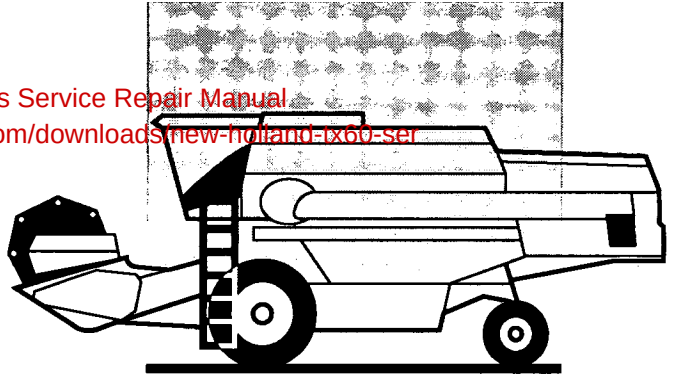


NEW HOLLAND TX60 Series REPAIR MANUAL

NEW HOLLAND
SERVICE

Print No. 84019441

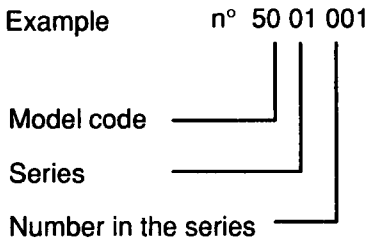
CONTENTS

INTRODUCTION

EXPLANATION OF MACHINE AND HEADER SERIAL NUMBERS

Machine serial number

PRODUCT IDENTIFICATION

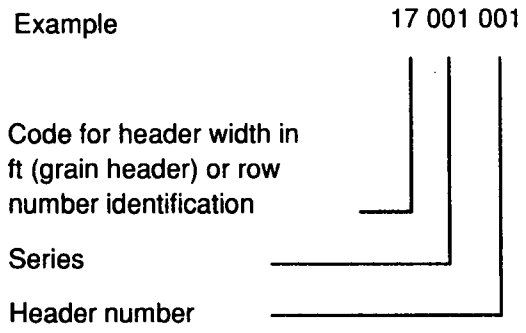


Explanation of model code

Type 48 = TX62
49 = TX64
66 = TX65
50 = TX66
51 = TX68

Header number

PRODUCT IDENTIFICATION



AVAILABLE HEADERS

12: 12 ft width grain header
13: 13 ft width grain header
15: 15 ft width grain header
17: 17 ft width grain header
20: 20 ft width grain header
24: 24 ft width grain header
56: 5-row maize header
57: 7-row maize header

NOTES FOR SERVICE PARTS CATALOGUE CONSULTING

NOTES FOR CATALOGUE CONSULTING

UPDATING ONLY MICROFICHE

MODIF.	ITEM	PART NR.	NT	Q.	DESCRIPTION	DENOMINAZIONE	DESIGNATION	L.C.
	1	84007894		1	SPACER	DISTANZIALE	ENTRETOISE	075D
C0202	2	80380429		1	GREASE ZERK	INGRASSATORE	GRAISSEUR	060I
	3	84000265		1	BEARING	CUSCINETTO	ROULEMENT	341C
	4	80100020		4	NUT, M16	DADO	ECROU	010D
	5	80140048		4	LOCKWASHER, 16MM	ROSETTA DI SICUREZZA	RONDELLE DE SECURITE	132R
	6	80120089		4	BOLT, M16 x 40	BULLONE	BOULON	140B
	7	80353308		2	NUT, M6	DADO	ECROU	010D
	8	80140015		2	WASHER, 6MM	ROSETTA PIANA	RONDELLE	131R
	9	84007920		1	CAM (10)	CAMMA	CAME	040C
	10	80062312	A	1	SCREW, M10 x 25	VITE	VIS	040V

NOTE: A = FOR FRANCE ONLY

C0202: 2502001 2502999

FOR TX66 ONLY

6.4

March '94

4

KNOTTERS
ANNODATORI
NOUEURS
KNUPFER
ANUDADORES

TX66-TX68

84006012 - 84006758

1 **ITEM** - **Reference** - Code of **Part Number.**

2 **PART NR.** - **Part Number.**

3 **NT** - **Note** - relating to the Part Number. There is a key to symbols and abbreviations at the bottom of the text page.

4 Q. - Total **Quantity** of the Part referred to in the page.
The quantity can be replaced by the following indications:
M = supplied in metres. **AR** = quantity as requested.

5 **MODIF.** - **Modification.**
C 0202 = Part valid **UNTIL 0202.**
D 0300 = Part valid **FROM 0300.**

6 **Implementation of change.** Serial number from which the change starts. The numbers are indicated on the identification plate of the model (see page 5).
E.g.: **D0300 Serial n° 2503001** means that the part has been installed **"FROM"** serial number **2503001.** Consequently, the parts marked by **C0202,** were installed **UP TO** serial number **2502999.**

7 | 2 | Includes item(s) ..... (See English discription)

8 | 1.5 | Part illustrated in the **Group.**

9 Technical specifications relating to the Part indicated.

10 Model **Trademark.**

11 **"Section" Code.**

12 **"Group" name.**

13 **"Group" code.**

14 **Page number.**

15 **Date** of printing or updating of page (month-year).

16 Part **Description.**

17 **L.C.-Lexicon code** for the identification of Part names in **German** and **Spanish** (see page 33).

18 **Further description** of the Part. Besides the specific indications of the Part such as size and use, common descriptions can be utilized (see page 34)..

19 Specific **Notes** to the illustrations or to the text.

20 **Position** of the **"Section"** on the machine.

21 **Running direction** (see page 34).

