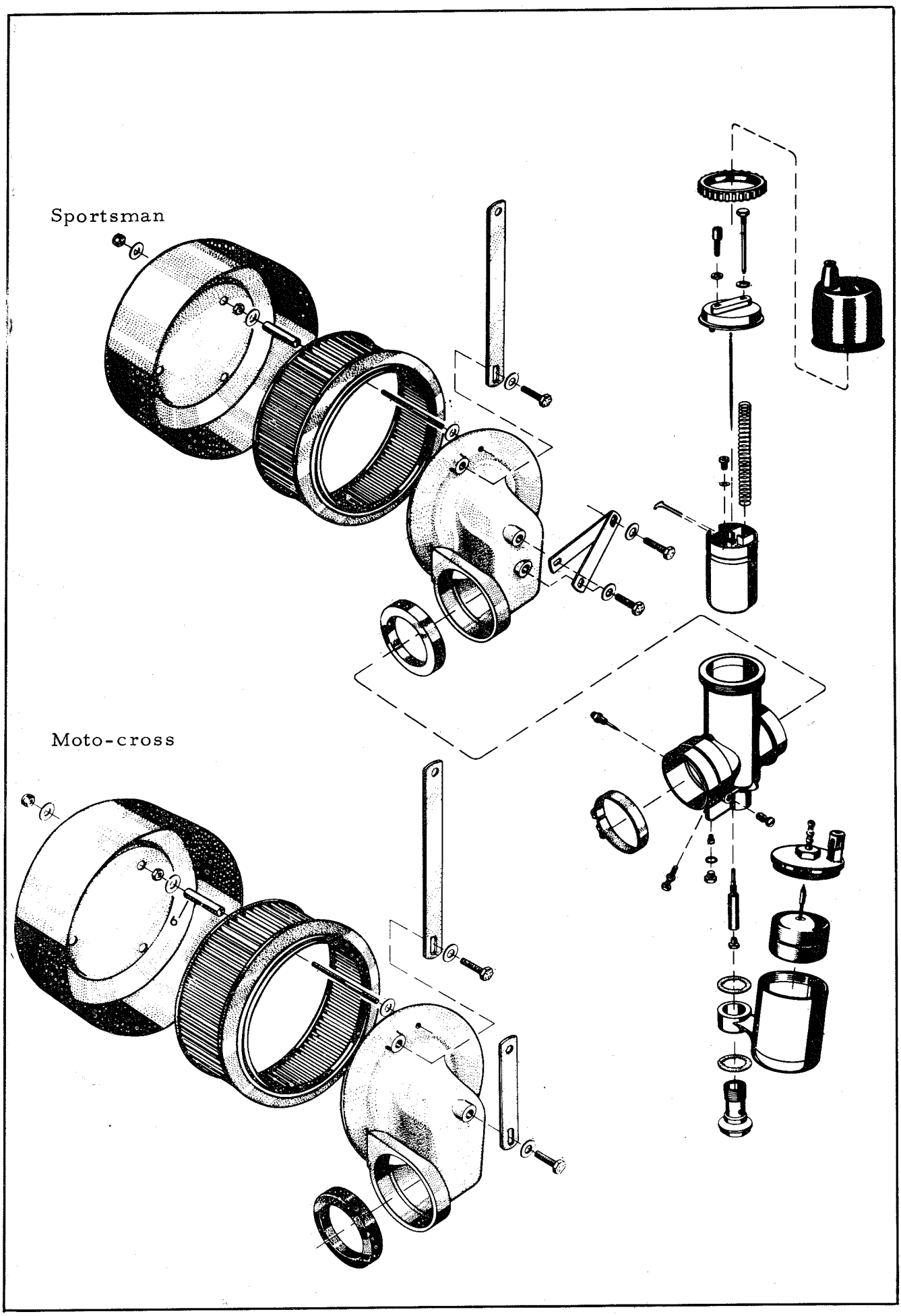
The jet is fitted in the carburettor body and is accessible after the bottom screw has been removed.

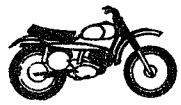
IDLING JET

The jet is fitted in the carburettor body and is accessible by unscrewing the carburettor screw.

THROTTLE NEEDLE

The throttle needle has four notches for different adjustment positions. The position is locked by means of a spring in the upper notch (Sportsman). On the moto-cross models, the needle position should be next from the top.


Sportsman
Moto-cross



CARBURETTOR AND AIR CLEANER

1. Carburettor assembly
2. Carburettor body
3. Carburettor cover
4. Throttle
5. Carburettor cover nut
6. Guide screw
7. Spring washer
8. Throttle stop screw
9. Nut
10. Carburettor body screw
11. Idling jet
12. Washer
13. Main jet
14. Idle air screw
15. Needle jet
16. Needle
17. Air control screw
18. Nut
19. Adjusting screw for throttle cable
20. Nut
21. Bottom screw
22. Clamp
23. Throttle spring
24. Spring clamp for needle
25. Washer for bottom screw
26. Float chamber assembly
27. Float chamber
28. Float chamber cover assembly
29. Float
30. Float needle
31. Slotted screw
32. Locking washer
35. Protecting sleeve
36. Air cleaner assembly
37. Air cleaner element (7)
38. Air cleaner connection (9)
39. Cover (3)
40. Washer (5)
41. Stud (8)
42. Washer (5)
43. Spacing sleeve (6)
44. Nut (4)
45. Washer (2)
46. Lock nut (1)
47. Neck ring for air cleaner (10)
48. Air cleaner attachment (13)
49. Hexagon bolt (12)
50. Washer (5)
51. Hexagon bolt
52. Washer
53. Air cleaner stay (11)
54. Washer (5)
55. Hexagon bolt (12)

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CLEANING THE CARBURETTOR

After dismantling, the carburettor should be thoroughly washed and then blown with compressed air. Pieces of wire or similar objects must not be used for cleaning.

CLEANING THE AIR CLEANER

Foreign matter such as dust, etc., can be removed by shaking out the cleaner against a soft object or by carefully blowing out with compressed air. The air cleaner should be changed when it has become blocked with dirt or moisture, but in any case after every 10,000 km (6000 miles).

REMOVING THE CARBURETTOR

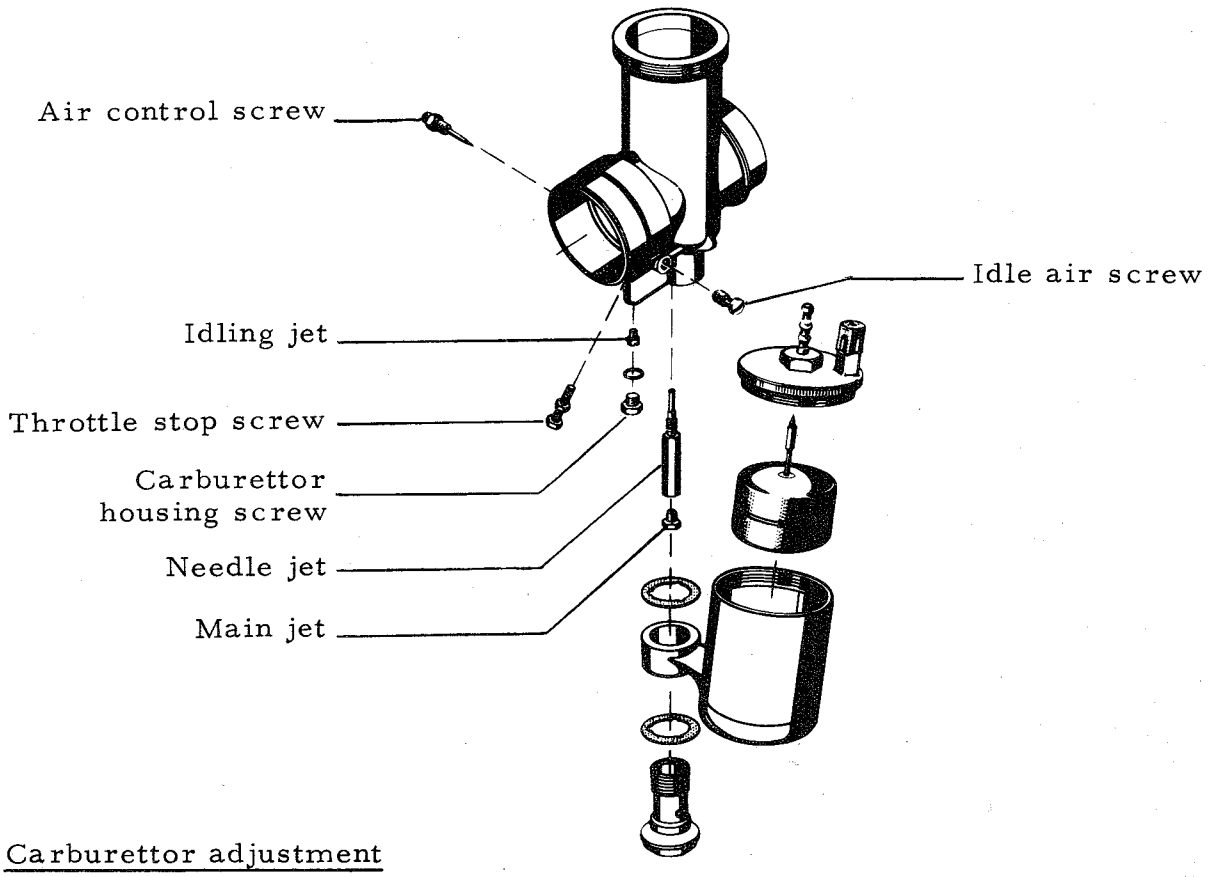
1. Remove the air cleaner stay and attachment from the frame and take off the complete air cleaner.
2. Disconnect the fuel hose from the carburettor and lift off the protecting sleeve from the carburettor cover.
3. Remove the throttle and loosen the carburettor at the clamp.
4. Pull off and lift out the carburettor.

(Fitting is done in the reverse order)

DISMANTLING AND ASSEMBLING THE CARBURETTOR

1. Remove the carburettor.
2. Unscrew the bottom screw with washer and remove the float chamber.
3. Screw out the needle jet and remove the main jet.
4. Remove the carburettor body screw with washer.
5. Screw out the idling jet.
6. Screw out the throttle stop screw with lock nut and the air control screw with nut.
7. Screw off the float chamber cover and take out the float.
8. Remove the throttle.

ASSEMBLING IS DONE IN THE REVERSE ORDER



Carburettor adjustment

1. Check that the throttle handle is in the closed position.
2. Screw in the adjusting screw for the throttle handle to the lowest position.
3. Slacken the air control screw lock nut and open the air control screw about 2 1/2 but not more than 3 turns from the screwed-in position. For easy starting and smooth idling accurate adjustment of the fuel- - air mixture is necessary. A leaner mixture is obtained when the control screw is screwed outwards.
4. Slacken the throttle stop screw lock nut and adjust the idling speed.
5. Tighten the lock nut without altering the position of the stop screw.

If the engine "four-strokes" at low speed when heavily loaded or when the throttle is opened quickly, the throttle needle must be lowered one notch. If the trouble persists in spite of this, the needle should be moved back to its original position (Sportsman 1st notch, Moto-cross 2nd notch) and a smaller main jet fitted. A jet smaller than 155 should not be used.

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Too lean a fuel mixture is the most usual cause for overheating and seizure of the engine. As a rule it is the piston that is worst affected. In this connection a lean fuel mixture concerns the petrol/air mixture coming from the carburettor.

The fuel mixture is determined in the first place by the size of the main jet and the setting of the throttle needle. A raised needle and larger jet give a richer mixture. In the event of difficulty in determining the correct carburettor adjustment, proceed as follows:

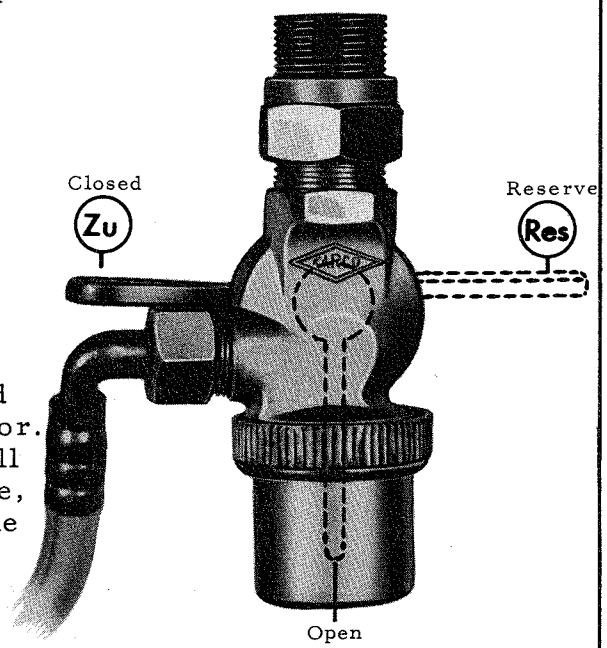
1. Increase the size of the jet.
2. Raise the needle until the engine runs "roughly" under load.
3. Reduce the mixture with a smaller jet.
4. Low the needle one notch.

"Horror" picture of engine seizure.

FUEL COCK WITH WATER SEPARATOR

The fuel cock is fitted under the tank on the right-hand side and can be set in three positions (see figure).

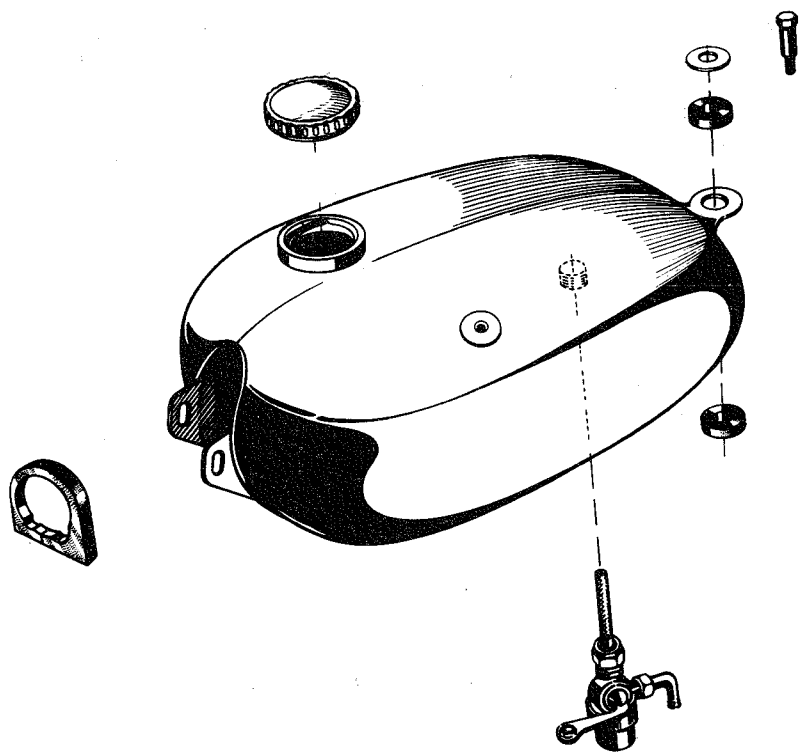
The fuel cock is provided with a water separator for collecting condensation water and other impurities. The part of the fuel cock which fits in the tank is provided with a filter to prevent large impurities from coming out with the petrol. If running troubles occur which are thought to be due to blockage of this filter, this can easily be checked by turning the cock to the open position and then take the fuel hose off the carburettor. If the filter is not blocked up, petrol will run out of the hose regularly. Otherwise, remove the fuel cock from the tank, take it apart and clean the two screens with compressed air.



FUEL TANK

When carrying out repairs to the fuel tank it must first be washed out with hot water until all the fuel and gases have been removed.

The tank, which rests on insert rubbers is attached to the frame by means of two bolts.



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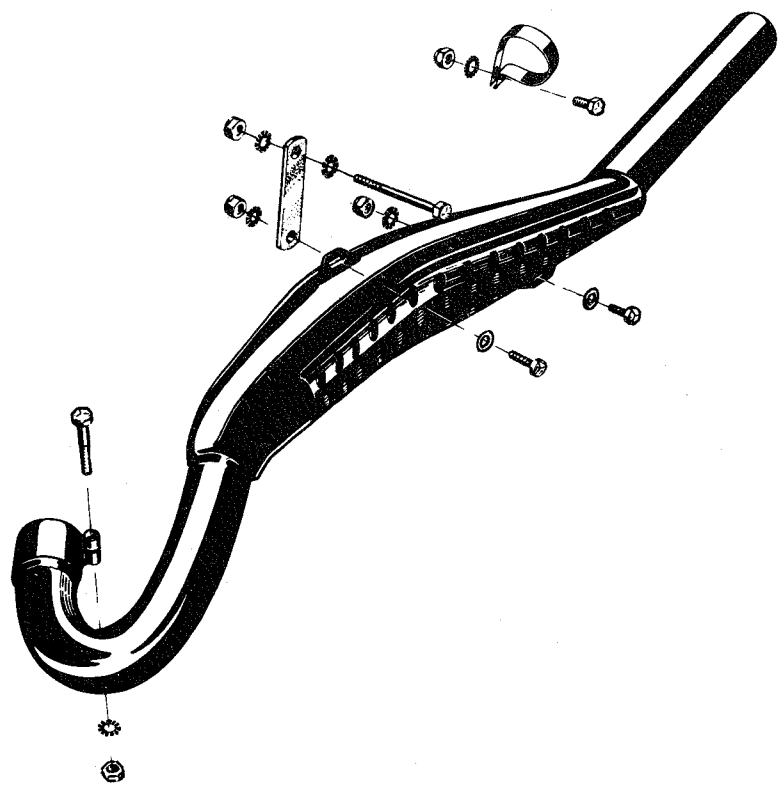
MOTO-CROSS



REMOVING EXHAUST PIPE AND SILENCER (SPORTSMAN)

1. Loosen the silencer attaching bolt on the frame.
2. Remove the bolt which attaches the exhaust pipe to the frame.
3. Loosen the clamp on the cylinder and lift off the complete exhaust system.

   (Fitting is done in the reverse order)

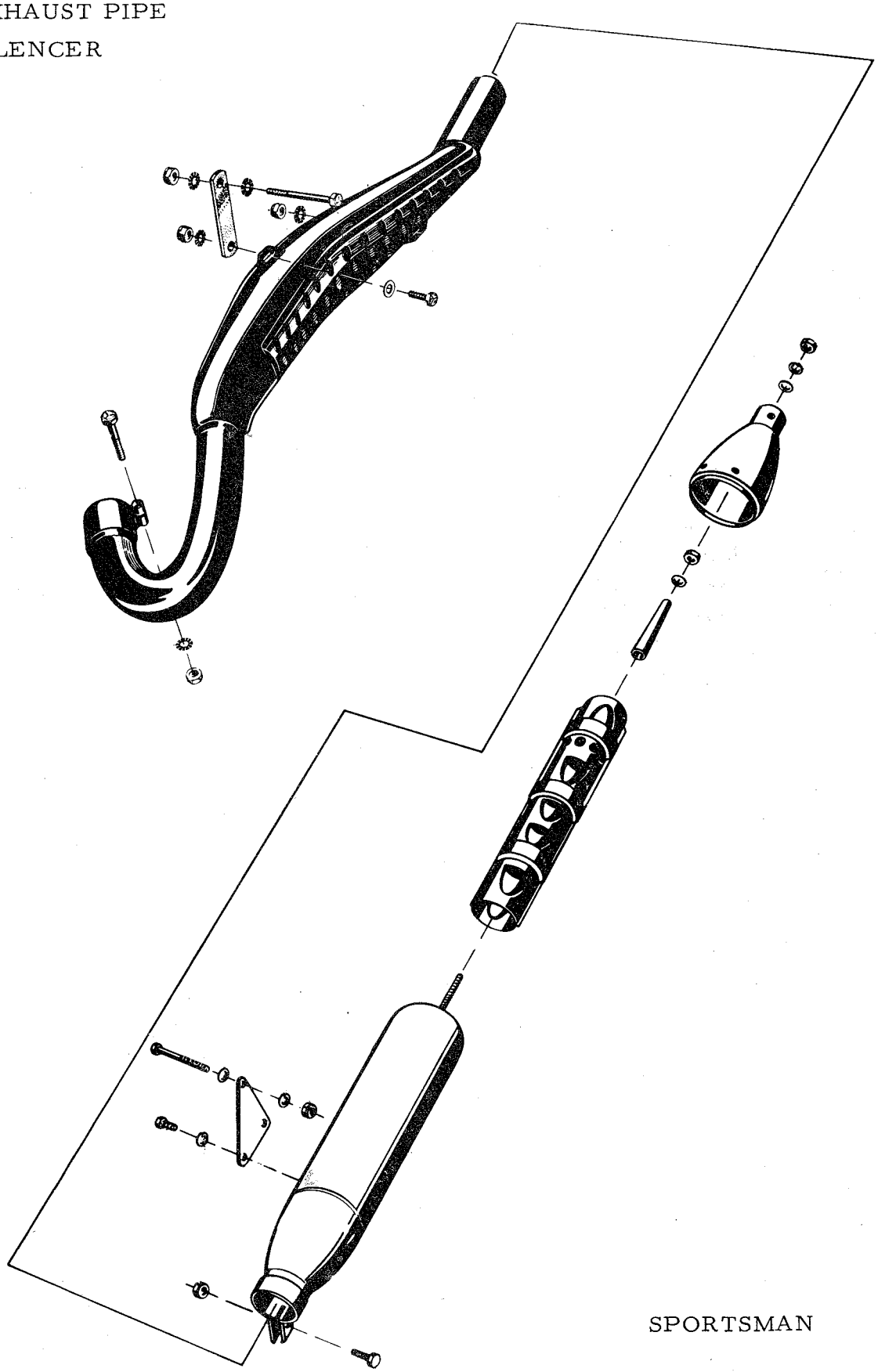
   The exhaust pipe of the moto-cross machine is removed in a similar manner as appropriate.

CHANGING THE SILENCER (SPORTSMAN)

1. Loosen the silencer attaching bolt on the frame.
2. Loosen the clamp and pull off the silencer.
3. Before fitting the new silencer to the exhaust pipe, apply a thin layer of Permatex as extra sealing between the pipes.

Report No.	Sheet No.
680808/2	3

EXHAUST PIPE
SILENCER



SPORTSMAN

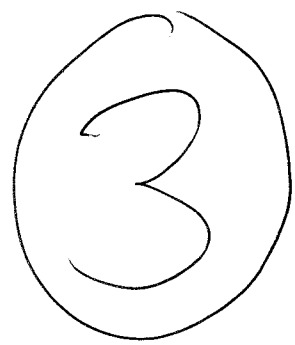
REPLACING THE SILENCER INSERT

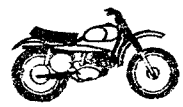
1. Remove the nut and the two washers in the silencer opening and pull off the tailpipe.
2. Unscrew the nut which is now accessible and remove the washer.
3. Remove the insert.

   (Fitting is done in the reverse order)

CLEANING

To clean the silencer, take it apart, burn it out and wash it in petrol.





DATA

	Sportsman	Moto-cross	
		250 cc	360 cc
DYNAMO	6 V/35+18 W	6 V/30 W	6 V/30 W
HEADLAMP BULB	6 V/30/30 W	-	-
CONTROL LAMP BULB	6 V/0.6 W	-	-
REAR LAMP BULB	6 V/5 W	-	-
BRAKE LIGHT BULB	6 V/18 W	-	-
HORN	6 V/30 W	-	-
SPARKING PLUG, TYPE	Bosch W 225 T 2	Bosch W 240 T 2 - W 260 T 2	Bosch W 240 T 2 - W 260 T 2
SPARKING PLUG, GAP	0.5 mm (.020")	0.5 mm (.020")	0.5 mm (.020")
CONTACT BREAKER GAP	0.3-0.4 mm (.012-.016")	0.3-0.4 mm (.012-.016")	0.3-0.4 mm .012-.016")
IGNITION ADVANCE	22°	22° (on 1967 and earlier models 18°)	22°
FIELD BREAKING POSITION	22-24 mm (.866-.945")	6-9 mm (.236-.354")	6-9 mm (.236-.354")

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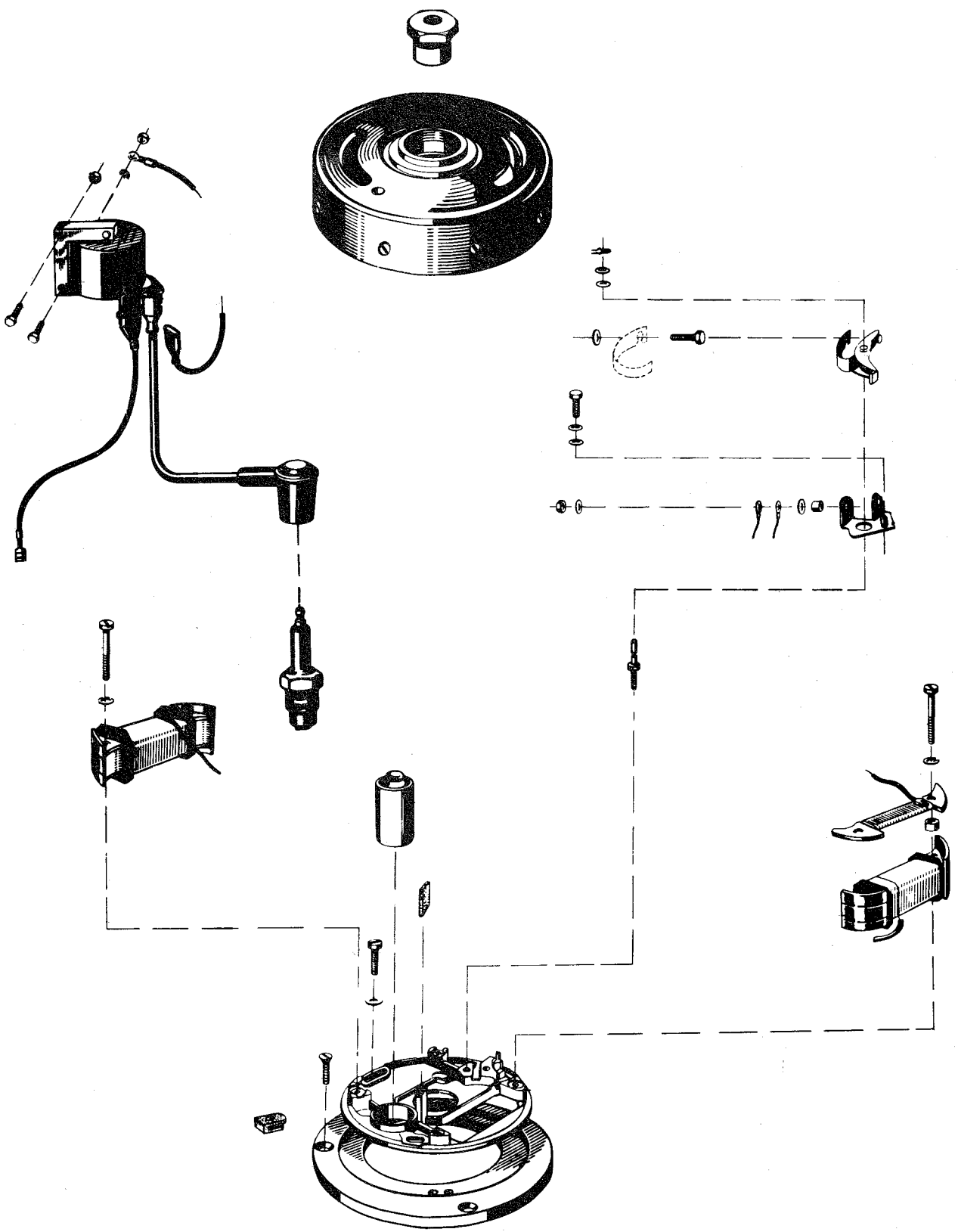
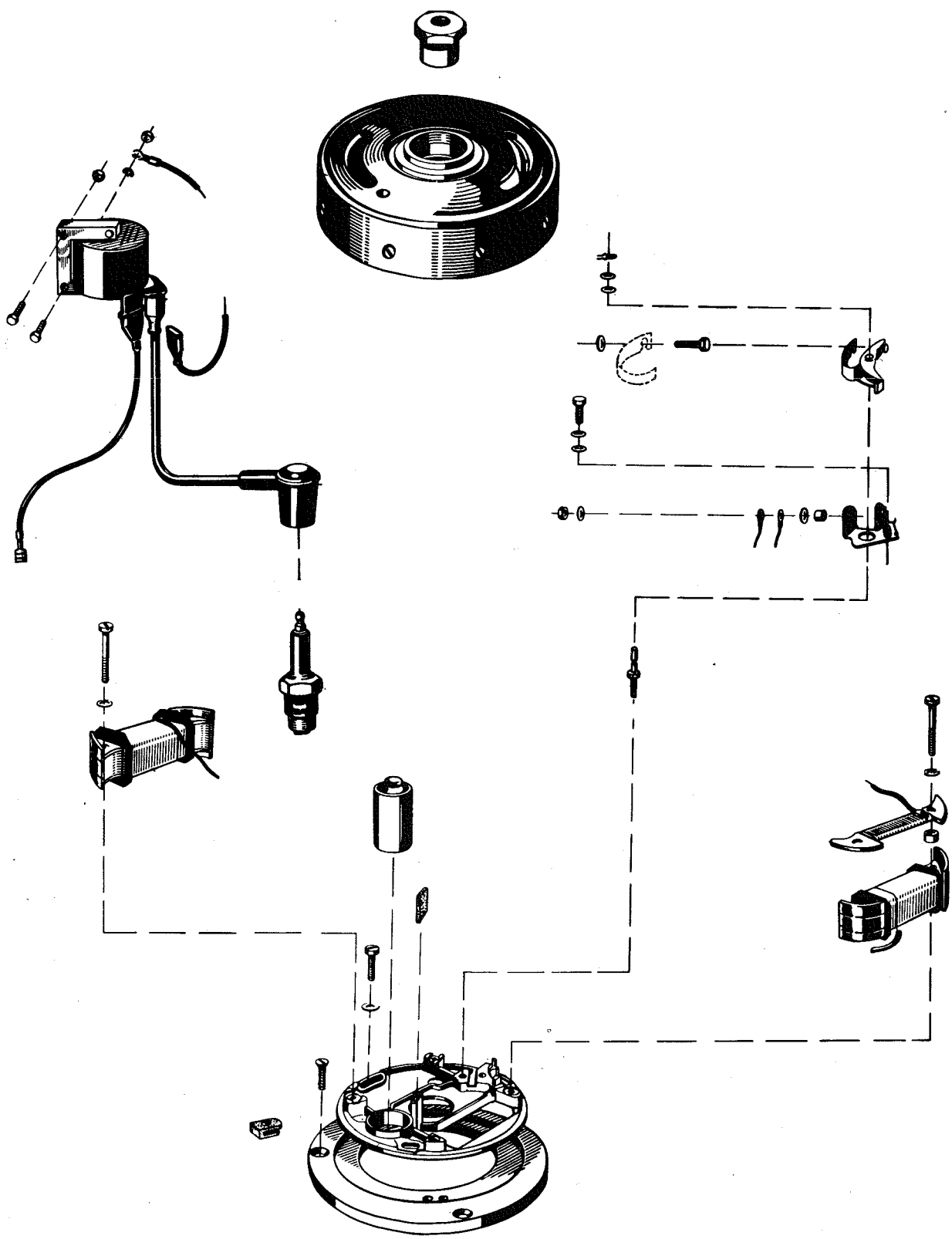
680809/1	4

FLYWHEEL MAGNETO - Motocross 250 cc (MG).

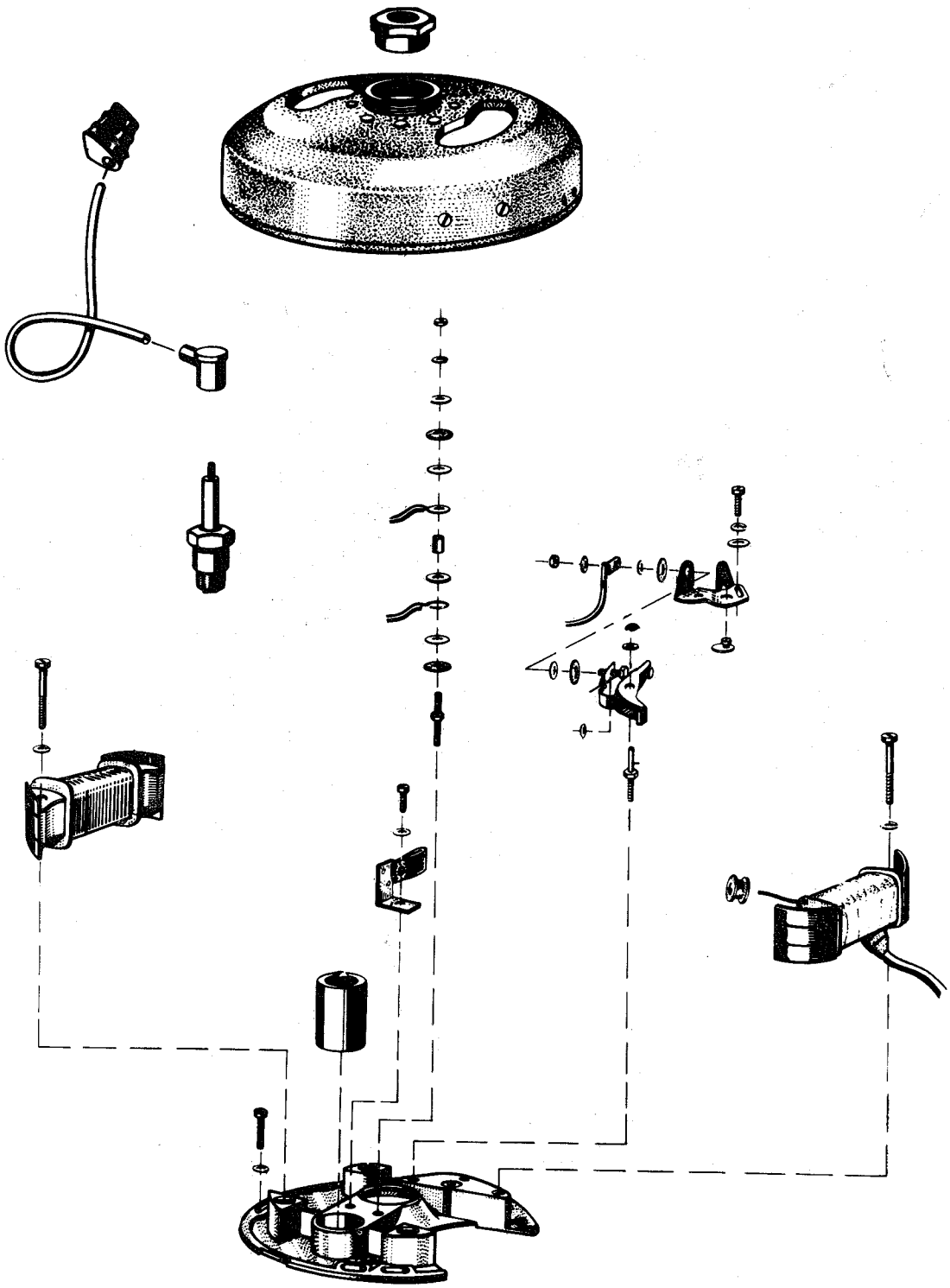


Flywheel magneto - SPORTSMAN



Report No.	Sheet No.
680809/2	4

Flywheel magneto - MOTO-CROSS



SPARKING PLUG

The sparking plug for the SPORTSMAN should be Bosch 225 T 2 or equivalent. On the Moto-cross 250 cc and 360 cc Bosch W 240 T 2 - Bosch W 260 T 2 or equivalent should be used.

SPARKING PLUG HEAT RATING

The heat rating of a sparking plug indicates the amount of heat which it can withstand. A sparking plug with a high heat rating withstands a higher degree of heat than a plug with a lower rating. The higher the heat rating of a plug, the greater its resistance to pre-ignition and less its resistance to blackening and oiling-up.

