

# Spare Parts Catalog 16 S 2220 TO Material number: 1342.002.015 Current date: 21.05.2020

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zuständiges Werk: Friedrichshafen

# Notes relating to the spare parts catalog

#### Setup of the spare parts catalog

#### - Cover sheet

- Tecnical Cover (only in SDM print)

Overview of figures

- Figure

- Associated parts list

- Next figure
- Associated 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
0680814	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

#### Figure and parts list

# 2 01.630 \* 01.600 01.310 01.310 01.310 01.350 \* 01.350 \* 01.360 01.360

#### 1 Positions and subpositions

Pos.	Sachnummer Product number	Benennung (Description)		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) <u>Combinations with standardized parts</u>

	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	Benennung	Technische Info	Description	Menge	Einheit
	Product number	(Description)	Technical info	(Benennung)	Quantity	Unit
062	0732.040.736	DRUCKFEDER		COMPRESSION SPRING	1	Stk

#### 4 <u>\*-Positions</u>

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 distina base

(5) Parts, dotted display

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





Pos.	Information	Amendment number
001	Use case	
002	Customer MAN	
003	City NN	
004	DUNS	
005	Vehicle / Apparatus	
006	Sales Name TG-A	
007	Manufacturer MAN	
008	Engineering Name	
009	Product Use TRUCK	
010	Vehicle/Hardware Type ROAD TRACTOR	
011	SOP	
012	Engine	
013	Sales Designation	
014	Manufacturer MAN	
015	Eng.Displ.	
016	Cylinder	
017	Nom. power 316 kW	
018	RPM at nom. power 1900 1/min	
019	Nom. torque 2100 Nm	
020	RPM at nom. torque 1000 1/min	
021	Classification use case	
022	DESIGNATION, CLUTCH MFZ430	
023	MANUFACTURER, CLUTCH ZF-SACHS	
024	TOTAL NUMBER OF WHEELS 4	
025	NUMBER OF DRIVING WHEELS 2	
026	DYNAMIC TYRE RADIUS 522 mm	
027	REAR AXLE RATIO 3.08	
031	PERMISS.GROSS VEHICLE WEIGHT 18 t	
032	PERMISS.GROSS COMBIN.WEIGHT 44 t	
033	APPROVAL NOTE 1 ERSTEINBAU*UEBERPRUEFUNG ERFORDERLICH	
034	Product description	
035	CO2-FAMILY XXX	
036	CO2-CERTIFICATE XXX	

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Pos.	Information	Amendment number
037	INSTALLATION POS TRANSMISSION HORIZONTAL LEFT	
038	TRANSMISSION ATTACHMENT FLANGE-MOUNTED	
039	RATIO, BOTTOM GEAR 13.8	
040	RATIO, TOP GEAR .84	
041	RATIO, 1ST GEAR 13.8	
042	RATIO, 2ND GEAR 11.54	
043	RATIO, 3RD GEAR 9.49	
044	RATIO, 4TH GEAR 7.93	
045	RATIO, 5TH GEAR 6.53	
046	RATIO, 6TH GEAR 5.46	
047	RATIO, 7TH GEAR 4.57	
048	RATIO, 8TH GEAR 3.82	
049	RATIO, 9TH GEAR 3.02	
050	RATIO, 10TH GEAR 2.53	
051	RATIO, 11TH GEAR 2.08	
052	RATIO, 12TH GEAR 1.74	
053	RATIO, 13TH GEAR 1.43	
054	RATIO, 14TH GEAR 1.2	
055	RATIO, 15TH GEAR 1	
056	RATIO, 16TH GEAR .84	
057	RATIO, 1ST GEAR REVERSE 12.92	
058	RATIO, 2ND GEAR REVERSE 10.8	
059	SET OF RATIOS SG	
060	RATIO RANGE BASIC DG	
061	NUMBER OF PLANETARY GEARS 5	
062	RATIO PLANETARY GEAR SET 4.565	
063	VER. SPLINE PLANETARY GEAR SET OBLIQUE TOOTHING	
064	DESIGN, SHIFT SYSTEM TURNING SHAFT	
065	POSITION, GEAR SHIFT SYSTEM HORIZONTAL LEFT	
066	DESIGN, SHIFT PATTERN UEH	
067	VERSION SHIFT SUPPORT GATE DEPENDENT SERVO	
068	VERSION ACTUATION SHIFT SYSTEM CONTROL CABLE	
070	DESIGN PSE PSE5	



