



Spare Parts Catalog

4 WG 310

Material number: 4646.074.076

Current date: 02.07.2019

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zuständiges Werk:
Passau

Notes relating to the spare parts catalog

Setup of the spare parts catalog

- Cover sheet
- Technical Cover (only in SDM print)
- Overview of figures
- Figure
- Associated parts list
- Next figure
- Associated parts list
- ...

Figure and parts list



Overview of figures

Bildtafel Figure	Sachnummer Product number	Benennung (Description)	Technische Info Technical info	Description (Benennung)	Menge Quantity	Einheit Unit
068.08.17	1316.170.001	AUSLEGER	WL	SHIFT TURRET	1	Stk
068.08.06	1316.170.031	DECKEL	WL*H-H *VM	COVER	1	Stk
068.08.14	1316.170.808	DECKEL	WL*AUSL+GEH*H-H*HF160N	COVER	1	Stk
08	1316.170.441	ANSCHLUSSTEILE	WL*NG-VORB*RG-SCHL*168N *BAJONETT	CONNECTING PARTS	1	Stk

The "gap" indicates that there is no separate graphics panel (poster) for this assembly
The parts of this assembly are shown with the same mid-section number on the figure

1 Positions and subpositions

Pos.	Sachnummer Product number	Benennung (Description)	Technische Info Technical info	Description (Benennung)	Menge Quantity	Einheit Unit
0370	1315.201.054	RUECKLAUFBOLZEN	KPL.16S151*SG*L= 79	REV.IDLER SHAFT	1	Stk
/0120	0631.329.293	SPANNSTIFT		SLOT. PIN	1	Stk

Positions marked with "/" are the individual items of a completion
For example: Position 0370 contains a centering pin with the position /0120

2 Combinations with standardized parts

Pos.	Sachnummer Product number	Benennung (Description)	Technische Info Technical info	Description (Benennung)	Menge Quantity	Einheit Unit
0630		VERSCHL.SCHR.		SCREW PLUG	1	Stk
	0636.302.067	VERSCHL.SCHR.		SCREW PLUG	1	Stk
	0634.801.249	DICHTRING	A 26 X 31	SEALING RING	1	Stk

The parts list shows the components included in the combination of standardized parts

3 Depiction of position/item number on the figure and in the parts list

01.620 - on the figure 01 relates to the assembly in which the position is included. Due to program-related reasons, it is shown on the figure.

0620 - in the parts list

Pos.	Sachnummer Product number	Benennung (Description)	Technische Info Technical info	Description (Benennung)	Menge Quantity	Einheit Unit
0620	0732.040.736	DRUCKFEDER		COMPRESSION SPRING	1	Stk

4 *-Positions

Positions marked with an * are optional i.e. inclusion in the parts list is not mandatory.
The following note is shown on the figure

je nach Stücklistenausführung
depending on spec. number
*
suivant la nomenclature
secondo la distinta base

5 Parts, dotted display

Parts with dotted display on the figure are only used for orientation of other parts

Technical Cover

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Material number: 4646.074.076



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Pos.	Information	Amendment number
	CUSTOMER: HYUNDAI	
	1.PERFORMANCE CALC.: 4646 709 200	
	VEHICLE DESIGNATION: HL 780-9S	
	WEIGHT EMPTY: 29,600 TO	
	ENGINE: CUMMINS QSM11 TIER3 NET	
	ENGINE POWER: 235,8 KW	
	SPEED: 1800 U/MIN	
	INPUT TORQUE: 1482 N/M	
	SPEED: 1400 U/MIN	
	TYRE SIZE: 29,5-25	
	TYRE RADIUS DYN.: 0,885 M	
	AXLE RATIO: 27,000	
	MAX. SPEED: 36,3 KM/H	
	VEHICLE DATA 2 : 1	
	2.PERFORMANCE CALC.: 4646 709 482	
	VEHICLE APPLICATION: HL780-9S UM	
	WEIGHT EMPTY: 34,100 TO	
	ENGINE: CUMMINS QSM11	
	ENGINE POWER: 235,0 KW	
	SPEED: 1.800 U/MIN	
	ENGINE TORQUE: 1.477 N/M	
	SPEED: 1.400 U/MIN	
	TIRES: 26,5R25	
	TYRE RADIUS DYN.: 0,907 M	
	AXLE RATIO: 27,000	
	MAX. SPEED: 34,6 KM/H	
	PRODUCT DESCRIPTION: ZF-ERGOPOWER L	
	TRANSMISSION TYPE: 4 WG 310	
	DROP CENTER DISTANCE: 575 MM	
	PRODUCTION LOCATION: PASSAU	
	VEHICLE: WHEEL LOADER	
	1. GEAR FORWARD: 4,187	
	2. GEAR FORWARD: 2,207	

Technical Cover

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Pos.	Information	Amendment number
	3. GEAR FORWARD: 1,384	
	4. GEAR FORWARD: 0,608	
	1. GEAR REVERSE: 4,187	
	2. GEAR REVERSE: 2,207	
	3. GEAR REVERSE: 0,970	
	NUMBER OF PULSES ENGIN: 60	
	NUMBER OF PULSES TURBINE: 59	
	NUMBER OF PULSES MRK: 91	
	NUMBER OF PULSES OUTPUT: 64	
	SHIFTED CLUTCHES 1G.KV/K1 2G.KV/K2 3G.K4/K2	
	SHIFTED COUPLING 4G.K4/K3	
	CONVERTER: W 400	
	CONVERTER PART NO.: 040 H 090	
	LOCK-UP CLUTCH: WITHOUT	
	STALL TORQUE RATIO: 2,51	
	TORQUE CONVERTER ABSORPTION: 248 NM	
	STATOR FREEWHEEL: WITH	
	ENGINE INPUT: REMOTE MOUNTED VIA JOINT SHAFT	
	INPUT FLANGE: MECH 7 C	
	OUTPUT: STANDARD	
	GEAR BOX SUMP STANDARD	
	OUTPUT FLANGE CONVERTER SIDE: MECH 8,5 C	
	OUTPUT PTO SIDE: WITH PARKING BRAKE	
	DISC BRAKE: SAHR FSG 110	
	RELEASE PRESSURE: 120 - 150 BAR	
	MEDIUM: HYDRAULIC OIL DIN 51525	
	CONNECTION BRAKE PRESSURE: JIC 9/16-18	
	OUTPUT FLANGE PTO SIDE: MECH 9 C	
	1.POWER TAKE OFF: -----	
	1.PTO FLANGE: SAE C 2 HOLE M16 * 4 HOLE M14	
	DRIVER / PROFILE: SAE C 12/24 DP 14 T	
	2. POWER TAKE OFF: -----	
	2.PTO FLANGE: SAE C 2 HOLE M16 * 4 HOLE M14	



Pos.	Information	Amendment number
	VERSION SHORT VERSION 18 MM	
	DRIVER / PROFILE: SAE C 12/24 DP 14 T	
	GEAR CHANGE CONTROL: ZF-ERGOSHIFT/ PROP VALVE	
	VOLTAGE: 24 VOLT	
	SPEED CONTROL: CONNECTION VIA EST	
	OIL LEVEL TUBE: WITHOUT	
	OIL DIPSTICK: WITHOUT	
	FILTER INSTALLATION: SEPARATE MOUNTED	
	PRES. DROP SWITCH: CLOSING SWITCH	
	ADAPTER WITHOUT	
	EMERGENCY STEERING PUMP: WITHOUT	
	TEMPERATURE SENSOR T/C: WITH (VIA EST)	
	ELECTRIC PARTS ORDER: SEPARATE ORDER	
	SEPARATE ORDER: 4656 185 004	
	EST-37A S. SCD 002000016027	
	CONTROL UNIT: EST 37A	
	SOFTWARE OPTIONS OPERATION MODE SELECTION	
	POWERINCH	
	ERGOTRACTION	
	GEAR SELECTOR: DW 3	
	2ND GEAR SELECTOR: WITHOUT	
	DISPLAY: WITHOUT	
	LOAD SENSOR: WITHOUT	
	WIRING: WITHOUT	
	OIL CAPACITY TRANSM.: CA. 32 LITRE	
	OIL FILLING TRANSM.: WITHOUT	
	OIL GRADE TRANSM.: OIL SPECIFICATION TE ML 03	
	WITH OR WITHOUT PAINTING PRIMING	
	PRIMER PAINT: BLACK RAL 9005	
	DOCUMENTATION GEAR BOX: -----	
	SECTION DRAWING: 4646 074 036	
	INSTALLATION DRAWING: 4646 674 076	
	GEARBOX DIAGRAM: 4646700387	

Technical Cover

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Pos.	Information	Amendment number
	OIL CIRCUIT DIAGRAM: 4646 700 291	
	INSTALL. INSTRUCTIONS: 0000 702 951	
	DRAWING 6009 665 002	
	DRAWING GEAR SEL. 1: 6006 630 033	
	CONNECTION DIAGRAM: 6006 700 564	
	CONNECTION DIAGRAM: S. SOFTWARE CONTROL DOC. (SCD)	

Assembly group overview

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Material number: 4646.074.076



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Picture	Pos.	Material number	Name	Quantity	Amend. no.	Techn. Info.
464613000700	270	4646.130.007	ENGINE CONNECTION	1		
464613040700	280	4646.130.407	ENGINE CONNECTION	1		
416604001200	500	4166.040.012	CONVERTER	1		
464610204600	30	4646.102.046	INPUT	1		
464610118900	10	4646.101.189	TRANSMISSION HOUSING	1		
464610148400	14	4646.101.484	TRANSMISSION HOUSING	1		
464610149100	12	4646.101.491	TRANSMISSION HOUSING	1		
464610148800	16	4646.101.488	TRANSMISSION HOUSING	1		
464616241600	20	4646.162.416	OIL PIPE	1		
464610801400	150	4646.108.014	COUNTERSHAFT	1		
464615107400	350	4646.151.074	COUPLING	1		
464615147000	355	4646.151.470	COUPLING	1		
464615148600	352	4646.151.486	COUPLING	1		
464615207800	360	4646.152.078	COUPLING	1		
464615251200	365	4646.152.512	COUPLING	1		
464615254800	367	4646.152.548	COUPLING	1		