The working temperature of the plug should be between 500 and 850°C (932 and 1562°F). 500°C (932°F) is the self-cleaning temperature, i.e. the temperature which the plug must maintain in order not to become blackened or oiled-up. Above 850°C (1562°F) the plug cause pre-ignition, which reduces the engine output and can cause damage.

Too soft a plug usually causes overheating and piston seizure. In doubtful cases it is better to use too hard a plug than one which is too soft. The engine may possibly be more difficult to start or tend to oil up at low speed, but it will never be damaged in the way that it could be by using too soft a plug.

SPARK GAP

The spark gap should be 0.5 mm (.020"). Too large a spark gap can make the engine difficult to start and cause overloading and burning of the ignition coil. On the other hand, too small a spark gap will result in a deterioration of the acceleration, idling and low speed characteristics. The spark gap should be checked with a wire gauge (not a feeler gauge).

Adjustment is done by bending the side electrode towards or away from the centre electrode.

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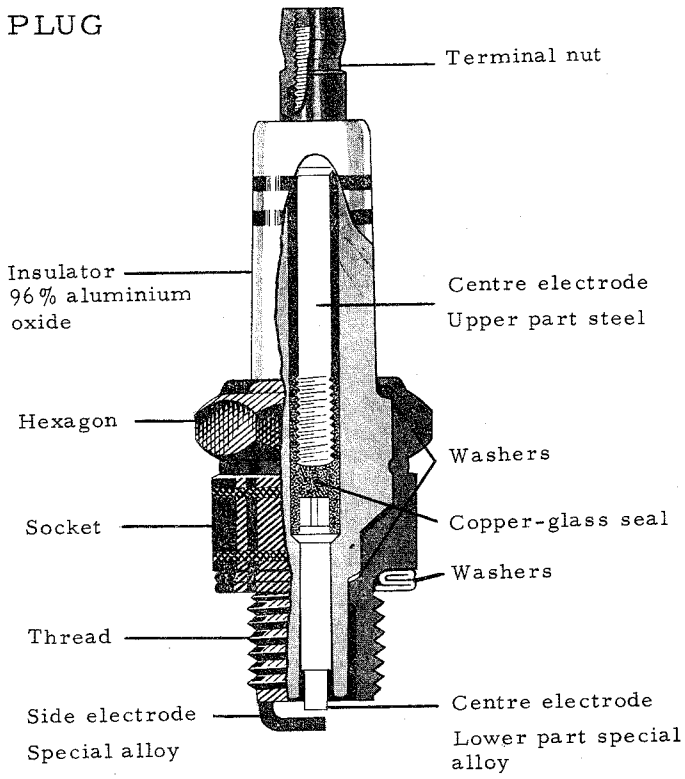
APPEARANCE OF THE SPARKING PLUG



Correct appearance:

Medium-brown insulator base, dark grey socket with grey carbon deposit. No excessive burning of the electrodes.

Incorrect appearance:

Possible faults:

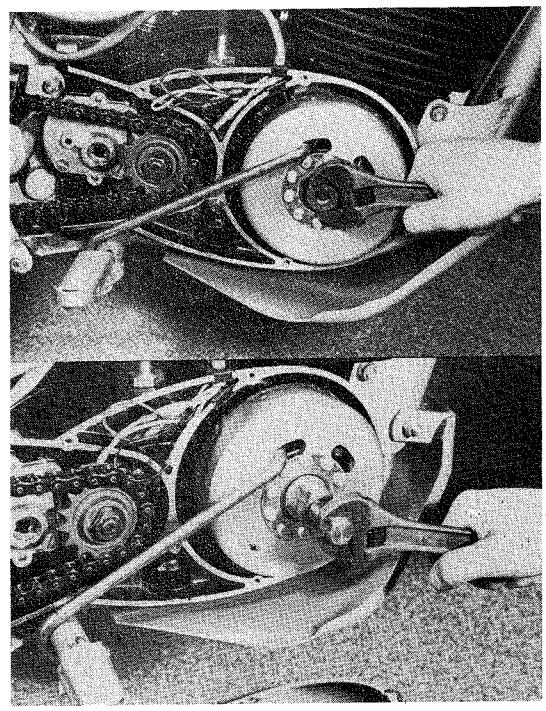
Beads on insulator base, which is burnt white. Electrodes "blued".	Heat rating too low. Fuel/air mixture too lean. Ignition too early. Sparking plug insufficiently tightened.
Insulator base, socket and electrodes coated with oil and carbon deposits.	Heat rating too high. Too much oil in the petrol.
Insulator base, socket and electrodes coated with dry, black soot.	Heat rating too high. Fuel/air mixture too rich. (Air cleaner blocked)
Dry, powder-like coating on socket and part of the insulator base. Insulator base point burnt clean.	Correct heat rating. High lead content in petrol.
Lead compounds on insulator base. Electrodes heavily corroded.	Heat rating too low and too high a lead content in the petrol.

Series MG and SG

FEMSA FLYWHEEL MAGNETO. (Motocross 400 cc, Sportsman 360C)

Removing:

1. Remove the right-hand crankcase cover.
2. Apply the holding spanner and screw off the flywheel nut.
   (Note: left-hand thread)
3. Remove the spacer ring which is now accessible and place on the flywheel puller. Make sure that the puller is screwed in fully.
4. Place the holding spanner in position (see figure) and pull off the flywheel.
5. Remove the armature plate.



Fitting:

Fit in the reverse order.

N.B. Tighten the flywheel nut to a torque of 6 kpm (43.3 lb.ft.).

Changing the coil

1. Remove the flywheel.
2. Disconnect the coil terminals and remove the coil by loosening the two attaching screws.
3. Fitting is done in the reverse order.

N.B. On the generator coil in the magneto, i.e., the coil which generates the low-tension current for the ignition coil on the outside, the earth connection of the winding is welded to the iron armature. Sometimes the welding of these fine copper wires may be faulty, in which case a satisfactory reinforcement or repair can be done by soldering.

CHANGING THE CONTACT BREAKERS

1. Remove the flywheel.
2. Remove the breaker plate locking screw and terminals and take off the breaker points from the armature plate.
3. Fit in the reverse order.

The breaker points must be checked at regular intervals. They must not be dirty, oily, burnt or oxidized, as this will result in poor ignition. It is even possible for new breaker points to become oily or oxidized as a result of moisture. Oxidized points can temporarily be cleaned up with a contact breaker file, after which they must be washed and blown dry.

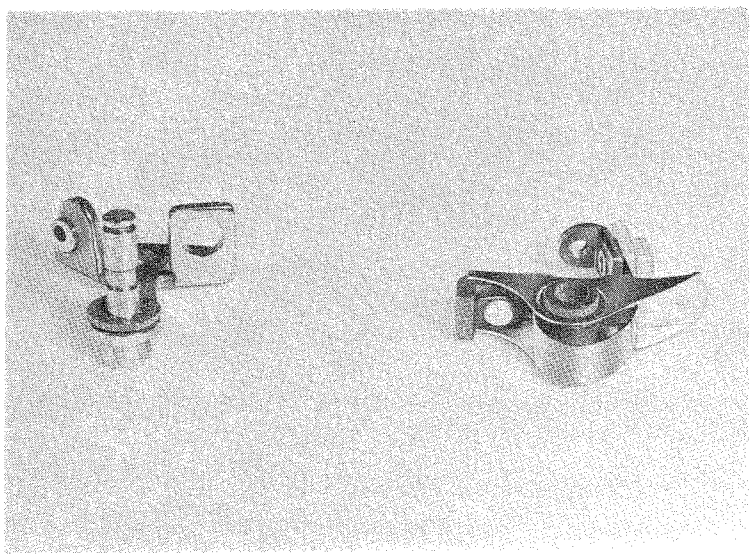
Slight variation or minor burning of the points occurring as a result of normal use does not usually cause any trouble. However, if the points are heavily ridged and cratered or oxidized, the breakers must be exchanged. They should then be washed in trichlorethylene. Cleaned points should not be touched with dirty fingers. Badly worn breaker points should be replaced, which is also necessary if the lifting lip or bushing of the breaker arm is worn, or the actual breaker arm or spring damaged.

Before fitting, the bearing bushing and lubricating wick should be oiled, with one drop of oil.

Check that the surfaces of the points are parallel. If not, adjust with a pair of pliers. Adjust the breaker gap.

N.B. In the event of ignition difficulties, check the fibre bush of the rotor arm. In some cases the bush may be too narrow, thereby causing the breaker points to move stiffly.

The measurement of the hole should be: $4.5\ \text{mm}\ {}^{+\ 0.05}_{+\ 0.02}$ ($.177''\ {}^{+\ .0020}_{+\ .0008}$)



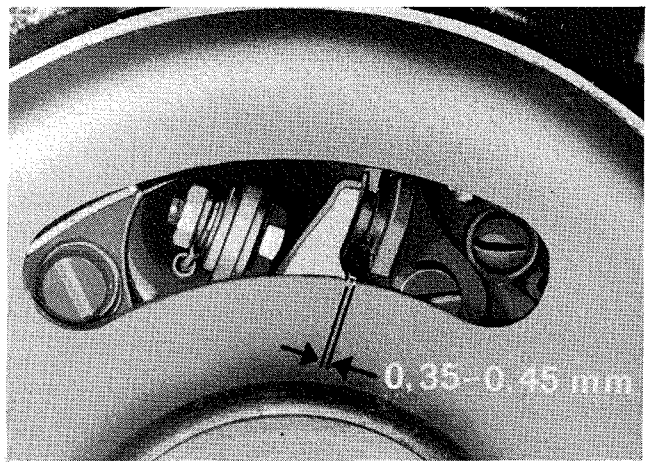
CHECKING THE CONTACT BREAKER GAP

Remove the cover over the flywheel magneto on the right-hand side of the engine.

Note that it is not necessary to remove the gear lever, since this comes out with the cover. Do not lose the rubber seal which is fitted over the gear shaft (see Fig. 22).

Screw out the sparking plug.

Turn round the engine until the breaker points are fully open. Check that they are not worn down or burnt. If necessary, clean the points with a breaker file or whetstone.



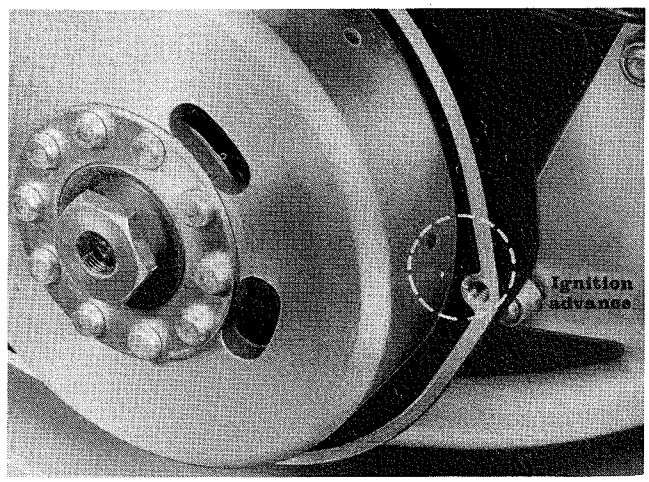
Insert a feeler gauge between the points and check the gap. This should be .014-.018 (0,35-0,45 m) see Fig. 23).

If necessary adjust the gap with the fixed contact after loosening its screw.

Tighten up the locking screw after adjusting and check the contact breaker gap once again.

CHECKING THE IGNITION ADVANCE (22°)

1. Find the opening position of the breaker points as described above.
2. Check that the centre punch mark on the flywheel comes in line with the scribed line on the crankcase.
3. If the centre punch mark comes before the scribed line (early ignition), turn the armature plate with the direction of rotation.
4. The armature plate can be turned after slackening its three attaching screws.
5. After adjustment, tighten up the armature plate again and recheck the ignition advance. The breaker gap is not affected by this adjustment.



For perfect function of the ignition system, the ignition lead must have a correct connection to the sparkplug terminal and ignition coil.

If not, cut off 5 mm (3/16") of the lead and remount it again.

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FEMSA magnetos for 400 cc moto-cross motorcycles (MG)

The following modifications have been introduced in production:

1. Interior diameter of stator plate.
   The interior diameter has been widened.

2. Ground connection of generator coil.
   A new system of fastening the ground cable has been introduced. Instead of weakening the wire by spotwelding it is now soldered to a special bracket.

3. Cam bevel
   Flywheel cams have now got a bevel so that when mounting the wheel on the shaft the cam may not damage the breaker shoe. By former design it was quite easy to damage the breaker, thereby making it impossible to set the ignition timing properly.

4. Insulation of generator coil
   The material has been changed to a glassfibre-reinforced nylon which has much better strength under extreme heat.

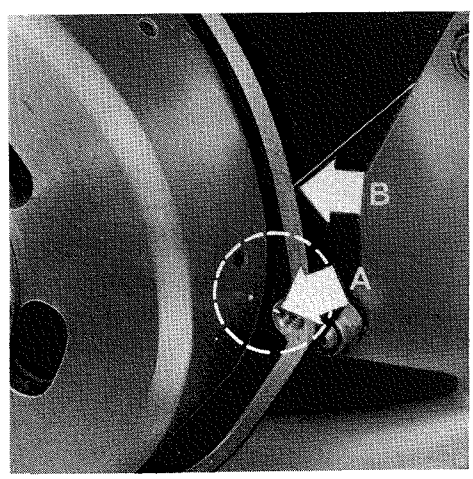
Fault-tracing

In some cases we have found that magnetos have had small metallic burrs left inside. These small burrs which mainly come from the flywheel and the ironcore can under unfortunate circumstances build up a short-circuit between the ironcore and the fixing nut at the breaker points. In cases of ignition failures carefully inspect that no burrs are hidden in the magneto.

Ignition timing

If the crankcase marking according to A is missing, the ignition is set to B at the casting joint. During springtime 1969 some motors have been missing the crankcase marking (A), and therefore the ignition has been set at the casting joint.

PLEASE INFORM YOUR CUSTOMERS OF THIS FACT.



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690901/1	4

REPLACING THE FLYWHEEL MAGNETO

1. Remove the right-hand crankcase cover.
2. Disconnect the lead terminals. (Sportsman)
3. Screw off the flywheel nut (Lefthand thread) and apply a puller and counterhold. Make sure the puller is screwed on as far as possible.
4. Take off the counterbalance wheel and remove the counterhold and puller.
5. Remove the armature plate by unscrewing the three bolts.

Fitting is done in the reverse order

The flywheel nut is tightened to a torque of 6 kpm (43.3 lb. ft.), Sportsman 3,5 kpm (25.3 lb. ft.).

CHANGING THE COIL

1. Remove the flywheel and armature plate and disconnect the lead to the faulty coil.
2. Unscrew the coil screws and change the coil.

CHANGING THE CONTACT BREAKERS

1. Remove the flywheel.
2. Remove the circlip and adjusting washer from the breaker arm bearing pin and loosen the slotted screw of the breaker plate and lead terminals.
3. Release the contact breakers from the eccentric pin.

Fit in the reverse order.

The breaker points must be checked at regular intervals. They must not be dirty, oily, burnt or oxidized, as this will result in poor ignition. It is even possible for new breaker points to become oily or oxidized as a result of moisture. Oxidized points can temporarily be cleaned up with a contact breaker file, after which they must be washed and blown dry.

Slight variation or minor burning of the points occurring as a result of normal use does not usually cause any trouble. However, if the points are heavily ridged and cratered or oxidized, the breakers must be exchanged. They should then be washed in trichlorethylene. Cleaned points should not be touched with dirty fingers. Badly worn breaker points should be replaced, which is also necessary if the lifting lip or bushing of the breaker arm is worn, or the actual breaker arm or spring damaged.

Before fitting, the bearing bushing and lubricating wick should be oiled, with one drop of oil.

Check that the surfaces of the points are parallel. If not, adjust with a pair of pliers. Adjust the breaker gap.

CHANGING THE CAPACITOR

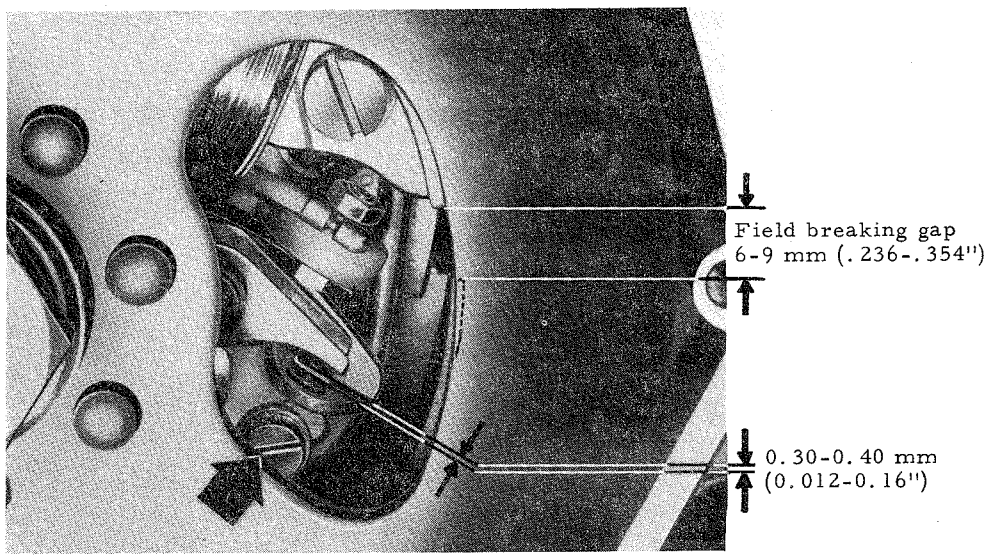
1. Remove the flywheel.
2. Disconnect the capacitor terminals.
3. Press the capacitor out of its attachment.
4. Fit in the reverse order.

The ignition coil and capacitor should be tested with a testing device, when the testing instructions concerned should be followed. If no datas are available, compare with new parts.

ADJUSTING THE BREAKER GAP

1. Remove the right-hand crankcase cover and screw out the sparking plug.
2. Turn round the flywheel so that the breaker points come fully apart.
3. Check the contact surfaces of the points and measure the gap between them with a feeler gauge. The gap should be 0.3 - 0.4 mm (.012 - .016").
4. Adjust the gap by slackening the locking screw on the fixed contact and moving it with a screwdriver until the correct gap is obtained. Then tighten the locking screw and check the gap again.

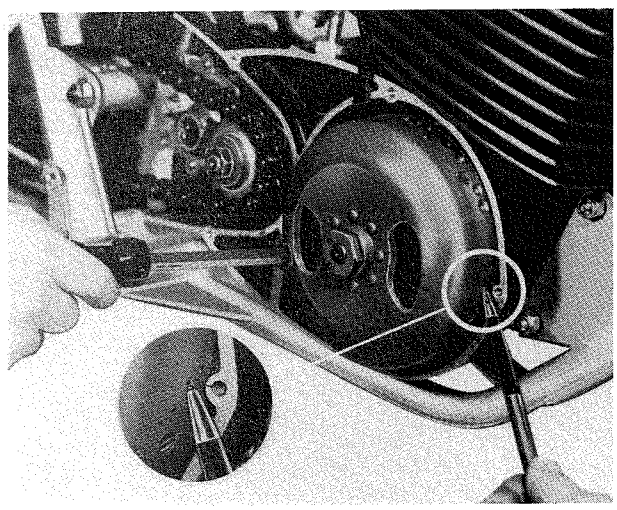
CHECKING THE FIELD BREAKING GAP



The gap should be measured at the instant that the breaker points just begin to separate. In order to find this position it is advisable to use an ignition setting lamp or a piece of thin paper between the points. At the instant of breaking the lamp goes out or the paper is released. Measure the gap with vernier callipers. The gap should be 6 - 9 mm (.236 - .354") (Sportsman 22 - 25 mm = .866 - .945"). If it is larger than this, increase the breaker gap, and vice versa.

CHECKING THE IGNITION ADVANCE

1. Find the opening position of the breaker points as described above.
2. Check that the centre punch mark on the flywheel comes in line with the scribed line on the crankcase.
3. If the centre punch mark comes before the scribed line (early ignition), turn the armature plate with the direction of rotation.
4. The armature plate can be turned after slackening its three attaching screws.
5. After adjustment, tighten up the armature plate again and recheck the ignition advance. The breaker gap is not affected by this adjustment.



For perfect function of the ignition system, the ignition lead must have a correct connection to the sparkplug terminal and ignition coil.

If not, cut off 5 mm (3/16") of the lead and remount it again.

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680810/2	4

REPLACING THE CABLE HARNESS (SPORTSMAN)

1. Remove the petrol tank, headlamp insert and rear lamp glass.
2. Take off the leads on the bulb holder and dipper switch.
3. Take out the leads in the headlamp housing and loosen the frame clip.
4. Then take off the leads (green, red and blue) on the dynamo and remove the lead on the frame (to the rear lamp and brake light contact).
5. Disconnect the leads in the rear lamp and the lead on the brake contact and remove the cable harness.

Fitting is done in the reverse order.

CHANGING THE HEADLAMP

1. Remove the headlamp insert and disconnect the terminals to the bulb and lighting control lamp.
2. Disconnect the other lead terminals in the headlamp housing.
3. Unscrew the headlamp attaching nuts in the lamp holder and remove the headlamp.
4. Fitting is done in the reverse order.

ADJUSTING THE HEADLAMP

1. Stand up the motor-cycle 5 metres (16' 5") from a screen or wall.
2. Load the motor-cycle by sitting in the seat. Make a mark on the wall level with the central point of the headlamp glass.
3. Switch on the headlamp to high-beam. The centre of the light beam should then come 2 cm (3/4") below the mark. For lou-beam the clear dividing line between light and darkness should come at least 5 cm (2") below the full-beam centre point.

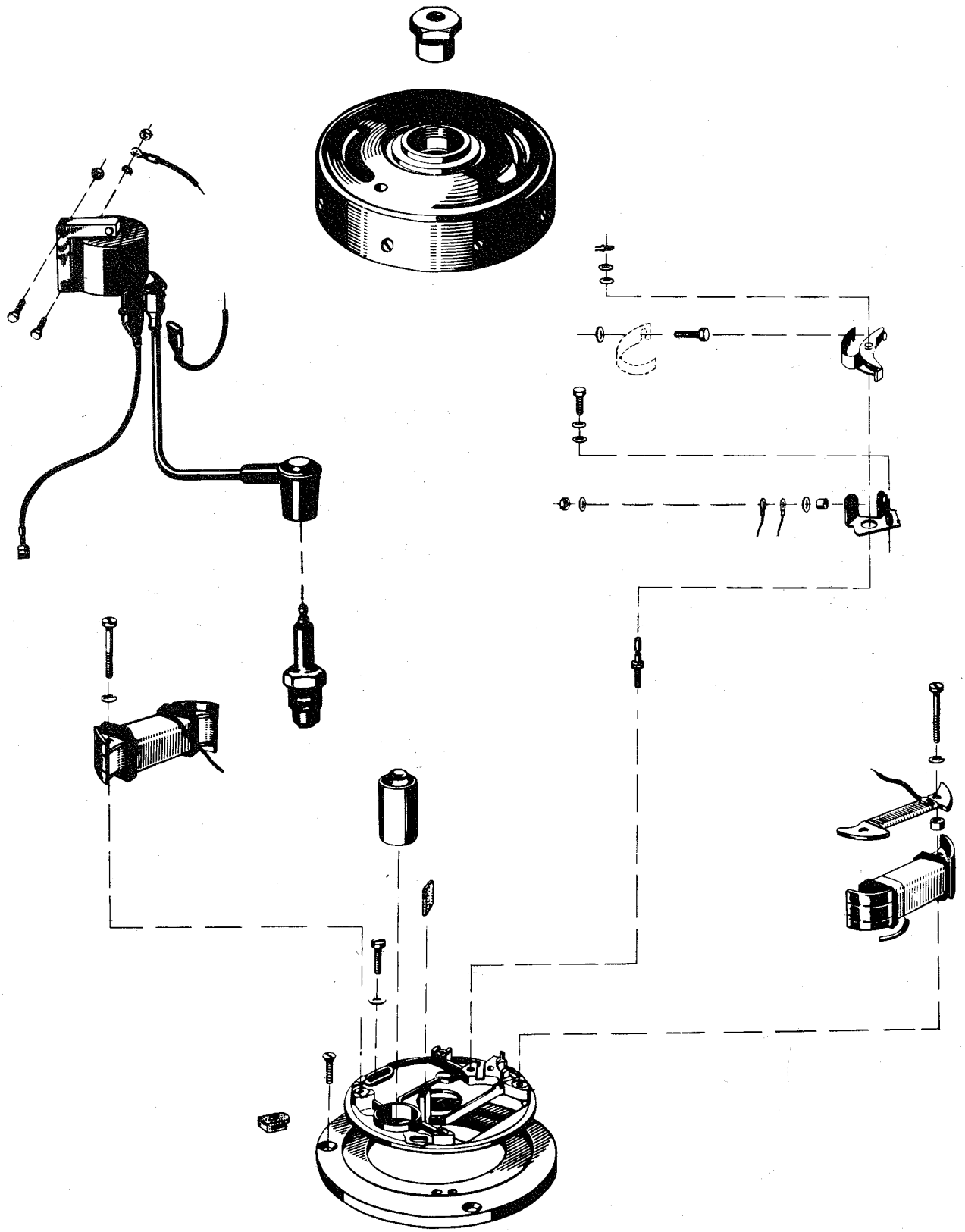
ELECTRICAL AND IGNITION SYSTEM. Series MG and SG

DATA

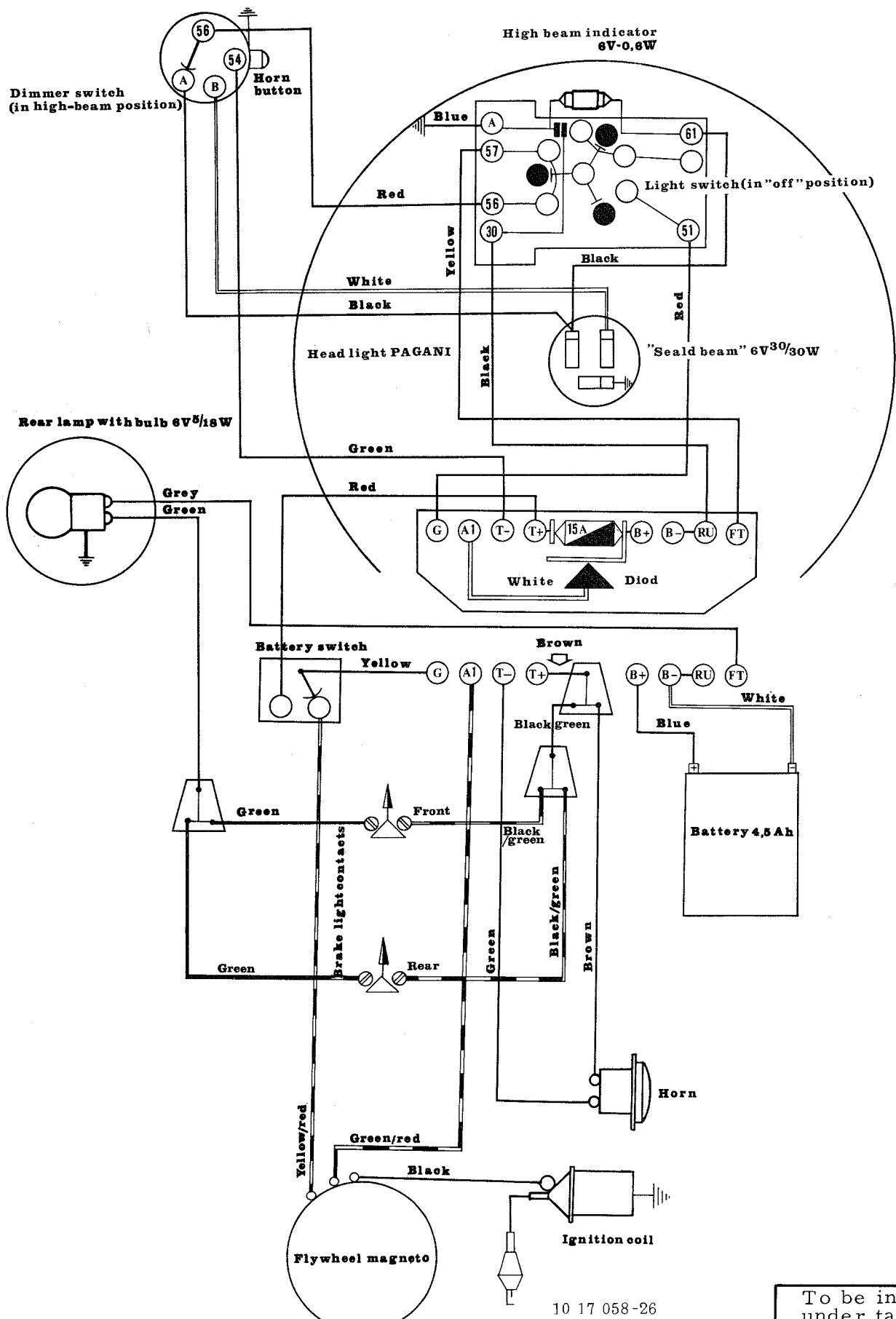
	Sportsman	Moto-cross	
	360 G	250 cc	400 cc
DYNAMO	6 V/30/30 W	6 V/35 W	6 V/30/30 W
HEADLAMP BULB	6 V/30/30 W	-	-
CONTROL LAMP BULB	6 V/0.6 W	-	-
REAR LAMP BULB	6 V/5 W	-	-
BRAKE LIGHT BULB	6 V/18 W	-	-
HORN	6 V/30 W	-	-
SPARKING PLUG, TYPE	Bosch W 225 T 2	Bosch W 240 T 2 - W 260 T 2	Bosch W 240 T 2 - W 260 T 2
SPARKING PLUG, GAP	0,5 mm (.020")	0.5 mm (.020")	0.5 mm (.020")
CONTACT BREAKER GAP	0.3-0.4 mm (.012-.016")	0.3-0.4 mm (.012-.016")	0.35-0.45 mm (.014-.018")
IGNITION ADVANCE	22°	22° (on 1967 and earlier models 18°)	22° - 24°
FIELD BREAKING POSITION	22-25 mm (.866-.984")	22-24 mm (.866-.945")	22-25 mm (.866-.984")
BATTERY	6 V 4,5 Ah	-	-

To be inserted under tab. nr Register Index **4**

FLYWHEEL MAGNETO - Motocross 250 cc (MG).



WIRING DIAGRAM FOR MC 360 C ENDURO. Replaces report no. 69 04 08/2.



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Signalhorn SH och SI

Vi har bytt ut signalhornet på våra Enduromaskiner. Samtidigt har vi flyttat upp hornet till baklyktans högra sida. Härigenom blir hållfastheten för signalhornets infästning betydligt bättre.

Nytt best. nr. på signalhorn 15 17 179-01.

Horn SH and SI

We have replaced the horn on our Enduro machines. At the same time we have moved up the horn to the right-hand side of the tail lamp, whereby the mounting has been considerably reinforced.

The part number of the new horn is 15 17 179-01.

Signalhorn SH und SI

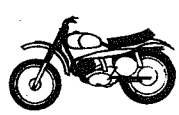
Wir haben das Signalhorn an unseren Enduro-Maschinen ausgewechselt. Gleichzeitig haben wir das Signalhorn auf die rechte Seite der Schlussleuchte versetzt. Dadurch wird die Befestigung des Signalhorns bedeutend haltbarer.

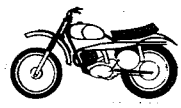
Die Bestellnummer des Signalhorns ist neu: 15 17 179-01.

Avertisseur SH et SI

Nous avons remplacé l´avertisseur de nos machines Enduro. En même temps, nous l´avons déplacé sur le côté droit du feu arrière. Ceci permet d´améliorer de façon considérable la résistance de la fixation de cet avertisseur.

Nouveau numéro de commande de l´avertisseur: 15 17 179-01.





Tändsystem "Moto-Plat"

Svänghjul och ankarplatta på Moto-Platmagneten är injusterade tillsammans och bör ej bytas ut i skilda enheter. Om så sker riskerar man att få tändtidpunkten förskjuten upp till 3,5° åt ena eller andra hållet.

"Moto-Plat" ignition system

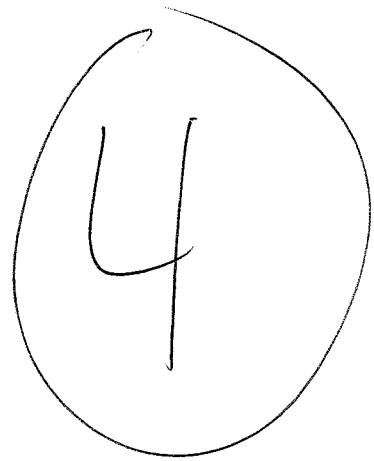
The flywheel and armature plate on the Moto-Plat magneto are matched together and should not be replaced as individual units, otherwise there is a risk that the ignition timing will be advanced or retarded by up to 3.5°.

Zündanlage „Moto-Plat"

Schwungrad und Ankerplatte beim Moto-Platmagneten sind zusammen eingestellt und sollten daher nicht getrennt ausgewechselt werden. Wenn dies nämlich erfolgt, besteht die Gefahr, dass der Zündzeitpunkt bis zu 3,5° in die eine oder andere Richtung verschoben wird.

Système d´allumage "Moto-Plat"

Le volant et le plateau d´ancrage de la magnéto Moto-Plat sont réglés en même temps à l´usine et, pour cette raison, il n´est pas recommandé de remplacer ces deux pièces séparément. Le résultat du remplacement d´une seule de ces deux pièces peut être un décalage du point d´allumage jusqu´à 3,5° dans un sens ou dans l´autre.



TIME FOR REPAIRS - TRANSMISSION

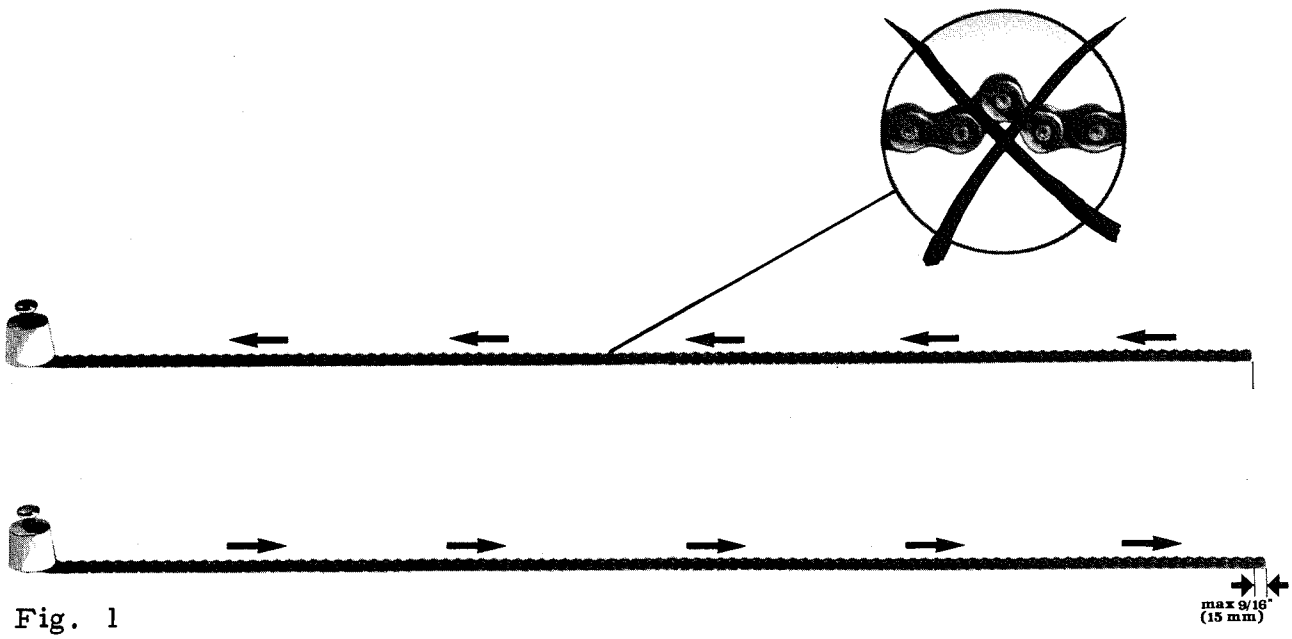


Fig. 1

Chain

Replace the chain when the difference between its lenght contracted and expended begins to approach 5/8 in (15 mm). See Fig. 1.