Pos.	Information	Amendment number			
071	VERSION TUBE R/C PLASTIC-FORM-PIPE				
072	VERSION TUBE SERVO PLASTIC PIPING				
073	NOTE ON VERSION SHIFT SYSTEM GEAR SHIFT COVER WITH AIR DIST				
074	DESIGN DOWNSHIFT GATE INTERLOCK RADIAL				
075	VERSION TUBE GATE INTERLOCK WITHOUT PIPING				
076	1ST CUSTOMER SPEC SHIFT SYSTEM RANGE INTERLOCK				
077	2ND CUSTOMER SPEC SHIFT SYSTEM GATE INTERLOCK				
081	DESIGN VALVE AIR SUPPLY VALVE BLOCK				
082	DIA.THROTTLE VALVE AIR SUPPLY mm				
083	SELECTION PATTERN VARIANT GEAR SHIFT PATTERN 1				
084	DESIGN, SEPARATING CLUTCH FULL-SYNCHRONIZED				
085	VERSION OF SYNCHRONIZER 1 14.GEAR BK-SYNCHRONIZATION				
087	REFERENCE LENGTH INPUT SHAFT 109 mm				
088	STANDARD TYPE INPUT SHAFT SAE				
089	NUMBER OF WEDGES INPUT SHAFT 10				
090	VERSION OF INPUT SHAFT FORM C				
091	NOMINAL DIAMETER INPUT SHAFT 2 in				
092	DIAMETER, JOURNAL, INPUT SHAFT 25 mm				
093	TYPE FIT SPIGOTS INPUT SHAFT F7				
094	VER. BEAR. SPIGOTS INPUT SHAFT TAPER ROLLER				
095	LENGTH, INPUT SHAFT 395.5 mm				
096	DIAMETER SHAFT OF INPUT SHAFT 50.3 mm				
097	LENGTH, PROFILE, INPUT SHAFT 120 mm				
098	BUSH VARIANT INPUT SHAFT WITHOUT GROOVE				
099	VERSION BEARING CONSTANT 1 GL				
100	DIAMETER BEARING INPUT SHAFT 99.916 mm				
101	TYPE FIT BEAR. INPUT SHAFT H5				
102	DESIGN,CONN., CLUTCH HOUSING SAE 1				
103	CENTR.DIA,HSG/ENGINE CONNECT. 511.175 mm				
104	NUMBER OF BORES, ENGINE CONN. 12				
105	BORE DIA, ENGINE CONNECTION 11 mm				
106	VERSION OF CLUTCH HOUSING INTEGRATED				
108	VERSION ENGINE CONNECTION NOT FORDABLE				



Pos.	Information	Amendment number
109	POSITION MOUNT. FACE HOUSING 2 WITHOUT GROOVE	
110	LENGTH CLAMP. FLAP RH ENG CONNECT. 292 mm	
112	TYPE OF RELEASE MECHANISM WITH	
113	REF.LENGTH,RELEASE BEAR.FLAN -7 mm	
114	DIAMETER, RELEASE FLANGE 60 mm	
115	TYPE FIT RELEASE BEARING FLA. F8	
116	DIAMETER BEARING BUSH RELEASE UNIT LH 35 mm	
118	ASSEMBLY POS. CLUTCH CYLINDER 6	
119	OUTER DIA. OUTPUT FLANGE RA 180 mm	
120	NO.OF BORES OUTPUT FLANGE HA1 4	
122	BORE DIA. OUTPUT FLANGE RA 15 mm	
127	REF. LENGTH OUTPUT FLANGE RA 211.5 mm	
128	DIMENSION SHIFT TURRET DIST. 300 mm	
129	MEAS. LOC. SHIFT TURRET DIST. SHIFT LEVER-LOCATION	
131	RADIUS SELECTOR LEVER 69 mm	
132	SELECTOR LEVER POSITION B	
133	DESIGN OFFSET SELECTOR LEVER OUTSIDE	
134	LENGTH OFFSET SELECTOR LEVER 3.6 mm	
136	RADIUS 1 SHIFT LEVER 57.000 mm	
137	SHIFT LEVER CONNECTION HEXAGON	
138	DESIGN, OFFSET, SHIFT LEVER OUTSIDE	
140	LEVER POSITION SHIFTING OUTPUT A	
143	SPRING ARRANGEMENT Q4	
144	SPRING FORCE DETENT PLUNGER RG 120 N	
148	SELECTOR SPRING FORCE, OUTSIDE 40 N	
153	SWITCH, REVERSE GEAR y	
154	DESIGN, RG (REV.GEAR) SWITCH CLOSING	
155	DESIGN, CONNECTION, RG SWITCH DIN BAYONET	
156	CODE SWITCH RG A2	
157	PROT.CAP SWITCH, REVERSE GEAR y	
158	NOTE ON SWITCH, REVERSE GEAR G.SHIFT SHAFT	
159	SWITCH, NEUTRAL GEAR y	
160	DESIGN,NG(NEUTRAL GEAR)SWITCH OPENING SWITCH	