Assembly group overview

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Material number: 4646.074.076



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Picture	Pos.	Material number	Name	Quantity	Amend. no.	Techn. Info.
464615307400	370	4646.153.074	COUPLING	1		
464615345900	375	4646.153.459	COUPLING	1		
464610303700	50	4646.103.037	OUTPUT	1		
464610345600	60	4646.103.456	OUTPUT	1		
464615406900	380	4646.154.069	POWER TAKE-OFF	1		
464615444600	390	4646.154.446	POWER TAKE-OFF	1		
464615501000	400	4646.155.010	POWER TAKE-OFF	1		
464615500802	410	4646.155.416	POWER TAKE-OFF	1		
464610901900	170	4646.109.019	PARKING BRAKE	1		
464610942400	70	4646.109.424	PARKING BRAKE	1		
464610602200	110	4646.106.022	SHIFT SYSTEM	1		
465710640100	115	4657.106.401	SHIFT SYSTEM	1		
465615901901	120	4656.159.019	SHIFT SYSTEM	1		
464612201200	225	4646.122.012	PRESSURE OIL PUMP	1		
464613800400	330	4646.138.004	FILTER	1		
464619940600	335	4646.199.406	LOOSE PARTS	1		

Assembly group overview

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Picture	Pos.	Material number	Name	Quantity	Amend. no.	Techn. Info.
464612502300	250	4646.125.023	INDUCTIVE SENSOR	1		
464613702400	310	4646.137.024	EMERGENCY STEERING PUMP	1		
464612400600	235	4646.124.006	TEMPERATURE SENSOR	1		
464613101000	290	4646.131.010	FILLER NOZZLE	1		
464612107900	210	4646.121.079	OIL PIPE	1		
464612141600	215	4646.121.416	OIL PIPE	1		
464619918500	490	4646.199.185	LOOSE PARTS	1		
465618500400	995	4656.185.004	ACCESSORIES	1		
414313900100	18	4143.139.001	TYPE PLATE	1		

Picture

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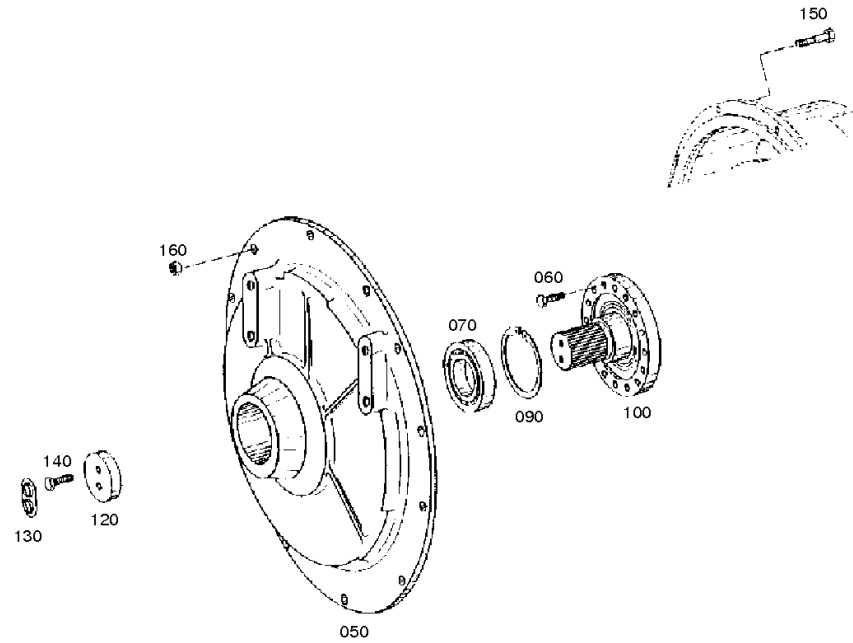
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Picture: 464613000700

Material-assembly-group-no: 4646.130.007



4 WG 310 /
ENGINE CONNECTION



Picture

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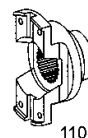
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Material-assembly-group-no: 4646.130.407



4 WG 310 /
ENGINE CONNECTION



Picture

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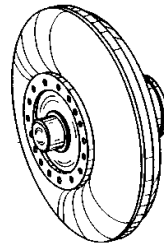
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Picture: 416604001200

Material-assembly-group-no: 4166.040.012



4 WG 310 /
CONVERTER



010

Picture

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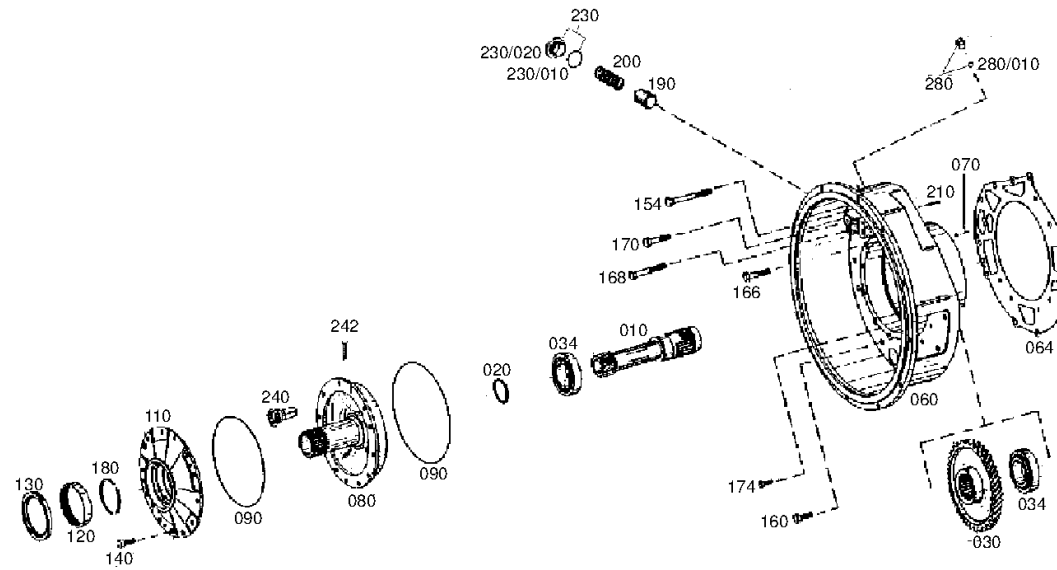
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Picture: 464610204600

Material-assembly-group-no: 4646.102.046



4 WG 310 /
INPUT



Picture

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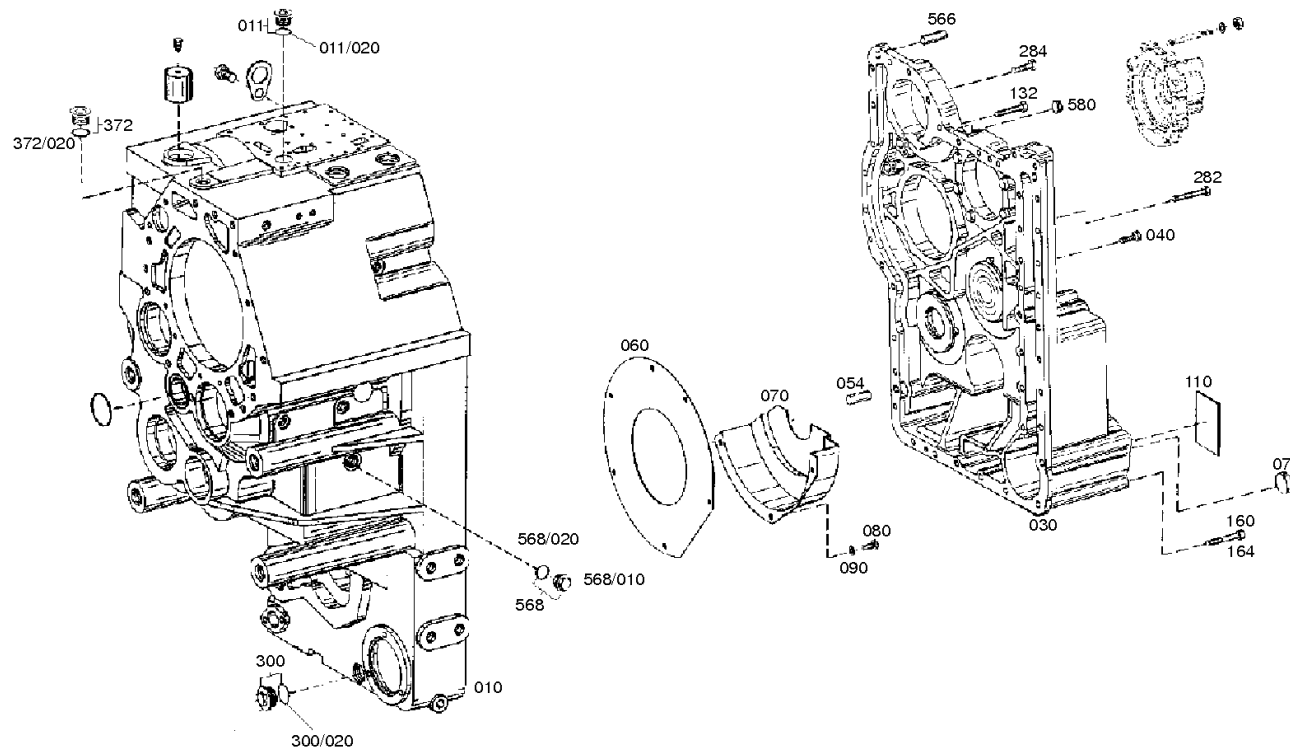
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Picture: 464610118900