Sprocket

Replace the sprocket when its teeth begin to approach the appearance illustrated in Fig. 2.

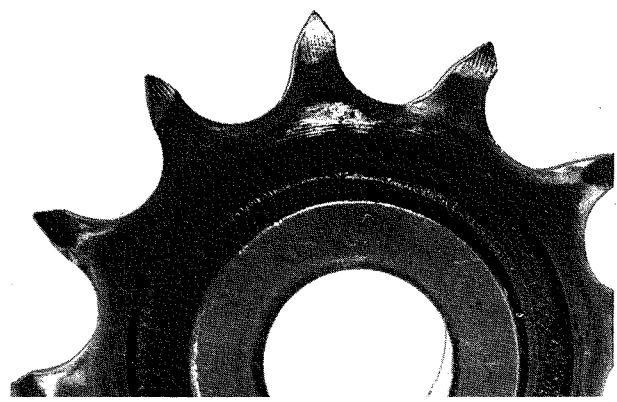


Fig. 2

Ersätter meddelande nr 10 17 025-97 A
Replaces report no. 10 17 025-97 A
Ersetzen bulletin Nr. 10 17 025-97 A
Remplace le bulletin No10 17 025-97 A

Maskiner med överväxel

Växellådan i våra överväxelmaskiner är fr.o.m. MI och SI utrustade med följande axlar och drev.

Huvudaxel	16 12 956-01
Hjälpaxel	16 12 982-01
Kugghjul 2:ans huvudaxel	16 12 986-01
-"- 3:ans -"-	16 12 987-01
-"- 4:ans -"-	16 12 817-01
-"- 1:ans hjälpaxel	16 12 835-01
-"- 2:ans -"-	16 12 837-01
-"- 3:ans -"-	16 12 990-01
-"- 4:ans -"-	16 12 820-01

Models with Overdrive

The gearbox in our overdrive maskines as from MI and SI is equipped with the following shafts and gears.

Main shaft	16 12 956-01
Auxilliary shaft	16 12 982-01
Gearwheel 2nd gear mainshaft	16 12 986-01
-"- 3rd -"- -"-	16 12 987-01
-"- 4th -"- -"-	16 12 817-01
-"- 1st -"- auxill.shaft	16 12 835-01
-"- 2nd -"- -"- -"-	16 12 837-01
-"- 3rd -"- -"- -"-	16 12 990-01
-"- 4th -"- -"- -"-	16 12 820-01

To be inserted under tab. nr. Register Index **5**

Maschinen mit Overdrive

Mit der Einführung des Modells MI und SI, das Getriebe in unsere Overdrive-maskinen mit folgende Wellen und Räder ansgerüstet ist:

Hauptwelle					16 12 956-01
Hilfswelle					16 12 982-01
Zahnrad	für	die	Hauptwelle	des 2. Ganges	16 12 986-01
-"-	-"-	-"-	-"- 3.	-"-	16 12 987-01
-"-	-"-	-"-	-"- 4.	-"-	16 12 817-01
-"-	-"-	Hilfswelle	-"- 1.	-"-	16 12 835-01
-"-	-"-	-"-	-"- 2.	-"-	16 12 837-01
-"-	-"-	-"-	-"- 3.	-"-	16 12 990-01
-"-	-"-	-"-	-"- 4.	-"-	16 12 820-01

Machines à boite surmultipliée

A portir de MI et SI la boite à vitesses de nos machines sumultipliées seront équipées des axes et des pignons suivants:

Arbre principal				16 12 956-01
Arbre auxiliaire				16 12 982-01
Pignon de	2 ème,	arbre	principal	16 12 986-01
-"-	3 ème,	-"-	-"-	16 12 987-01
-"-	4 ème,	-"-	-"-	16 12 817-01
-"-	1 ère,	arbre	auxiliaire	16 12 835-01
-"-	2 ème,	-"-	-"-	16 12 837-01
-"-	3 ème,	-"-	-"-	16 12 990-01
-"-	4 ème,	-"-	-"-	16 12 820-01

MC-Motor

Växellådan har fr. o. m. nedanstående motornummer ändrats. Ändringen berör 1:ans ingrepp, alltså 1:ans och 2:ans drev på hjälpaxeln. 2:ans drev har försetts med 5 tappar.

OBS: Antingen måste båda dessa drev vara av äldre typen eller av nyare typen, de kan ej kombineras.

Best. nr. på de nya dreven är följande:

	250 cc	360 cc	400 cc
1:ans drev på hjälpaxeln	16 12 834-01	16 12 836-01	16 12 835-01
2:ans drev på hjälpaxeln	16 12 837-01	16 12 837-01	16 12 837-01

OBS: I den nya reservdelskatalogen finnes dessa nummer redan införda.

De nya dreven kommer att ingå i produktionen fr. o. m. för

SH, 8-speed: 8S 370 112
SH: S 361 861
MH 400 cc: M 402 223
MH 360 cc, 8-speed: 8M 365 181
MH 250 cc, 8-speed: 8M 260 126
MH 250 cc: M 252 737

MC-Engine

As from the engine numbers shown below, the gearbox has been modified. The modification concerns the engagement of 1st speed, i.e. the 1st and 2nd speed pinions on the auxiliary shaft. The 2nd speed pinion has been provided with five engaging pins.

N.B. Either both these pinions must be of the earlier type or the new type. They cannot be used together.

The part numbers of the new pinions are as follows:

	250 cc	360 cc	400 cc
Gear wheel, 1st speed, auxiliary shaft	16 12 834-01	16 12 836-01	16 12 835-01
Gear wheel, 2nd speed, auxiliary shaft	16 12 837-01	16 12 837-01	16 12 837-01

N.B. These part numbers are already included in the new spare parts catalogue.

The new pinions will be incorporated in production as from:

SH, 8-speed: 8S 370 112
SH: S 361 861
MH 400 cc: M 402 223
MH 360 cc, 8-speed: 8M 365 181
MH 250 cc, 8-speed: 8M 260 126
MH 250 cc: M 252 737

Maskiner med överväxel

MI 400 cc kommer att tillverkas även i överväxelversion. Detta gör att vi, för att få samma växellåda i alla överväxelmaskiner, kommer att ändra 250 cc och 360 cc:s växellåda samtidigt som överväxeln införes på 400 cc-maskinerna.

Reservdelsförteckning över växellådan för SI- och MI-motorer med överväxel:

Huvudaxel	16 12 956 01
Hjälpaxel	16 12 982 01
Kugghjul 2:ans huvudaxel	16 12 986 01
" 3:ans "	16 12 987-01
" 4:ans "	16 12 817 01
" 1:ans hjälpaxel	16 12 835 01
" 2:ans "	16 12 837 01
" 3:ans "	16 12 990 01
" 4:ans "	16 12 820 01

Models with Overdrive

We will also market a 400 cc MI model with a 4th gear or Overdrive. In order to have the same gearbox on all Overdrive models we intens to alter the 250 cc and 360 cc gearboxes at the same time as the new 400 cc Overdrive gearbox is introduced.

Replacement parts list for gearbox on MI and SI engines with Overdrive:

Main shaft	16 12 956 01
Auxilliary shaft	16 12 982 01
Gearwheel 2nd gear mainshaft	16 12 986 01
" 3rd " "	16 12 987 01
" 4th " "	16 12 817 01
" 1st " auxill. shaft	16 12 835 01
" 2nd " " "	16 12 837 01
" 3rd " " "	16 12 990 01
" 4th " " "	16 12 820 01

Maschinen mit Overdrive

Ab Januar 1971 können wir auch die Maschine 400 ccm mit Overdrive liefern. Deshalb werden wir, um das gleiche Getriebe in allen Maschinen mit Overdrive zu bekommen, das Getriebe der Maschinen 250 ccm und 360 ccm ändern, wenn der Overdrive bei der Maschine 400 ccm eingeführt wird.

Nachstehend geben wir Ihnen ein Ersatzteilverzeichnis über das Getriebe für SI und MI-Motoren mit Overdrive:

Hauptwelle	16 12 956 01
Hilfswelle	16 12 982 01
Zahnrad für die Hauptwe le des 2. Ganges	16 12 986 01
" " " " " 3. "	16 12 987 01
" " " " " 4. "	16 12 817 01
" " " Hilfswelle " 1. "	16 12 835 01
" " " " " 2. "	16 12 837 01
" " " " " 3. "	16 12 990 01
" " " " " 4. "	16 12 820 01

Machines à boîte surmultipliée

A partir de janvier 1971, nous allons fabriquer même des machines de 400 cm^3 dans la version surmultipliée. Pour avoir la même boîte surmultipliée sur toutes les machines qui en sont équipées, nous allons modifier les boîtes des machines de 250 et 360 cm^3 à l'occasion de l'introduction de la boîte surmultipliée sur les machines de 400 cm^3.

Liste de pièces de rechange de la boîte équipant les moteurs MI et SI, version surmultipliée:

Arbre principal	16 12 956 01
Arbre auxiliaire	16 12 982 01
Pignon de 2 ème, arbre principal	16 12 986 01
" " 3 ème, " "	16 12 987 01
" " 4 ème, " "	16 12 817 01
" " 1 ère, arbre auxiliaire	16 12 835 01
" " 2 ème, " "	16 12 837 01
" " 3 ème, " "	16 12 990 01
" " 4 ème, " "	16 12 820 01

Maskiner utrustade med överväxel

För att erhålla bättre funktion har fjäder nr 12 25 454-01 för överväxelns returrörelse ersatts med fjäder nr 15 15 304-01. Var god makulera tidigare utsänt servicemeddelande angående denna fjäder.

Den nya fjäderns beställningsnr är 15 15 304-01.

Machines equipped with over-drive

In order to improve the function the spring No. 12 25 454-01 for the return movement of the over-drive has been replaced by spring No. 15 15 304-01. Please cancel previous service report regarding this spring.

The reference No. for the new spring is 15 15 304-01.

Mit Schnellgang ausgerüstete Maschinen

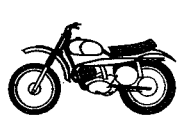
Um bessere Funktion zu erhalten ist die Feder Nr. 12 25 454-01 für den Rücklauf des Schnellgangs durch die Feder Nr. 15 15 304-01 ersetzt worden. Alle früheren Service-Mitteilungen bezüglich dieser Feder sind hiermit ungültig.

Best. Nr. der neuen Feder: 15 15 304-01.

Motos équipées de surmultiplicateur

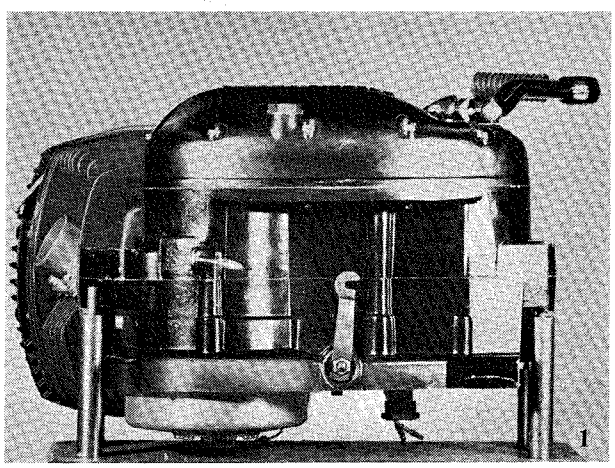
Afin d´améliorer le fonctionnement, nous avons remplacé le ressort de rappel No. 12 25 454-01 par le ressort No. 15 15 304-01. Vous voudrez bien annuler le bulletin de service précédent se rapportant au ressort 12 25 454-01.

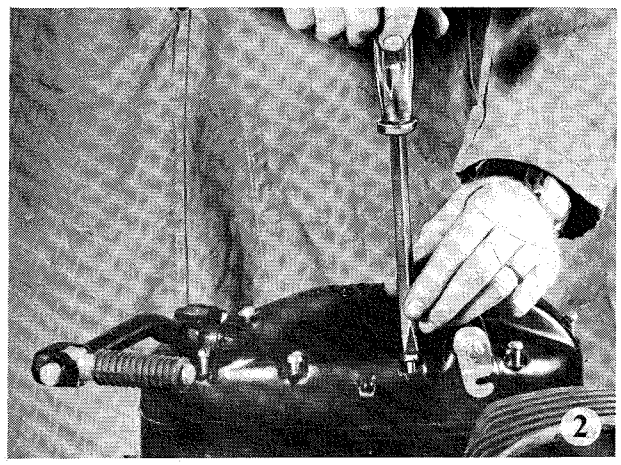
Le numéro de référence du nouveau ressort est 15 15 304-01.

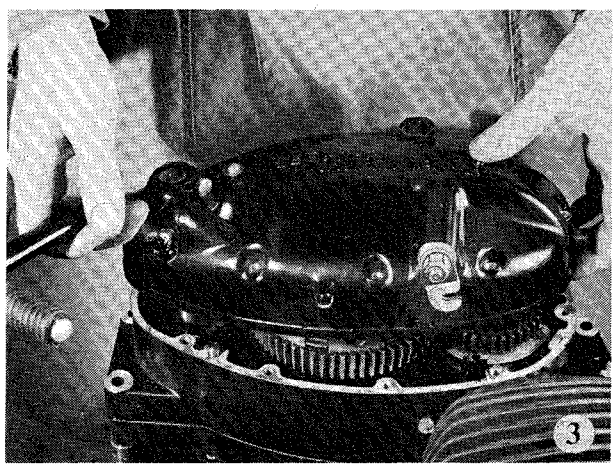


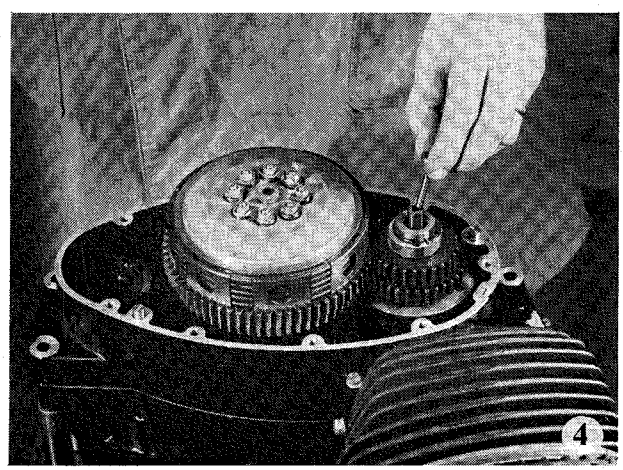
8-SPEED UNIT (MH, SH)

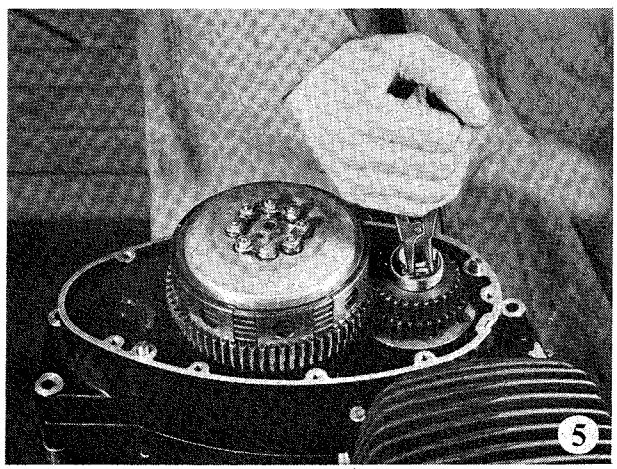
Dismantling and assembling

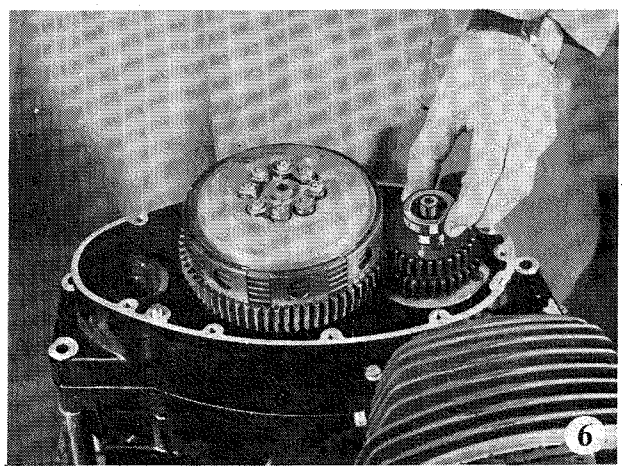


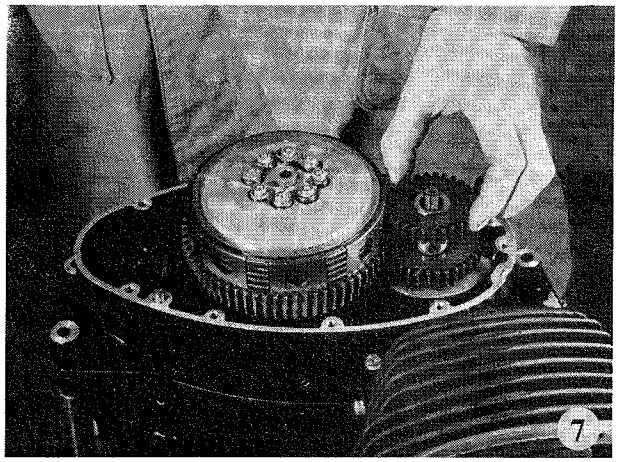








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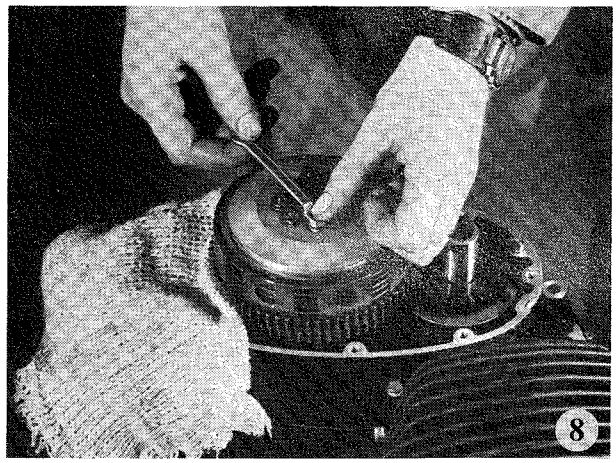
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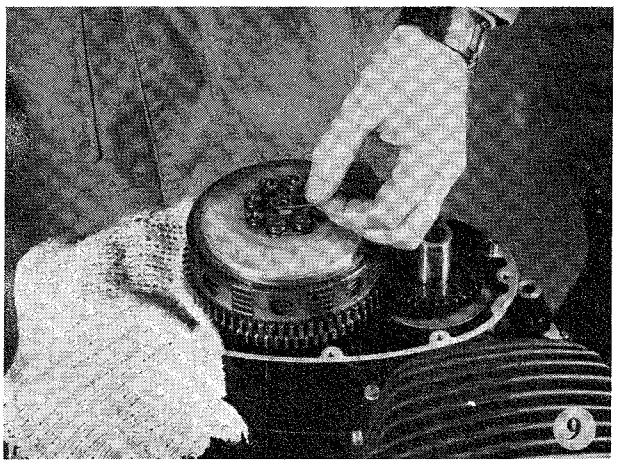
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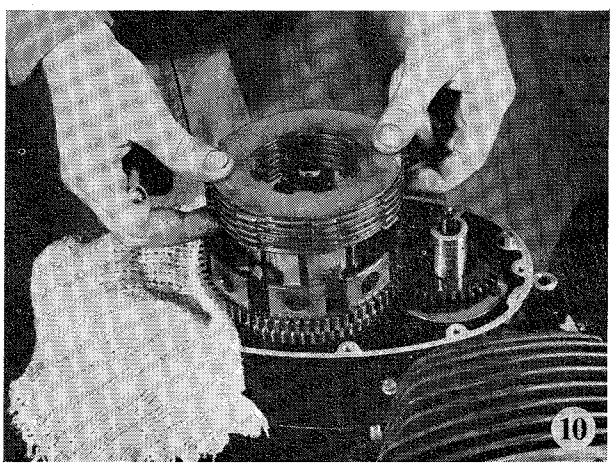
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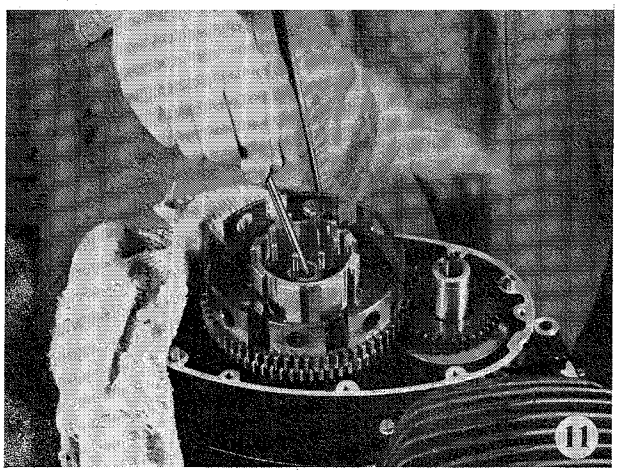
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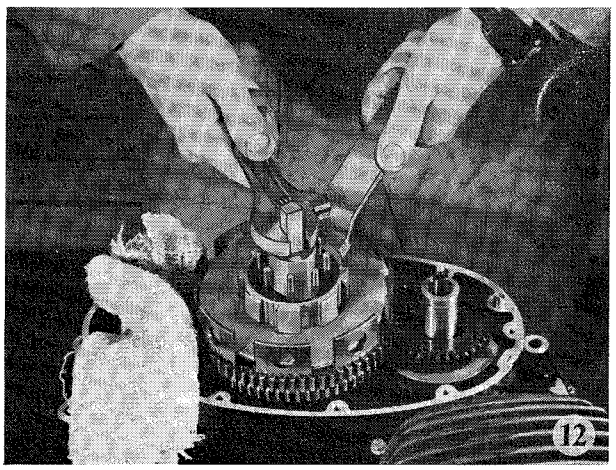
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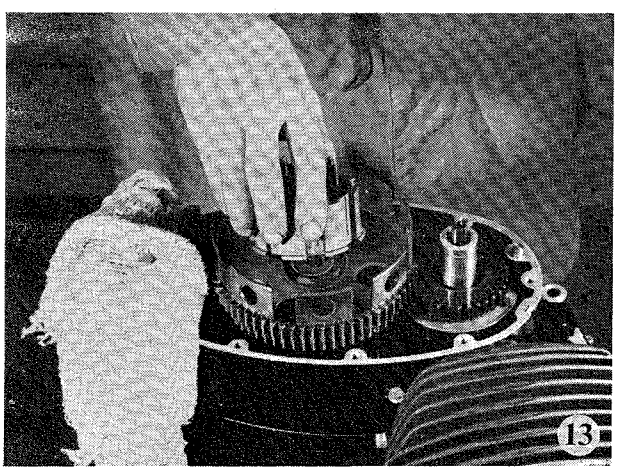
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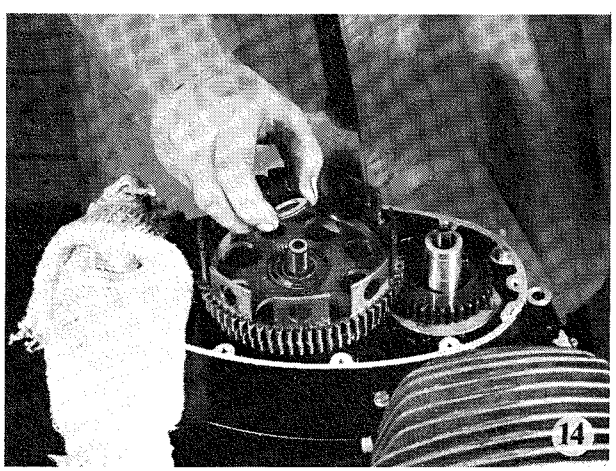
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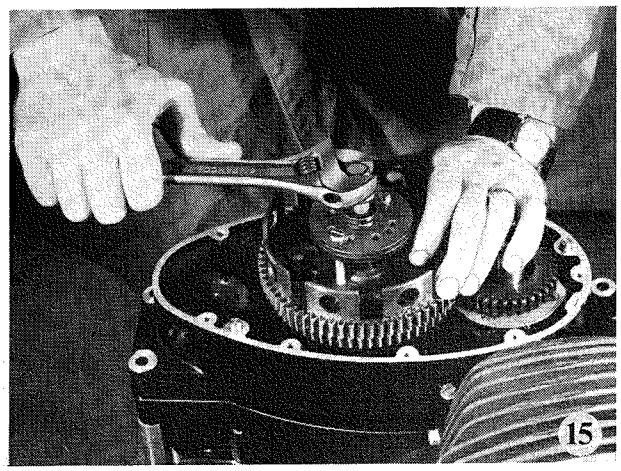
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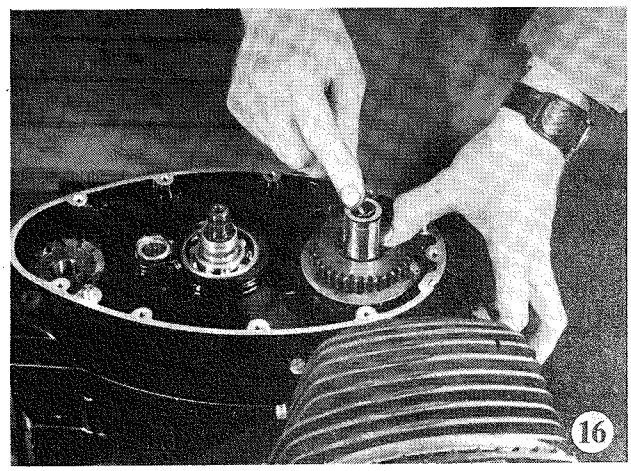
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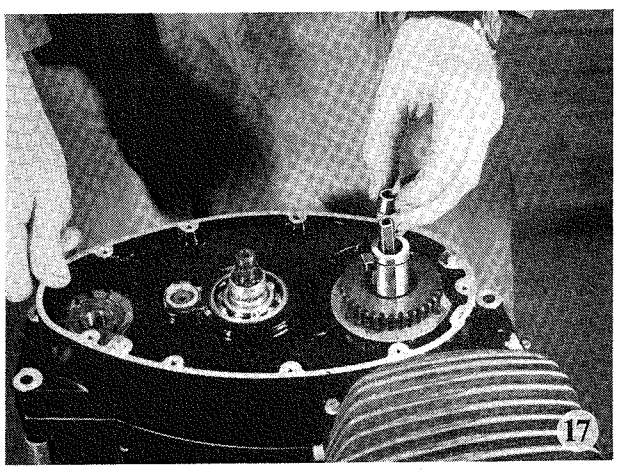
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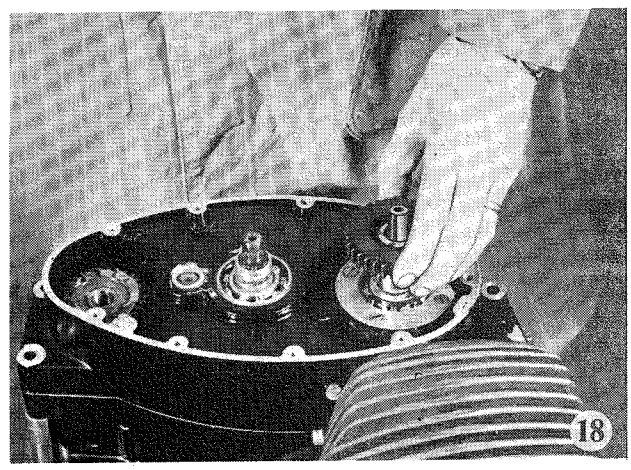
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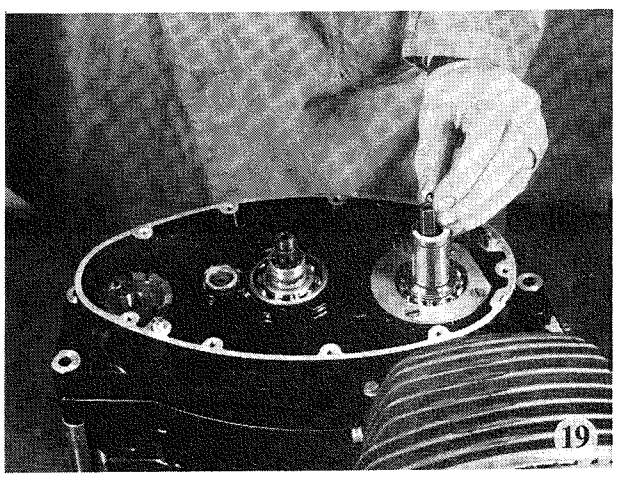
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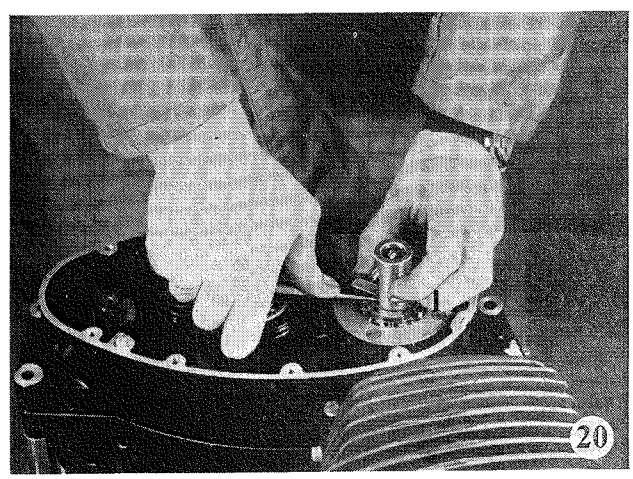
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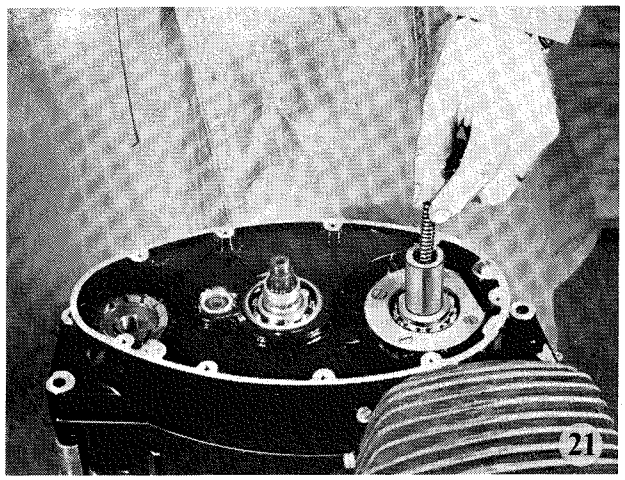
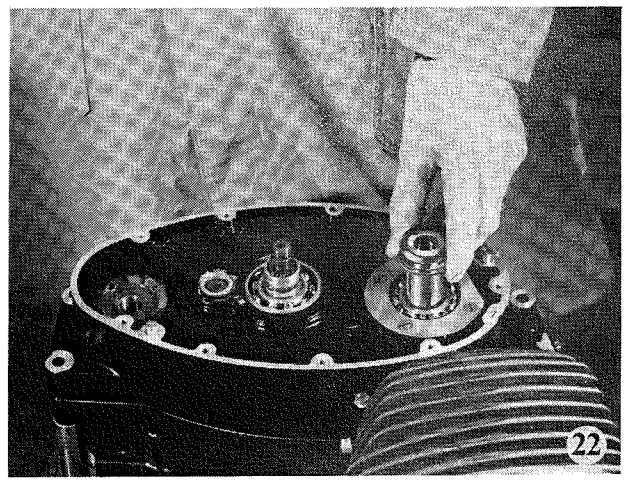
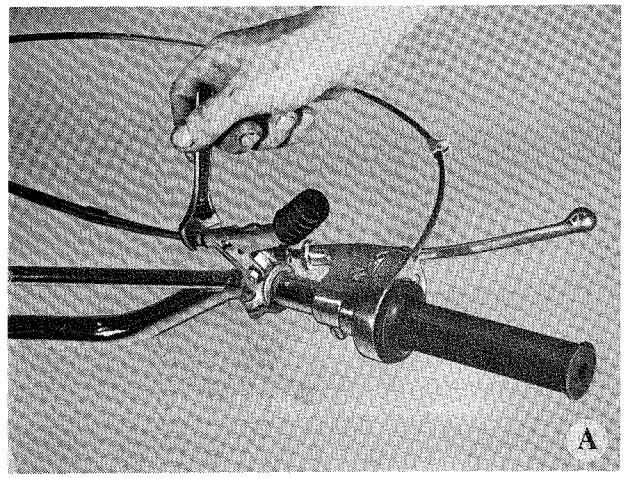


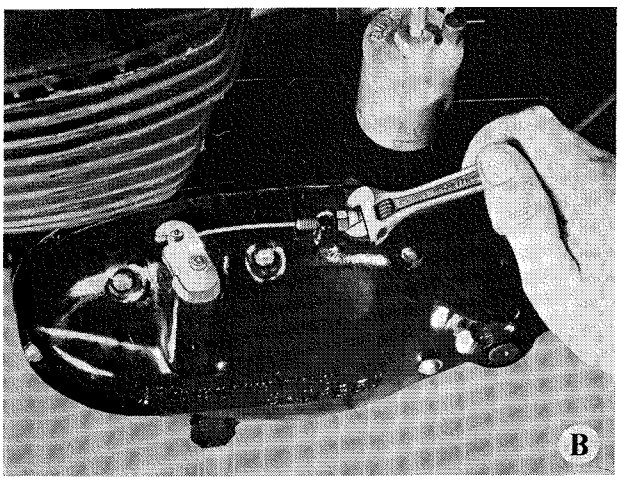


Assemble in the reverse order.

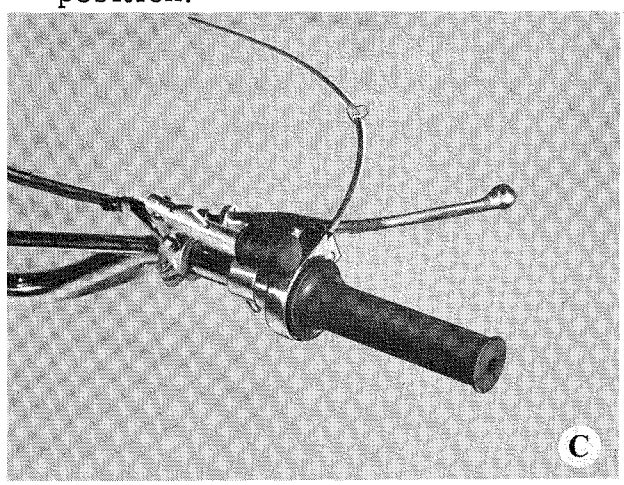
ADJUSTING LENGTH OF CONTROL CABLE:



A. Set the adjusting screw to the central position.

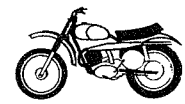


B. Lengthen or shorten the cable. There should be no free play at either end.



C. Start the engine and actuate the lever.

Check that the handle is locked in depressed position. If not, extend the cable by means of the adjusting screw of the handle.



Spärrhylsa - växelmekanism

Med anledning av att vi måste borra ett hål i spärrhylsan för att få ventilation när den användes i 125 cc-motorerna ändrar vi nummer på hylsan

12 25 413-01 skall vara 16 12 455-01

OBS! Den gamla hylsan utan hål kan ej användas i 125 cc-motorn.