22 Parts illustrated without item number are shown in the following group.

23 General information of the group.

CONVERSION CHART

	Foot	Yard	Mile	Inch	Metre
1 Foot	1	0.333	–	12	0.3048
1 Yard	3	1	–	36	0.9144
1 Mile	5280	1760	1	63360	1609.35
1 Inch	0.0833	0.0277	–	1	0.0254
1 Metre	3.281	1.0936	–	39.37	1

1 US bushel	=	35.2391 litre	1 litre = 0.028 US bushel
1 US quart	=	0.9464 litre	1 litre = 1.056 US quart
1 UK bushel	=	36.3687 litre	1 litre = 0.027 UK bushel
1 UK quart	=	1.1365 litre	1 litre = 0.879 UK quart
1 US gallon	=	3.785 litre	1 litre = 0.264 US gallon
1 UK gallon	=	4.5461 litre	1 litre = 0.22 UK gallon
1 barrel	=	158.987 litre	1 litre = 0.0063 barrel

1 acre	= 0.4047 ha	1 ha	= 2.471 acre
1 pound	= 0.4536 kg	1 kg	= 2.204 pound
1 hp	= 0.736 kW	1 kW	= 1.358 hp
1 lb/ in^2	= 0.0689 bar = 6.894 kPa	1 bar 1 kPa	= 14.5 lbs/ in^2 = 0.145 lbs/ in^2
1 pa	= 10^{-5} bar = 1.450×10^{-4} lbs/ in^2	1 bar 1 lb/ in^2	= 100 kPa = 6.896 kPa
1 kgf.m	= 9.806 Nm	1 Nm	= 0.1019 kgf.m
1 lbf ft	= 0.1385 kgm	1 kgf.m	= 7.22 lbf ft

TIGHTENING TORQUES

Metric hardware

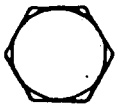
Nominal size	Property class 5-8 Torque Nm		Property class 8-8 Torque Nm			Property class 10-9 Torque Nm	
	plain	plated	lock nut	plain	plated	plain	plated
M4	1.7	2.2	2.3	2.6	3.4	3.7	4.8
M6	5.8	7.1	7.9	8.9	12	3	17
M8	14	18	19	22	28	31	40
M10	28	36	38	43	56	61	79
M12	49	63	66	75	97	107	138
M16	121	158	164	186	240	266	344
M20	237	307	331	375	485	519	671
M24	411	531	573	648	839	897	1160

Imperial hardware

Diameter	SAE GR 2	SAE GR 5		SAE GR 8	
	TORQUE				
	Nm	Nm		Nm	
		A	B	A	B
1/4"	7	11	10	16	14
5/16"	14	24	20	35	29
3/8"	24	42	34	65	53
7/16"	42	72	58	102	81
1/2"	61	111	90	156	125
5/8"	111	231	190	319	258
3/4"	210	393	312	563	448
7/8"	224	583	461	814	651
1"	339	868	692	1220	976

A. Bolts not oiled

B. Bolts oiled

Identification	Specification
	SAE - Grade 1
No identification	SAE - Grade 2
	SAE - Grade 5
	SAE - Grade 8

SPEED RANGES (maximum idle)

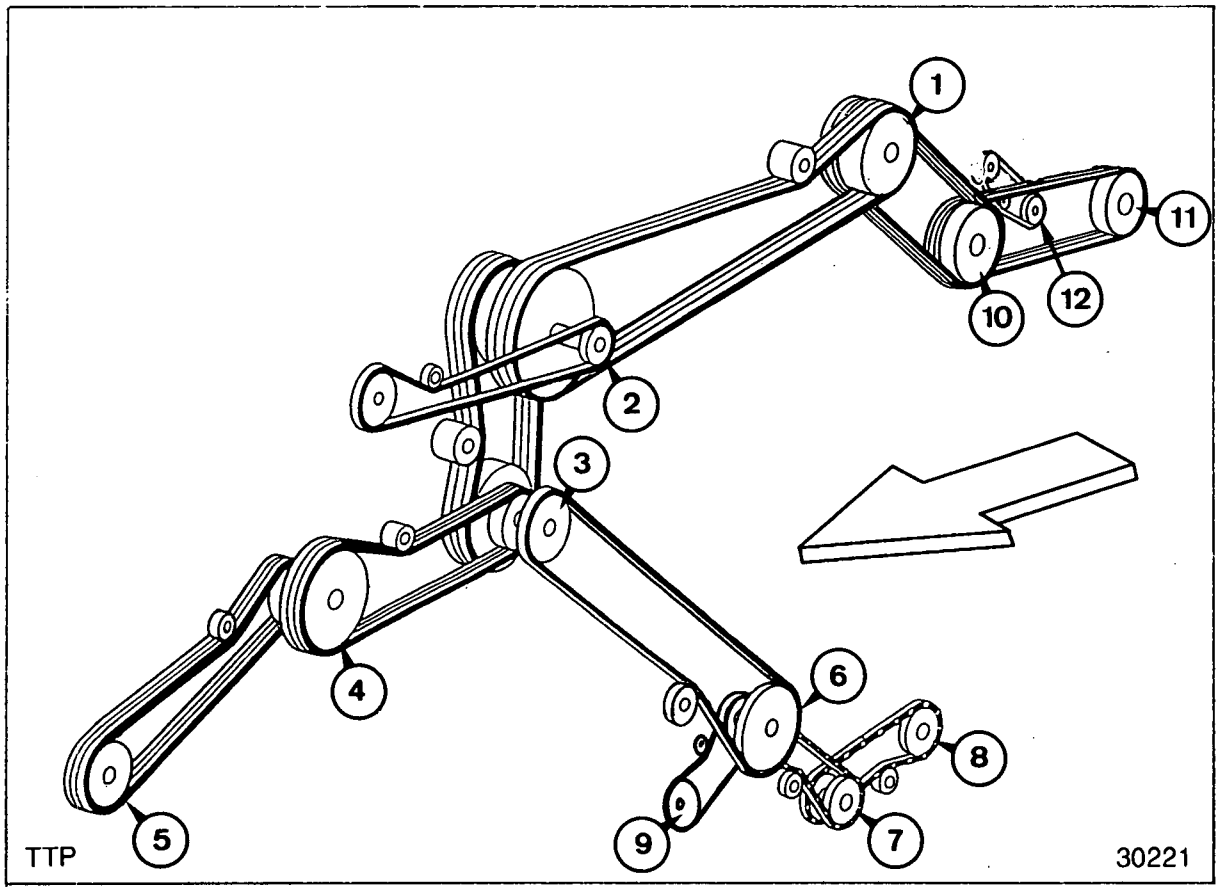


Fig. 1

Combine left-hand side (Fig. 1)		TX62-64-65-66 rpm	TX68 rpm
1	Engine	2500	2100
2	Loose pulley on beater shaft	1340	1340
3	Intermediate shaft	800	800
4	Straw elevator top shaft	374	374
5	Header drive	433 (575 for Canada and Australia)	
6	Cleaning shoe drive	600 (540*)	600 (540*)
7	Returns cross auger and roto-thresher (TX68-66 only)	800 (720*)	800 (720*)
8	Returns auger and thrower (TX68-66 only)	600 (540*)	600 (540*)
9	Eccentric shaft	320 (288*)	320 (288*)
10	Chopper drive	2098	2098
11	Chopper	3500	3500
12	Chaff spreader (input shaft)	330	330