Material-assembly-group-no: 4646.101.189



4 WG 310 /
TRANSMISSION HOUSING



Picture

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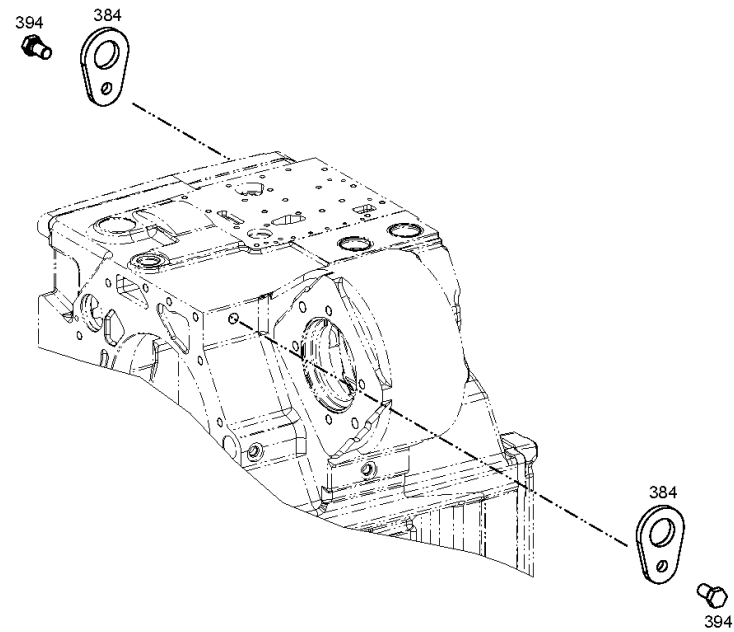
Material number: 4646.074.076

Picture: 464610148400

Material-assembly-group-no: 4646.101.484



4 WG 310 /
TRANSMISSION HOUSING



Picture

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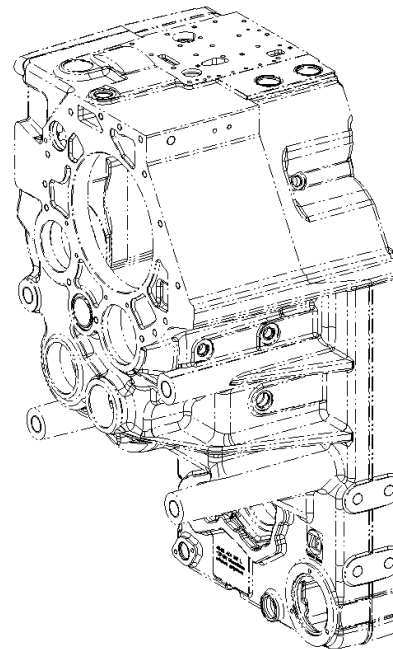
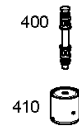
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Picture: 464610149100

Material-assembly-group-no: 4646.101.491



4 WG 310 /
TRANSMISSION HOUSING



Picture

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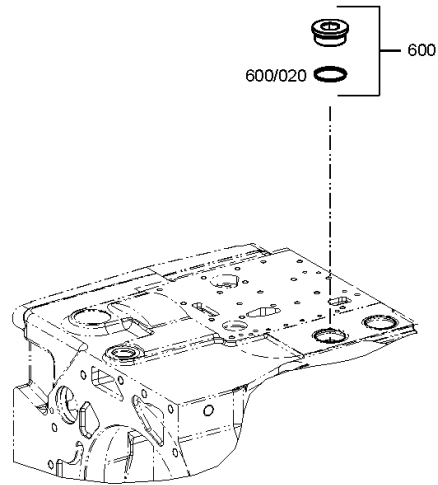
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Picture: 464610148800

Material-assembly-group-no: 4646.101.488



4 WG 310 /
TRANSMISSION HOUSING



Picture

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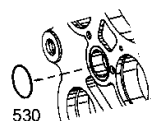
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Picture: 464616241600

Material-assembly-group-no: 4646.162.416



4 WG 310 /
OIL PIPE



Picture

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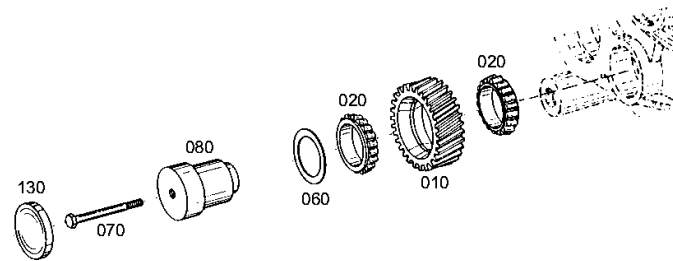
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Picture: 464610801400

Material-assembly-group-no: 4646.108.014



4 WG 310 /
COUNTERSHAFT



Picture

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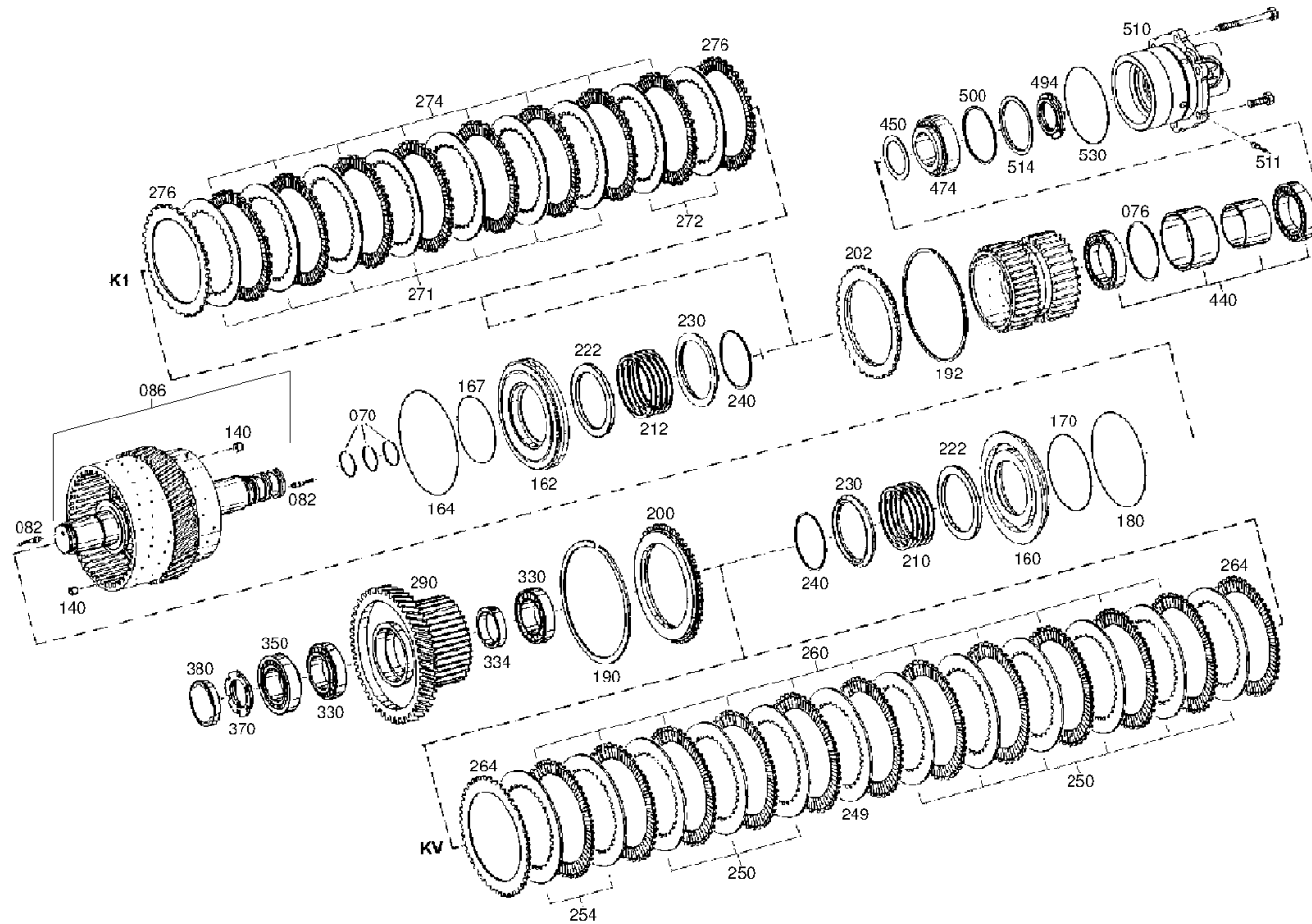
Material number: 4646.074.076

Picture: 464615107400

Material-assembly-group-no: 4646.151.074



4 WG 310 /
COUPLING



Picture

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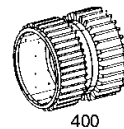
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Material-assembly-group-no: 4646.151.470



4 WG 310 /
COUPLING



Picture

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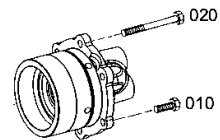
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Picture: 464615148600