Interlock sleeve - gear mechanism

Since we have had to drill a hole in the interlock sleeve to provide breathing when used on the 125-cc engines, the part number of the sleeve has now been altered as follows:

12 25 413-01 changed to 16 12 455-01

N.B. The old sleeve without hole cannot be used on the 125-cc engine.

Sperrhülse - Schaltmechanismus

Weil wir die Sperrhülse mit einer Bohrung versehen müssen, um eine Ventilation zu erzielen wenn sie in 125 cc-Motoren verwendet wird, ist die Nummer wie folgt geändert worden:

12 25 413-01 wird in 16 12 455-01 geändert.

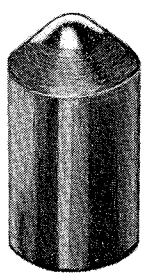
ZUR BEACHTUNG! Die alte Hülse ohne Bohrung kann nicht in 125 cc-Motoren verwendet werden.

Douille de blocage - Mécanisme de changement de vitesse

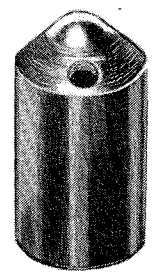
Par suite du percement d´un trou dans la douille de blocage mentionnée en titre, dans le but d´assurer une bonne aération en cas d´emploi sur les moteurs de 125 cm^3, nous avons changé le No de référence de cette douille:

Le nouveau numéro est 16 12 455-01 au lieu de l´ancien numéro 12 25 413-01.

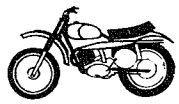
REMARQUE: L´ancienne douille, sans trou, ne peut pas être employée sur les moteurs de 125 cm^3.



Ej för 125 cc
Not on 125-cc
Passt nicht für
den 125 cc-Motor
Non pour 125 cm^3



Även för 125 cc
Also suitable for 125-cc
Passt auch für
den 125 cc-Motor
Même pour 125 cm^3



Kugghjul i växellådan

För att underlätta identifiering av växellådshjul för våra motocrossmaskiner kommer vi att införa siffermärkning. Kugghjulen kommer att märkas med den 3:e siffergruppen i beställningsnumret.

Exempel: Kugghjul nr 16 12 861-01 kommer att märkas med 861.

Gear wheels in gearbox

In order to facilitate identification of the gear wheels on our motocross machines we are introducing number marking. The gear wheels will be marked with the third figure group in the part number.

Example: Gear wheel number 16 12 861-01 will be marked "861".

Getriebezahnräder

Um unsere Getriebezahnräder für unsere Motocross-Maschinen leichter erkennen zu können, werden wir eine Zifferkennzeichnung einführen. Die Zahnräder werden mit der 3. Ziffergruppe der Bestellnummer gekennzeichnet.

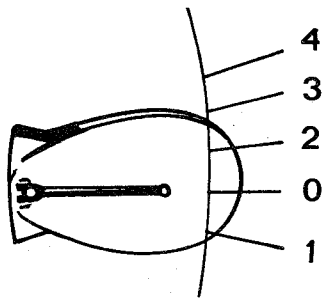
Beispiel: Zahnrad Nr. 16 12 861-01, wird mit 861 gekennzeichnet.

Pignons de boîte de vitesses

Afin de faciliter l´identification des pignons des boîtes de vitesses de nos motocyclettes, nous allons désormais marquer ces pignons du troisième groupe de chiffres de leur numéro de référence.

Ainsi, le pignon de référence 16 12 861-01 par exemple sera marqué 861.

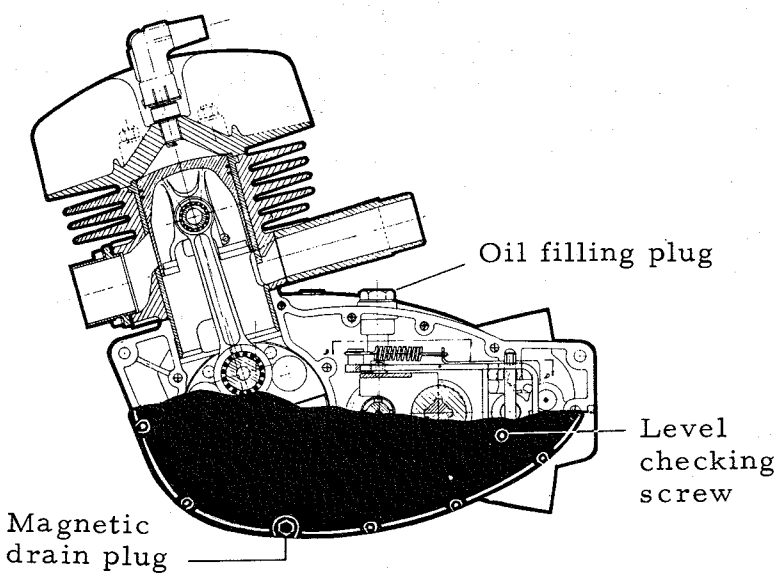
GENERAL



The engine power is transmitted from the crankshaft to the clutch through a gear drive with built-in sheck absorber. The clutch is built into the large ring gear and has five friction discs and six steel discs. The innermost steel disc is thicker than the others.

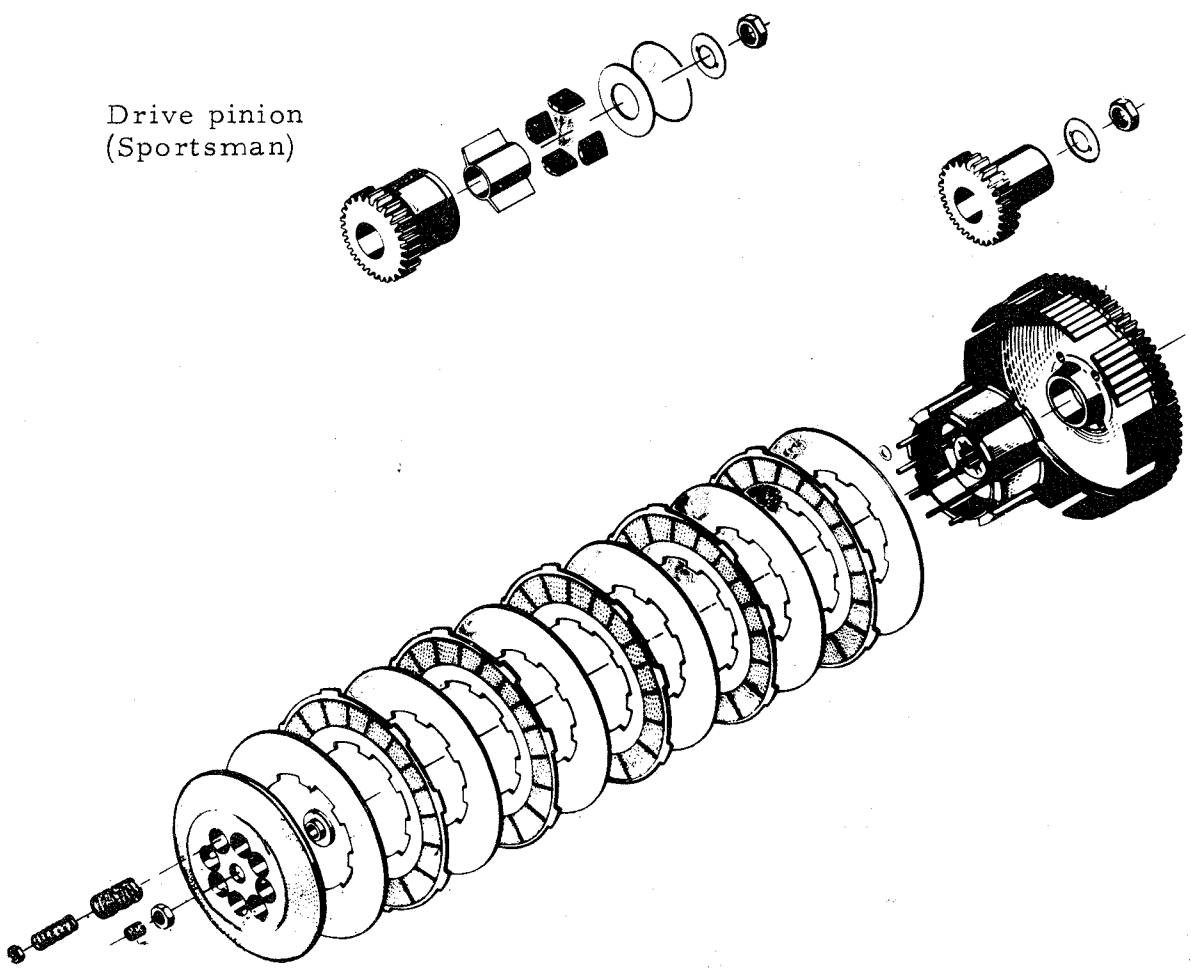
The clutch rod is actuated by a lever on the lower part of the gearbox. The gear wheels, shafts and gear shifter of the gearbox are enclosed in a gearbox housing which is built integrally with the engine. The gearbox housing holds 0.9 litre (1 5/8 Imp. pints) of oil, which is splashed round by the gear wheels and lubricates the contact surfaces.

The gearbox has four speeds and the gear pedal is placed on the righthand side.

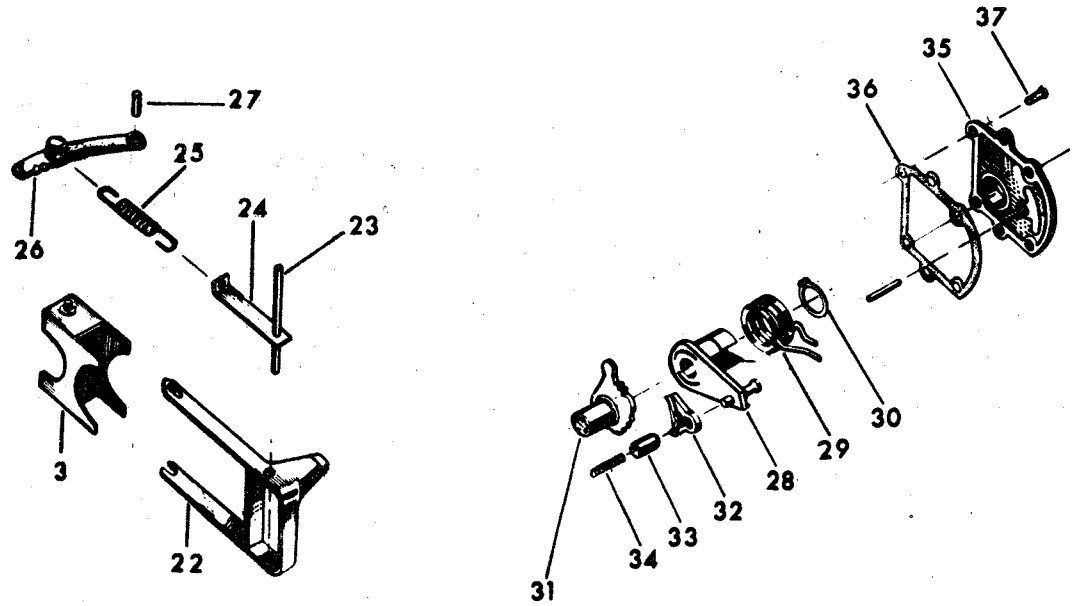


CLUTCH

Drive pinion
(Sportsman)



GEARSHIFT MECHANISM



Gearshift mechanism dismantled.

Fig.

3. = Guide
22. = Gear shifter
23. = Gear shifter shaft
24. = Interlock spring retainer
25. = Interlock spring
26. = Interlock segment
27. = Pin
28. = Control link
29. = Control spring
30. = Circlip
31. = Step feeder
32. = Pawl
33. = Interlock sleeve
34. = Spring
35. = Cover
36. = Gasket
37. = Slotted screw

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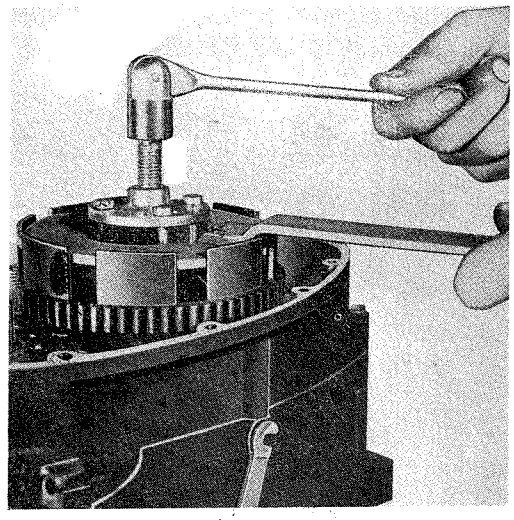
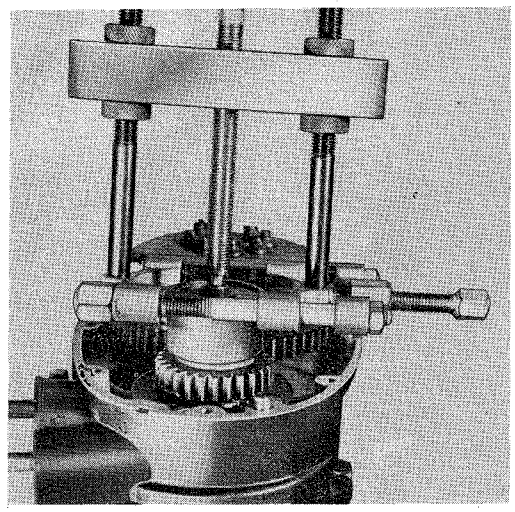
Dismantling the clutch

1. Unscrew the oil plug and drain out the oil.
2. Remove the left-hand crankcase cover and kick-starter pinion. Put a rag in hole, preventing ports from falling into the gearbox.
3. Remove the gasket.
4. Remove the eight nuts on the pressure plate.
5. Remove the pressure plate, springs and discs assembly.
6. Bend aside the locking tabs on the drive pinion and clutch hub.
7. Unscrew the nuts and remove the locking washers.
8. Remove the clutch hub and drive pinion with the help of a puller.

   Fitting is done in the reverse order. Use loctite or locking tabs for the nuts.

For changing the rubber buffers for the crankshaft pinion (see 680805/3).

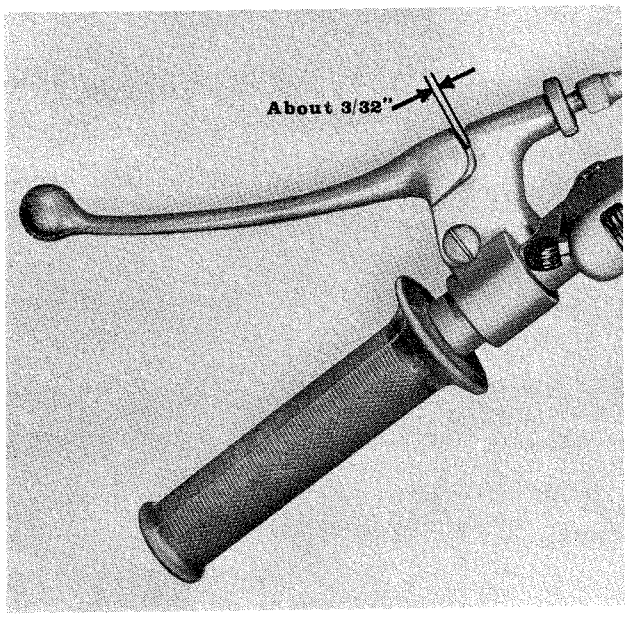


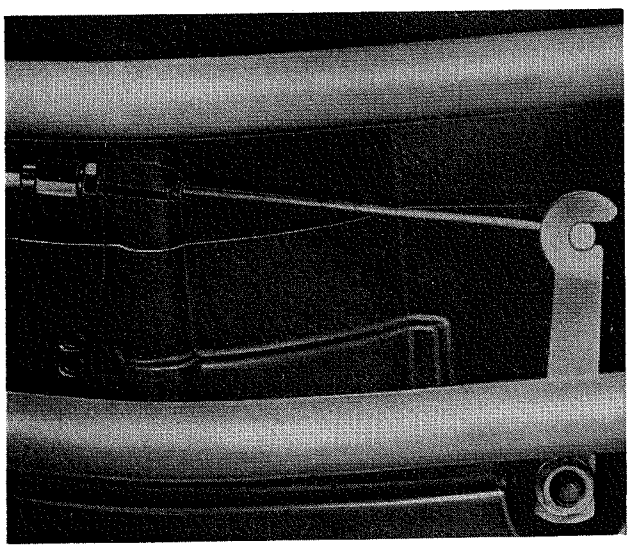


ADJUSTING THE CLUTCH CABLE

Rough adjustment is done with the adjusting screw on the engine and final adjustment at the clutch handle.

1. Slacken the lock nut on the clutch control handle.
2. Turn the adjusting screw so that there is a clearance of 2-3 mm (about 3/32") at the handle.
3. Tighten the lock nut without altering the position of the adjusting screw.





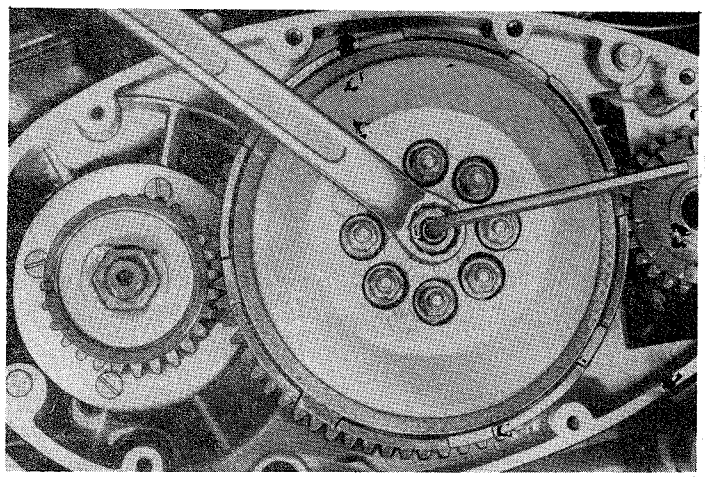
Adjusting at lower attachment

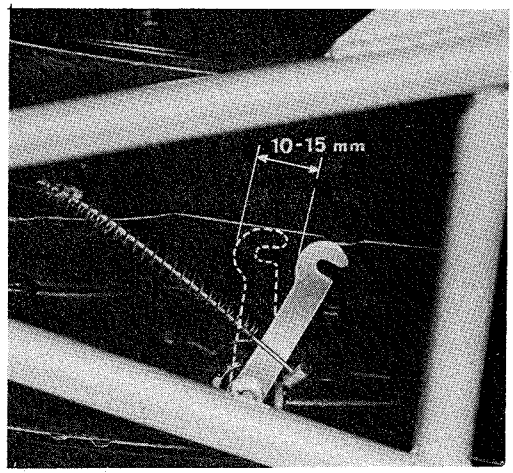
Printed in Sweden

ADJUSTING CLUTCH LEVER CLEARANCE

The clearance of the clutch lever alters with the wear on the clutch facings and is adjusted with the clutch rod adjusting screw.

1. Close the fuel cock and run the engine until the carburettor is empty.
2. Lay down the motor-cycle on its right side, and turn the handle bars to the left as far as possible. Clean the joint between the cover and crankcase.
3. Unscrew the bolts on the cover and lift it off with the kick-starter pedal.
4. Slacken the lock nut on the clutch hub.
5. Turn the adjusting screw with a hexagon spanner until the lever clearance is 10-15 mm (3/8-5/8").
6. Tighten the lock nut without altering the position of the adjusting screw.
7. Check the clutch lever clearance.
8. Clean the contact surfaces of the cover without removing the gasket.
9. Fit in the kick-starter pinion and place on and tighten the cover.





REPLACING THE CLUTCH DISCS

Removing:

1. Removing the left-hand crankcase cover.
2. Remove the eight nuts with washers and take off the outer and inner clutch springs.
3. Lift out the discs assembly.

In order to prevent the gearbox oil from running out, the motor-cycle must be laid down flat on its right side, and the handle bars turned to the left as far as possible.

Fitting:

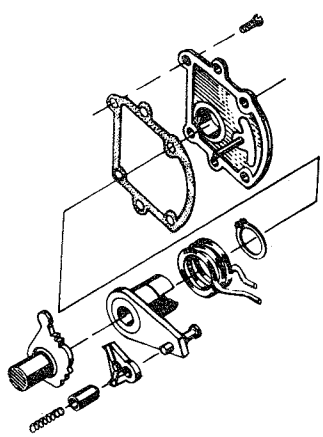
1. Place the thickest steel disc innermost.
2. Then fit on the other discs alternately.
3. Fit on the pressure disc, inner and outer clutch springs and screw on the nuts with washers. Use Loctite or locking tabs.
4. Tighten the nuts alternately and evenly all round.
5. Adjust the clutch lever clearance.
6. Fit the crankcase cover.

Replacing control link spring

Removing:

1. Remove the right-hand crankcase cover and take off the chain.
2. Screw off the cover with gaskets.
3. Remove the control link and spring.
4. Remove the snap ring and spring from the control link.

Fitting is done in the reverse order.

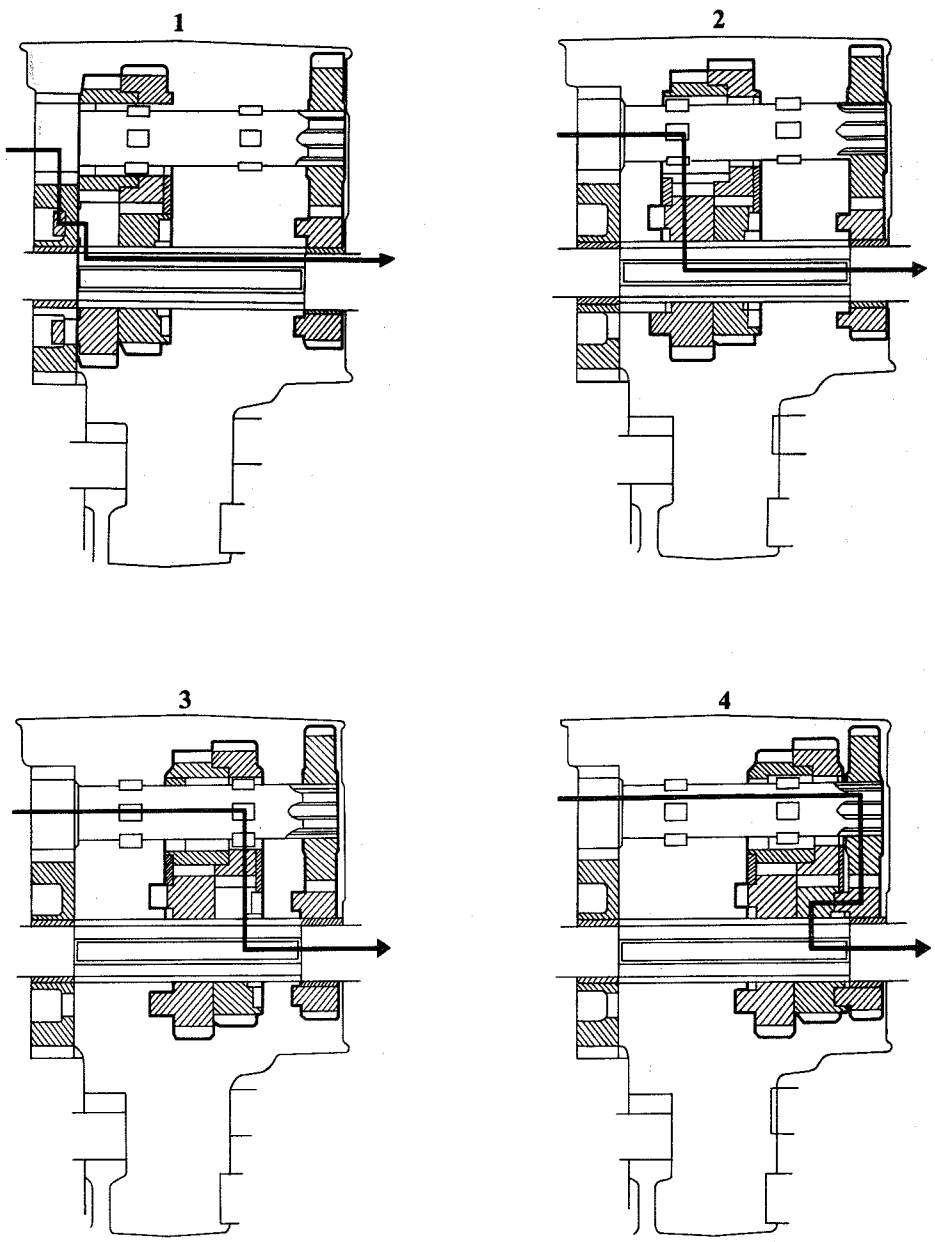


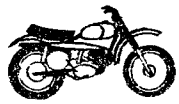
GEARBOX

Dismantling and assembling of the gearbox is described in Section 3, Engine.

A list of the ball bearings and needle bearings can be found in Section 3, Engine.

GEAR POSITIONS

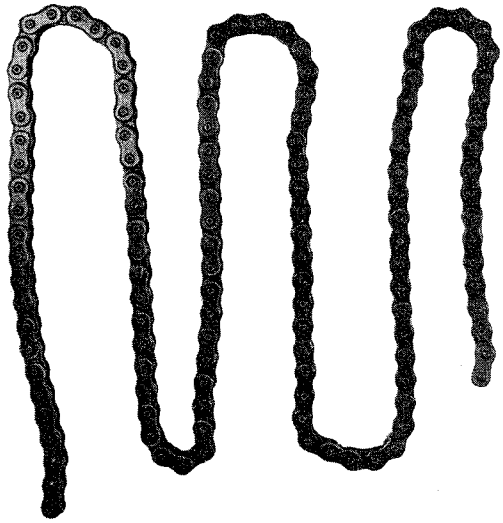




CHAINS

MOTO-CROSS

SPORTSMAN

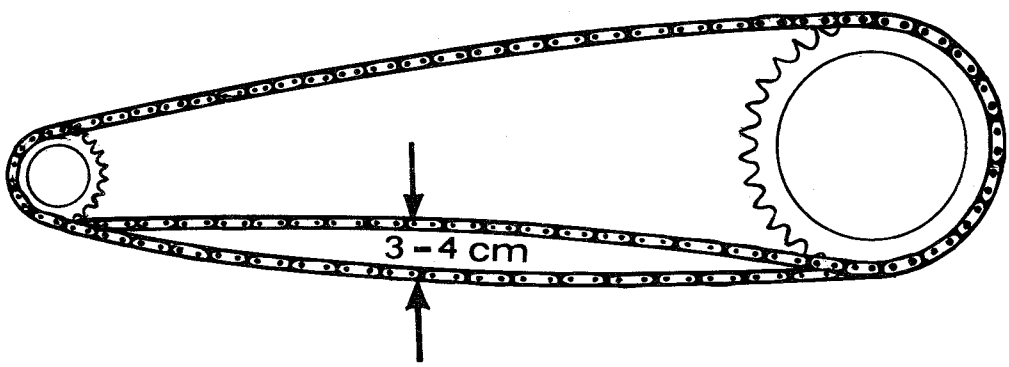


Master link

Joining link

ADJUSTING THE CHAIN TENSION

1. Loosen first the left and then the right axle nut.
2. Slacken the lock nuts of the adjusting screws.
3. Tension the chain by screwing in the adjusting screws an equal amount on both sides.
4. Check that the chain tension is 3-4 cm (1 3/16-1 9/16").
5. Tighten the lock nuts without altering the position of the adjusting screws.
6. Tighten first the right and then the left axle nut.
7. Check the foot brake adjustment and that the wheels are in line.



REMOVING THE DRIVING CHAIN

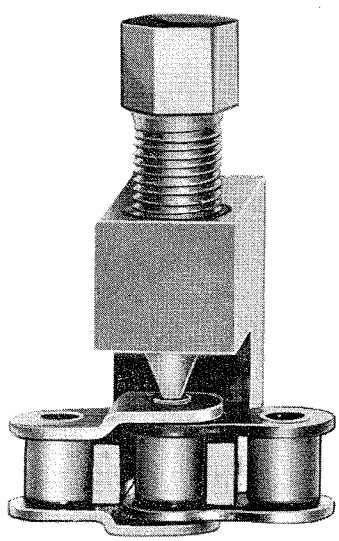
1. Turn the rear wheel so that the master link comes at the lower part of the chain.
2. Open the master link with pliers or a screwdriver and remove the link.
3. Attach a disused driving chain to the outermost free link. If no chain is available, a piece of iron wire 1.5 metres (5 ft.) long can be used instead.
4. Pull the upper part of the chain backwards and let the extension chain (or iron wire) follow round the front sprocket and through the upper chain guard.
5. Disconnect the extension chain (or iron wire) from the driving chain and pull it right out.

FITTING THE DRIVING CHAIN

1. Attach the chain to the lower end of the extension chain (or iron wire).
2. Pull the upper end of the extension chain (or iron wire) backwards and feed in the chain onto the front sprocket.
3. Place the end of the chain on the rear sprocket and remove the extension chain.
4. Connect up the chain with the master link, making sure that the closed part faces the direction of rotation of the chain.

REPAIRING THE DRIVING CHAIN

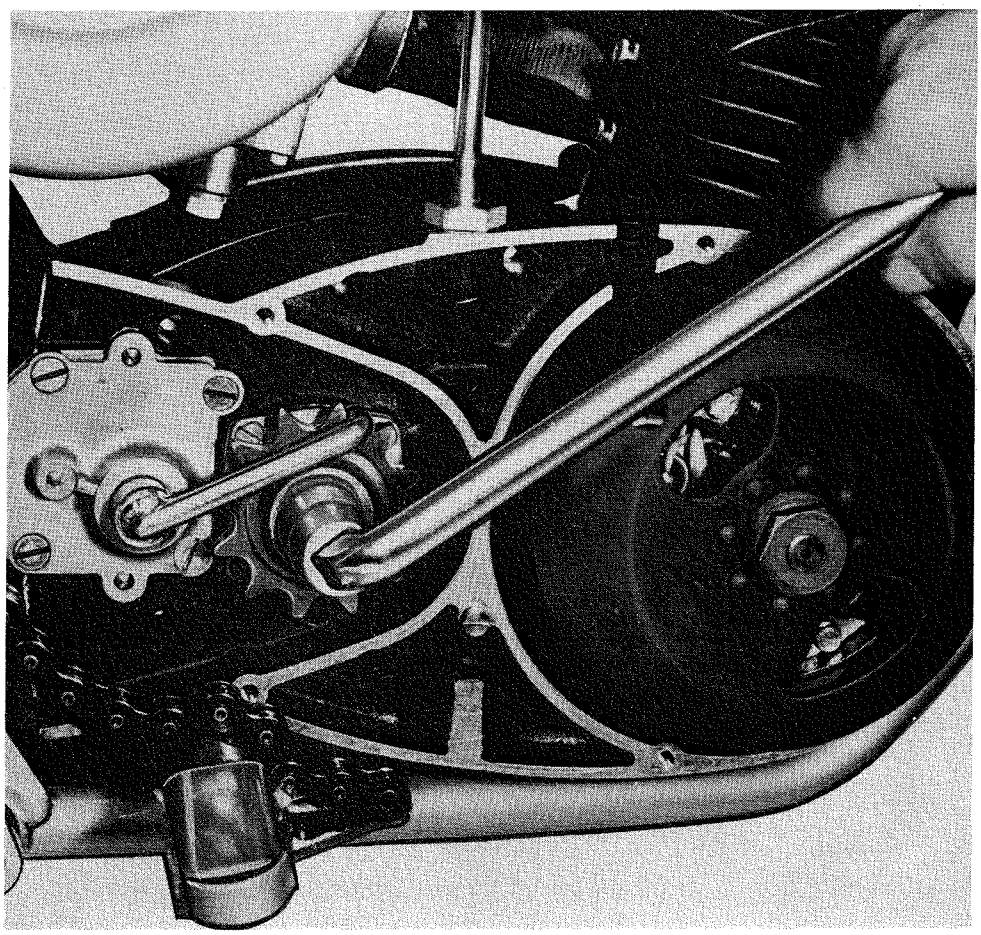
1. Fit on the chain braker and remove the broken link.
2. Make up the chain to the correct length with half or whole links.
3. Attach the link with a master link or by riveting.
4. Fit the chain.



CHANGING THE DRIVE SPROCKET

1. Remove the right-hand crankcase cover and take off the driving chain.
2. Open the locking tab and place holding spanner 15 19 199-01 on the sprocket.
3. Remove the nut (left-hand thread) and washer.
4. Pull off the sprocket with puller 12 24 816-01.

   Fitting is done in the reverse order.



FRAME

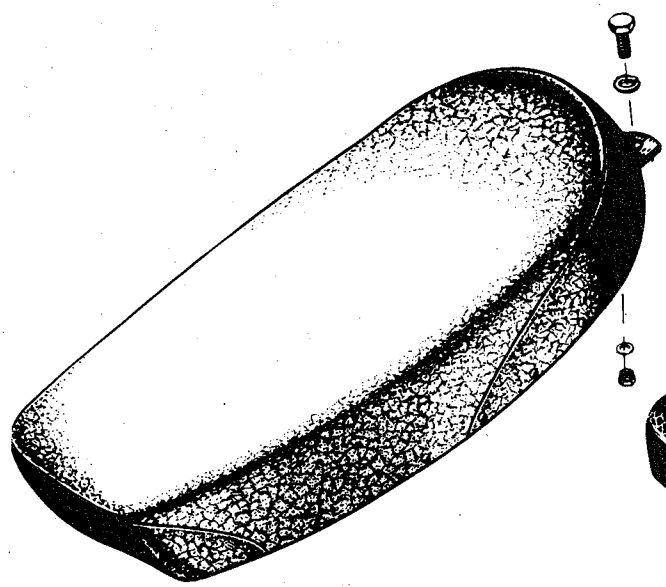
The frame consists of 40 mm (1 9/16") diameter chrome-molybdenum tubing.

The rear fork is pivoted in the rear part of the frame.

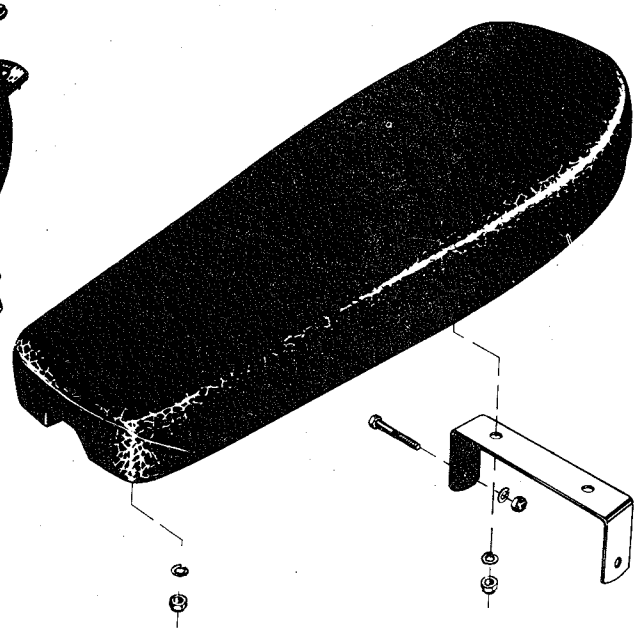
When straightening or welding the frame, note that the tubing is only 1.5 mm (.06") thick, so that particular care is necessary when welding.

REPLACING THE SADDLE OR SADDLE COVER

1. Remove the saddle by unscrewing the two rear attaching bolts and the two front nuts. (One nut on motocross).
2. Lift off the saddle. If the saddle covering is worn out, it can be replaced with a new one. It is glued on under the saddle.