Pos.	Information	Amendment number
161	DESIGN, CONNECTION, NG SWITCH DIN BAYONET	
162	CODE SWITCH NG A1	
163	PROT.CAP SWITCH, NEUTRAL GEAR y	
184	FUNCTION OF R/C SWITCH GP	
185	DESIGN, GP SWITCH PREPARED	
188	PROTECTING CAP GP SWITCH n	
189	FUNCTION OF S/G SWITCH GV	
190	DESIGN, GV SWITCH WITHOUT GROOVE	
193	PROTECTING CAP GV SWITCH n	
231	ATTACHM.POS.HEAT EXCHANGER IN FRONT LEFT PREPARED	
233	VER. TRANSMISSION VENTILATION ELBOW JOINT	
235	POS.TRANSMISSION VENTILATION IN FRONT	
236	DESIGN PULSE SENSOR INPUT WITH	
237	DES.CONN.PULSE SENSOR INPUT DIN BAYONET	
238	PROT.CAP PULSE SENSOR INPUT y	
239	DM PLACE OF TAKEOFF PULSE SENSOR IN 172 mm	
240	PLACE OF TAKEOFF PULSE SENSOR INPUT COUNTER SHAFT CONSTANT 2	
241	VERSION PULSE SENSOR SFA H68 WITHOUT GROOVE	
245	PROT.CAP PULSE SENSOR SFA H68 n	
246	NO. PULSES PULSE SENSOR SFAH68 6 IMP/U	
251	VER. PULSE SENSOR TRANSM. H70 WITH	
252	VER. CONNECT. PULSE SENSOR H70 DIN BAYONET	
253	DESIGN PULSE SENSOR H70 KITAS II	
254	INSTRUCTION SENSOR H70 ADR-EXPLOSION-PROOF	
255	PROT.CAP PULSE SENSOR TM H70 y	
256	NO PULSES PULSE SENSOR TM H70 6 IMP/U	
257	ASSEMBLY POS PULSE SENSOR H70 1	
258	NOTE ASS. POS PULSE SENSOR H70 INSTALLATION DRAWING	
270	POSITION, OIL FILLER HOUSING LEFT+RIGHT	
271	NOTE ON OIL FILL FILL IN OVERFLOW	
272	OIL CAPACITY, GEARBOX 13 dm3	
273	OIL FILL VARIANT EX WORKS	
274	OIL GRADE PERMISSIBLE ACC. TO TE-ML02	



Pos.	Information	Amendment number
275	OIL CLASS FIRST FILLING E	
276	CODING OUTER CONSERVATION KA1+2	
277	SCOPE OUTER CONSERVATION T	
278	CODING INNER CONSERVATION KI1	
279	CONSERVATION SPECIFICATION ZFN 916	
280	COLOR JET BLACK	
281	COLOUR CLASSIFICATION ACC. TO RAL 9005	
	PAINTING, ZF STANDARD 915 W	
291	Alias ID	
292	MAN 81.32004-6006	