Material-assembly-group-no: 4646.151.486



4 WG 310 /
COUPLING



Picture

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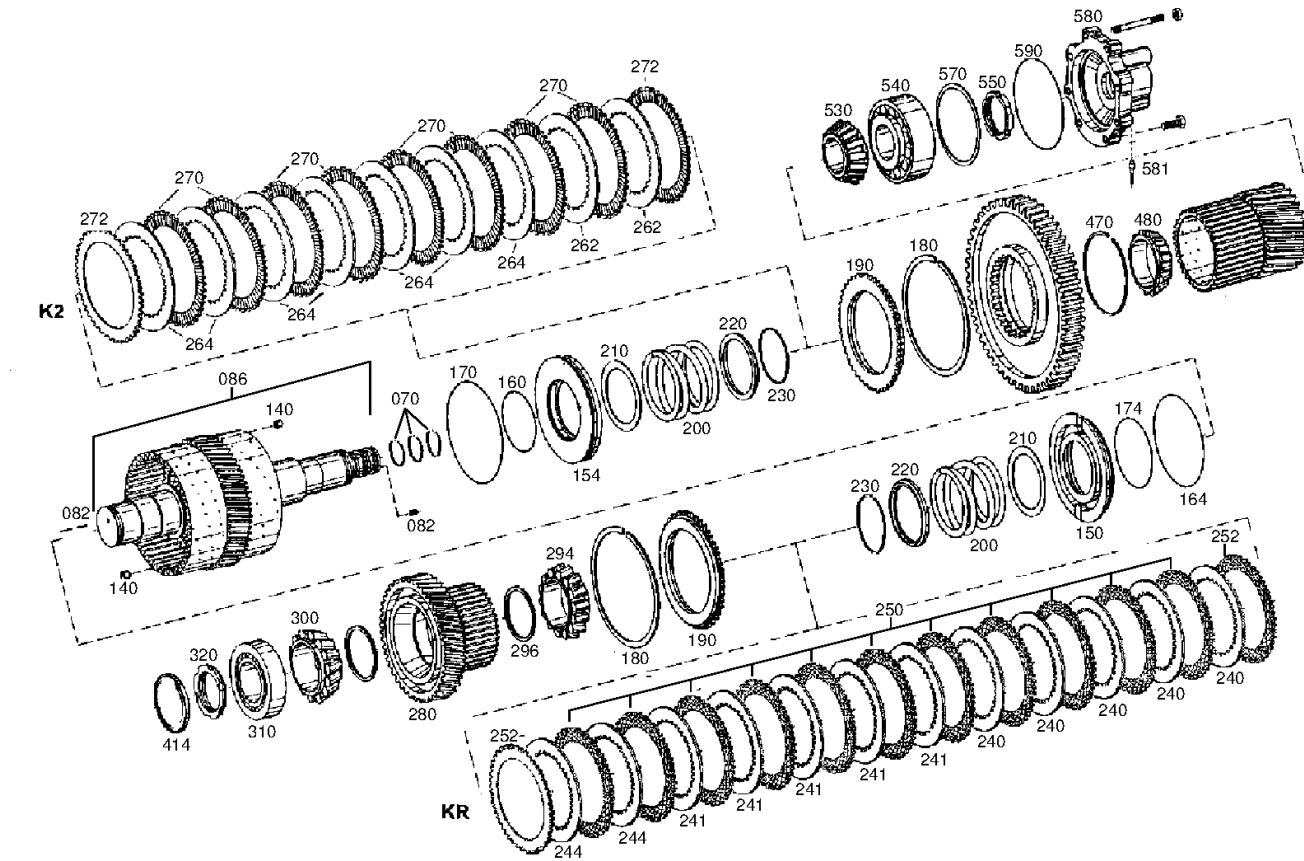
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Picture: 464615207800

Material-assembly-group-no: 4646.152.078



4 WG 310 /
COUPLING



Picture

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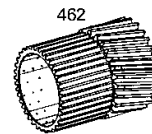
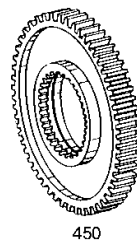
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Picture: 464615251200

Material-assembly-group-no: 4646.152.512



4 WG 310 /
COUPLING



Picture

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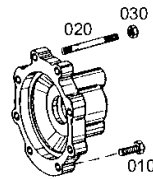
Material number: 4646.074.076

Picture: 464615254800

Material-assembly-group-no: 4646.152.548



4 WG 310 /
COUPLING



Picture

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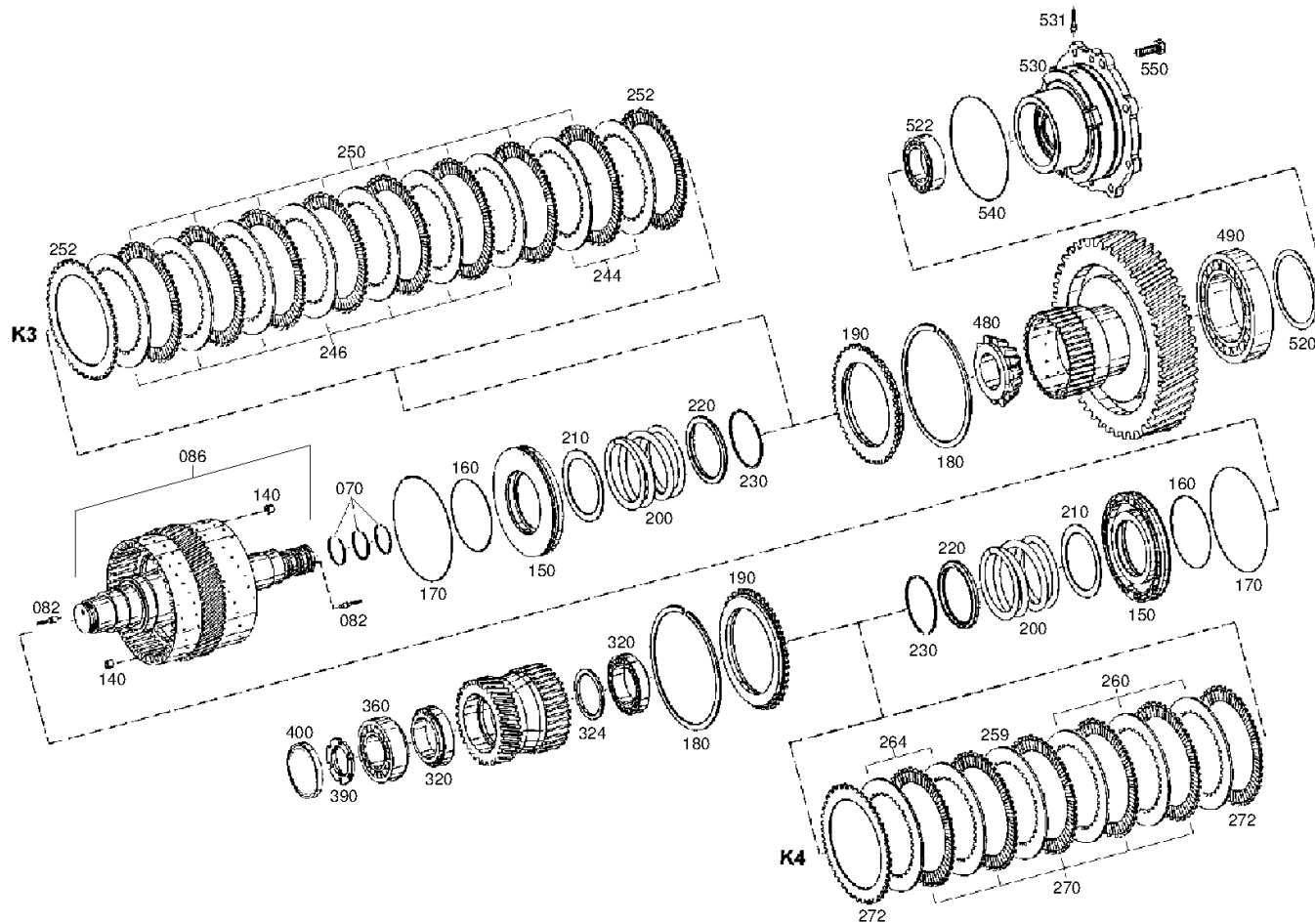
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Picture: 464615307400

Material-assembly-group-no: 4646.153.074



4 WG 310 /
COUPLING



Picture

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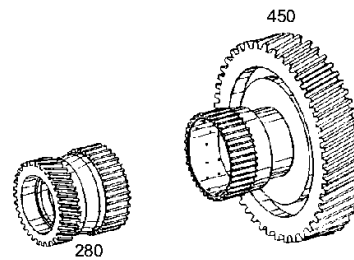
Material number: 4646.074.076

Picture: 464615345900

Material-assembly-group-no: 4646.153.459



4 WG 310 /
COUPLING



Picture

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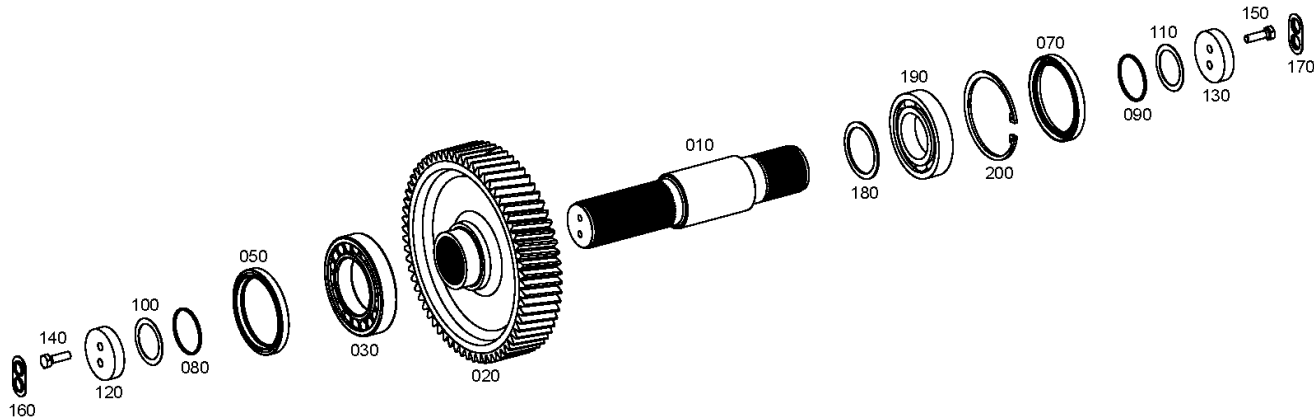
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Picture: 464610303700

Material-assembly-group-no: 4646.103.037



4 WG 310 /
OUTPUT



Picture

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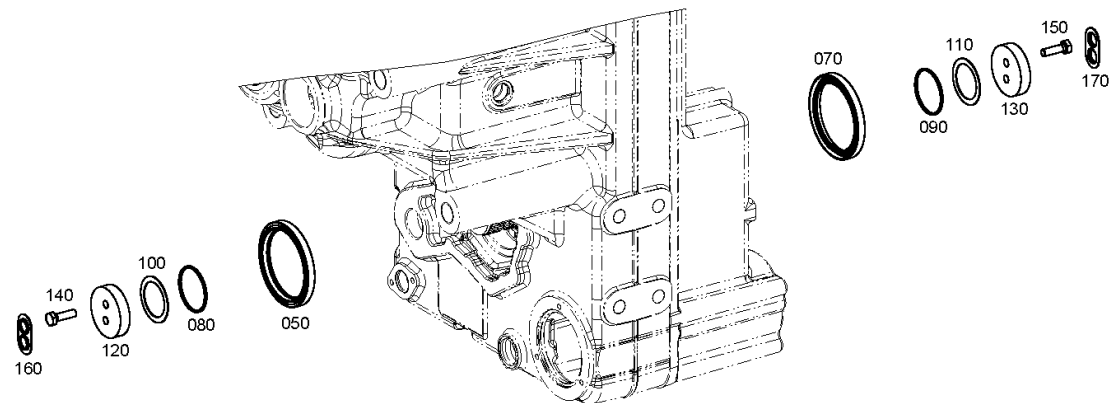
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Picture: 464610303780