* When using small diameter drive pulley 3

Combine right-hand side (Fig. 2)

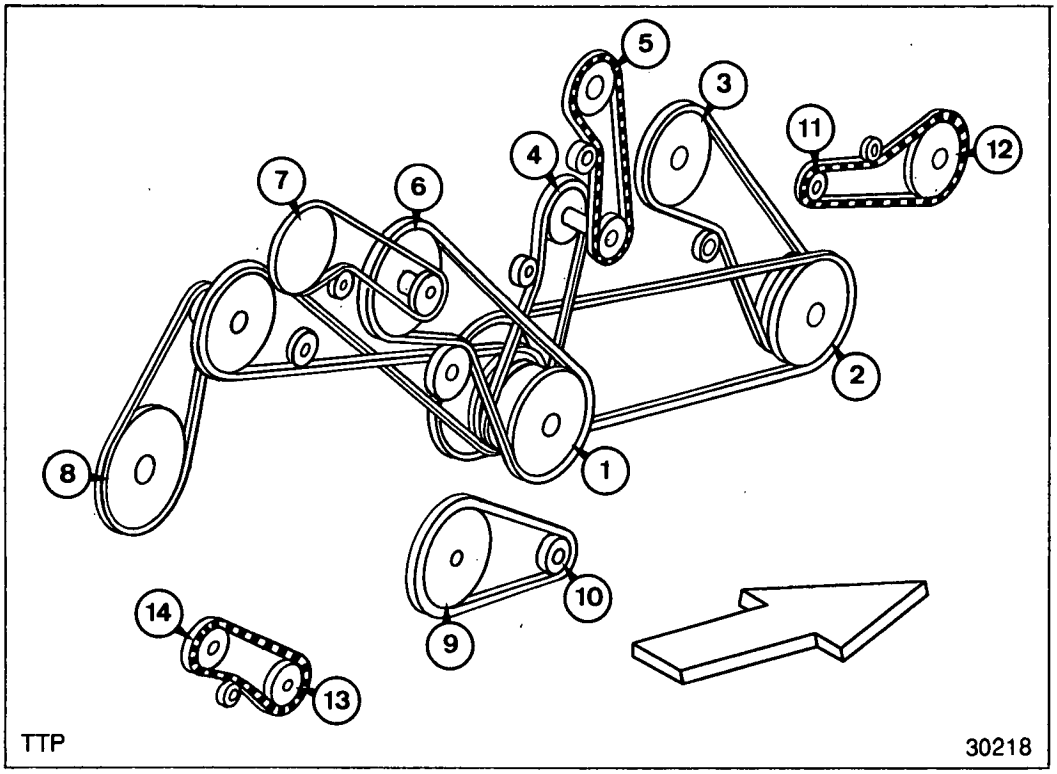


Fig. 2

		rpm	
1	Intermediate shaft	800	
2	Threshing drum	385 to 1140	
3	Beater	256 to 760	
4	Bubble-up auger speed (gearbox)		
	standard:	370	
	option:	441	
5	Grain elevator top shaft		
	standard:	382	
	option:	456	
6	Rotary separator	760 or 400	
7	Straw flow beater	760 or 400	
8	Straw walker	220	
9	Eccentric shaft	320	288*
10	Cleaning fan	500 to 920	450 to 838*
11	Graintank unloading intermediate shaft	1340	
12	Graintank unloading auger	604	
13	Returns cross auger and rotothresher	800	720*
14	Returns auger and thrower	600	540*

* When using small diameter drive pulley 3 on left-hand side

Combine engine compartment

Models TX62-64-65-66: Ford 675 TA (Fig. 3)

		TX62 rpm	TX64/65 rpm	TX66 rpm
1	Engine	2100	2500	2500
2	Hydraulic pump	2564	2564	2564
3	Alternator	5817	6925	6925
4	Intermediate shaft	2600	2600	1552
5	Airconditioning compressor	2453	2453	2453
6	Rotary screen	300	300	300
7	Engine fan	1567	1866	1475

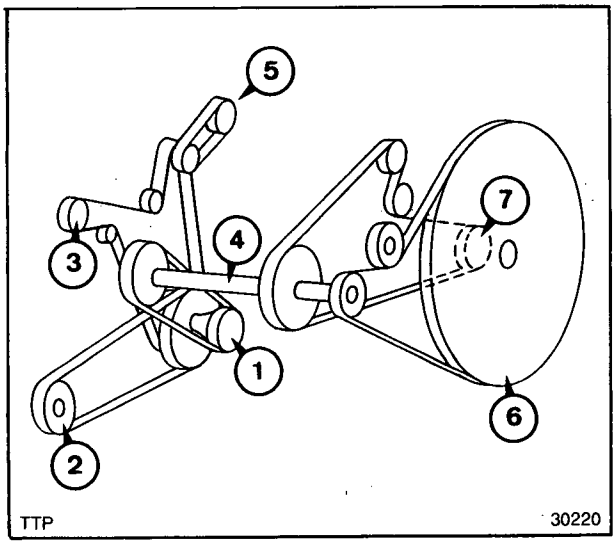


Fig. 3

Model TX68: IVECO 8460SRI (Fig. 4)

		rpm
1	Engine	2100
2	Hydraulic pump	2564
3	Alternator	3934
4	Intermediate shaft	1563
5	Airconditioning compressor	2355
6	Rotary screen	302
7	Engine fan	1475

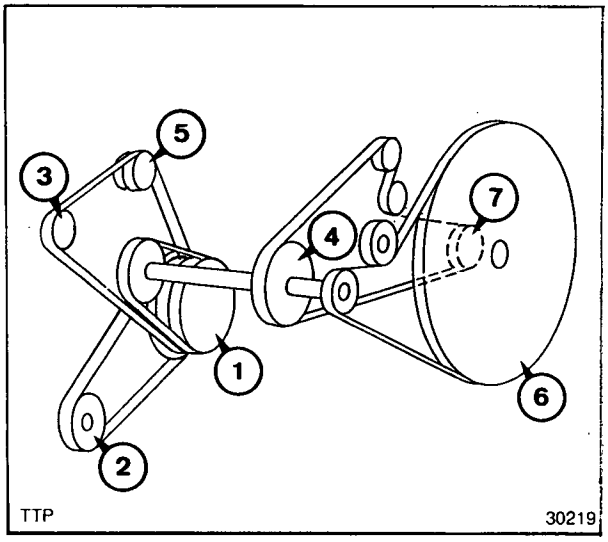


Fig. 4

Grain header (Fig. 5)