MOTO-CROSS



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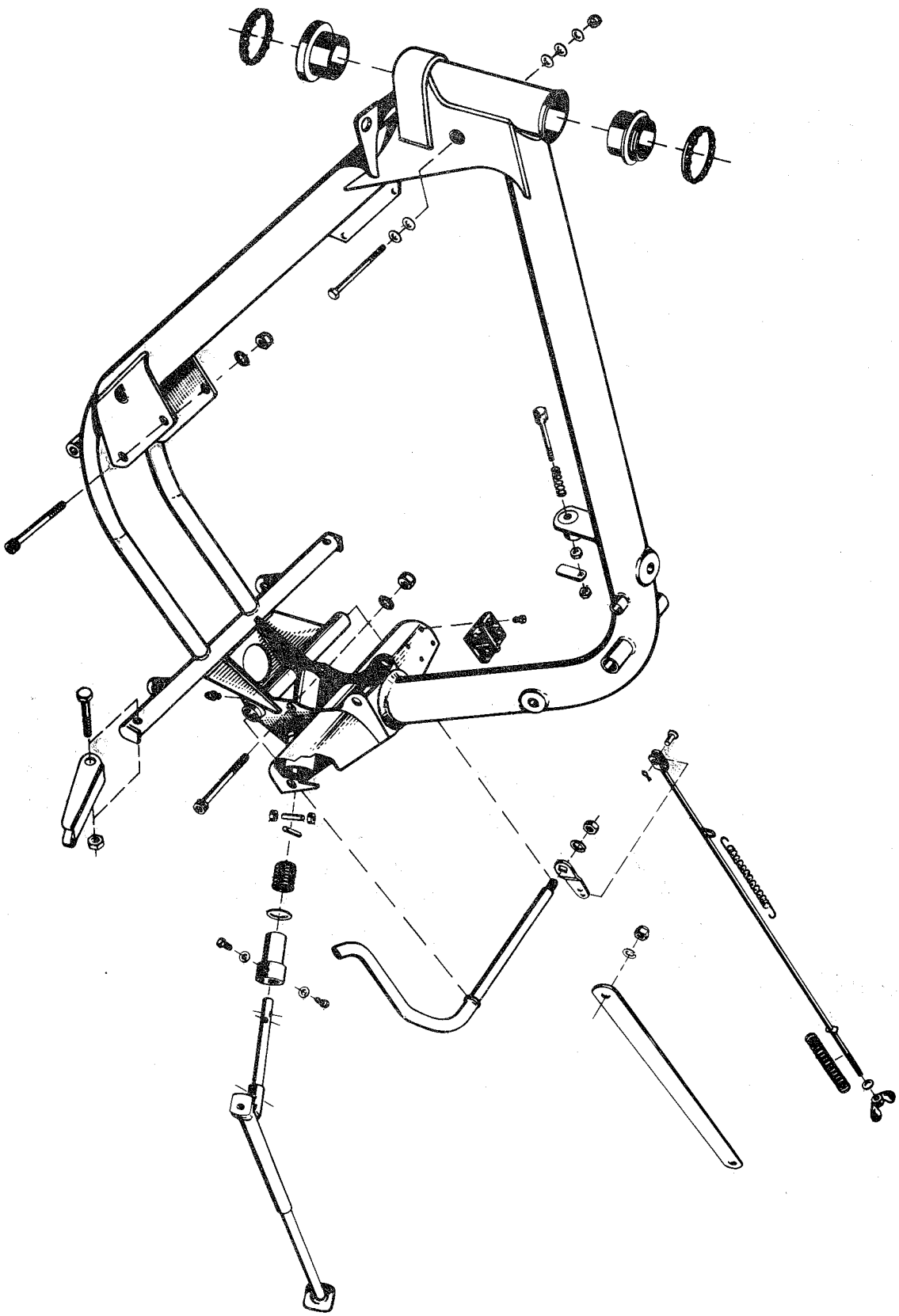
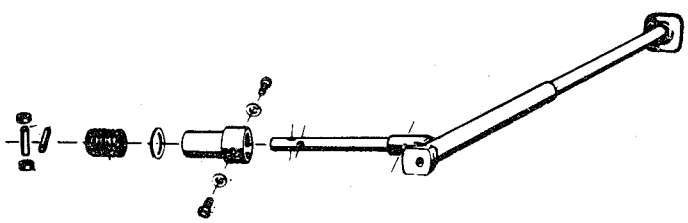
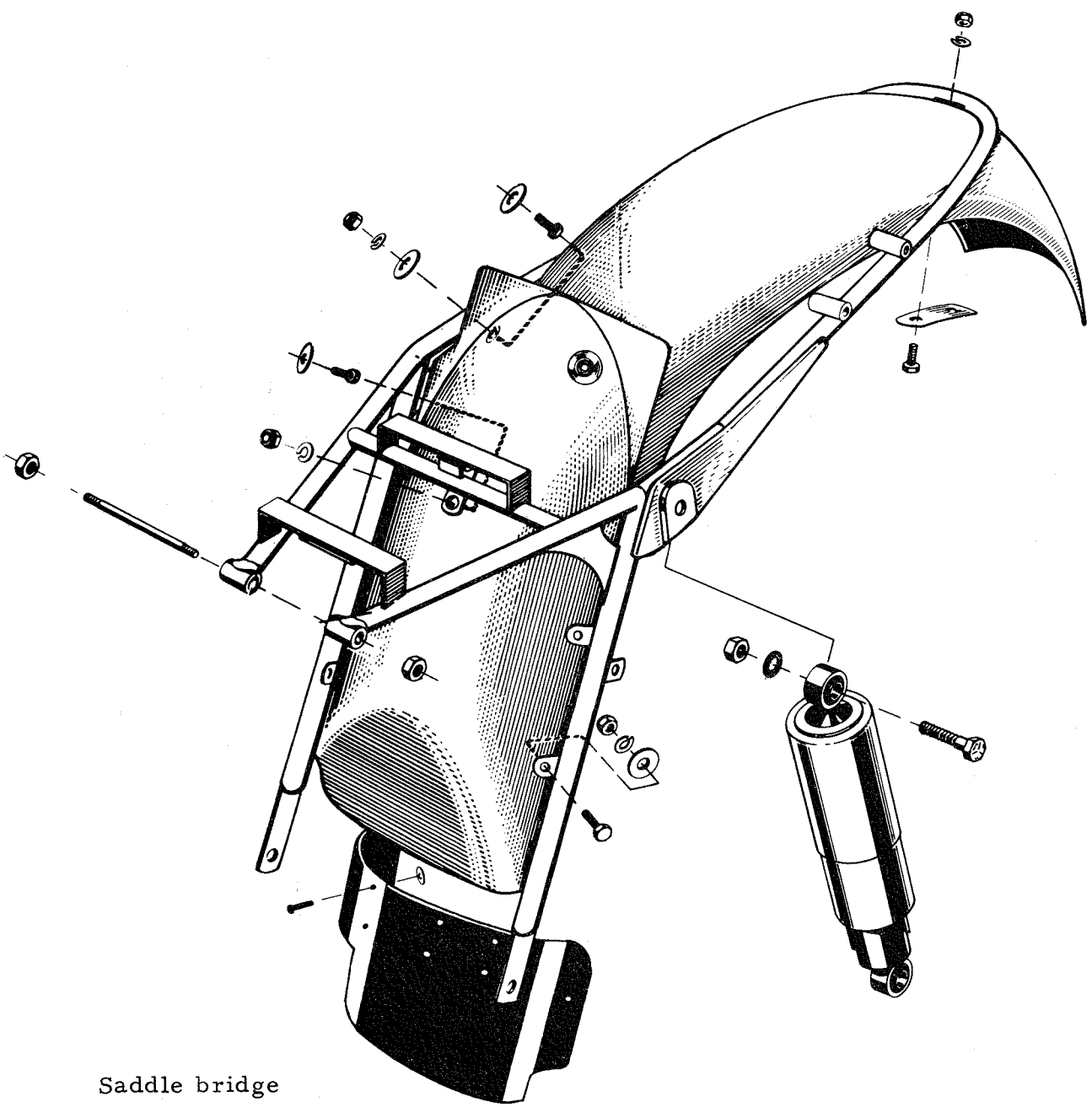


CHANGING THE DROP STAND LEG

1. Place a screwdriver between the stop lug and washer in order to compress the spring.
2. Remove the bolts which are now accessible and lift out the support leg.
3. Fitting is done in the reverse order, but the spring must be compressed to enable the two bolts to be fitted.

N.B. Heat must not be used for straightening the parking support leg.





Saddle bridge

SPORTSMAN

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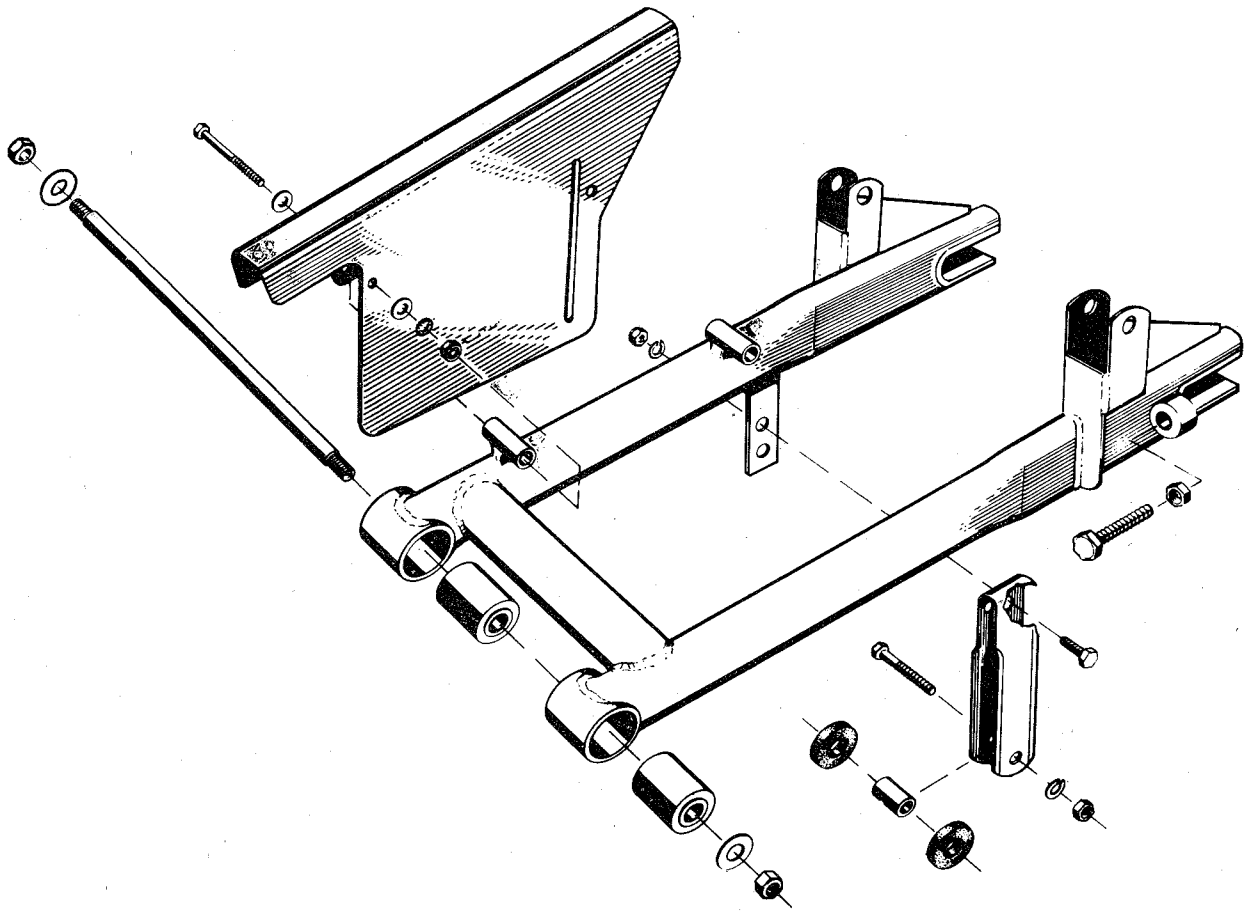
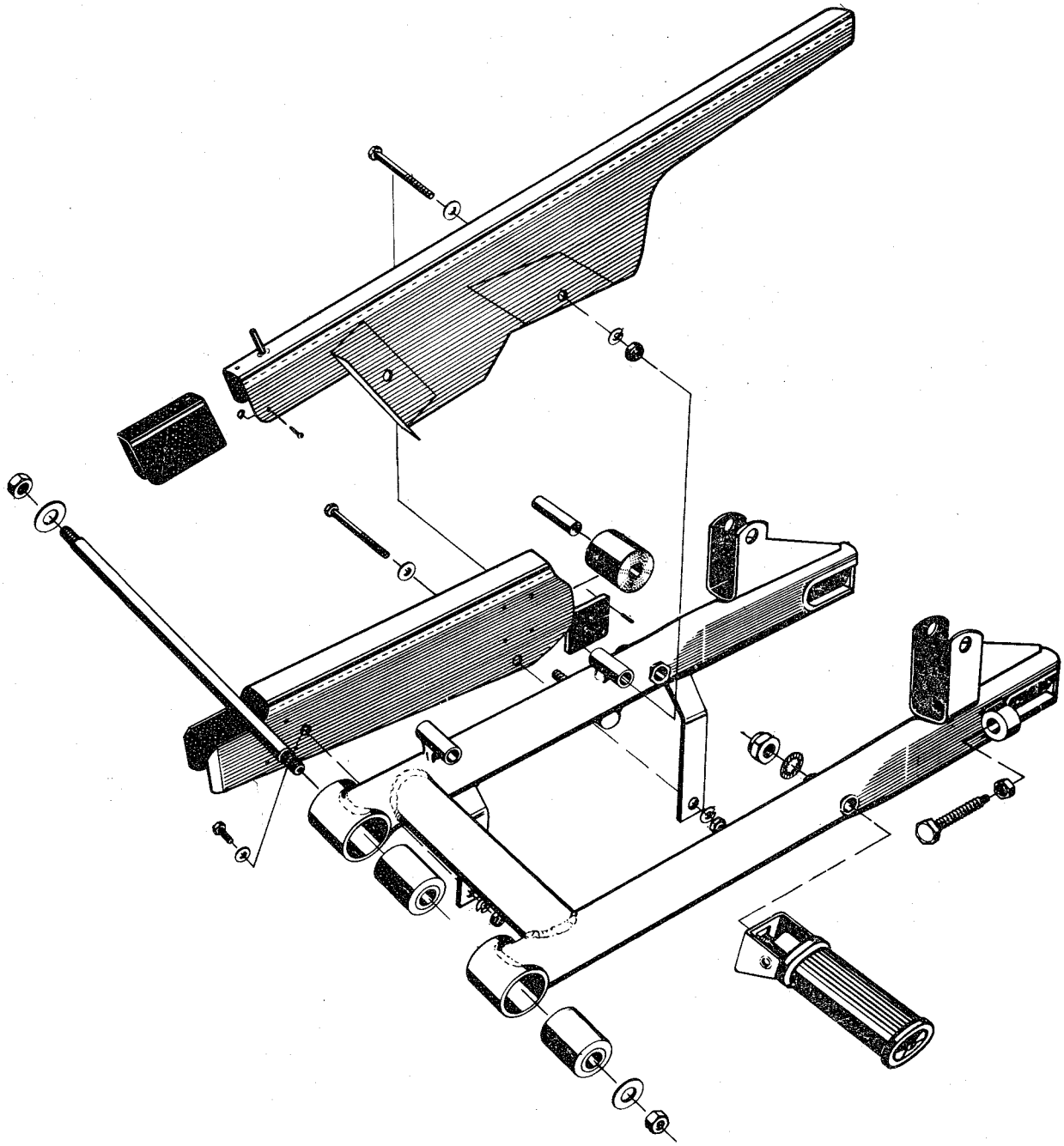


Rear fork

MOTO-CROSS



Rear fork

SPORTSMAN

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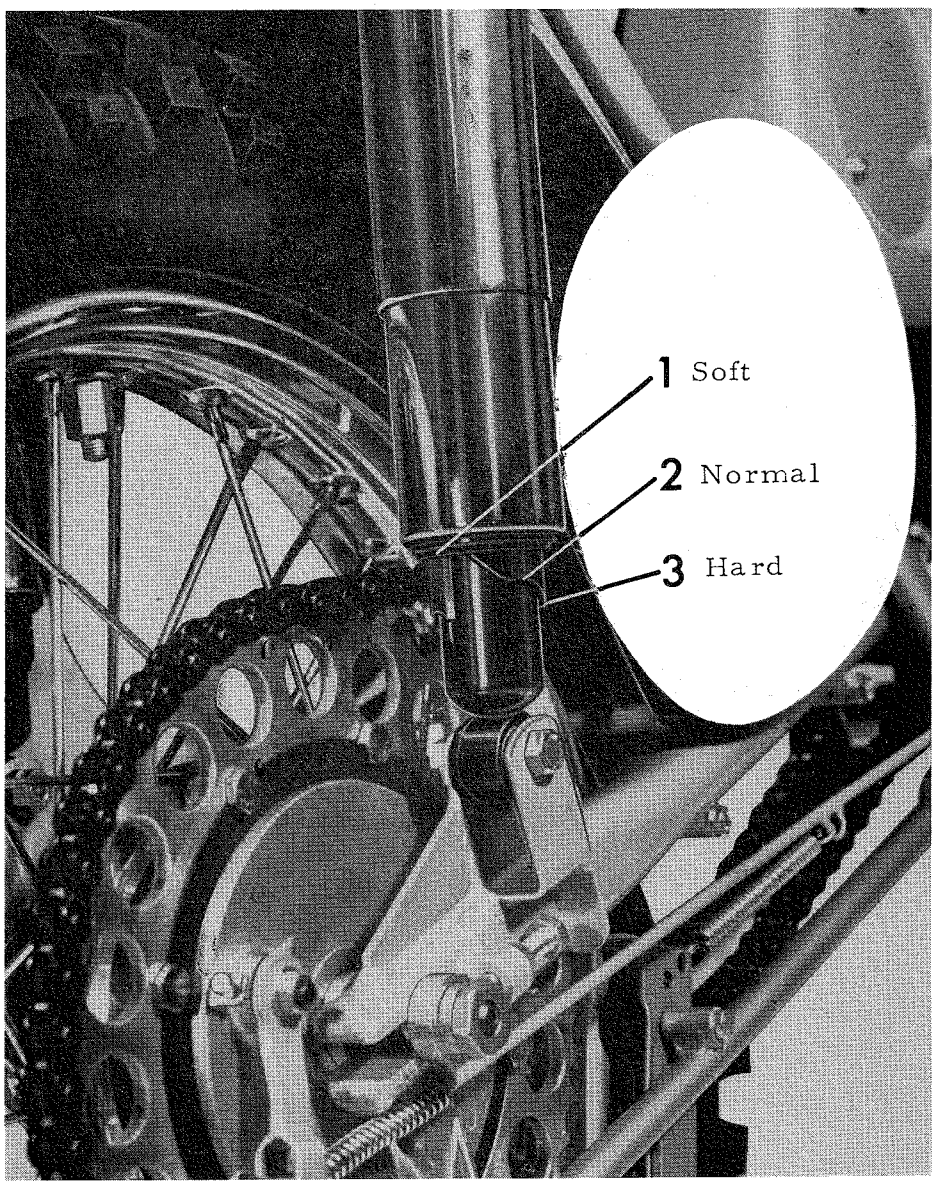
REAR FORK

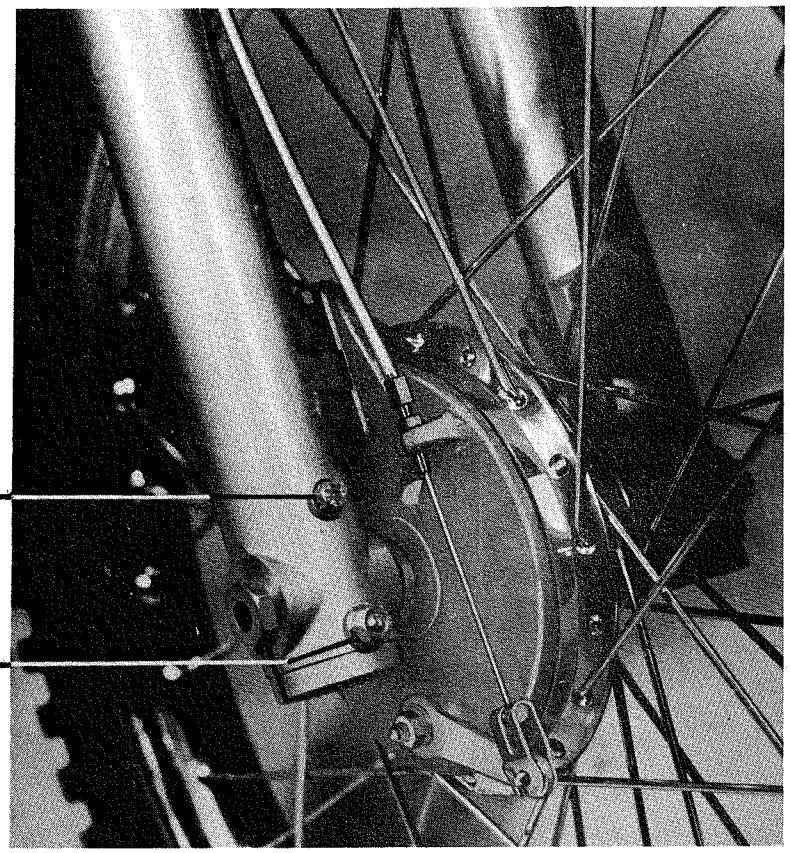
The rear fork, which is of the pivoting type, is mounted in the rear part of the frame and is connected to the saddle bridge by means of a combined spring and hydraulic shock absorber.



REMOVING THE REAR FORK

1. Remove the rear wheel, brake drum and chain sprocket as well as the lower shock absorber attaching bolts. Loosen the upper shock absorber bolts.
2. Screw off the nut for the rear fork shaft and knock out the shaft with a drift.
3. Remove the brake rod tension spring and pull off the rear fork.

THE FRONT FORK is of the telescopic type and contains long coil springs and hydraulic shock absorbers. Oil is filled through the filling hole at the top of the fork legs and is drained through the drain screw at the lower part of the fork legs.



The damping action is obtained by the fork tube running over a damping spindle in the fork leg. Oil with a higher viscosity gives increased damping effect (harder suspension) and oil with a lower viscosity reduces the damping effect.

CHANGING THE OIL

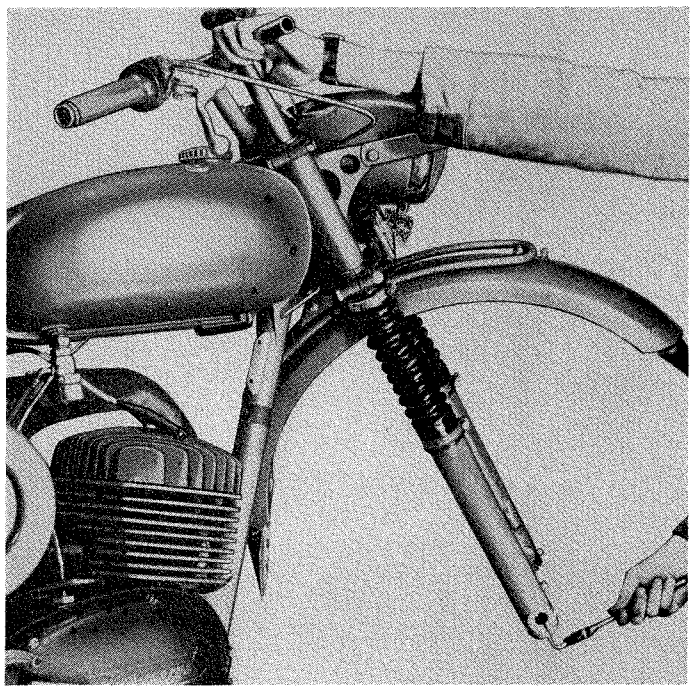
Remove the drain screws and filling screws and let the oil run out without compressing the fork. When all the old oil has run out, screw in the drain screws. Fill up with 200 cc (3/8 Imp. pint) of suitable oil in each fork leg.

REPLACING THE FORK LEGS

1. Remove the front wheel.
2. Screw out the top bolt and unscrew the upper and lower clamping bolts.
3. Loosen the locking screws on the lamp holder (Sportsman Scrambler) and remove the fork leg.
4. Loosen the two hose clips on the fork leg and remove the rubber bellows and rubber ring.
5. Fit in the reverse order. Make sure that the air hole of the bellows faces backwards and is not blocked. Lubricate the oil seals.

RECONDITIONING THE FORK LEGS

1. Remove the fork leg and rubber bellows.
2. Take out the spring.
3. Screw out the oil drain screw and drain the oil.
4. Unscrew the hexagon bolt and remove the inner tube and stripper together with the two oil seals.
5. Then remove the circlip and take off the bushing.
6. Finally remove the damping spindle, spring and damping sleeve.

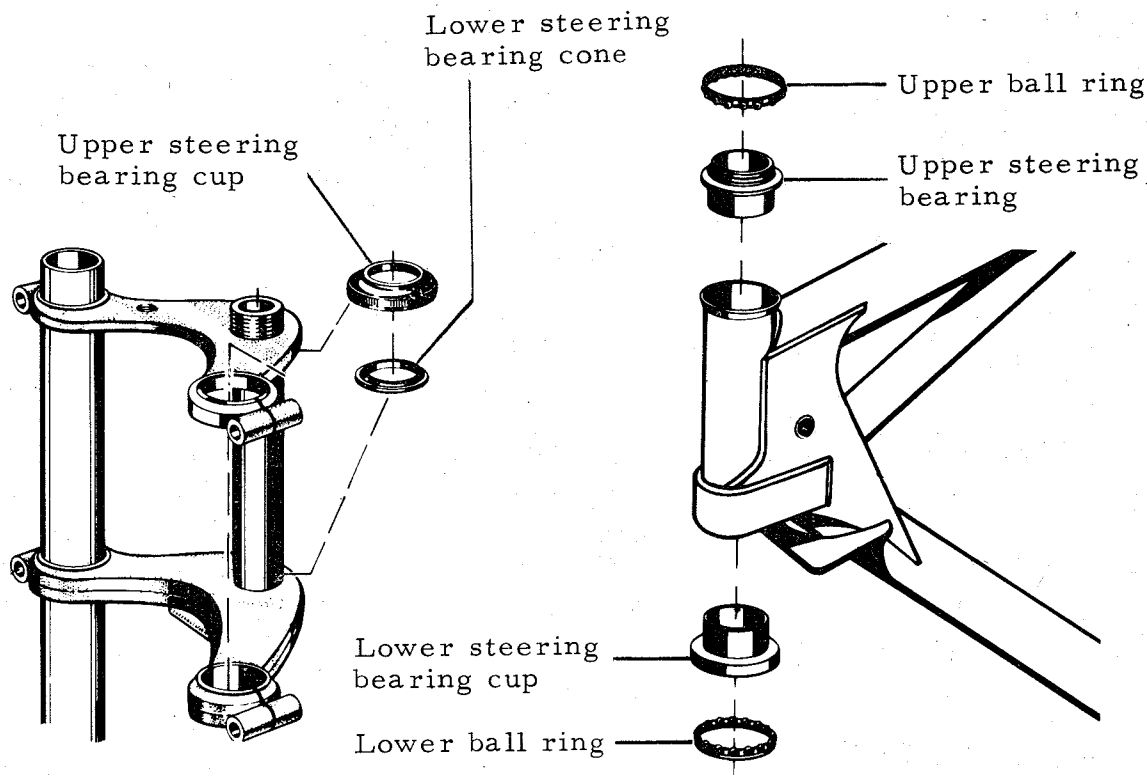


REPLACING THE FORK PLATE

1. Remove the handlebar holder on the fork plate and unscrew the top bolts.
2. Slacken and remove the cap nut with washer. Then slacken the fork tube clamping bolts, after which the fork plate can be lifted off.
3. Fit in the reverse order.

REPLACING THE FORK CROWN AND BEARINGS

1. Remove the front wheel, mudguard, fork plate with handlebar and fork legs.
2. Remove the upper steering bearing cup and fork crown.
3. Remove the upper and lower ball rings, after which the lower steering bearing cup can be knocked out of the frame with a drift.
4. Knock out the lower steering bearing cone with a screwdriver.
5. Knock out the upper steering bearing cone with a drift.
6. Fitting is done in the reverse order. The lower steering bearing cup and upper steering bearing cone are knocked in with a drift. The upper steering bearing cone is driven down with a piece of pipe diameter 30 mm (1 3/16"), length 200 mm (7 7/8").



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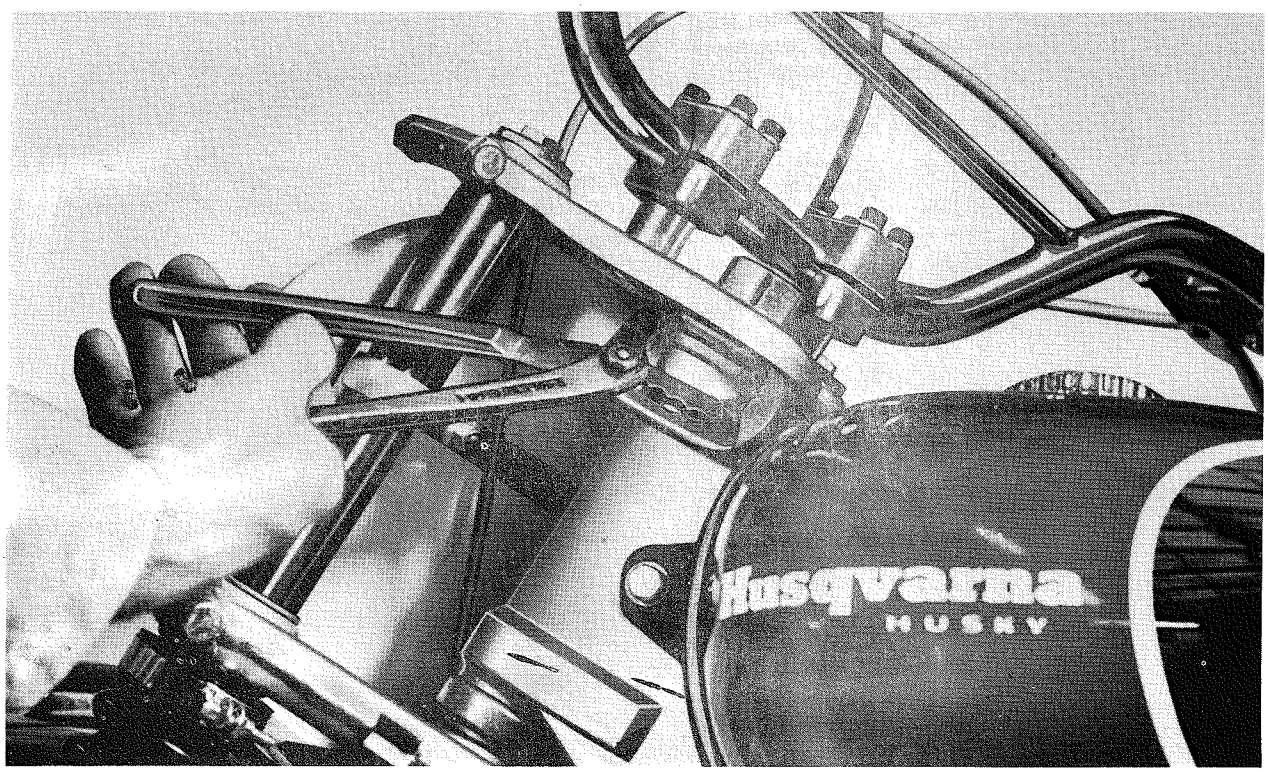
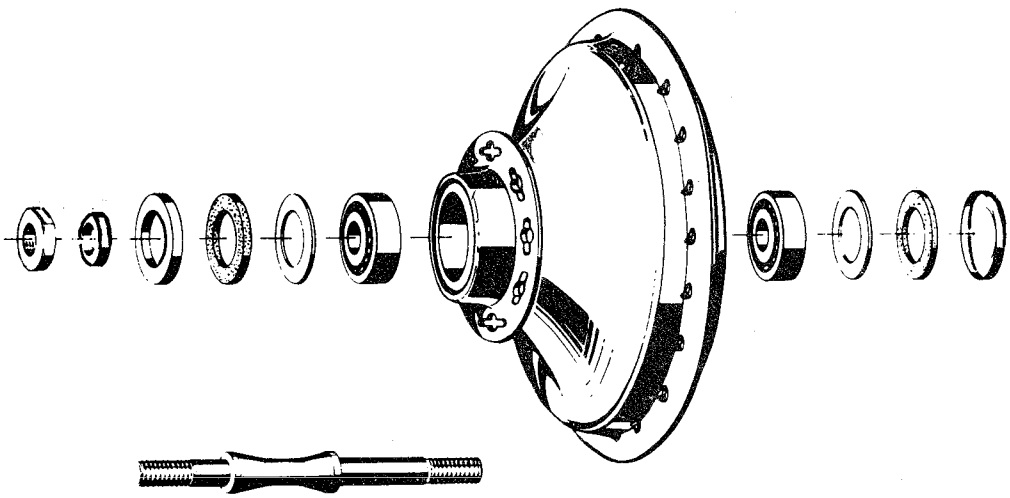
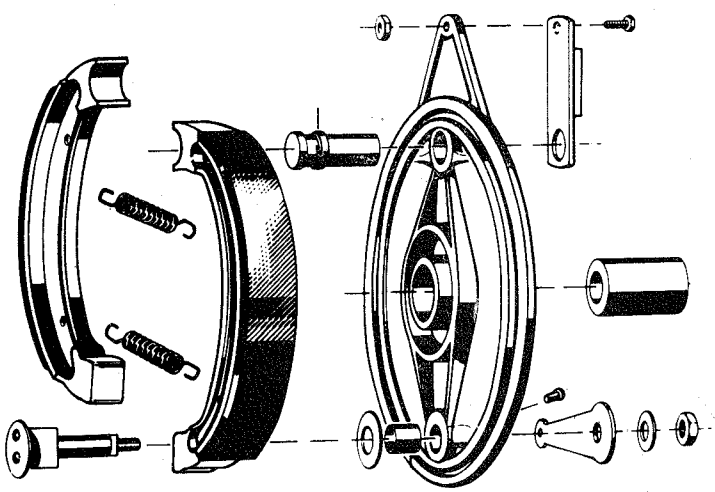
CHECKING AND ADJUSTING THE STEERING BEARINGS

1. Block up the motor-cycle so that the front wheel can rotate freely.
2. Grasp the lower part of the forklegs and pull them backwards and forwards in the longitudinal direction of the machine.
3. Any necessary adjustment is done on the upper steering bearing cup. Loosen the cap nut and clamping bolts for the fork plate.
4. Take up the upper steering bearing cup with polygrip pliers and then back it off about 1/8 of a turn.
5. Tighten up the cap nut and clamping bolts and check that the bearing does not move stiffly.