Material-assembly-group-no: 4646.103.037



4 WG 310 /
OUTPUT



Picture

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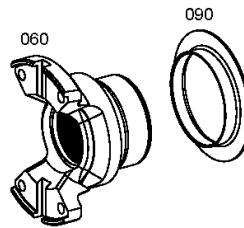
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Picture: 464610345600

Material-assembly-group-no: 4646.103.456



4 WG 310 /
OUTPUT



Picture

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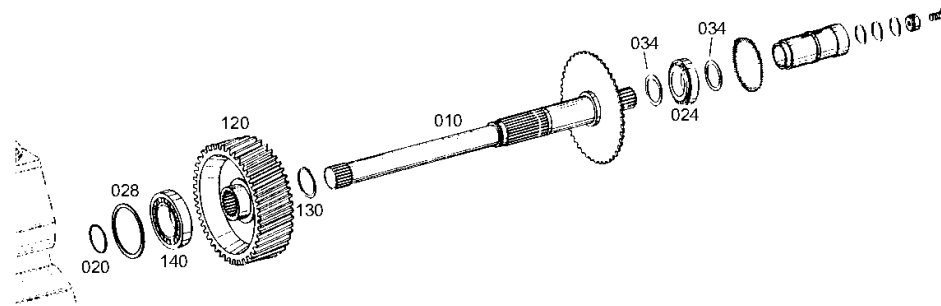
Material number: 4646.074.076

Picture: 464615406900

Material-assembly-group-no: 4646.154.069



4 WG 310 /
POWER TAKE-OFF



Picture

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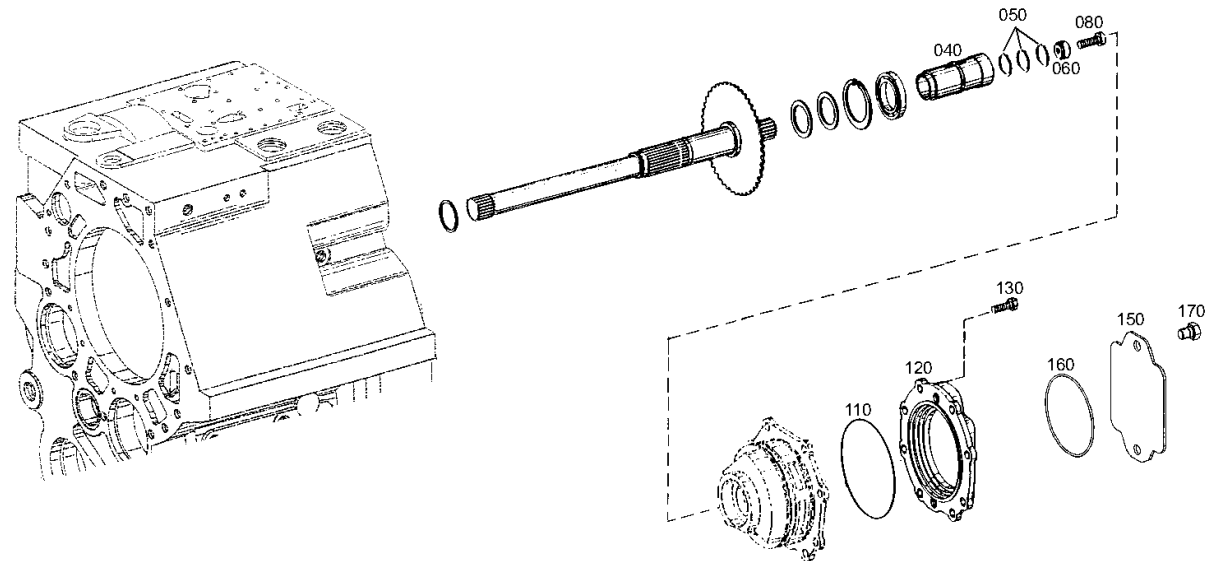
Material number: 4646.074.076

Picture: 464615444600

Material-assembly-group-no: 4646.154.446



4 WG 310 /
POWER TAKE-OFF



Picture

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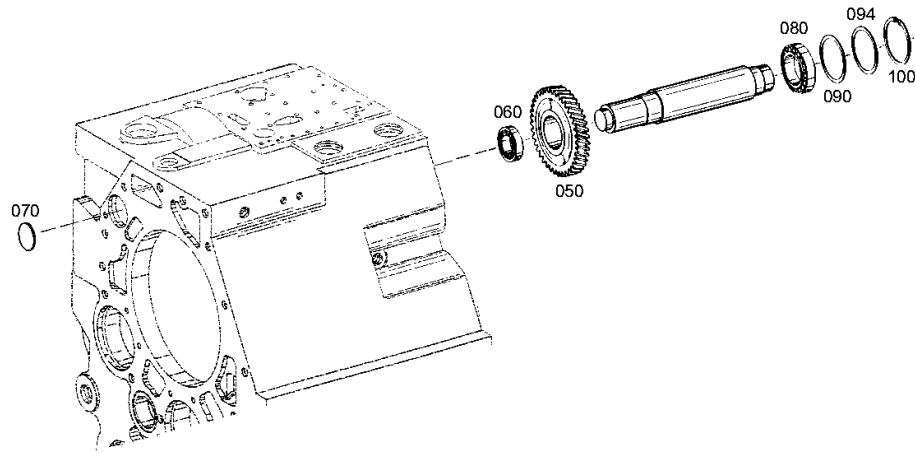
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Material-assembly-group-no: 4646.155.010



4 WG 310 /
POWER TAKE-OFF



Picture

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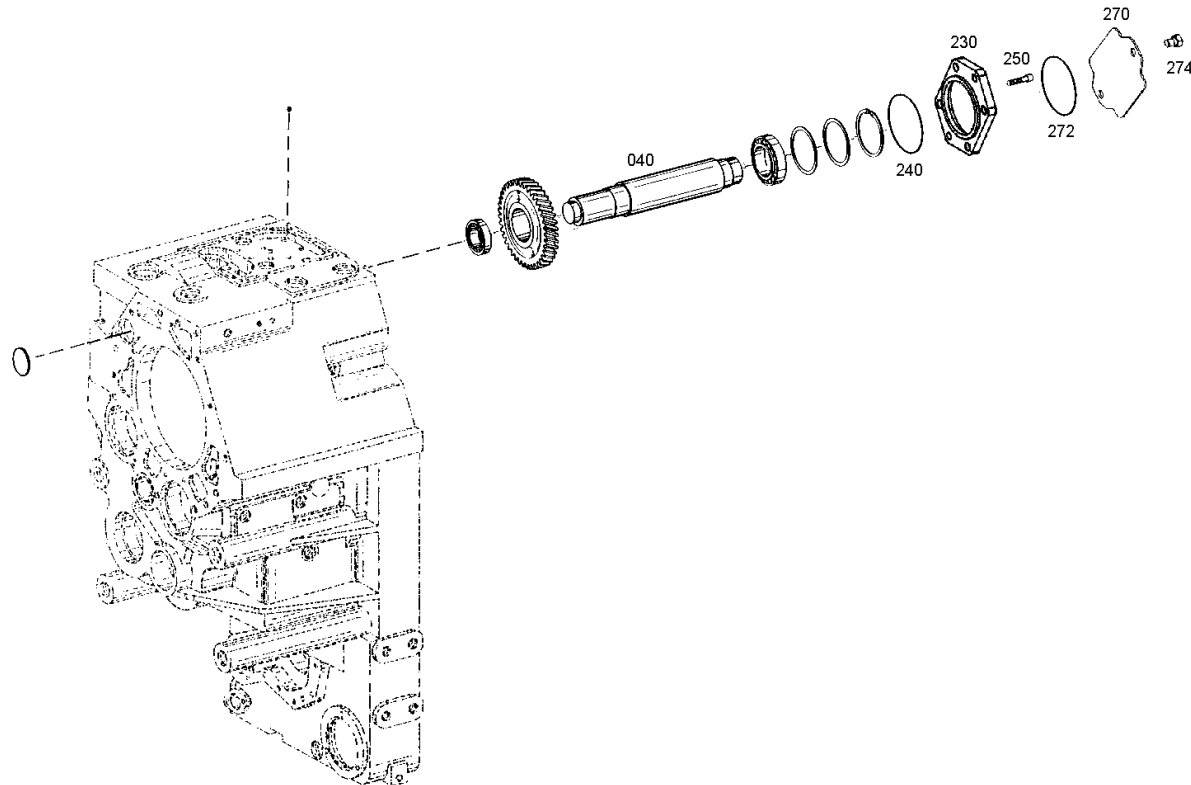
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Picture: 464615500802