1	Knife speed	575 rpm (1150 cuts/min)
2	Reel speed with	
	23-tooth sprocket	21 to 57 rpm
	13-tooth sprocket	12 to 32 rpm
3	Auger speed with	
	44-tooth sprocket	176 rpm
	52-tooth sprocket	150 rpm

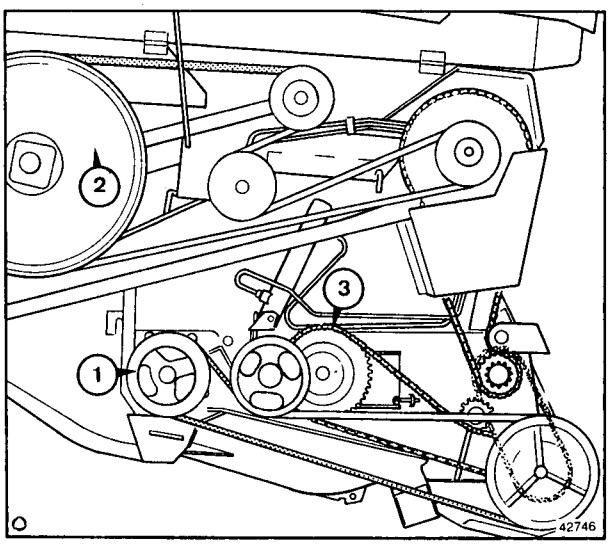


Fig. 5

Maize header (Fig. 6)

1	Auger speed	144 rpm
2	Stalk roll speed with	
	28-tooth sprocket	892 rpm
	24-tooth sprocket	1041 rpm
	20-tooth sprocket	1249 rpm
3	Gathering chains with	
	28-tooth sprocket	1.27 m/sec
	24-tooth sprocket	1.47 m/sec
	20-tooth sprocket	1.76 m/sec

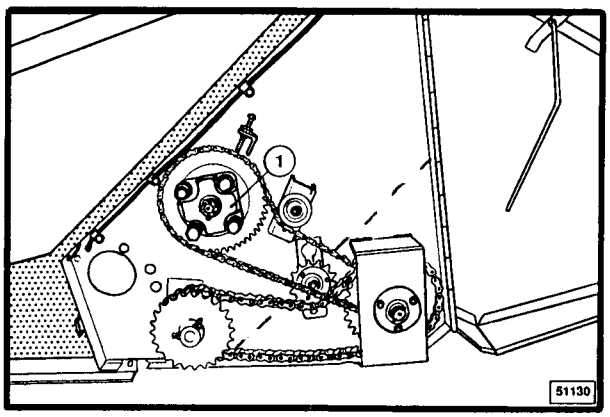


Fig. 6

OIL APPLICATION GUIDE

Lubricant	Recommended FNH product	Corresponding international classification
Engine oil	M2C-121-C (SAE 15W-40)	API CE/SF CCMC D4/G2 MIL-L-2104 D
Gearbox oil	M2C-94-A (SAE 80W-90)	API GL-5 MIL-L-2105 D
Hydraulic oil Hydrostatic oil	M2C-48-C3	ISO HV 46 DIN 51524 H-LP32 H-LP46
Chains Threaded rods Pivot points	M2C-94-A	SAE 90 gear oil
Grease nipples	M1C-137A	NLGI - class 2
Brake fluid	M6C-25-A	SAE J 1703A DOT 4
Tracks	M2C-159-B	API-CC-CD MIL-L-2104 C
Airconditioning compressor	–	–
Antifreeze	E 2218 - T - 9	BSS 6580

TRACTION AND STEERING AXLE

TRACTION AND STEERING AXLE

TRACTION GEARBOX

Oil change

- After the first 100 operating hours
- After 200 operating hours
- Thereafter, every 400 operating hours or annually

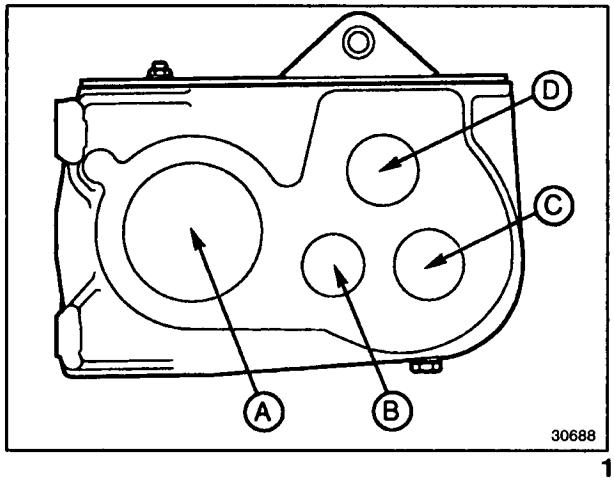
Gearbox capacity

15 litres

Oil specification

Use AMBRA Hypoid 90 oil (ref. NH520A) or an oil meeting the following specification:

- API-GL-5 or MIL-L-2105 D
- Viscosity grade: SAE 80W-90



1

Gear shifting diagram - Figure 1

Shaft A: half-shafts from differential

Shaft B: transmission main shaft

Shaft C: countershaft

Shaft D: drive shaft

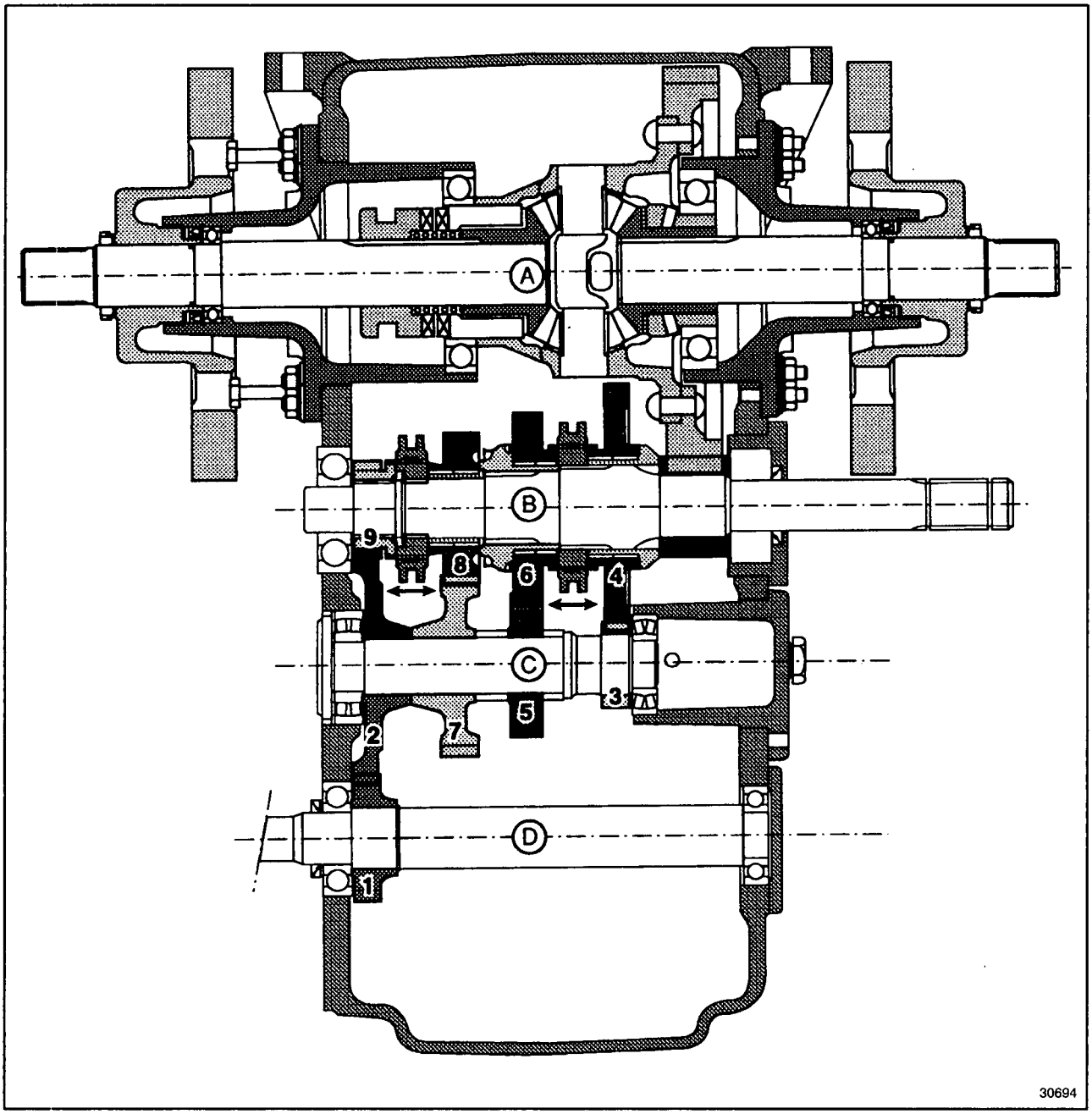
Shifting diagram - Figure 2

First gear: 1 - 2 - 3 - 4 - differential

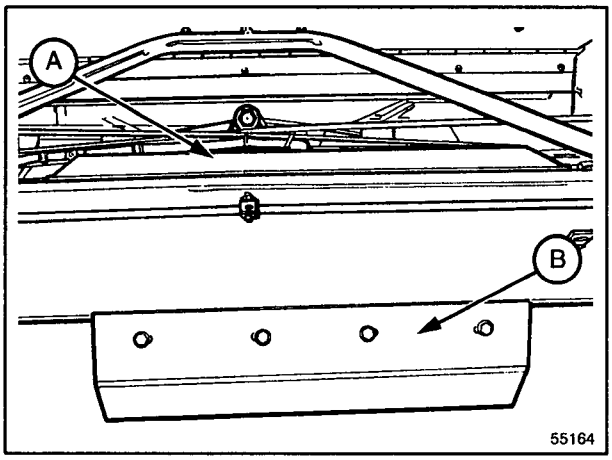
Second gear: 1 - 2 - 5 - 6 - differential

Third gear: 1 - 2 - 7 - 8 - differential

Fourth gear: 1 - 2 - 9 - differential



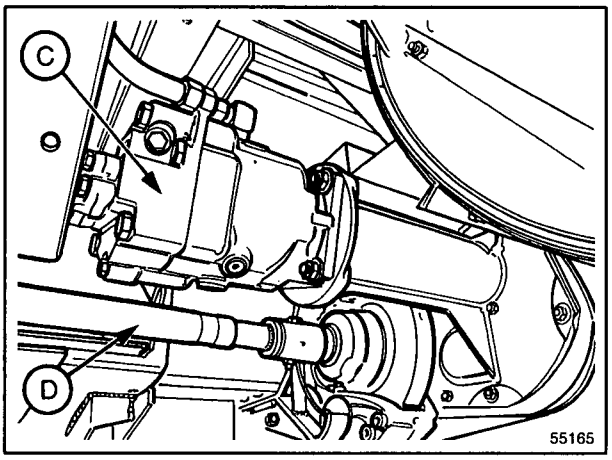
2



3

REMOVAL - Figures 3 to 6

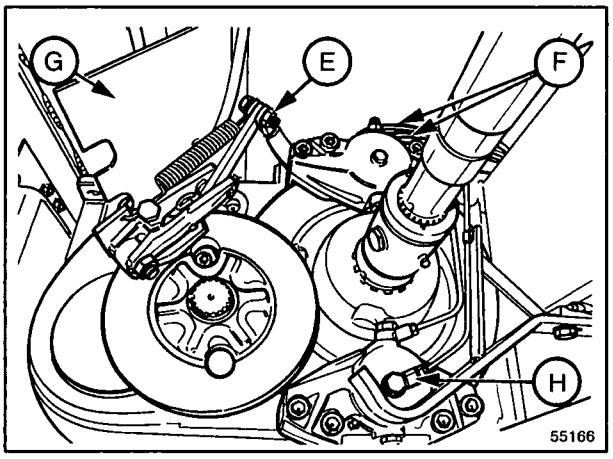
1. Remove cover A and cover B.



4

CAUTION:
Before removing any components, secure the machine safely in place by placing adequate wedges against both traction and steering wheels.

2. Remove hydrostatic motor C, and drive shaft D on both sides of the gearbox.



5

3. Remove cover G.

4. Disconnect hand brake cable E and wires F on both sides.

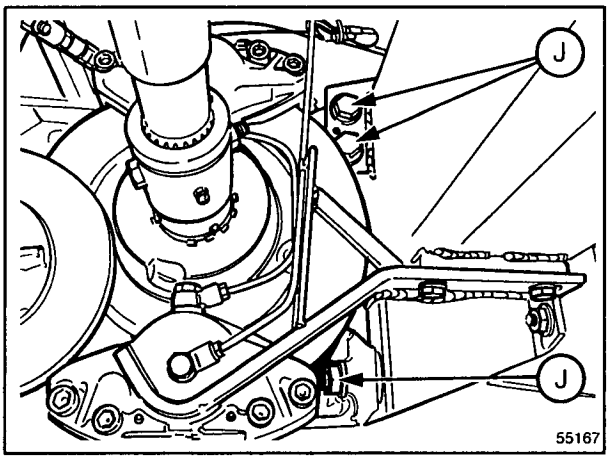
5. Remove tubes H on both sides of the gearbox.