## Assembly group overview Page 1 from 2

Material number: 1342.002.015



Graphics	Pos.	Material number	Name	Quantit y	Amend. no.	Techn. Info.
068.01.05-1	110	1316.101.128	TRANSMISSION HOUSING	1		
068.01.40-1	118	1315.101.409	CONNECTING PARTS	1		
068.01.57-1	120	1316.101.989	TRANSMISSION HOUSING	1		
068.02.59-1	140	1315.102.429	CONNECTION PLATE	1		
068.02.82-1	150	1315.102.811	INPUT SHAFT	1		
068.02.02-1	910	1316.102.032	INPUT SHAFT	1		
068.03.80-1	180	1316.103.803	COUNTERSHAFT	1		
068.03.01-1	920	1316.103.013	COUNTERSHAFT	1		
068.04.13-1	930	1316.104.037	MAIN SHAFT	1		
068.06.01-1	230	1316.106.008	SHIFT SYSTEM	1		
068.06.43-1	234	1315.106.422	CONNECTING PARTS	1		
068.06.80-1	238	1315.106.800	SHIFT SYSTEM	1		
068.07.84-1	292	1341.108.806	GEAR SHIFT HOUSING	1		
068.07.48-1	910	1341.108.010	GEAR SHIFT HOUSING	1		
068.07.47-1	914	1341.108.409	GEARSHIFT SHAFT	1		
068.07.82-1	924	1341.108.002	DETENT	1		
068.08.22-1	954	1341.171.403	END COVER	1		
068.08.02-1	960		PNEUMATIC SERVO UNIT	1		
068.08.79-1	964	1341.171.813	CONNECTING PARTS	1		
068.09.03-1	934	1341.109.025	CONNECTING PARTS	1		
068.09.08-1	940	1341.109.409	CONNECTING PARTS	1		
068.10.89-1	296		SELECTOR LEVER	1		
068.10.08-1	932		SELECTOR LEVER	1		
068.12.25-1	920	1341.149.011	SET OF SPRINGS	1		
068.40.04-1	500	1316.112.014	GV-SHIFT SYSTEM	1		
068.40.43-1	502	1315.112.425	CONNECTING PARTS	1		
068.43.21-1	10	1315.131.047	COVER	1		
068.43.06-1	20	1315.131.050	RC HOUSING	1		
068.43.40-1	30	1315.131.400	CLOSING COMPONENTS	1		
068.43.80-1	512	1315.131.805	RC HOUSING	1		
068.43.41-1	516	1315.131.436	CONNECTING PARTS	1		
068.44.07-1	40	1315.132.015	PLANETARY DRIVE	1		

# Assembly group overview Page 2 from 2

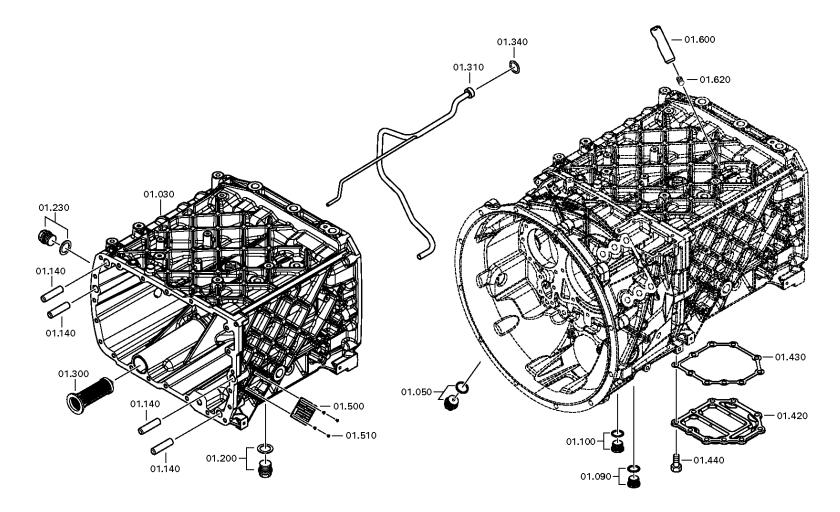
Material number: 1342.002.015



Graphics	Pos.	Material number	Name	Quantit y	Amend. no.	Techn. Info.
068.44.41-1	50	1316.132.400	PLANETARY DRIVE	1		
068.45.04-1	70	1316.133.008	SYNCHRONIZER	1		
068.45.40-1	80	1315.133.405	SYNCHRONIZER	1		
068.46.02-1	90	1316.134.021	GP SHIFT SYSTEM	1		
068.46.41-1	554	1315.134.409	CONNECTING PARTS	1		
068.57.12-1	390	1316.145.012	RANGE SELECTION	1		
068.93.95-1	130	1315.168.019	CLUTCH RELEASE DEVICE	1		
073.R0.01-1	KIT	1272.298.934	SMALL COMP.SET	1		