Material-assembly-group-no: 4646.155.416



4 WG 310 /
POWER TAKE-OFF



Picture

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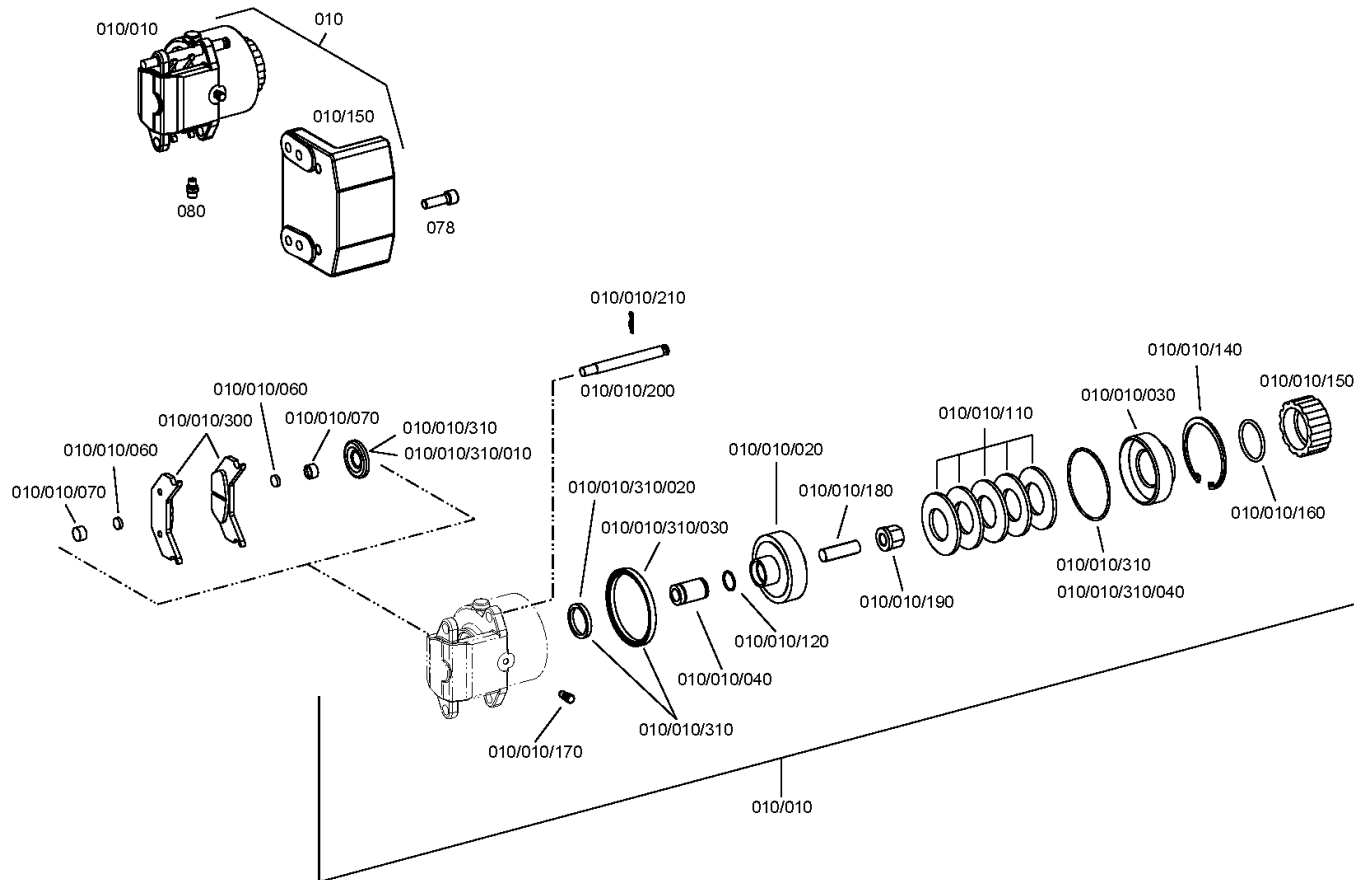
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Material-assembly-group-no: 4646.109.019



4 WG 310 /
PARKING BRAKE



Picture

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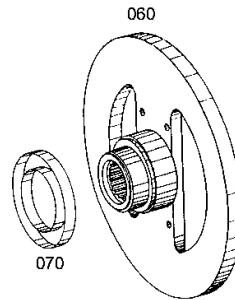
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Picture: 464610942400

Material-assembly-group-no: 4646.109.424



4 WG 310 /
PARKING BRAKE



Picture

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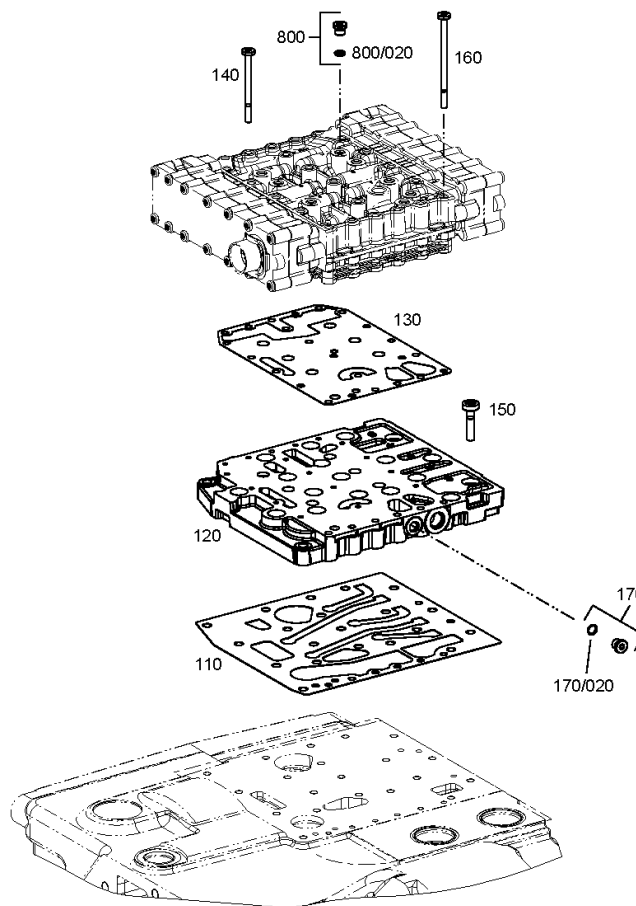
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Picture: 464610602200

Material-assembly-group-no: 4646.106.022



4 WG 310 /
SHIFT SYSTEM



Picture

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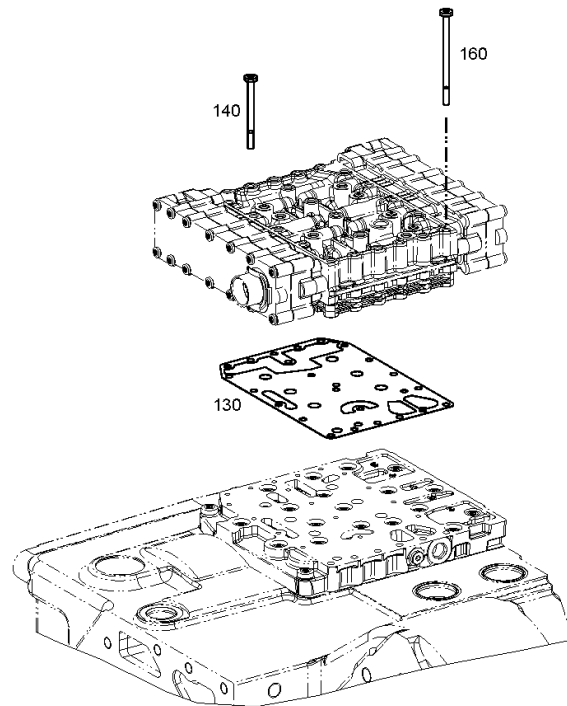
Material number: 4646.074.076

Picture: 464610602280

Material-assembly-group-no: 4646.106.022



4 WG 310 /
SHIFT SYSTEM



Picture

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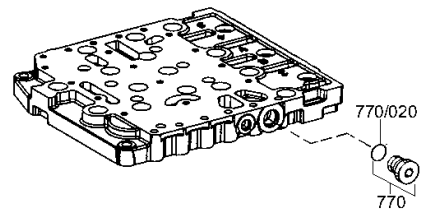
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4 WG 310 /
SHIFT SYSTEM



Picture

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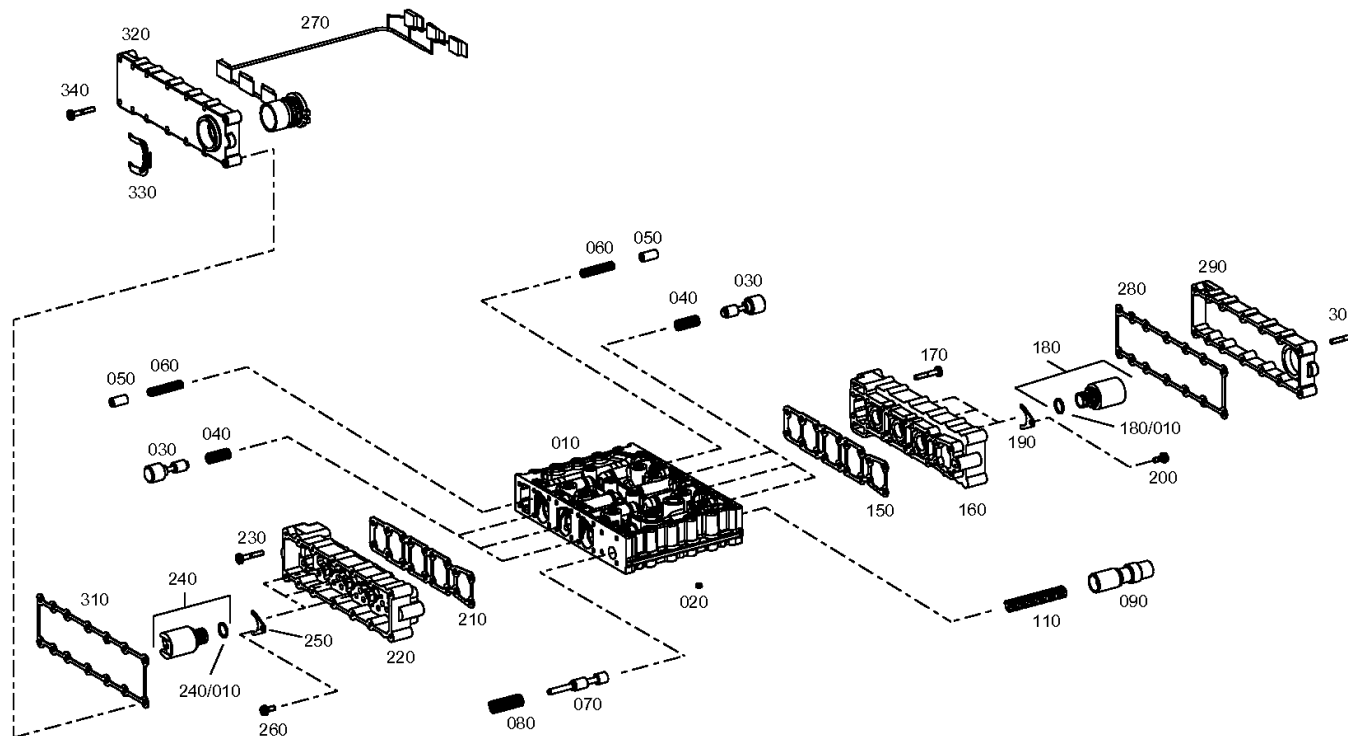
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4 WG 310 /
SHIFT SYSTEM