Front wheel - MOTO-CROSS

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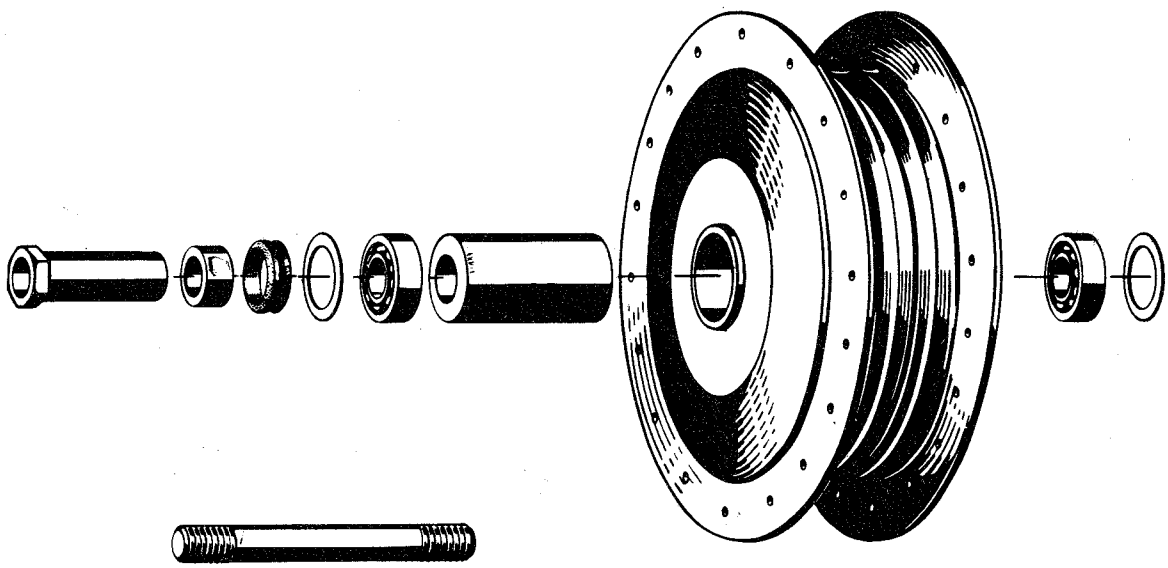
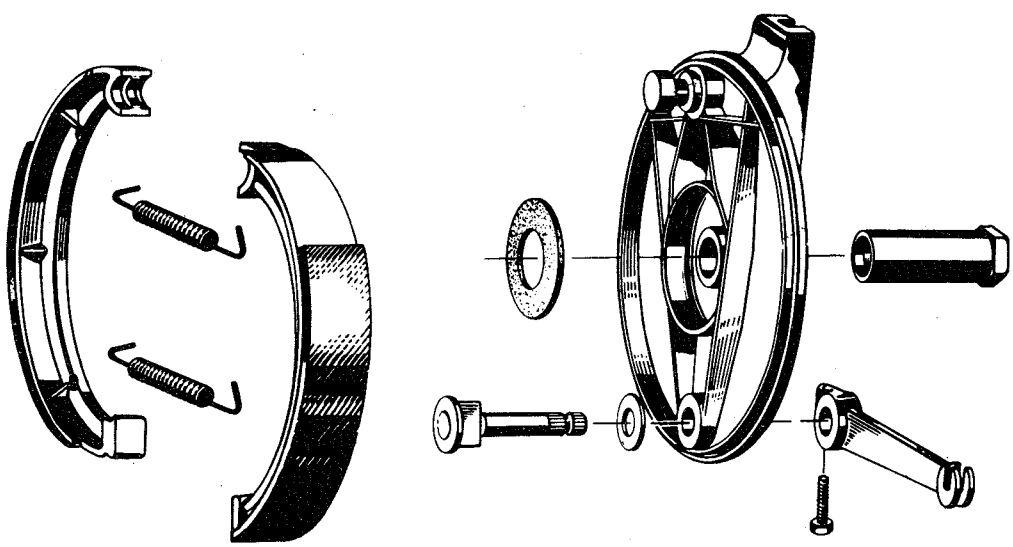
REMOVING THE FRONT WHEEL (SPORTSMAN)

1. Block up the motor-cycle so that the front wheel can rotate freely.
2. Loosen the fork leg clamping bolts and the right-hand axle nut (but not completely).
3. With the help of the right-hand axle nut, press out the axle towards the left-hand fork leg and unscrew the right-hand axle nut completely. (Turn the fork legs forwards so that the wheel can be pulled out.)
4. Pull out the axle and take care of the spacing sleeve (or bevel gear) on the left-hand side.
5. Remove the brake backing plate and let it hang on the brake cable.

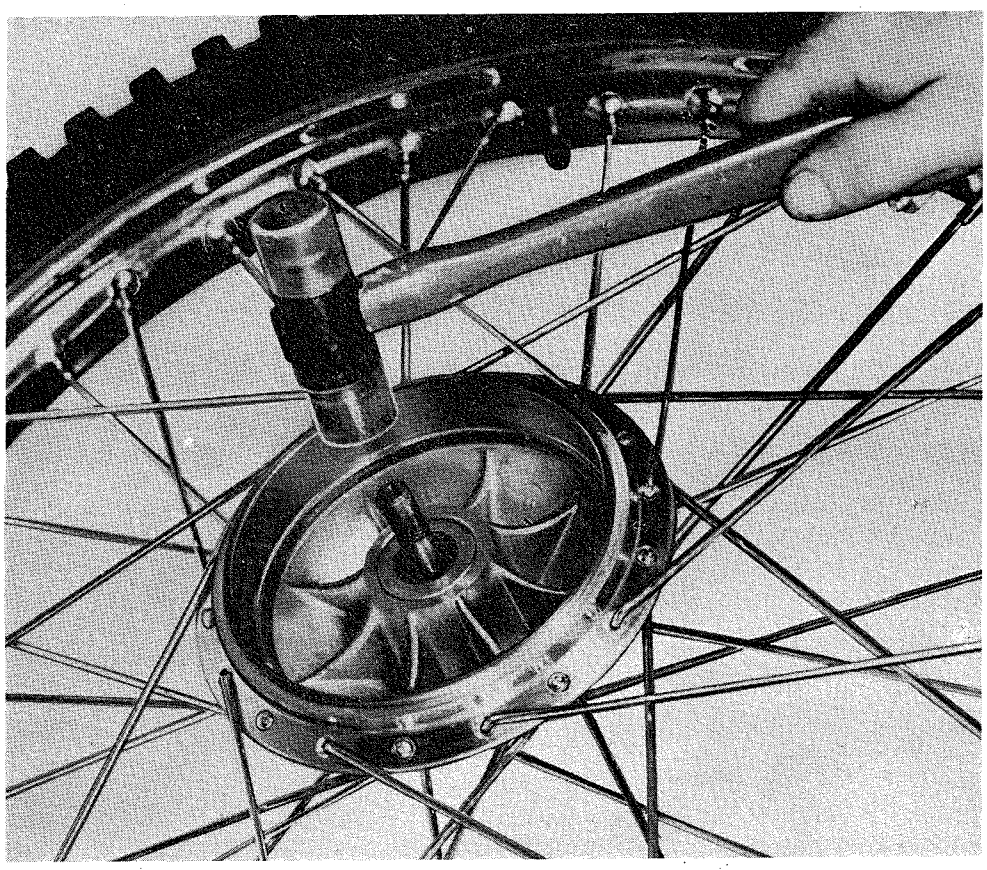




REPLACING THE WHEEL BEARINGS (MOTO-CROSS)

1. Knock out the front axle from the brake drum side with a plastic or lead mallet.
2. The remaining bearing and oil seal are knocked out with a drift or tube sleeve.
3. Clean all the parts before fitting. Lubricate the new bearings with bearing grease and fit the bearing on the brake drum side with a 35 mm (1 3/8") tube sleeve. The dust cover on the ball bearing should face outwards.
4. Fit the other ball bearing on the short part of the front axle.
5. Fit the axle in the hub sleeve and make sure that the ball bearing is pressed home. Fit the oil seals.

BEARING REPLACEMENT IN THE REAR WHEEL AND ON THE SPORTSMAN 250 T IS CARRIED OUT IN ACCORDANCE WITH THE ABOVE DESCRIPTION AS APPROPRIATE.



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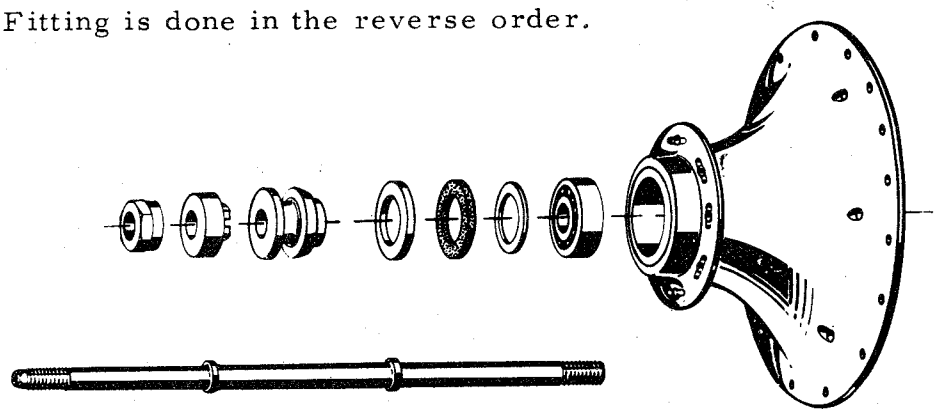
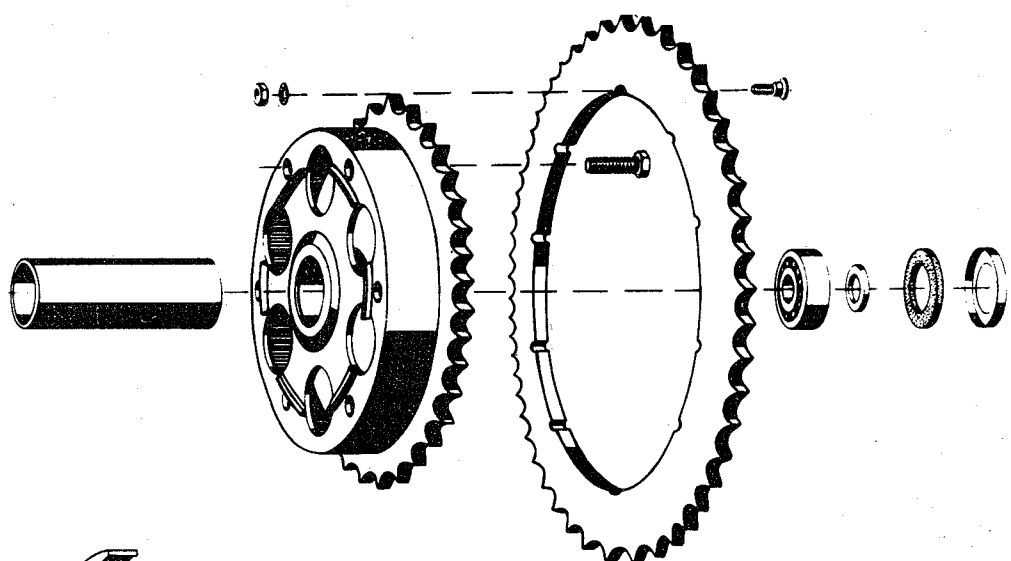
REAR WHEEL

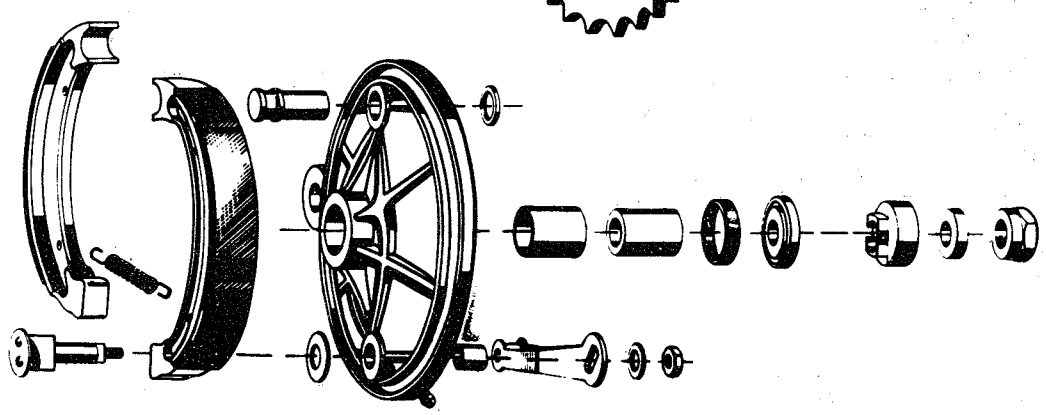
REMOVING THE REAR WHEEL (MOTO-CROSS)

1. Block up the motor-cycle so that the rear wheel can rotate freely.
2. Undo the master link and open the chain.
3. Disconnect the brake link at the pivoting point in the frame.
4. Screw off the wing nut from the brake rod and remove the return spring from the chain guide.
5. Unscrew the axle nuts and pull the wheel straight out backwards.
6. Remove the axle nut on the right-hand side and lift off the brake backing plate and distance pieces. Note the spacing sleeve for the brake backing plate.

Fitting is done in the reverse order.

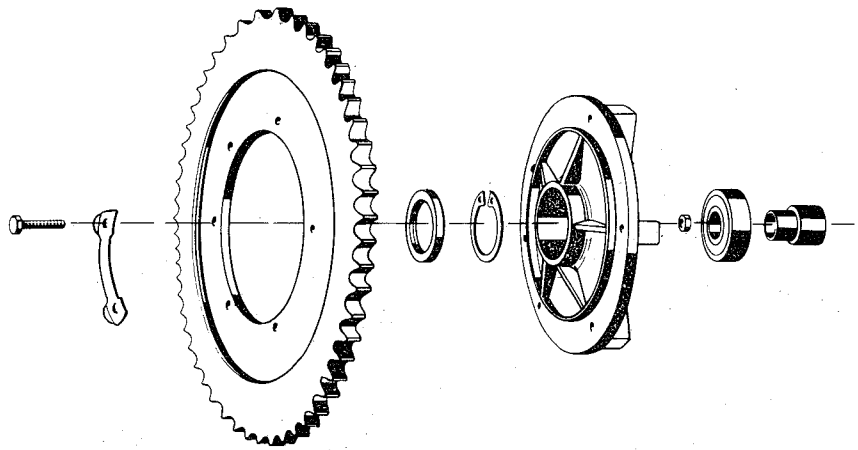


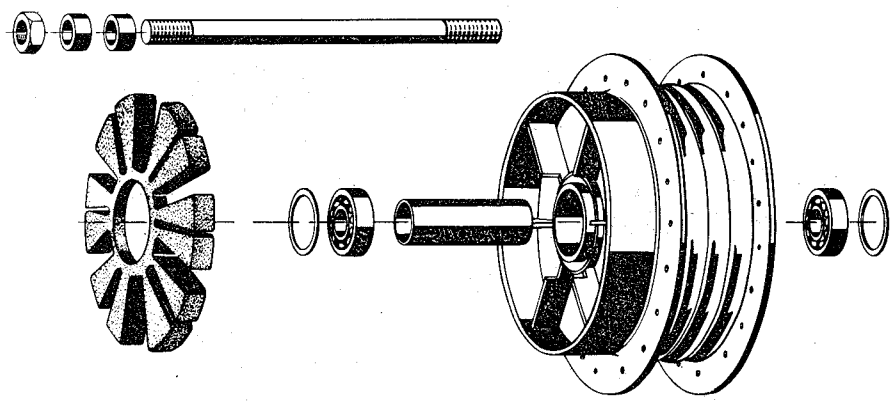


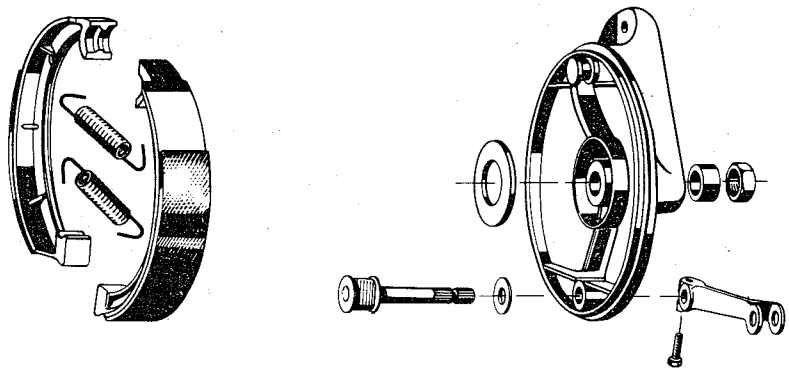


REMOVING AND FITTING THE REAR WHEEL (SPORTSMAN)

1. Block up the motor-cycle so that the rear wheel can rotate freely.
2. Undo the master link and open the chain.
3. Remove the brake rod and return springs.
4. Unscrew the axle nuts and pull the wheel straight out backwards.
5. Remove the axle, chain sprocket and brake backing plate.
6. Fitting is done in the reverse order. N.B. On the sprocket side of the hub there is a rubber shock absorber. Make sure that this is turned the right way round when fitting.







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REPLACING THE REAR WHEEL BEARINGS

1. Check the bearing play by pulling and pushing the wheel sideways.
2. If any play is noticed, the wheel bearings are replaced in the same way as for the front wheel. (On the Moto-cross model do not forget the spacing washer between the ball bearing and oil seal on the brake drum side. Make sure that the axle is turned the right way round. The end which does not have a spanner flat should be on the brake drum side. Lubricate the spacing sleeve in the brake backing plate bearing and fit the brake backing plate.)

BRAKES

ADJUSTING THE BRAKES

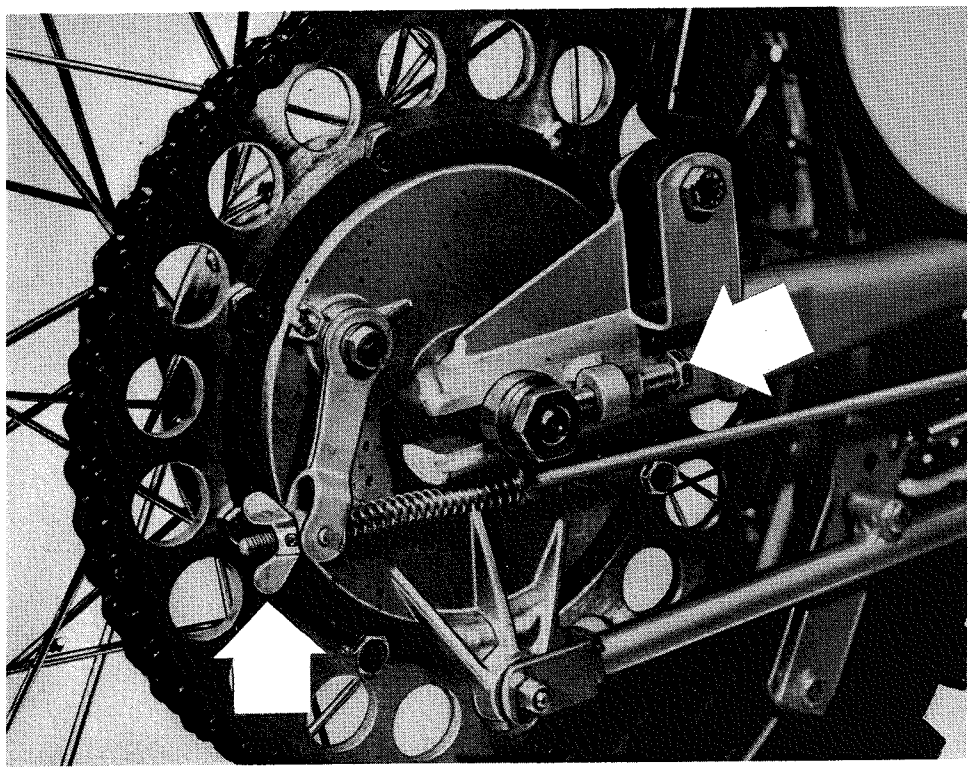
Front wheel

The brake shoes are operated by a cable which is connected to the brake handle. The clearance at the handle should be 2-3 mm (about 3/32") and full braking effect should be obtained when the handle is parallel to the handlebar.

Rough adjustment is done with the adjusting screw on the brake backing plate and fine adjustment with the screw on the brake handle.

Rear wheel

The brake shoes are operated by a brake rod connected to the brake pedal, which it should be possible to press down about 5 cm (2") before full braking effect is obtained. Adjustment is done with a wing nut on the rear part of the brake rod. When adjusting, make sure that the brake backing plate lever does not come into contact with the rear fork. There should be a clearance of at least 2 mm (3/32") between the lever and rear fork when the brake pedal is fully depressed. If not, the brake shoes must be replaced.



Checking the brake link bearing sleeves. (Not SPORTSMAN)

Press down the brake pedal and try to turn the rear wheel backwards and forwards at the same time. There must be no play on the brake link bearing sleeves.

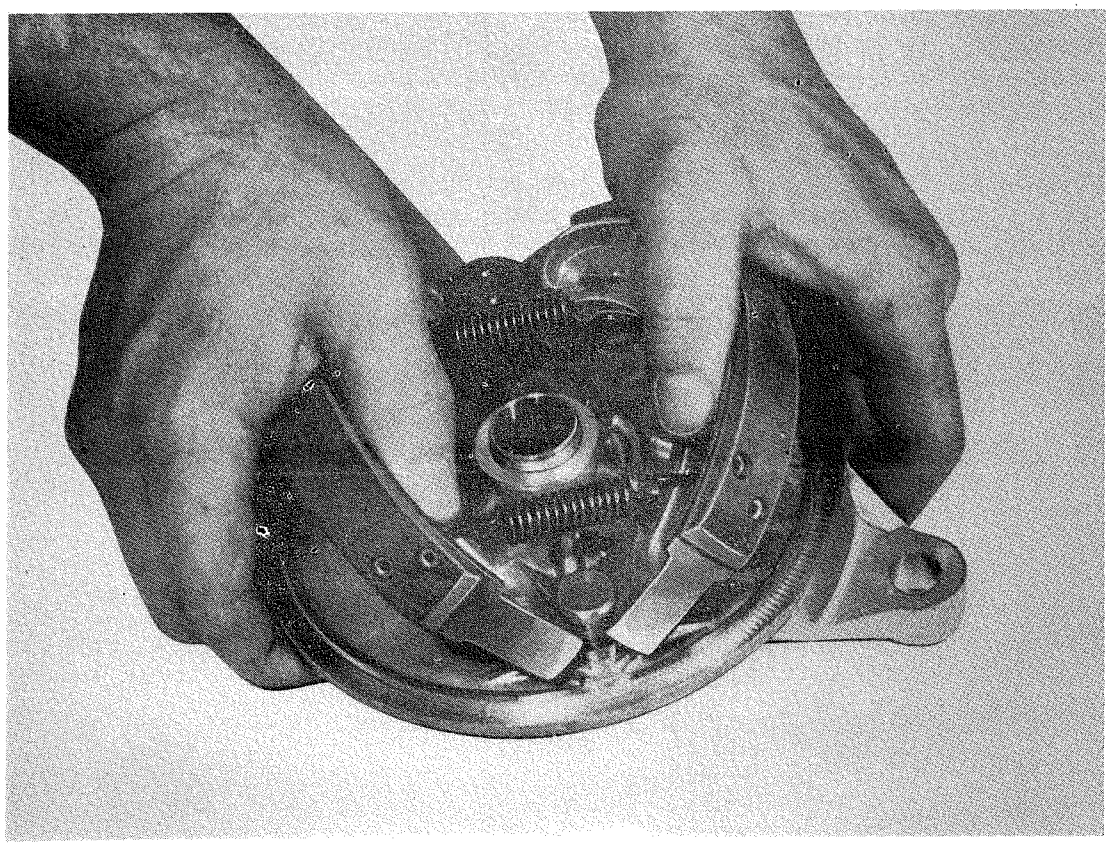
After the brakes have been adjusted, check that the shoes are not in contact with the brake drum.

REPLACING THE BRAKE SHOES

1. Separate the brake shoes with a screwdriver at the fixed pivoting point and lift up one of the shoes.
2. Then lift out both shoes from the brake backing plate.
3. If the brake bands are worn, replace the brake shoes with new ones.
4. Clean all the parts. Make sure that no oil gets on the brake linings.

5. Check that the return springs are in good condition and that the brake cam bearing play is not excessive. Replace the bushing if there is too much play.
6. Lubricate the bearing sparingly with a grease gun through the grease nipple.
7. Turn the brake lever to the correct angle and fit the springs in the brake shoes.
8. Place the brake shoes on either side of the pivoting point and brake cam.
9. Press the brake shoes down into position.

On the SPORTSMAN 250 T there is no grease nipple for lubricating the brake cam pin.



FITTING THE REAR FORK

Fitting is done in the reverse order to removal.

N.B. Before tightening the shaft nut, set the fork to the central position within its range of movement.

Be careful with the flexible bushings.

The pivoting arm bushings should be renewed if the pivoting arm has any lateral play when the rear wheel has been removed.

SHOCK ABSORBERS

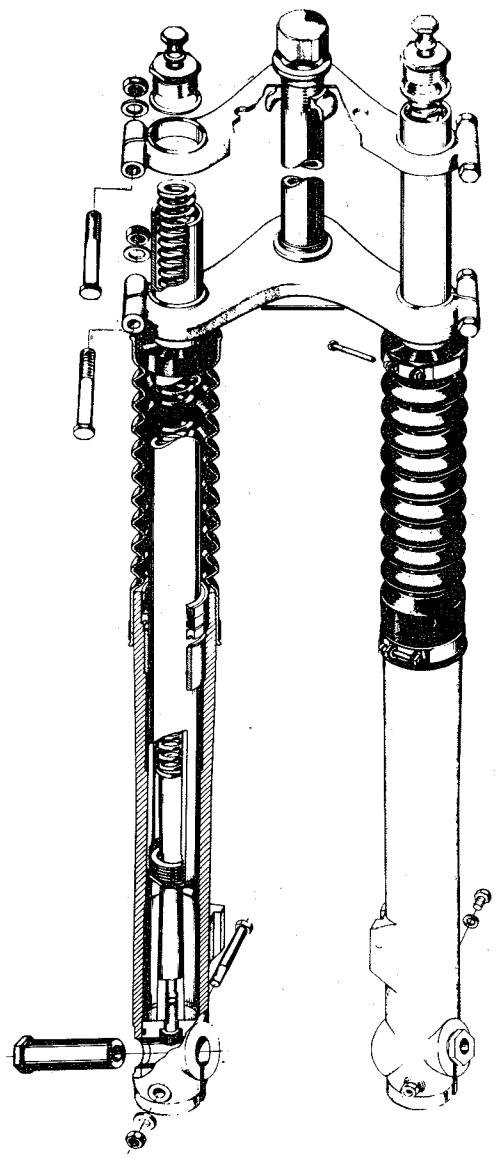
The rear shock absorbers are of the combined spring and hydraulic type. They do not require any maintenance, except for the rubber bushings, which are easily replaceable.

The spring tension of the shock absorbers can be adjusted to three different positions. If the shock absorber function is unsatisfactory, the complete shock absorber should be replaced.

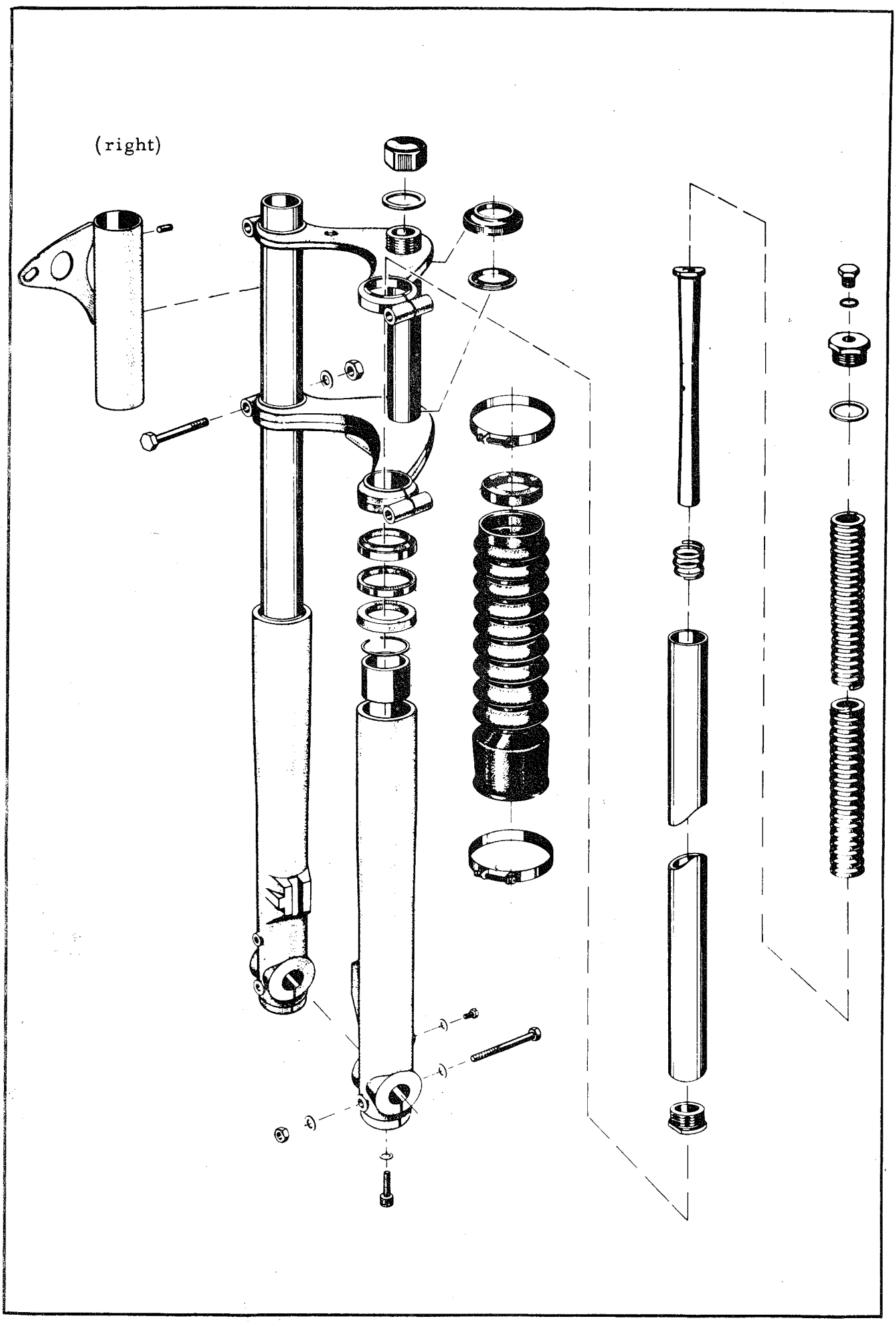
FRONT FORK

DATA

Inner bushing	35 x S8
Outer bushing	40 x k7, height 30 x h12
Stripper	STEFA A 35545 x 7 x 10
External diameter of fork tube	34 mm (1 11/32")
Oil seal	VN 35 x 25 (external diameter 45 mm = 1 25/32")
Intermediate oil seal	STEFA BB 354507
Distance between fork head and upper edge of fork leg	190 mm (7 1/2")



M 19205-1 0.45 10-68 Enbart för spridning utom Sverige Printed in Sweden


(right)

Gäller samtliga MC

Valid for all motorcycles

Gültig für alle Motorräder

Valable pour toutes les motocyclettes

Ventilhus i framgaffelben

På vissa levererade motorcyklar har kanten enligt nedanstående bild ej fasats. Detta måste göras vid eventuell isärtagning då annars tätringen kan skadas vid monteringen.

Valve housing in the front fork leg

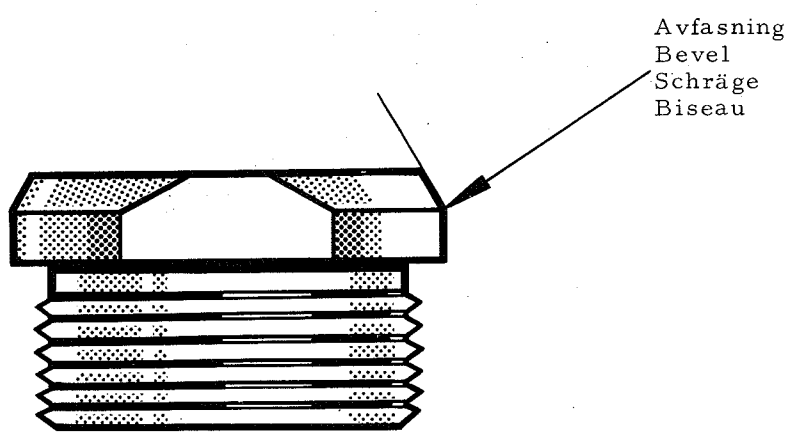
On certain delivered motocycles the edge according to the illustration below hasn´t been bevelled. This must be done at a possible dismantling, as otherwise the sealing ring can be damaged at the assembly.

Ventilgehäuse im Vordergabelbein

Auf gewissen gelieferten Motorrädern ist die Kante laut der untenstehenden Illustration nicht abgefast worden. Dies muss bei eventueller Demontage gemacht werden, da sonst der Dichtungsring bei der Montage beschädigt werden kann.

Boîtier de soupape dans la jambe de fourchette avant

Sur certaines motocyclettes livrées le bord selon l´illustration ci-dessous n´a pas été biseauté. Il faut le faire au démontage éventuel, puisqu´autrement la bague d´étanchéité peut être endommagé au montage.



Skärmstag, kompl.
Mudguard stay, complete
Kotflügelstrebe, kpl.
Tivant de garde-boue, complet

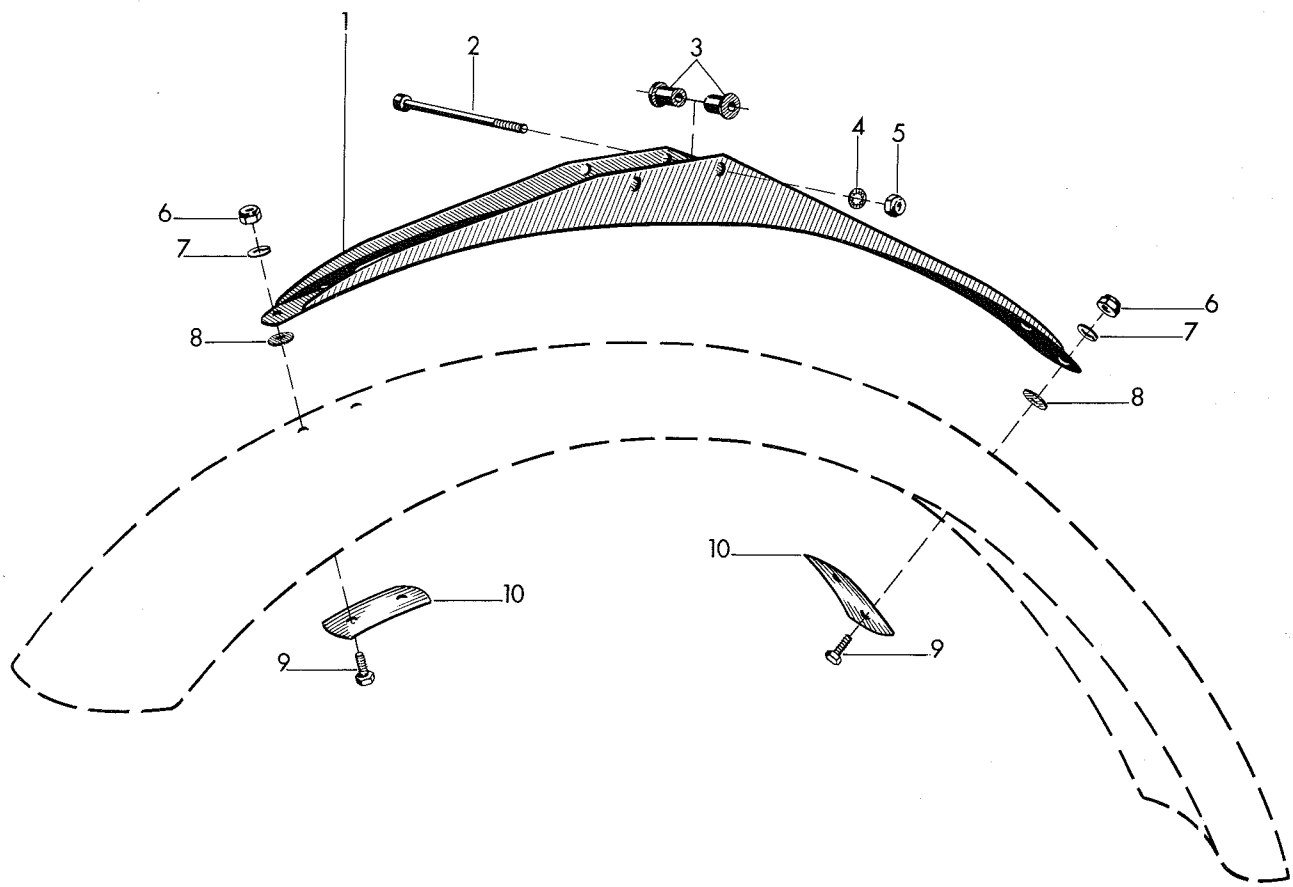


Bild nr Fig. no. Bild Nr. Fig. no.	Det. nummer Part number Teilnummer No de pièce	Antal Quantity Anzahl Nombre	Benämning Description Bezeichnung Nomenclature
1	15 18 016-01	1	Skärmstag, kompl. Mudguard stay, complete Kotflügelstrebe, kpl. Tirant de garde-boue, complet
2	20 24 385-12	2	Skruv med 6-kanthål Hexagonal bolt Sechskantschraube Boulon, six pans
3	15 18 017-01	4	Gummibussning Rubber bush Gummibuchse Bague caoutchouc
4	28 47 180-01	2	Låsbricka innertandad för M6 Locking washer, internal teeth Sicherungsscheibe, Innenverzahnung Rondelle d´arrêt, denture intérieure
5	25 80 142-01	2	Låsmutter M6 Lock nut Sicherungsmutter Contre-écrou
6	25 81 146-01	4	Låsmutter Lock nut Sicherungsmutter Contre-écrou
7	28 04 328-01	4	Fjäderbricka, FBB 6,1 Spring washer Federscheibe Rondelle élastique
8	15 18 121-01	4	Gummibricka Rubber washer Gummischeibe Rondelle caoutchouc
9	20 06 368-11	4	6-kantskruv M6 Hexagonal bolt Sechskantschraube Vis 6 pans
10	15 18 102-01	2	Skärmbricka Mudguard washer Kotflügelscheibe Rondelle de garde-boue

Styrstång MI

För att tillmötesgå marknadens önskemål, kommer vi att på MI-maskinerna att införa en annan styrstång.