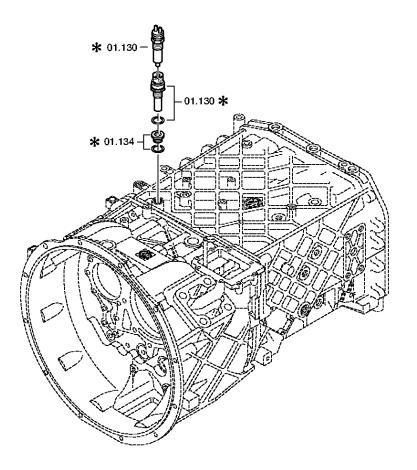
Material number: 1342.002.015 Plant: 068.01.05-1 TRANSMISSION HOUSING





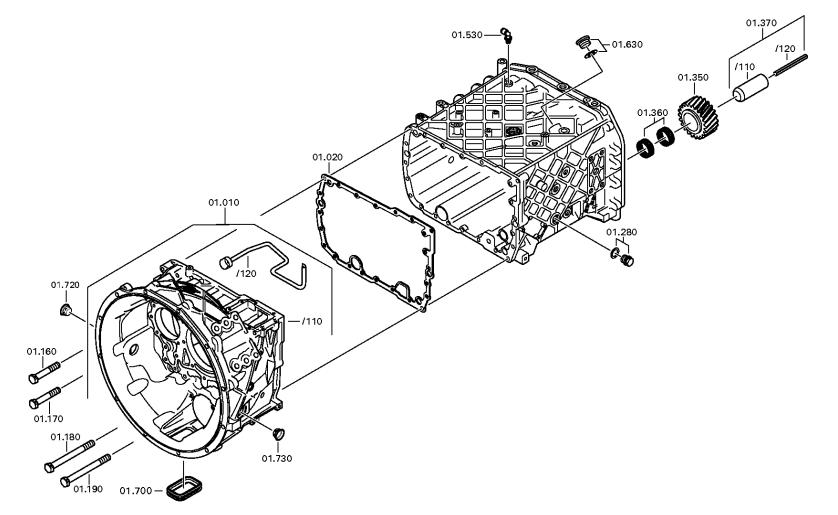
Material number: 1342.002.015 Plant: 068.01.40-1 TRANSMISSION HOUSING





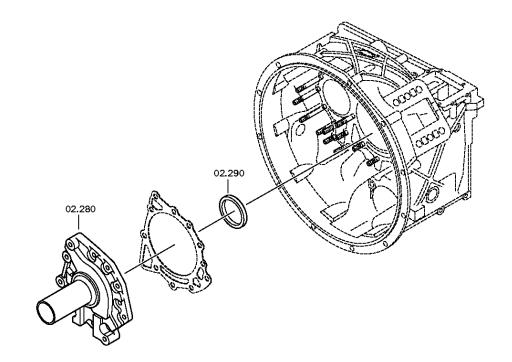
Material number: 1342.002.015 Plant: 068.01.57-1 TRANSMISSION HOUSING





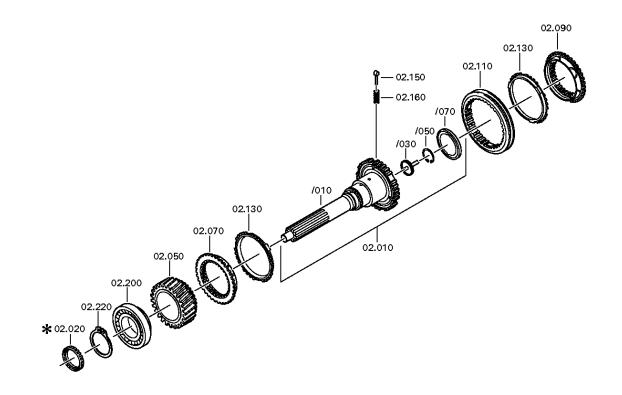
Material number: 1342.002.015 Plant: 068.02.59-1 CONNECTION PLATE





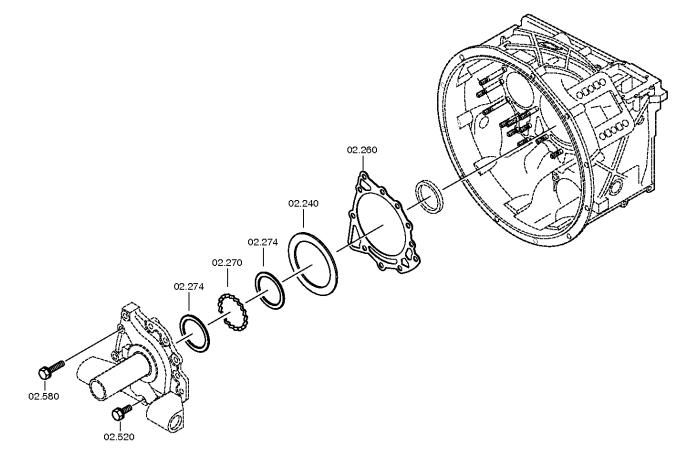
Material number: 1342.002.015 Plant: 068.02.02-1 CONNECTION PLATE