Picture

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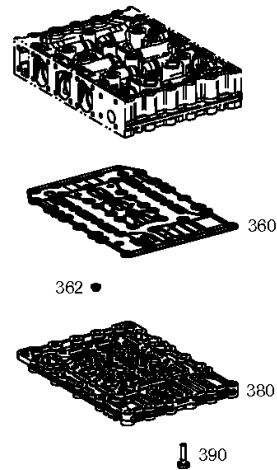
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4 WG 310 /
SHIFT SYSTEM



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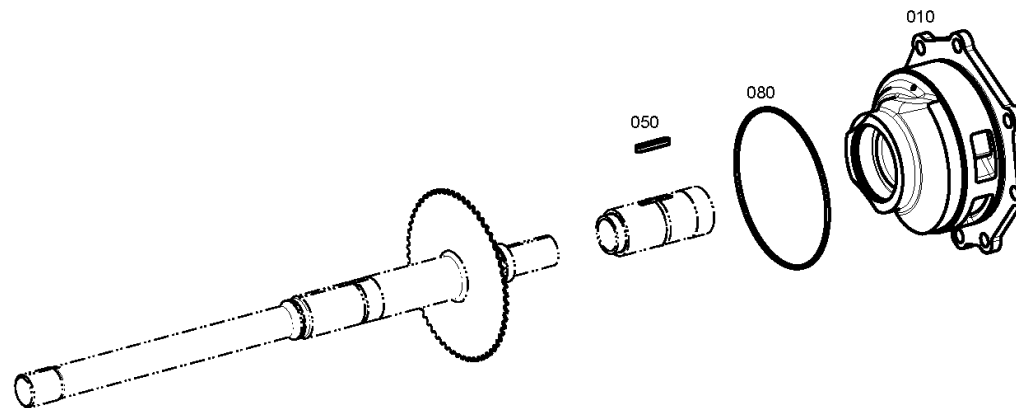
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4 WG 310 /
PRESSURE OIL PUMP



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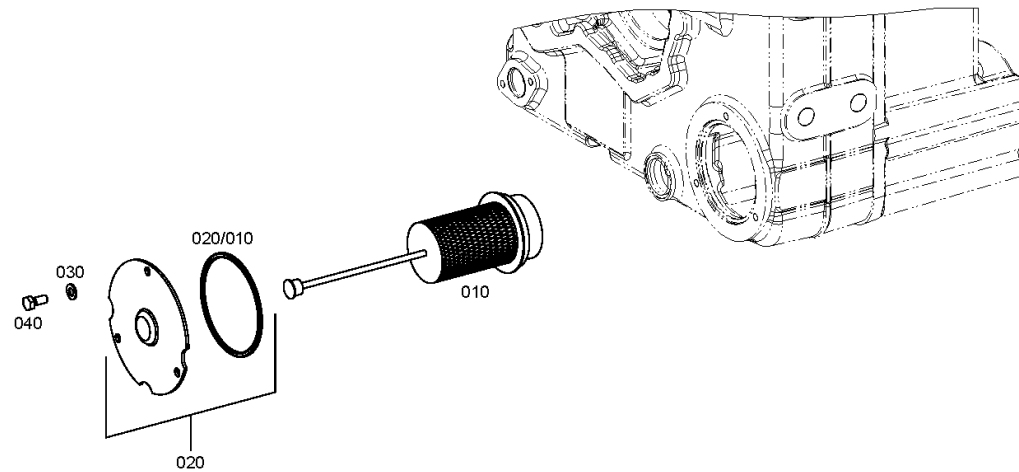
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4 WG 310 /
FILTER



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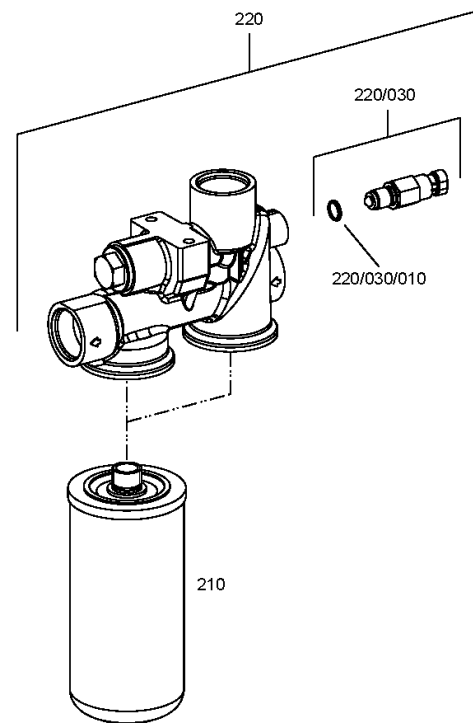
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4 WG 310 /
LOOSE PARTS



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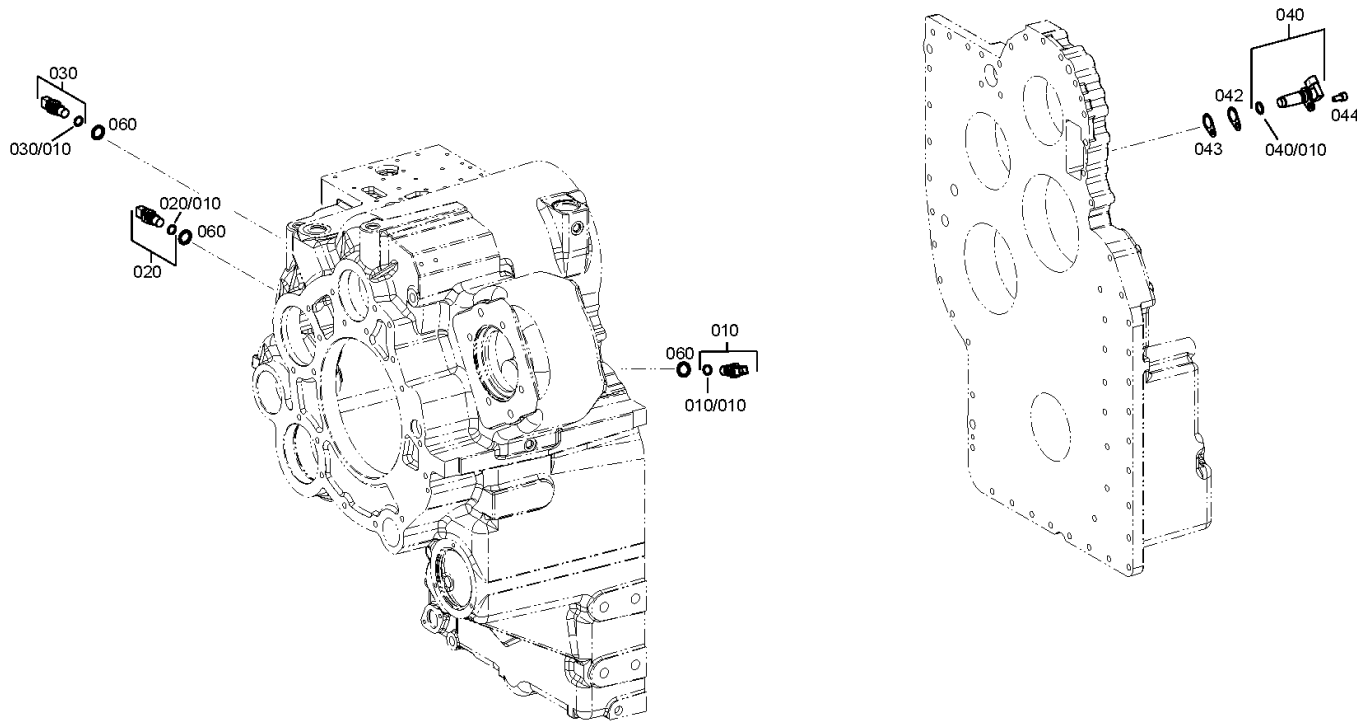
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4 WG 310 /
INDUCTIVE SENSOR



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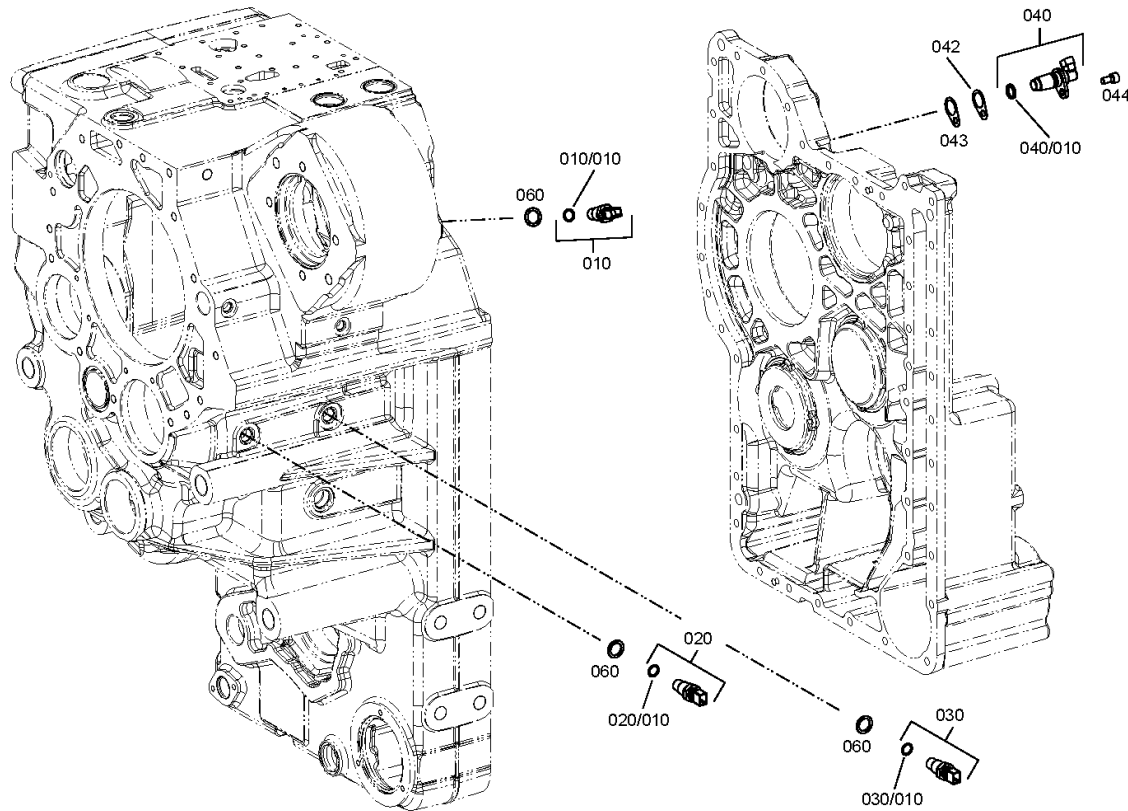
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4 WG 310 /
INDUCTIVE SENSOR