6. Remove the cable for the differential lock.

7. Install a suitable and safe support underneath the gearbox (e.g. a wooden pallet on a forklift).

CAUTION:
The gearbox is heavy (±350 kg).
Take extreme caution when removing!
Use a supporting device which can handle this weight!

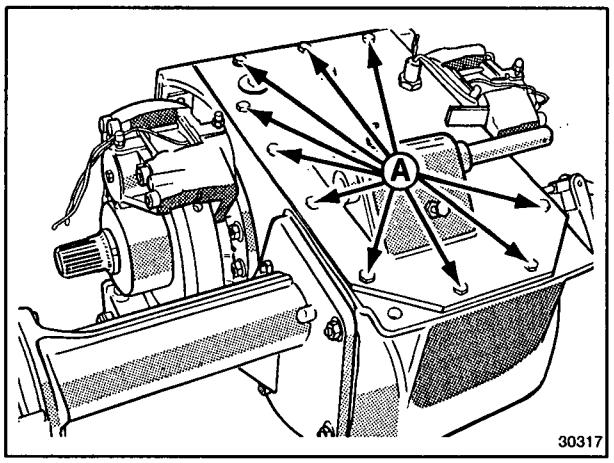
8. Loosen bolts J on both sides of the gearbox and ower the gearbox slowly.



6

INSTALLATION

Reinstall in reverse order of the removal sequence. Refer to paragraph headed "Brakes" subheading "Bleeding brakes".



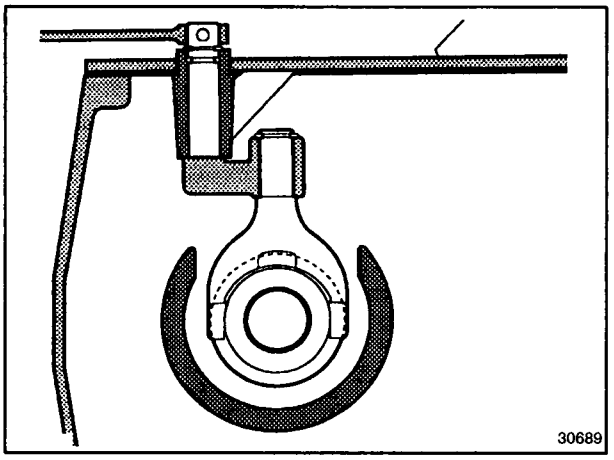
7

DISASSEMBLY

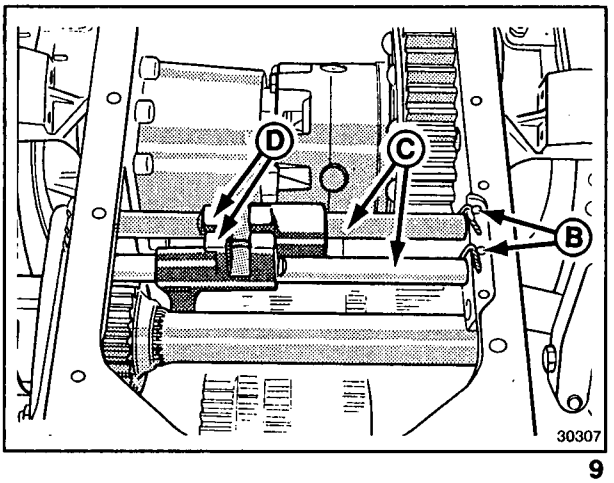
NOTE:
To disassemble and reassemble a complete gearbox, the following special tools will be needed: 80434443, 84014512, 80434446, 80434450, 80434416.
Make sure these tools are available before starting any repair.

General - Figures 7 and 8

1. Remove the hydrostatic motor housing from the gearbox, if not done before.
2. Remove the cover by removing bolts A.
3. Refer to Figure 8 for the disassembly of the differential lock control.



8



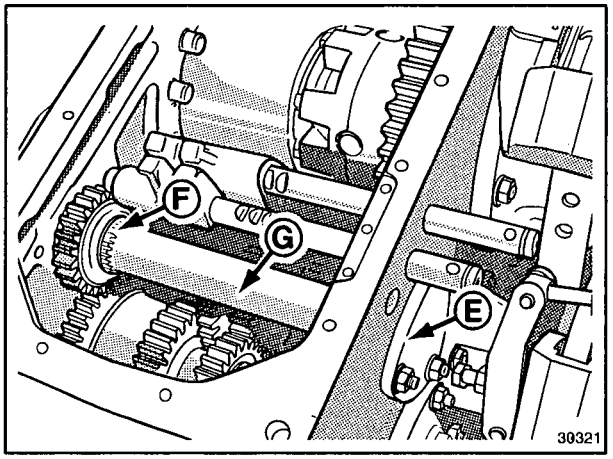
9

Removal of selector forks and shifter shafts - Figure 9

1. Drive out roll pins B.
2. Move shifter shafts C to the right-hand side and remove the selector forks D. Ensure balls and springs do not fall into the gearbox.

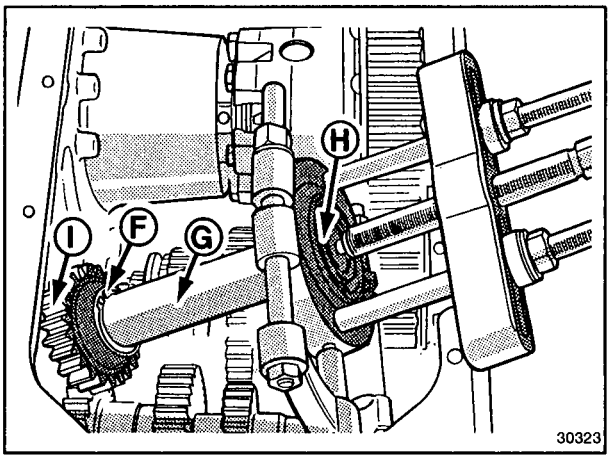
Removal of drive shaft - Figures 10 and 11

1. Remove the selector fork and shifter shafts.
2. Remove cover E.
3. Remove circlip F and slide it halfway the shaft G.
4. Drive shaft G to the left-hand side.