Den nya styrstången är längre och har ett något uppflyttat stagrör.

Den nya styrstångens best. nr är 15 13 018 01.

New Handle Bar MI

To meet requests from various markets we will introduce a new handle bar for the MI models.

The new handle bar is longer (wider) and the cross-stay has been moved somewhat higher up.

Order no. for the new handle bar is 15 13 018 01.

Lenker MI

Auf Wunsch werden wir eine andere Lenkerausführung bei den MI-Maschinen liefern.

Der neue Lenker ist länger und hat eine etwas nach oben versetzte Rohrstrebe.

Die Bestellnummer des neuen Lenkers ist 15 13 018 01.

Barre de direction MI

Afin de répondre à la demande du marché nous allons monter une nouvelle barre de direction sur les machines MI. Cette nouvelle barre de direction sera plus longue que la barre actuelle et son étai tubulaire a une position un peu relevée.

La nouvelle barre de direction porte le numéro de référence pour la commande 15 13 018 01.

Däck MI

Fr. o. m. MI-maskinernas införande kommer vi att lagerföra ett bredare bakdäck 4,50" x 18,00".

Best. nr på däck 4,50" x 18,00" är 15 16 619 01.

Tires MI

As of the introduction we will market a wide rear tire dimensioned 4.50" x 18.00".

Order no. for tire 4.50" x 18.00" is 15 16 619 01.

Reifen MI

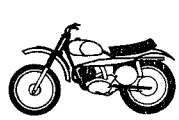
Ab der Einführung der MI-Maschinen werden wir einen breiteren Hinterradreifen liefern, und zwar 4,50" x 18,00".

Die Bestellnummer des Reifens 4,50" x 18,00" ist 15 16 619 01.

Pneus MI

A partir du montage des machines MI nous allons livrer des pneus arrière d´un modèle plus large, notamment de dimensions 4.50" x 18.00".

Le numéro de référence pour la commande des nouveaux pneus est 15 16 619 01.



Ram och bakgaffel MI

På MI-maskinerna införes ny ram med kraftigare infästning för bakgaffeln. Detta innebär att vi samtidigt ändrar nedanstående detaljer till resp. nr.

Ram kompl.	15 10 354-01
Bakgaffel kompl.	15 10 361-01
Fästbult bakgaffel	15 10 368-01
Elastisk bussning	15 10 367-01

Frame and rear fork MI

On the MI version of our machines a new frame with stronger suspension for the rear fork will be introduced. This means that the following details will get new reference numbers.

Frame complete	15 10 354-01
Rear fork	15 10 361-01
Attaching bolt, rear fork	15 10 368-01
Elastic bushing	15 10 367-01

Rahmen und Hinterradgabel MI

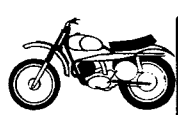
Für die MI-Maschinen wird ein neuer Rahmen mit stärkerer Befestigung für die Hinterradgabel eingeführt. In diesem Zusammenhang werden für die folgenden Teile die Best. Nummern geändert:

Rahmen, kpl.	15 10 354-01
Hinterradgabel, kpl.	15 10 361-01
Befestigungsbolzen, Hinterradgabel	15 10 368-01
Elastische Buchse	15 10 367-01

Cadre et fourche arrière MI

Les machines MI sont équipées d´un nouveau cadre, dont l´attache de la fourche arrière est plus forte. Les numéros des pièces de rechange respectives sont:

Cadre complet	No. 15 10 354-01
Fourche arrière	No. 15 10 361-01
Boulon de fixation, fourche arrière	No. 15 10 368-01
Coussinet élastique	No. 15 10 367-01



Felsökning framgaffel

Läckage vid tätningsringar	Byt tätningsringar, kontrollera ev. byt avstrykare
Gaffeln slår hårt tillbaka vid returrörelse	1. Returfjädern brusten 2. För lite olja
Gaffeln gör lätt genomslag	1. För lite olja 2. För tunn olja 3. Fjädrarna utmattade 4. Dämpspindeln sliten på ytterdiametern p.g.a. felmontering eller skevhet.

Fault tracing: front fork

Leakage at seals	Replace the seals, inspect and if necessary, replace oil wiper.
The fork bottoms heavily during the return travel	1. Return spring broken 2. Insufficient oil
Fork tends to bottom when compressed	1. Insufficient oil 2. Oil too thin 3. Springs are fatigued 4. Damping spindle worn on the outside due to incorrect fitting or distortion.

ASSEMBLING OF SPOKES IN THE REAR WHEEL

1. Find that place of the hub, where the cast-joint is in the right part of the nearest spoke attachment.
   See figure 1.

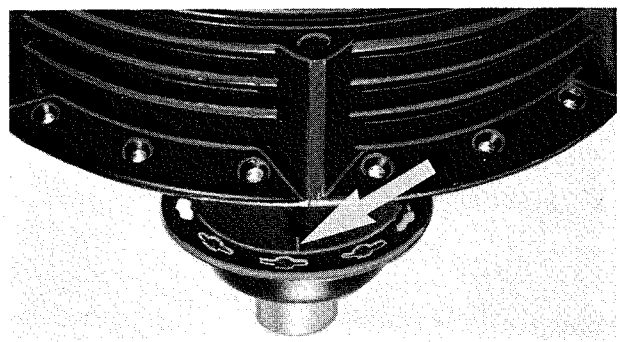


Fig. 1

2. Then follow the joint up to the hole for the sprocket which is situated just in front.
   See figure 2.

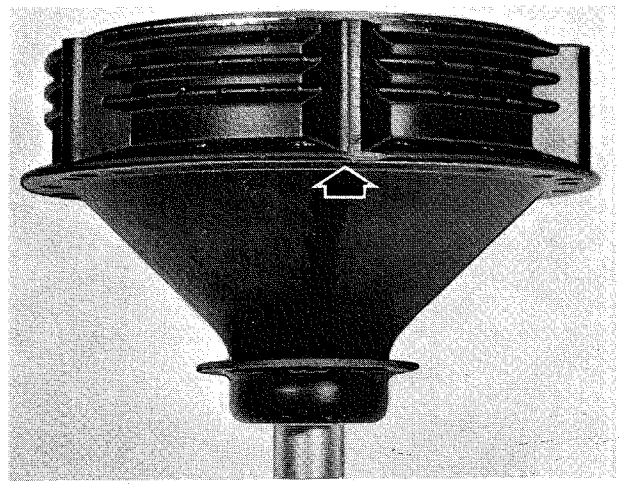


Fig. 2

3. Take two of the six short spokes and assemble them one on each side of the hole. The left one downwards and the right one upwards. See figure 3.

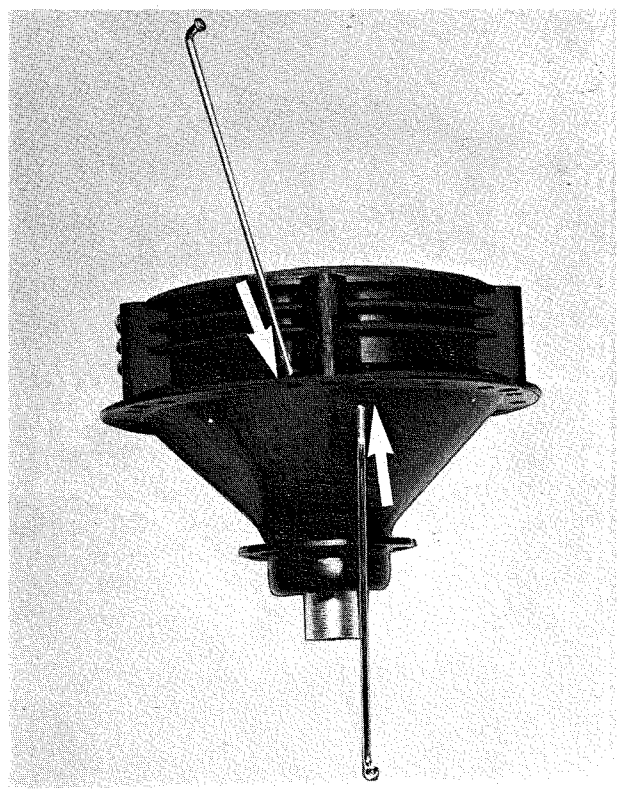


Fig. 3

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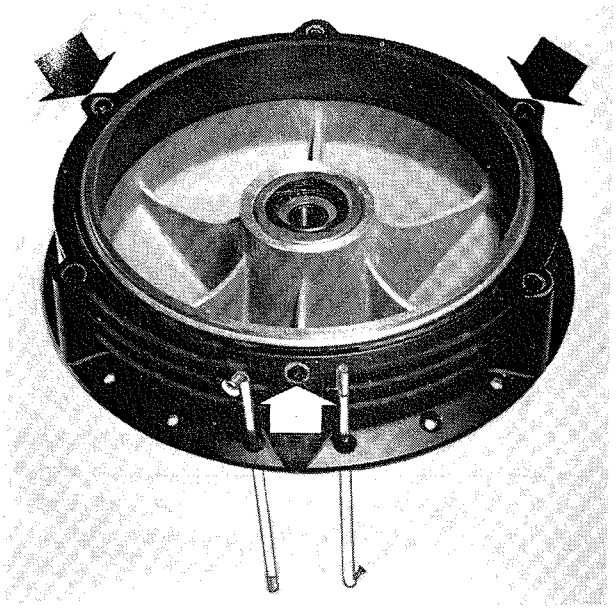


Fig. 4

4. Then assemble the remaining short spokes by every second bolt-hole in the same way. See figure 4.

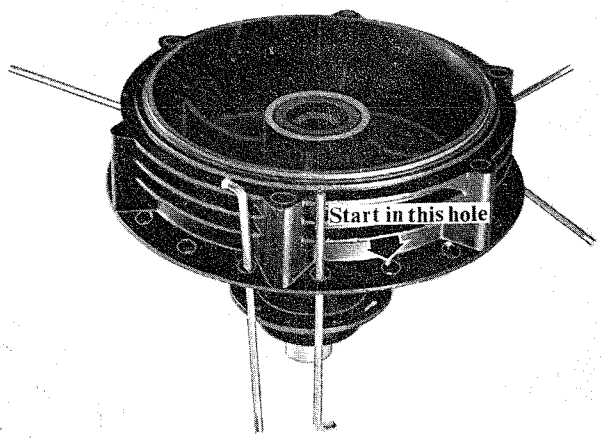
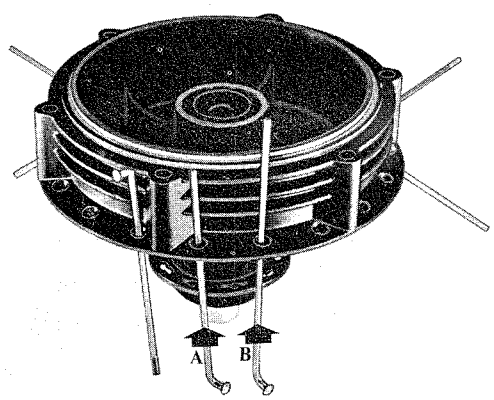


Fig. 5

5. Take 12 of the medium spokes. Start assembling them by a pair of short spokes. See figure 5.



A and B in the same direction

Fig. 6

6. Attach the first spoke in the same direction as the short one to the left is assembled. See figure 6.

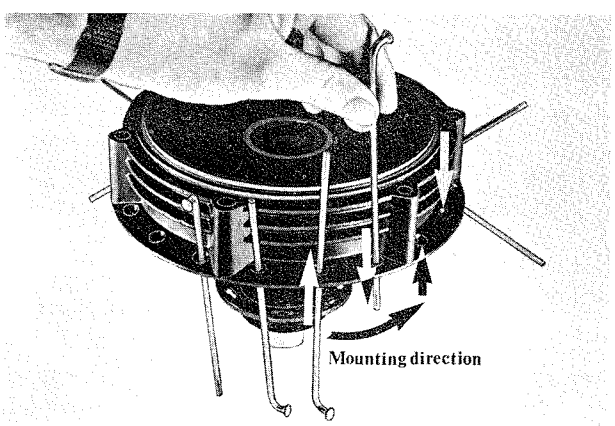


Fig. 7

7. Go to the right and assemble every second medium spoke upwards and every second one downwards in the remaining free holes. See figure 7.

8. To make the assembling of the wheel rim easier you should bend the spokes assembled from down with a hammer or similar. See figure 8.

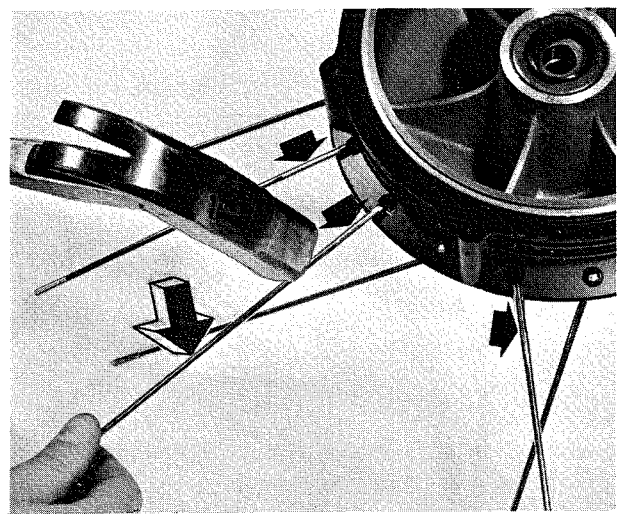


Fig. 8

9. Put the wheel rim over the hub in such a way that the holes in the rim with the greatest inclination angle is directed against the brake drum. See figure 9.

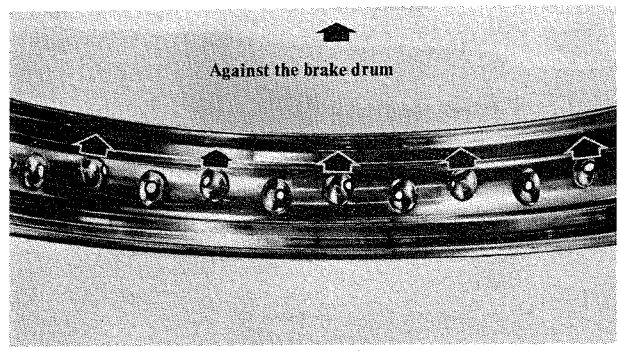


Fig. 9

10. Start to assemble the spokes which have been stuck upwards (the rivet inwards the hub) according to figure 10. Start with a hole in the rim with a big inclination angle. Then use every forth rim hole. Screw on the nipple a few turns.

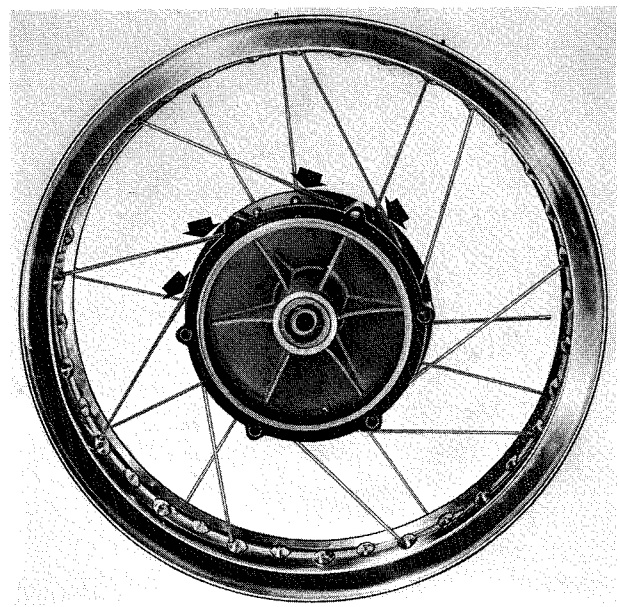


Fig. 10

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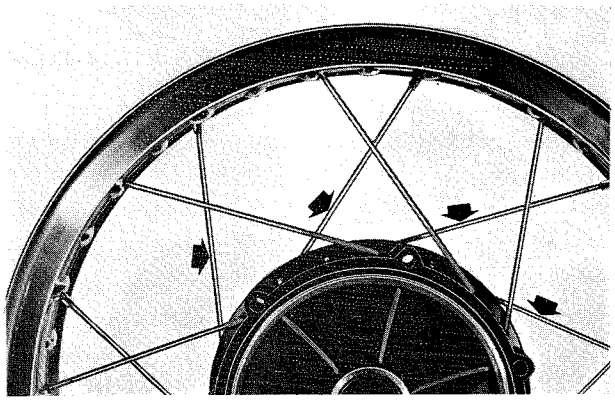


Fig. 11

11. Then assemble the spokes which have been stuck downwards (the rivet outwards). These are assembled in the opposite rotation direction so that every second hole in the rim is filled with spokes from the side of the brake backing plate on the hub. See figure 11.

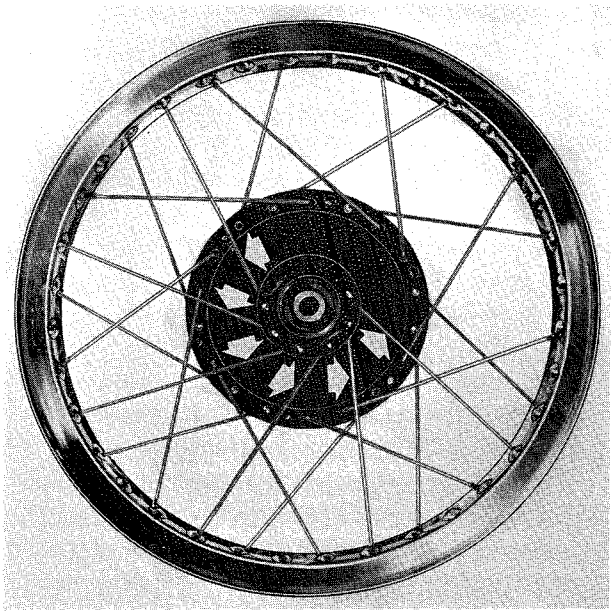


Fig. 12

12. Turn the wheel and assemble the long spokes. First assemble all with the rivet upwards. See figure 12.

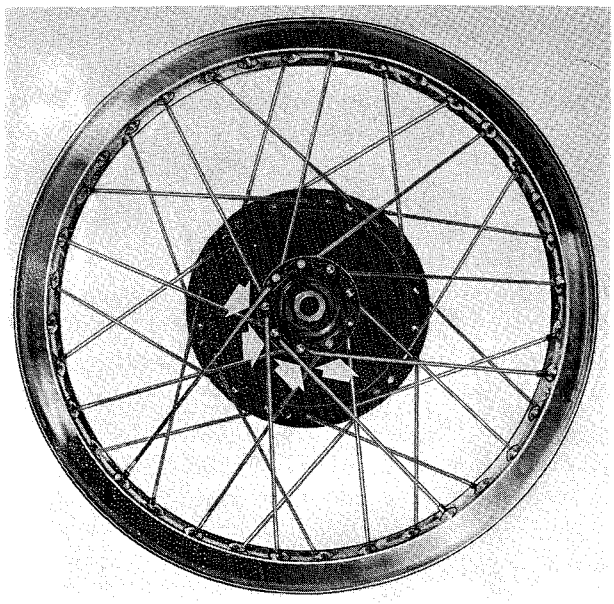


Fig. 13

13. Then mount the other half in the opposite rotation direction and with the rivet downwards. See figure 13.

Mutter, Bromshävarm - MC

För att få säkrare funktion har vi ersatt främre bromshävarmens axelmutter (25 08 318-11) med en självlåsande. Se fig. nedan.

Best. nr nya muttern: 25 80 153-01.

Nut, brake lever - MC

To improve reliability we have replaced the shaft nut (25 08 318-11) of the front brake lever with one that is self-locking. See figure below.

Part No. of the new nut: 25 80 153-01.

Mutter, Bremshebel - MC

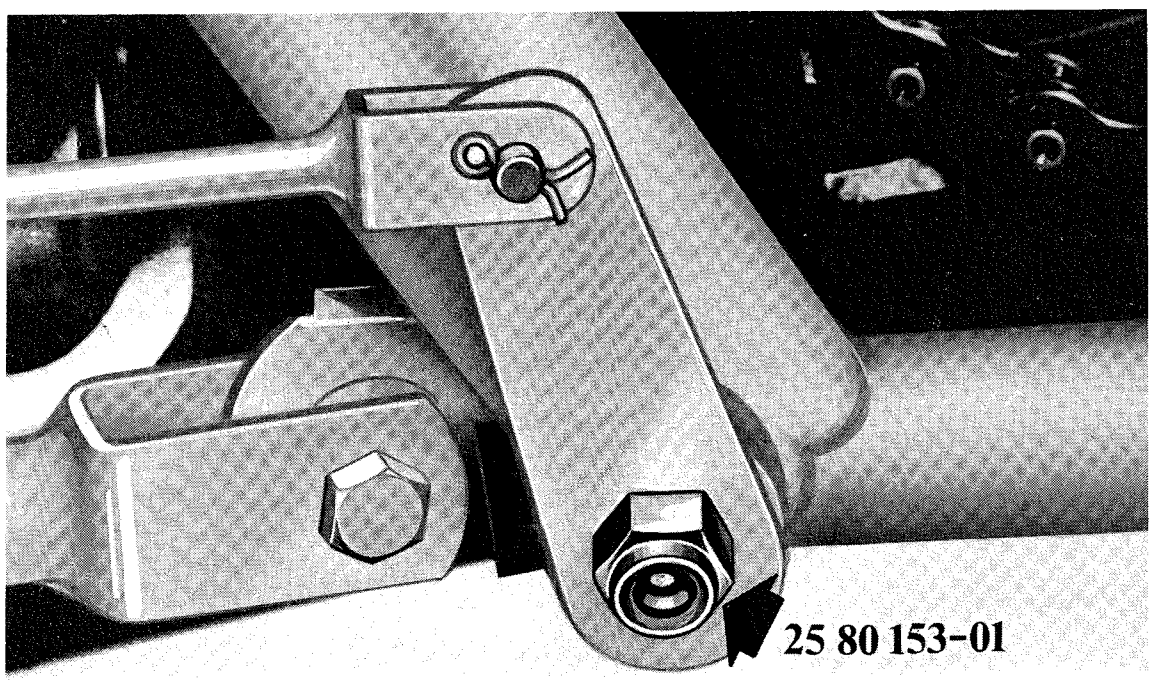
Um eine sichere Funktion zu erzielen haben wir die Achsmutter (25 08 318-11) des vorderen Bremshebels mit einer neuen selbstsichernden Mutter ersetzt. Siehe nachstehende Abbildung.

Bestellnummer der neuen Mutter: 25 80 153-01.

Ecrou, levier de frein - MC

Afin d´assurer un fonctionnement plus sûr de l´écrou d´axe du levier de frein avant (référence 25 08 318-11) nous l´avons remplacé par un écrou à serrage automatique, voir figure ci-dessous.

No de référence du nouvel écrou: 25 80 153-01.



Tank - MI

Vi kommer att införa en ny tank med bättre hållfasthetsegenskaper på våra Cross-maskiner.

I samband med att tanken bytes ersätter vi de två stöden (mellan tanken och övre ramröret) med ett, som placeras ca 10 cm från styrhuvudet.

	250 cc	360 cc	400 cc
Tankens best.nr	15 14 040-01	15 14 040-03	15 14 040-02
Stödets best.nr	15 14 041-01	15 14 041-01	15 14 041-01

Tank - MI

We will introduce a new tank, with better strenght, on our Motocross-mashines.

In connection with the change of the tank the two supports (between the tank and the upper frame tube) will be replaced by one support, which will be located approximately 4" (10 cm) from the steering head tube.

	250 cc	360 cc	400 cc
Part number, Tank	15 14 040-01	15 14 040-03	15 14 040-02
Part number, Support	15 14 041-01	15 14 041-01	15 14 041-01

Kraftstoffbehälter - MI

Für unsere wird ein neuer Kraftstoffbehälter mit grösserer Haltbarkeit eingeführt.

Damit im Zusammenhang werden die zwei Auflagen (zwischen Behälter und dem oberen Rahmenrohr) gegen eine Auflage, mit der Anbringung ca. 10 cm vom Führungsrohr ausgewechselt.

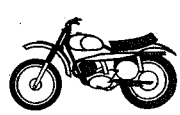
	250 cc	360 cc	400 cc
Best. Nr. Behälter	15 14 040-01	15 14 040-03	15 14 040-02
Best. Nr. Auflage	15 14 041-01	15 14 041-01	15 14 041-01

Réservoir - MI

Nous allons introduire un nouveau réservoir avec de meilleures qualités de résistance sur nos machines motocross.

En même temps que la réservoir est échangé, nous remplaçons les deux supports (entre le réservoir et le tuyau de cadre supérieur) avec un support, qui est placé environ 10 cm de la tête de commande.

	250 cc	360 cc	400 cc
No. de commande du réservoir	15 14 040-01	15 14 040-03	15 14 040-02
No. de commande du support	15 14 041-01	15 14 041-01	15 14 041-01



OVERHAUL OF FRONT FORKS, MH, SH, MI, SI

Dismantling of fork shanks with the front fork in the frame

1. Block up the machine.

3. Release the spring compression and remove the spring by taking off the top screw.
4. Remove the socket head bolt which retains the damping spindle at the bottom of the lower fork shank. Make sure that the bottom of the shank is held in the right position. by leaving one clamping bolt in its hole. (See fig. 1). Use a retaining key (part no. 15 19 122-01) to hold the damping spindle in position.
5. Remove the lower fork shank by pulling straight downwards.

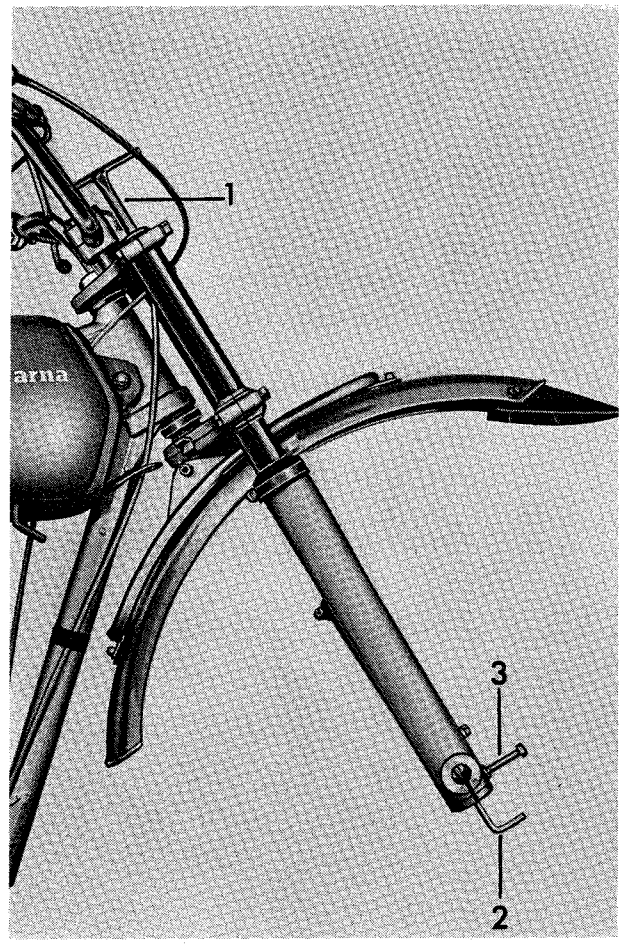


Fig. 1

1. Holder
2. Hexagon ring spanner nr 6
3. Clamping bolt

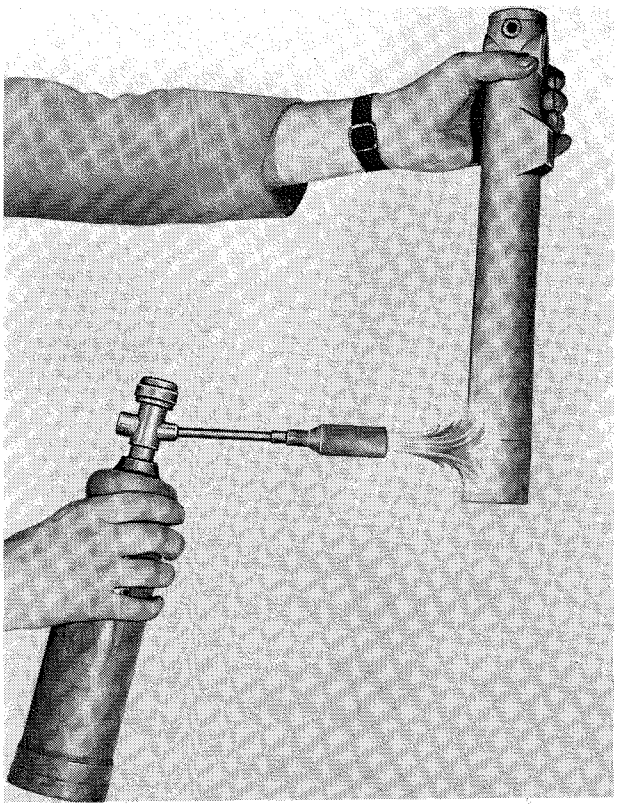


Fig. 2

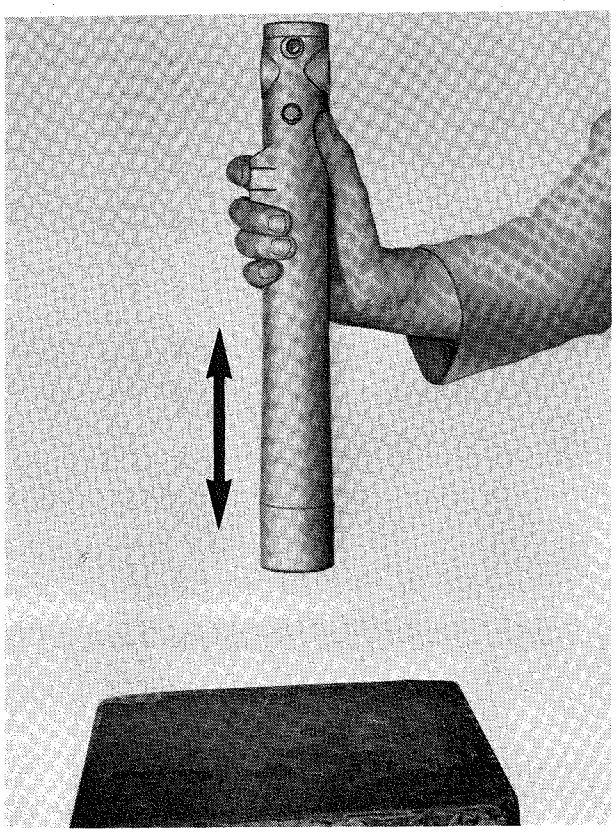


Fig. 3

Replacing the seal and bush

Remove the sealing ring, with the oil wiper, by means of an inside extractor tool. Fit a new sealing ring and also a new oil collector, if inspection shows this to b necessary.

To remove bush, first remove locking ring and then heat the fork shank gently, (see fig. 2) until the bush can be knocked out by tapping against a wooden bench or block (fig. 3). If the bush refuses to be dislodged, an inside extractor tool may be used.

Replacing the valve body

The valve body is retained in the upper fork shank by means of locking fluid. If trouble is encountered when dismantling, heat the joint to about 150°C. When reassembling, remember to apply locking fluid to the thread of the new valve body (see fig. 4).

WARNING: If the valve body is not securely retained the lower shank could drop in the event of a bounce.

Reassemble in reverse order (See fig. 5).

Dismantling of damping spindle with return spring

Once the valve body has been removed, the damping spindle will drop freely without further dismantling (See fig. 5).

CAUTION: Do not dismantle the valve body without good reason.

The damping spindle can be removed without dismantling the valve body if the entire fork shank assembly is removed from the machine.

Proceed as follows:

1. Remove front wheel
2. Unscrew the top bolt and remove the upper and lower clamping bolts (See Fig. 6).
3. Loosen the locking screws on the lamp holder (Enduro) and remove the fork shank.

Overhaul the fork shank as instructed previously. The damping spindle can be extracted by slackening the bottom screw and turning the shank upside down.

Reassemble in the reverse order.

Ensure that the outer diameter of damping spindle has not worn. To avoid eccentric assembly of the spindle, proceed as follows when reassembling the upper and lower fork shanks:

Fig. 4

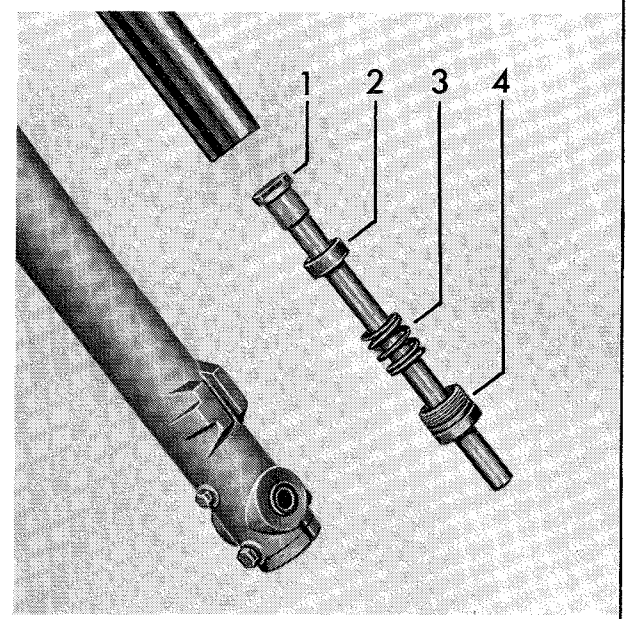


Fig. 5

1. Damping spindle
2. Sealing ring
3. Return spring
4. Valve body

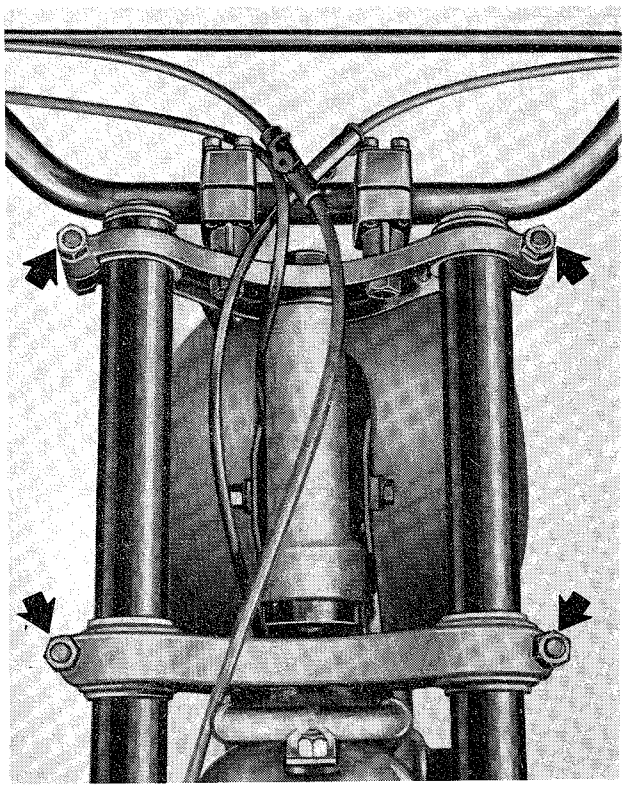


Fig. 6

1. Insert the damping spindle and return spring in the upper fork shank and fit the retaining key in the recess in the spindle.
2. Assemble the shanks and fit socket head bolt but do not tighten.
3. Press the shanks together to the maximum load position and secure socket head bolt. Make sure that the clamping bolt is in its hole. See fig. 1.
4. Finally fit spring and top bolt.