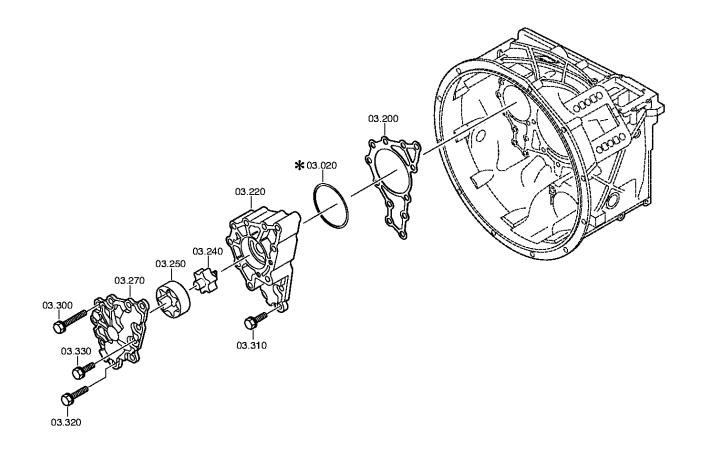
Material number: 1342.002.015 Plant: 068.02.82-1 CONNECTION PLATE





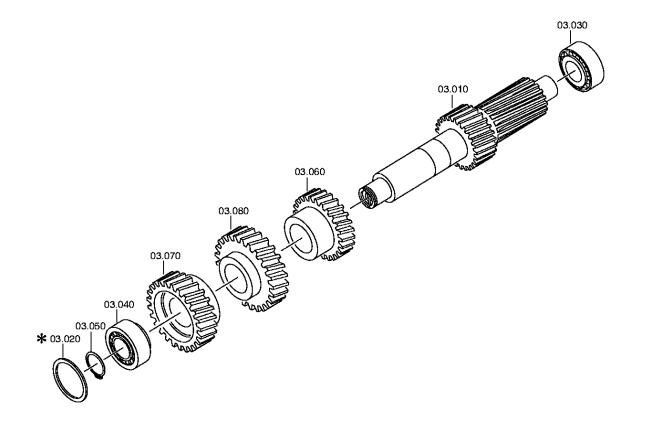
Material number: 1342.002.015 Plant: 068.03.80-1 COUNTERSHAFT





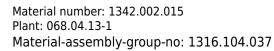
Material number: 1342.002.015 Plant: 068.03.01-1 COUNTERSHAFT