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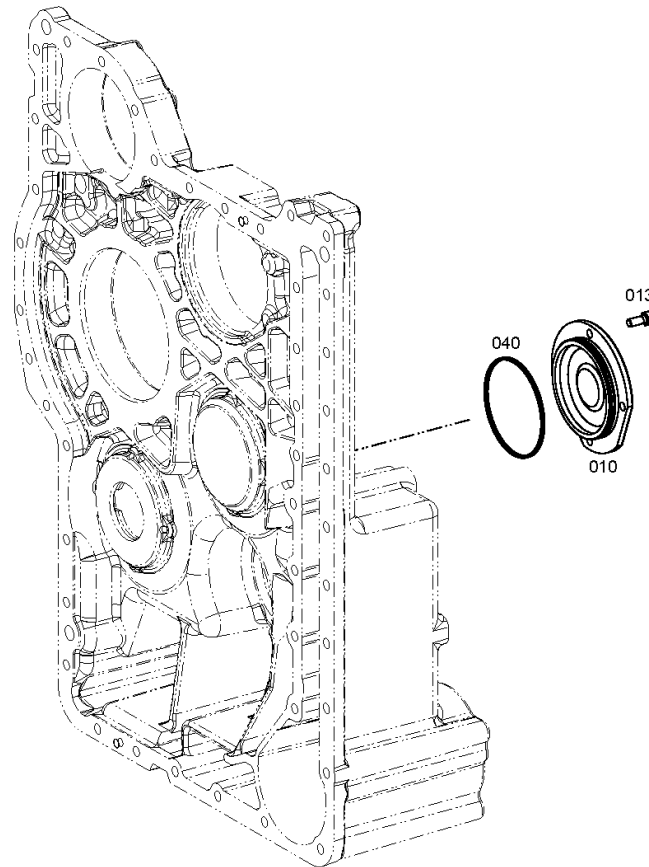
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4 WG 310 /
EMERGENCY STEERING PUMP



Picture

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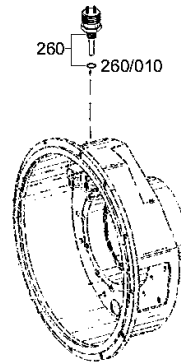
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4 WG 310 /
TEMPERATURE SENSOR



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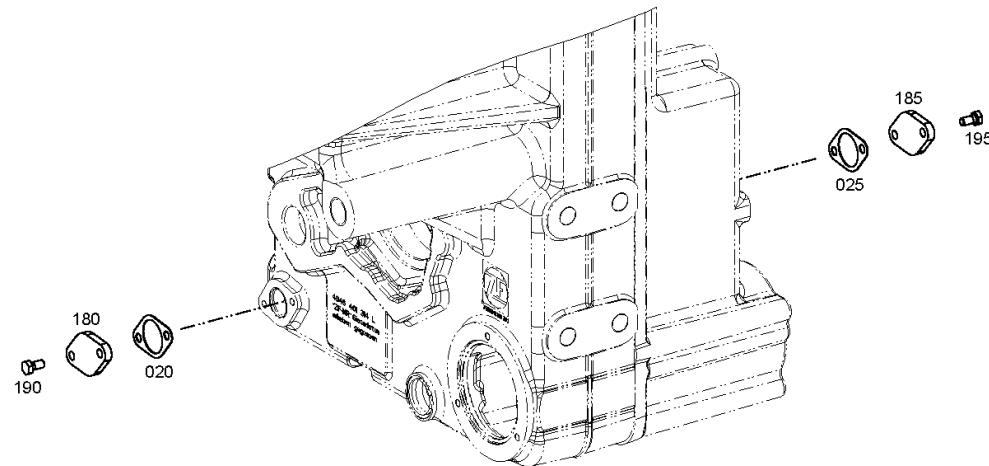
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4 WG 310 /
FILLER NOZZLE



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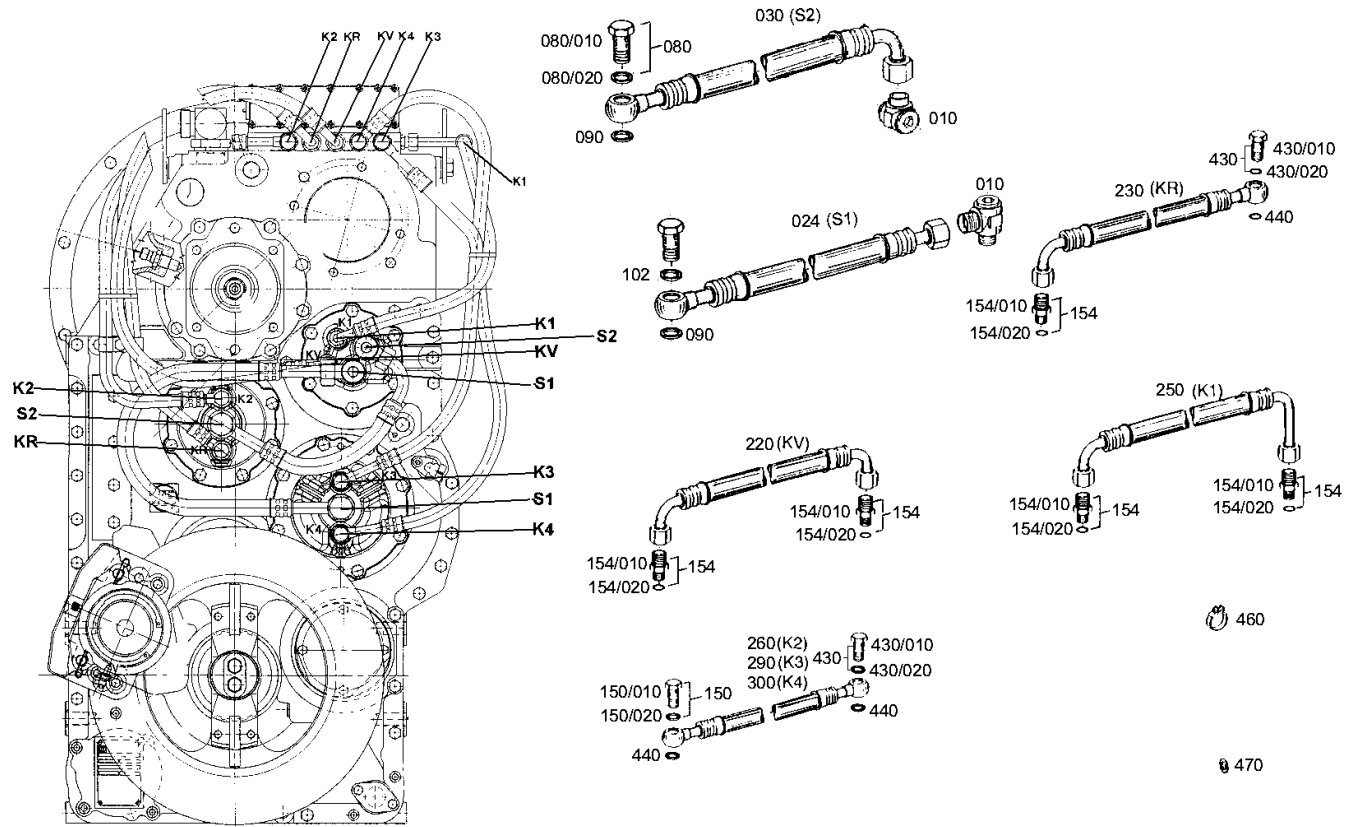
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4 WG 310 /
OIL PIPE



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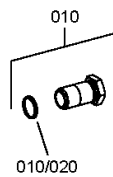
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4 WG 310 /
OIL PIPE



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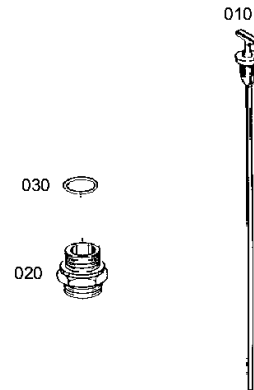
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4 WG 310 /
LOOSE PARTS



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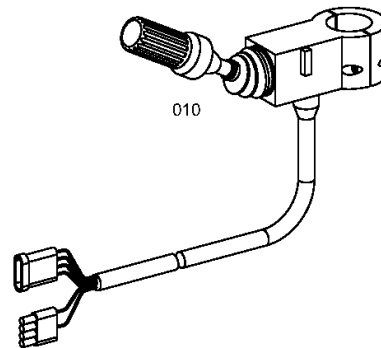
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4 WG 310 /
ACCESSORIES



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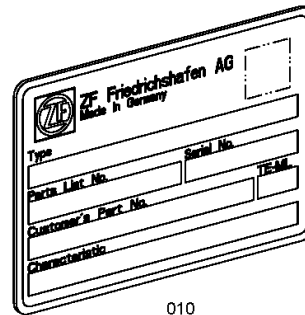
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4 WG 310 /
TYPE PLATE



010