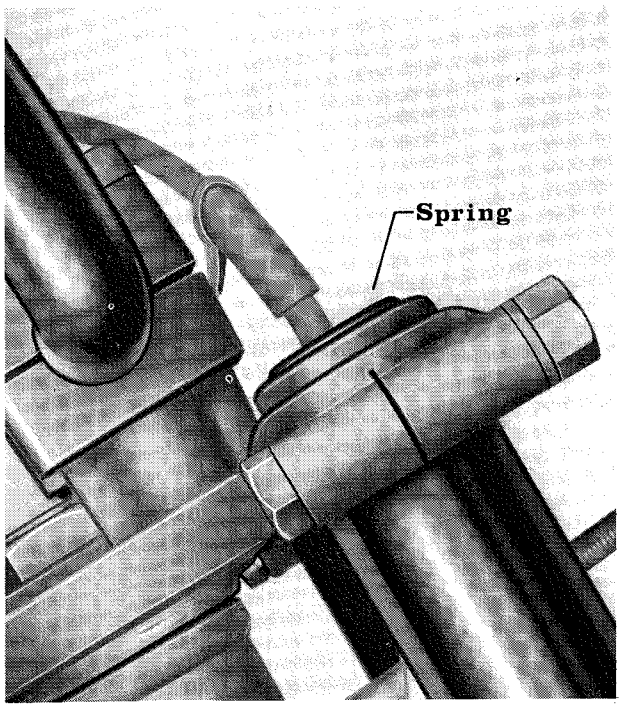


Fig. 7

Checking for spring fatigue

The springs in the front fork should be under a certain amount of compression when fork is not under load. However, springs are subject to fatigue and will gradually become shorter. If spring does not project above the upper edge of the lower fork shank when the fork is not under load, the spring is not fit for further service. See fig. 7. Never renew one spring alone - renew both together.

NOTE: The upper fork shank is symmetrical and can therefore be fitted either way up. This is useful if shank has been damaged in neighbourhood of seal.

Adjustment of front fork parallelism

In a crash, the fork shanks may be disorted in relation to one another as shown in fig. 8. This can be corrected by slackening the 4 clamping bolts (see fig. 6) and adjusting the forks until the shanks are parallel again (See fig. 9).

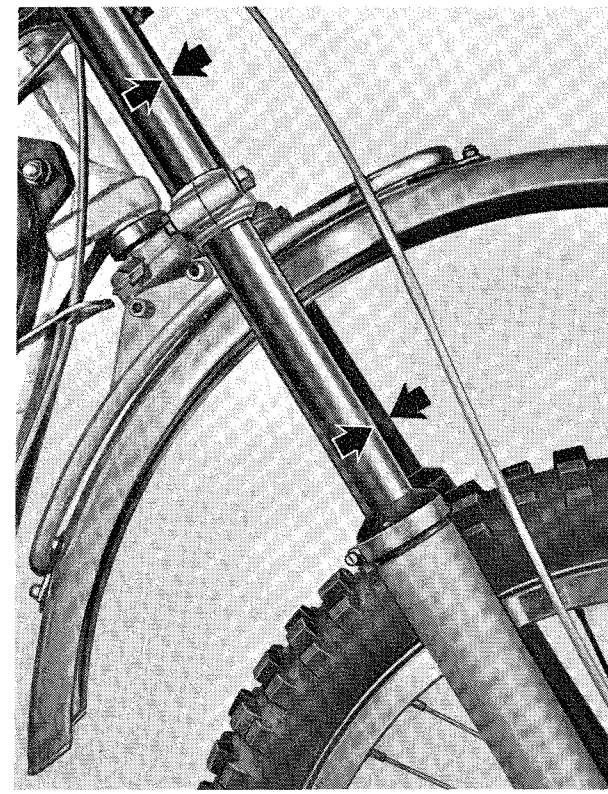
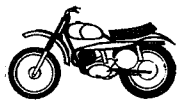


Fig. 8

Fig. 9



Fjäder - Parkeringsstöd

Vi inför en ny fjäder för parkeringsstödet. Den nya fjädern har en större öppning för lättare montering.

V.g. korrigera i reservdelskatalogen.

12 24 309-01 skall vara 15 10 442-01.

Spring for parking rest

We have introduced a new spring for the parking rest. The new spring has a wider opening to facilitate fitting.

Please amend the Spare Parts Catalogue as follows:

12 24 309-01 to be changed to 15 10 442-01.

Feder - Kippständer

Wir führen eine neue Feder für den Kippständer ein. Die neue Feder hat eine grössere Öffnung, um eine leichtere Anbringung zu ermöglichen.

Wir bitten um eine entsprechende Änderung im Ersatzteilkatalog.

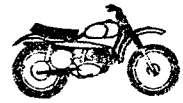
12 24 309-01 ist zu ändern auf 15 10 442-01.

Ressort - Béquille de parcage

Nous avons monté un nouveau ressort à la béquille de parcage. Ce nouveau ressort, ayant une plus grande ouverture, est plus facile à monter que l´ancien.

Prière de faire la correction correspondante dans le Catalogue de Pièces de Rechange.

15 10 442-01 au lieu de 12 24 309-01.



Serviceverktyg

Som komplettering till den nuvarande verktygssatsen för våra MC, kommer vi fr.o.m. 23.3.1970 att saluföra nedanstående serviceverktyg:

6-kanthålnyckel 4 best.nr. 95 02 671-06.
6-kanthålnyckel 5 best.nr. 95 02 671-09.

Service-tools

As a supplement to the present tool kit for our motorcycles, we will offer for sale the service tools below from 23.3.1970 onwards:

Hexagon ring spanner 4 order no. 95 02 671-06.
Hexagon ring spanner 5 order no. 95 02 671-09.

Bedienungswerkzeuge

Zur Ergänzung des gegenwärtigen Werkzeugsatzes für unsere Motorräder, werden wir ab 23.3.1970 die untenstehenden Bedienungswerkzeuge verkaufen:

Sechskantschlüssel 4 Best. Nr. 95 02 671-06.
Sechskantschlüssel 5 Best. Nr. 95 02 671-09.

Outils de service

Pour compléter la trousse d´outils présente pour nos motocyclettes, nous allons mettre en vente les outils de service ci-dessous à partir du 23.3.1970:

Clé pour vis 6 pans 4, commande no. 95 02 671-06.

Clé pour vis 6 pans 5, commande no. 95 02 671-09.

SERVICE TOOLS from MJ and SJ

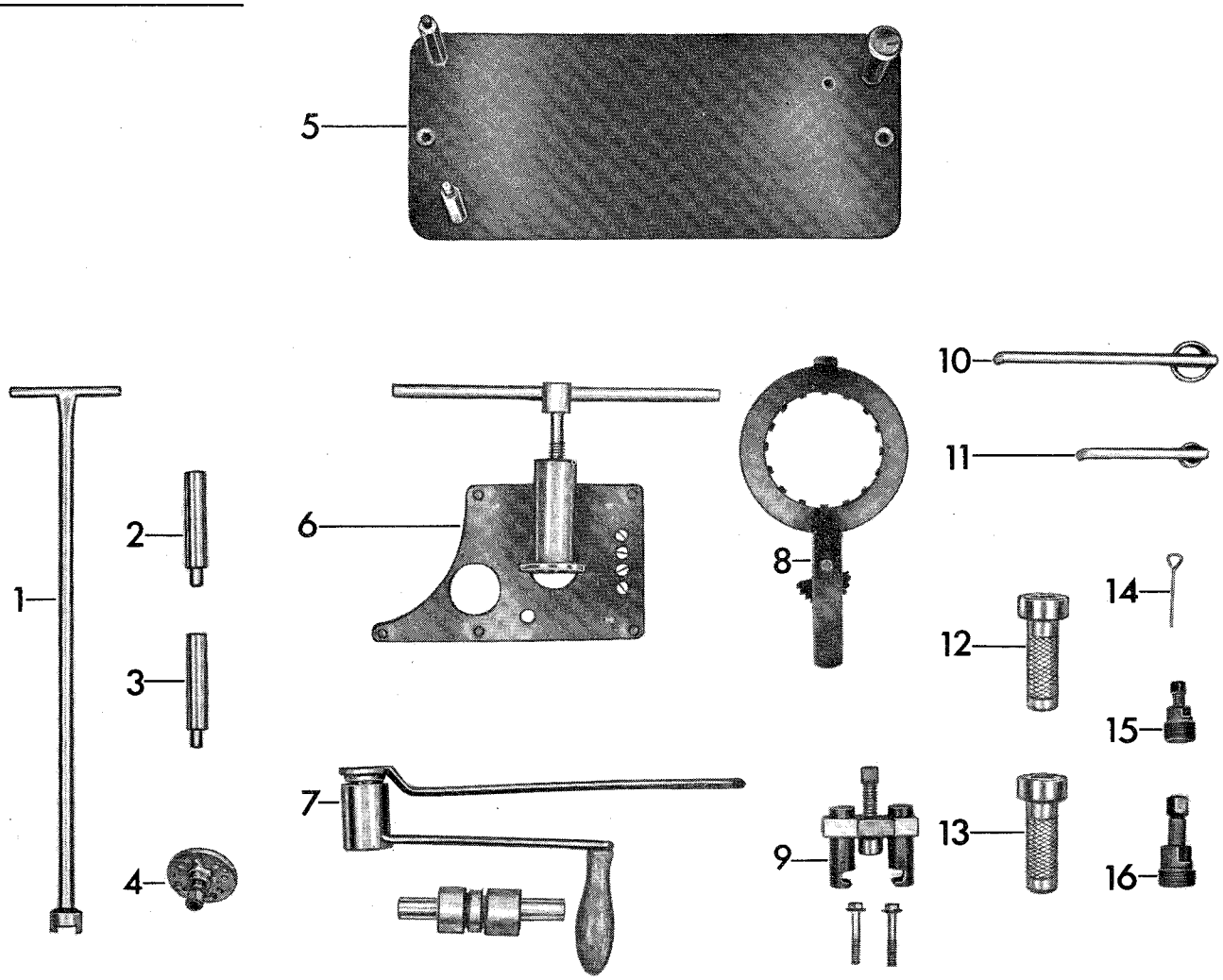


Fig. No.	Part No.	Description	Fig. No.	Part No.	Description
x 1	15 19 122-01	Holding spanner for damping spindle	9	15 19 275-01	Puller for sprocket and drive gear
2	15 19 249-01	Drift for piston pin 250 cc	10	15 19 271-01	Holding tool for flywheel
3	15 19 250-01	Drift for piston pin 400 cc, 450 cc	11	15 19 278-01	Holding tool for chain sprocket
4	15 19 268-01	Puller for clutch	x12	15 19 178-01	Drift for front fork ϕ = 40 mm
5	15 19 243-01	Mounting stand	x13	15 19 179-01	Drift for front fork ϕ = 44 mm
6	15 19 257-01	Removing tool for crankcase	14	15 19 322-01	Timing tools for Moto-Plat
7	15 19 251-01	Fitting tool for crankcase	15	15 19 276-01	Puller for flywheel Moto-Plat
8	15 19 261-01	Holder for clutch	x16	15 19 177-01	Puller for flywheel Femsa

x = Previously used tools

To be inserted under tab. nr Register Index **7**

Serviceverktyg - MC

För att få ett mera ändamålsenligt utförande på vårt monteringsverktyg nr 15 19 125-01 kommer vi att öka längden på handtaget på trapetsskruven.

Verktyg av det äldre utförandet kan ändras enl. följande beskrivning:

1. Tillverka ett handtag med mått enl. fig. 1. Detta handtag kan även beställas direkt av oss med best.nr. 15 19 288-01.
2. Kapa av fästet enl. fig. 2.
3. Svetsa fast handtaget på ansatsplattan enl. fig. 3.

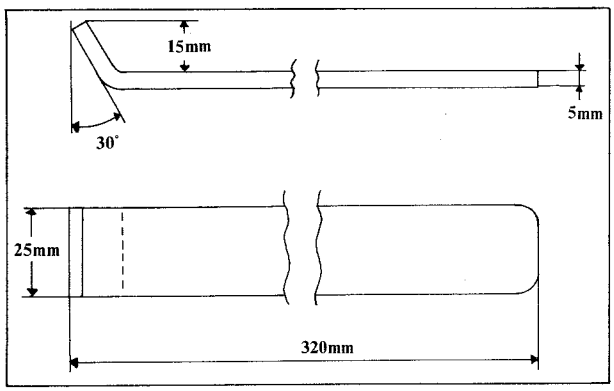


Fig. 1

Service tool - MC

To make the design of our assembly tool No. 15 19 125-01 more functional, we will increase the length of the handle on the Acme-thread screw.

Tools of the earlier design can be altered according to the following description:

1. Make a handle with dimensions as per Fig. 1. This handle may also be ordered direct from us under Part No. 15 19 288-01.
2. Cut off the bracket according to fig. 2.
3. Weld the handle onto the shoulder plate as per Fig. 3.

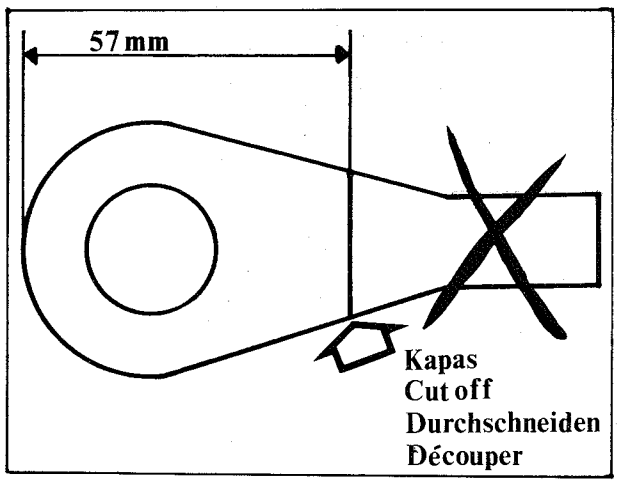


Fig. 2

To be inserted under tab. nr Register Index **7**

Service-Werkzeug - MC

Um unser Einbauwerkzeug Nr. 15 19 125-01 noch praktischer zu machen, haben wir den Handgriff der Trapezschraube verlängert.

Werkzeuge älterer Ausführung können wie folgt geändert werden:

1. Einen Handgriff mit den Abmessungen lt. Abb. 1. anfertigen. Dieser Handgriff kann aber auch direkt von uns bestellt. Bestellnummer: 15 19 288-01.
2. Die Befestigung gemäss Abb. 2 durchschneiden.
3. Den Handgriff an der Ansatzplatte festschweissen. Siehe Abb. 3.

Outillage de service - MC

Dans le but d´en rendre l´emploi plus universel, nous allons modifier l´outil de montage de référence 15 19 125-01 en en allongeant la poignée à la vis trapézoïdale.

L´outil d´ancien modèle peut être modifié de la façon suivante:

1. Fabriquer une poignée en se référant aux cotes indiquées dans la figure 1. Cette poignée peut être commandée directement chez nous sous la référence 15 19 288-01.
2. Découper l´étrier selon fig. 2.
3. Souder cette poignée à la plaque de butée comme le montre la figure 3.

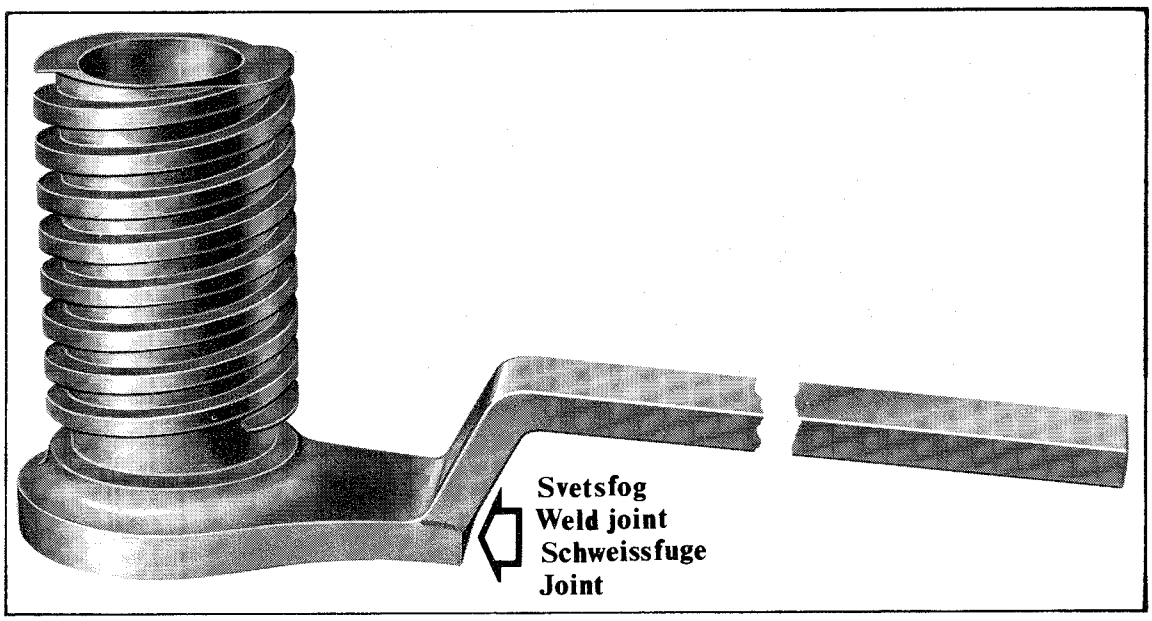


Fig. 3

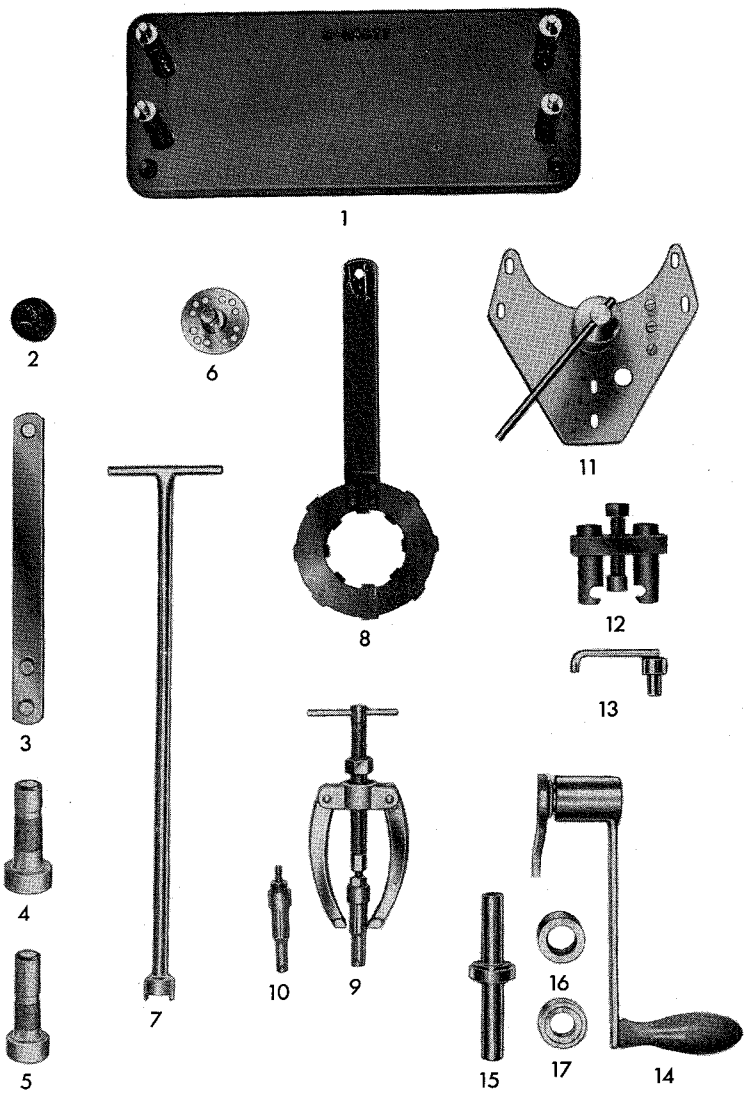


Fig. No.	Part. No.	Description	Fig. No.	Part. No.	Description
1	12 24 877-01	Mounting stand	9	15 19 105-01	Ball bearing puller
2	12 24 878-01	Puller for flywheel ø 143	10	15 19 107-01	Attachment for 12-14.5 mm holes
		" ø 116			
		" FEMSA	11	15 15 109-01	Removing tool for crankcase
3		Counterhold for flywheel	12	12 24 816-01	Puller for chain sprocket
	15 19 183-01	"			
4	15 19 178-01	Drift	13	15 19 119-01	Holding spanner for chain sprocket
5	15 19 179-01	"			
6	12 24 807-01	Puller for clutch ring gear	14-17	15 19 125-01	Fitting handle for crankcase
7	15 19 122-01	Holding spanner for damping spindel			
8	12 24 806-01	Holder for clutch			

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Speedometer combinations

Speedometer kit No.	Incl. parts No.	Motocross			Sportsman		Note
		250	360	400	250	360	
15 17 174-01	Speedometer 15 17 001-02	x	x	x			Rear
	Cable 15 17 171-01	x	x	x			wheel
15 17 086-02	Speedometer 15 17 087-02				x		Earlier models Front
	Cable 15 17 088-01				x		wheel
15 17 134-01	Speedometer 15 17 135-01	19"			x		Front
	Cable 15 17 088-01				x		wheel "trip"
15 17 158-01	Speedometer 15 17 001-02	21"				x	Rear
	Cable 15 17 171-01					x	wheel "trip"

Ombyggnadssats för överväxel
Set of parts for overgear
Umbausatz für Schnellgang
Jeu d´accessoires pour sur multiplicateur

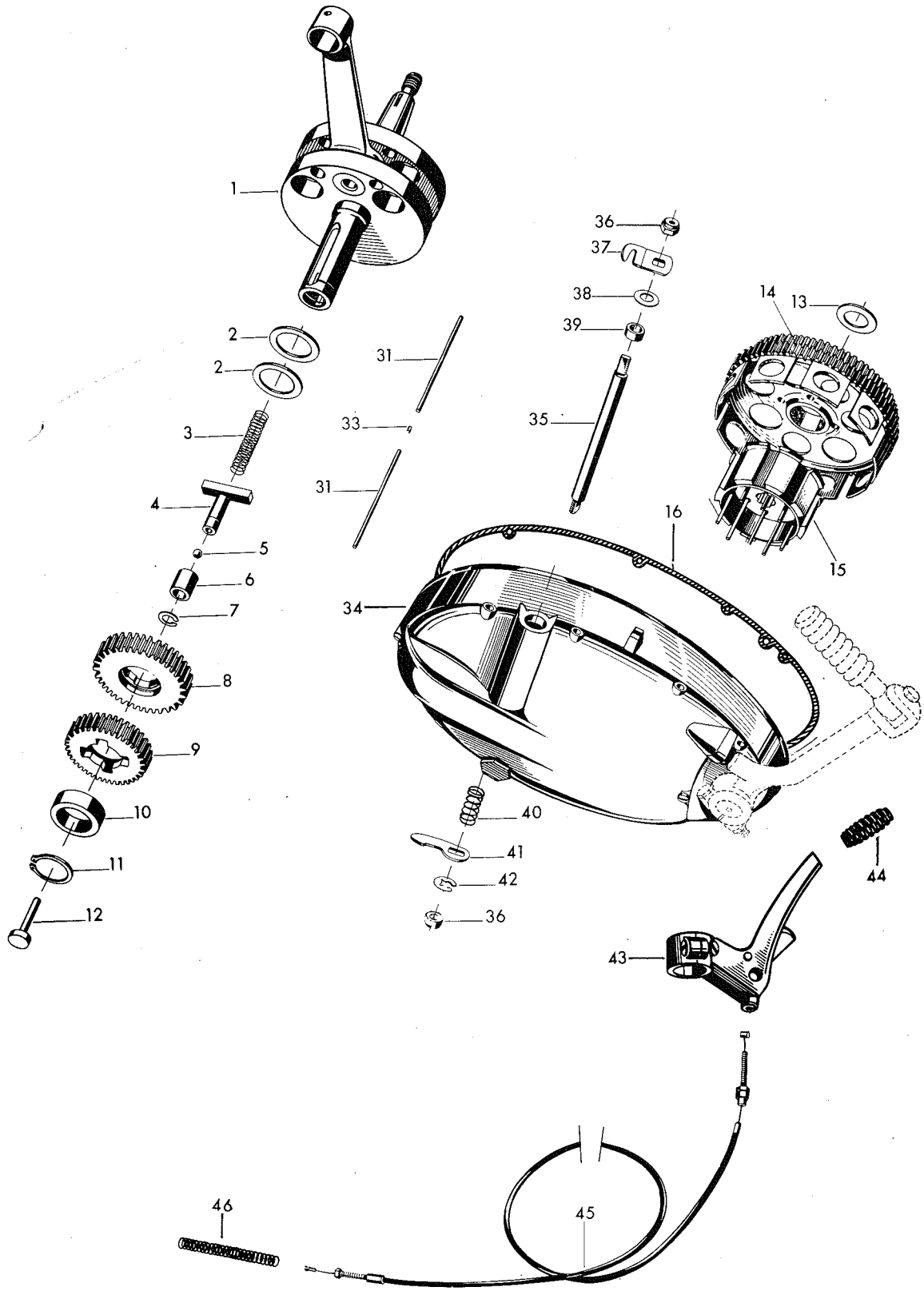


Bild nr Fig. no. Bild Nr. Fig. no.	Det. nummer Part number Teilnummer No. de pièce	Antal Quantity Anzahl Nombre	Benämning Description Bezeichnung Nomenclature
1-46	16 10 621-01		Ombyggnadssats för överväxel (250 cc) Set of parts for overgear (250 cc) Umbausatz für Schnellgang (250 cc) Jeu d´accessoires pour surmultiplicateur (250 cc)
1-46	16 10 621-02		Ombyggnadssats för överväxel (360 cc) Set of parts for overgear (360 cc) Umbausatz für Schnellgang (360 cc) Jeu d´accessoires pour surmultiplicateur (360 cc)
1-46	16 10 621-03		Ombyggnadssats för överväxel (400 cc) Set of parts for overgear (400 cc) Umbausatz für Schnellgang (400 cc) Jeu d´accessoires pour surmultiplicateur (400 cc)
1	16 10 538-01	1	Vevparti, kpl., utan kolv (250 cc) Crank shaft, complete, without piston (250 cc) Kurbelwelle, kpl., ohne Kolben (250 cc) Embiellage, complet, sans piston (250 cc)
1	16 10 463-01	1	Vevparti, kpl., utan kolv (360 cc) Crank shaft, complete, without piston (360 cc) Kurbelwelle, kpl., ohne Kolben (360 cc) Embiellage, complet, sans piston (360 cc)
1	16 10 612-01	1	Vevparti, kpl., utan kolv (400 cc) Crank shaft, complete, without piston (400 cc) Kurbelwelle, kpl., ohne Kolben (400 cc) Embiellage, complet, sans piston (400 cc)
2	16 11 979-01 16 11 979-02 16 11 979-03	2	Distansring Spacing ring Abstandring Douille d´écartement
3	16 11 983-01	1	Fjäder Spring Feder Ressort
4	16 11 984-01	1	Dragkil Pull wedge Schiebekeil Clavette de traction
5	29 30 220-01	1	Stålkula 3/16" Stell ball Stahlkugel Bille d´acier
6	16 11 985-01	1	Styrhylsa Guide bushing Führungsbuchse Douille de guidage
7	16 11 994-01	1	Låsring Lock ring Sicherungsring Bague de blocage

Bild nr Fig. no. Bild Nr. Fig. no.	Det. nummer Part number Teilnummer No. de pièce	Antal Quantity Anzahl Nombre	Benämning Description Bezeichnung Nomenclature
8	16 11 980-01	1	Kugghjul, 33 kuggar Gear wheel, 33 teeth Zahnrad, 33 Zähne Pignon, 33 dents
9	16 11 981-01	1	Kugghjul, 27 kuggar Gear wheel, 33 teeth Zahnrad, 33 Zähne Pignon, 33 dents
10	16 11 982-01	1	Distansring Spacing ring Abstandring Douille d´écartement
11	28 20 025-01	1	Spårring Circlip Schlitzring Circlips
12	16 11 986-01	1	Tryckstång Push rod Drukstange Tige de commande
13	12 25 373-01	1	Stödbricka, huvudaxel Support washer, mainshaft Stützscheibe, Hauptwele Rondelle d´appui, arbre primaire
14	16 11 987-01	1	Kopplingskrans Clutch ring Kupplungsring Couronne d´embrayage
15	16 11 989-01	1	Kopplingscentrum, kompl. med pinnskruvar Clutch hub, complete with studs Kupplungsnabe, kpl. mit stiftschrauben Moyeu d´embrayage, complet avec goujons
16		1	Packning Gasket Dichtung Joint
31	16 11 992-01	2	Tryckstång Push rod Druckstange Tige de commande
33	12 25 241-01	1	Rulle SKF Ø 5 x 5 Roller Rolle Galet

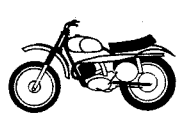
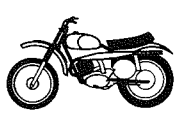


Bild nr Fig. no. Bild Nr. Fig. no.	Det. nummer Part number Teilnummer No. de pièce	Antal Quantity Anzahl Nombre	Benämning Description Bezeichnung Nomenclature
34	16 10 456-01	1	Vevhuskåpa Crankcase cover Kurbelgehäusedeckel Carter-cylindre
35	16 12 808-01	1	Axel Axle Achse Axe
36	25 80 153-01	2	Mutter Nut Mutter Écrou
37	16 12 809-01	1	Hävarm Lever Hebelarm Levier
38	28 16 251-01	1	Bricka Washer Scheibe Rondelle
39	12 25 476-01	1	Tätring Sealing ring Dichtungsring Bague d´étanchéité
40	16 12 812-01	1	Fjäder Spring Feder Ressort
41	16 12 811-01	1	Manöverarm Operating arm Bedienungsarm Bras de commande
42	28 47 190-01	1	Bricka Washer Scheibe Rondelle
43	15 15 301-01	1	Handtag, kompl. Handle, complete Handgriff, kpl. Poignée, complète
44	12 25 426-01	1	Pedalgummi Pedal rubber Pedalgummi Caoutchouc de pédale
45	15 15 302-01	1	Wire, kompl. Cable Seilzug, kpl. Câble, complète

Bild nr Fig. no. Bild Nr. Fig. no.	Det. nummer Part number Teilnummer No. de pièce	Antal Quantity Anzahl Nombre	Benämning Description Bezeichnung Nomenclature
46	15 15 304-01		Fjäder Spring Feder Ressort



Tools for Husqvarna Moto-cross 250 cc and 400 cc

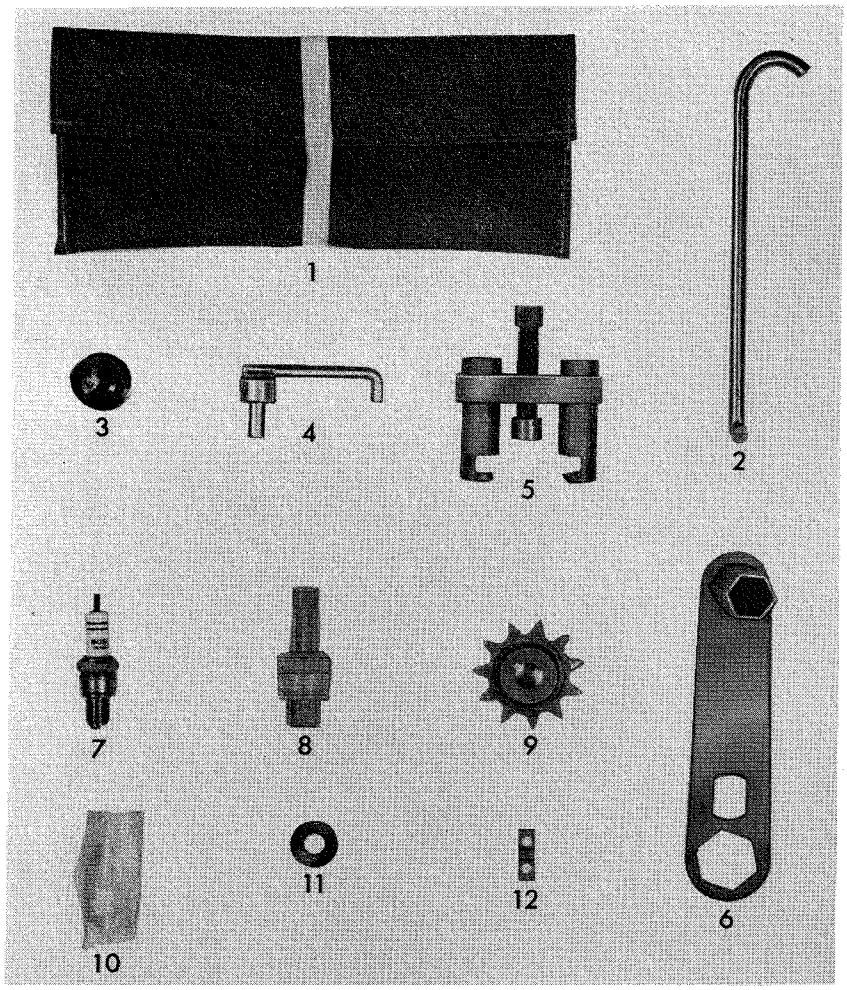


Fig. No.	Order No.	250 cc	400 cc	Price Skr.	Denomination
1	50 11 922-01	1	1	3:-	Tool-case
2	15 19 183-01	1	1	5:-	Counterhold for magneto
3	15 19 180-01	1	-	15:-	Puller for magneto
	15 19 177-01	-	1	15:-	" " "
4	15 19 119-01	1	1	14:-	Holding tool
5	12 24 816-01	1	1	28:-	Puller for chain sprocket
6	15 19 081-01	1	1	12:-	Combination key
7	12 27 233-01	1	1	4:-	Spark plug Bosch W 260 T2
8	50 11 953-01	1	1	1:-	Holder for spark plug
9	16 12 976-01	1	-	20:-	Chain sprocket 11 teeth
	16 12 994-01	-	1	20:-	" " 11 " "
	16 12 976-03	1	-	20:-	" " 13 "
	16 12 994-03	-	1	20:-	" " 13 "
10	59 13 000-01	1	1	0:25	Plastic cover
11	12 25 396-01	3	-	0:50	Locking washer
12	16 11 993-01	4	4	0:30	" "
1-12	15 19 184-01	1	-	120:-	Tool and accessories, compl.
	15 19 184-02	-	1	119:-	" " " "

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