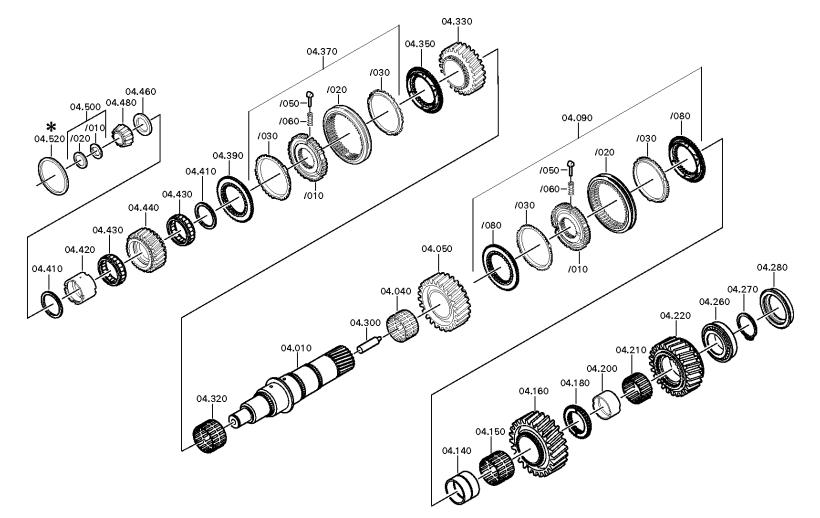


# Plant

Page 1 from 1

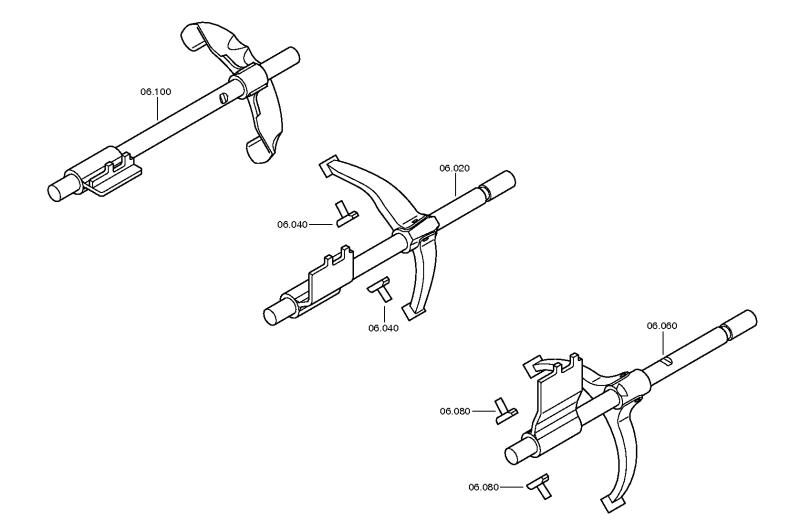






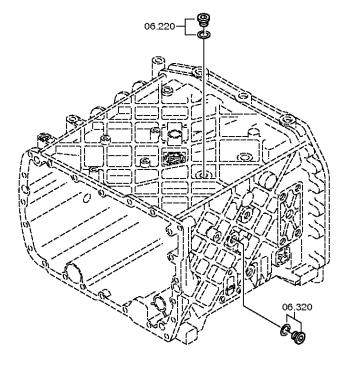
Material number: 1342.002.015 Plant: 068.06.01-1 SHIFT SYSTEM





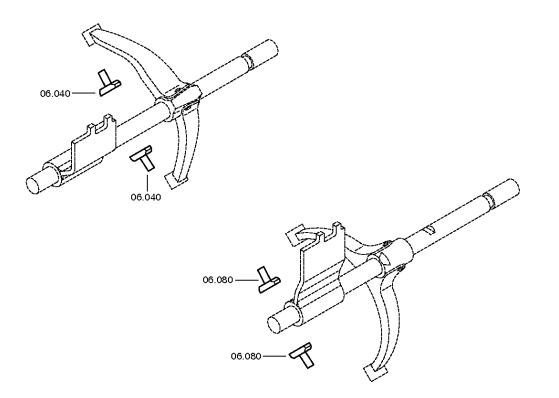
Material number: 1342.002.015 Plant: 068.06.43-1 SHIFT SYSTEM





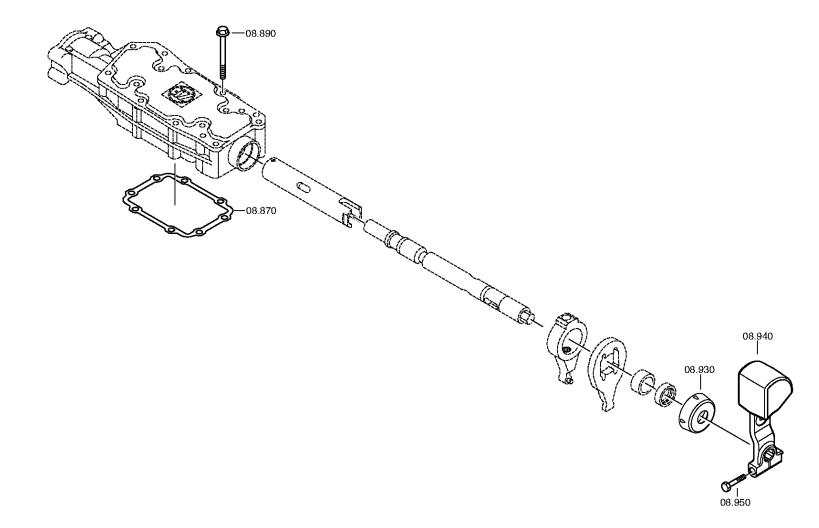
Material number: 1342.002.015 Plant: 068.06.80-1 SHIFT SYSTEM