10

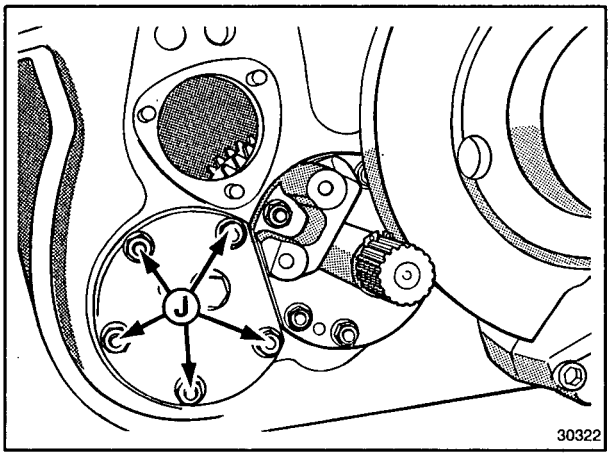
5. Remove ball bearing H and slide circlip F and gear I from the shaft G.
6. Remove shaft G from the left-hand side.



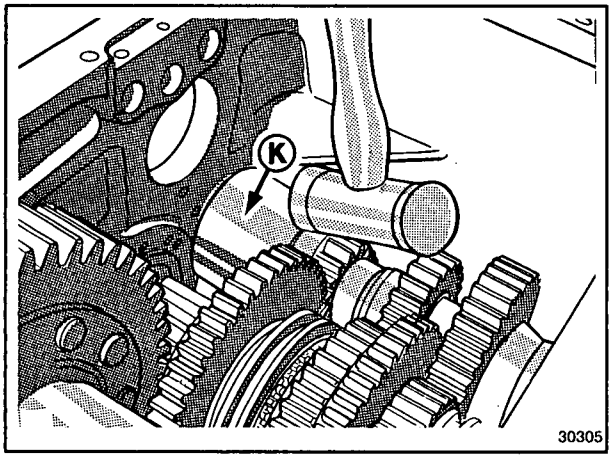
11

Removal of the countershaft - Figures 12 to 14

1. Remove the hand brake shoe and disc (Refer to paragraph headed "Brakes", subheading "Disassembly of brake shoes and discs").
2. Remove the five nuts J and drive out bearing housing K (Fig. 13) from the inside using a plastic hammer.



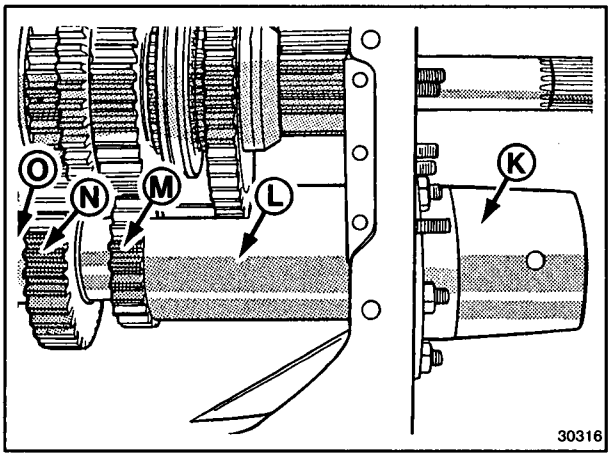
12



13

3. Install special tool L (80434443) and install bearing housing K the other way around (Fig. 14).

4. Drive the shaft out to the right until the left-hand part of the shaft is detached from the left-hand bearing.

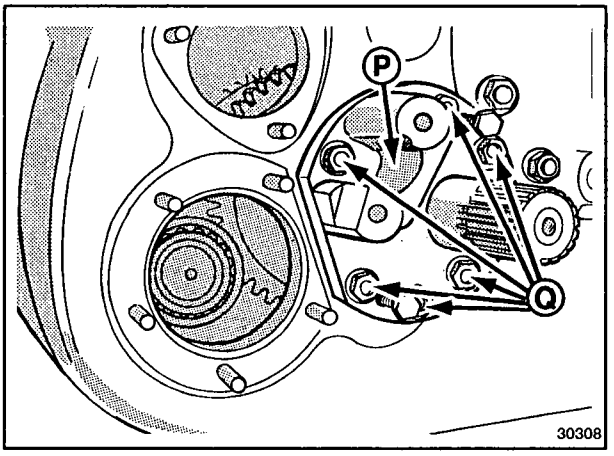


14

5. Remove bearing housing K and special tool L (80434443).

6. Remove the shaft together with gears M and N. Finally remove gear O.

NOTE:
This shaft can be removed without removing the shifter shafts C (Fig. 9) or input shaft G (Fig. 11).



15

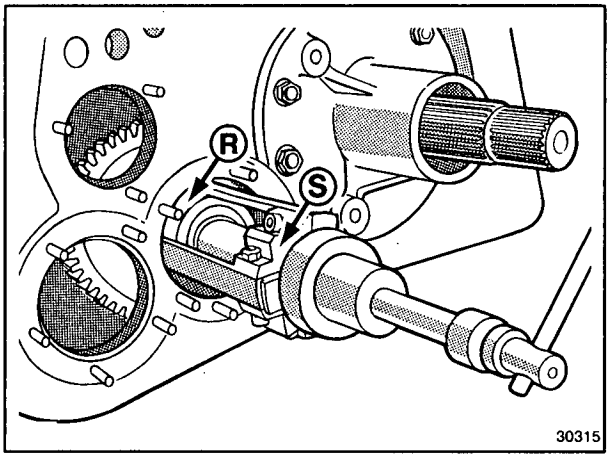
Removal of transmission main shaft -
Figures 15 to 18

1. Remove the brake shoes and discs on both sides (Refer to paragraph headed "Brakes", subheading "Disassembly of brake shoes and discs").

2. Remove the selector forks and shifter shafts (Refer to subheading "Removal of selector forks and shifter shafts").

3. Remove bearing housing P by removing the six nuts Q and by screwing two bolts into the bearing housing P.

4. Pull bearing R from the shaft using special puller S (84014512) on the right-hand side.



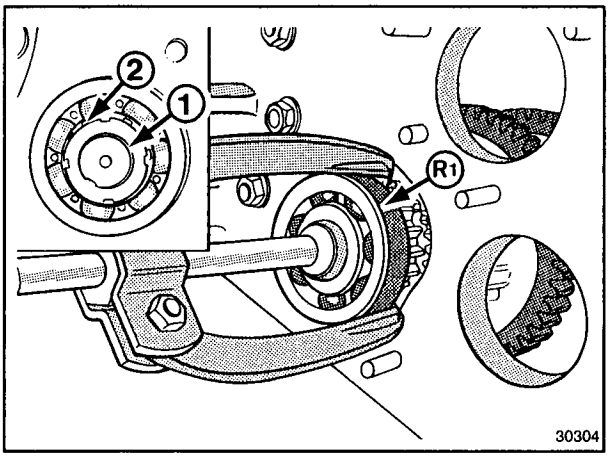
16

5. Drive the shaft to the left-hand side and remove slotted nut 1, lock washer 2 and bearing R1.

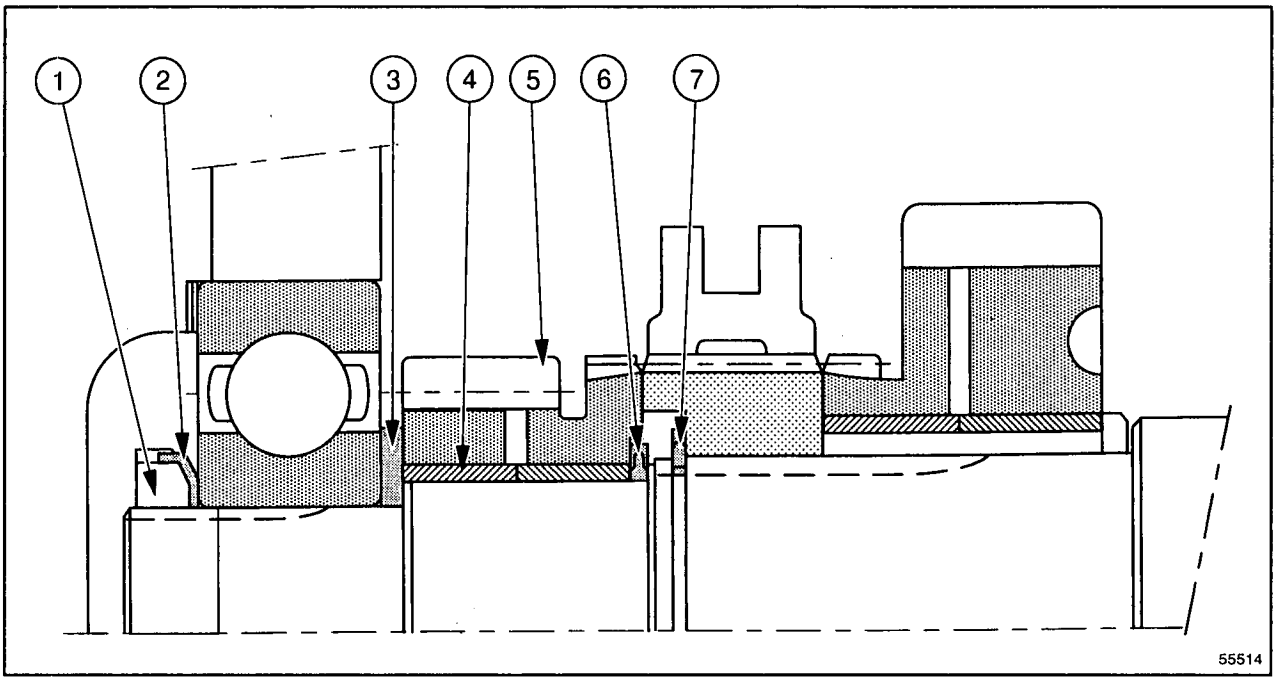
6. Remove ring 3, gear 5, needle bearing 4, ring 6 and circlip 7 through the aperture in the left-hand side of the gearbox.

7. Remove the shaft with the remaining gears from the gearbox.

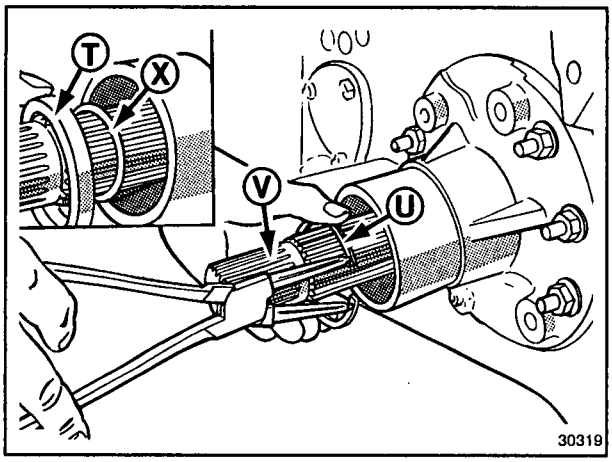
NOTE:
This shaft can be removed without removing the input shaft or the countershaft.



17



18



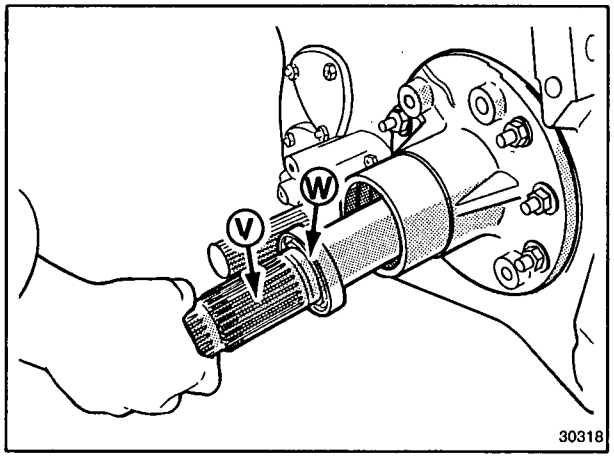
19

Removal of the half-shaft from the differential - Figures 19 and 20

1. Remove the brake shoes and brake discs on both sides (Refer to paragraph headed "Brakes", sub-heading "Disassembly and assembly of brake shoes and discs").

2. Carefully remove oil seal ring T, O-ring X and circlip U on both sides.

3. Pull out both shafts V, together with bearings W.



20

Removal of the differential - Figures 20 and 21

NOTE:
It is possible to remove the differential without removing the drive shaft, transmission main shaft and the countershaft.

1. Remove both half-shafts V.

2. Remove six nuts 8.

3. Remove bearing housing 9 by screwing in two bolts 10 (M8 x 60) instead of two M8 x 16 bolts.

4. Remove the differential lock jaws and spring together with housing 9.

5. Proceed in the same way on the other side and remove differential 11.