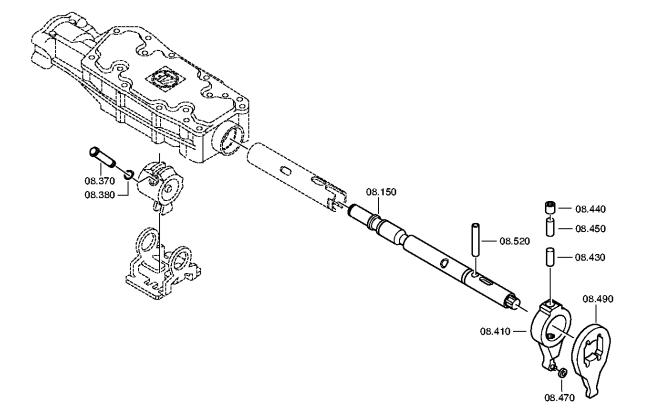
Material number: 1342.002.015 Plant: 068.07.84-1 GEAR SHIFT HOUSING





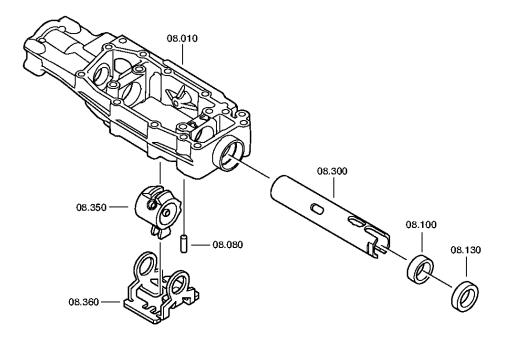
Material number: 1342.002.015 Plant: 068.07.47-1 GEAR SHIFT HOUSING





Material number: 1342.002.015 Plant: 068.07.48-1 GEAR SHIFT HOUSING



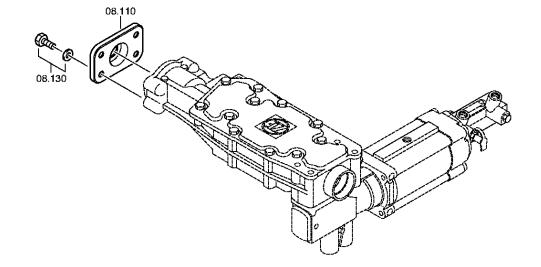


Material number: 1342.002.015 Plant: 068.07.82-1 GEAR SHIFT HOUSING



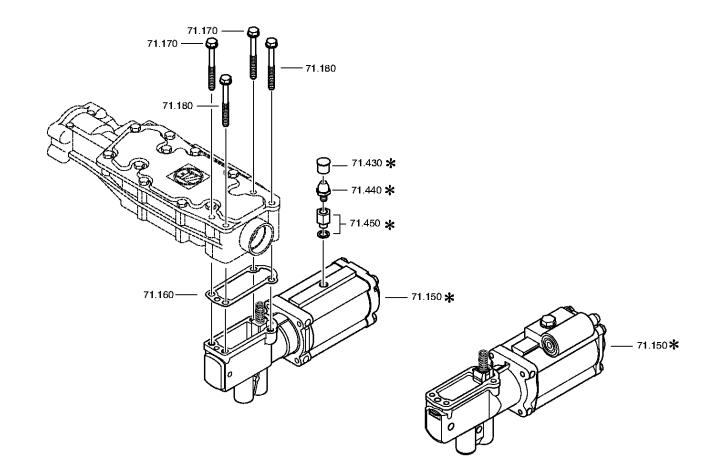
Material number: 1342.002.015 Plant: 068.08.22-1 END COVER





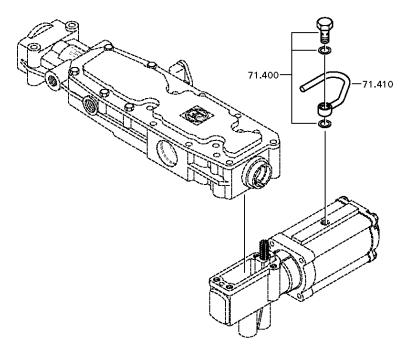
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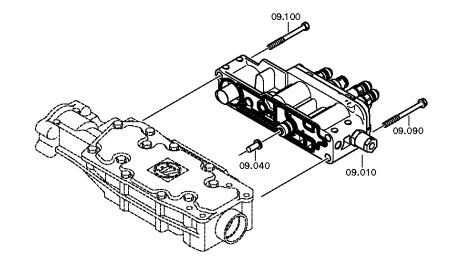
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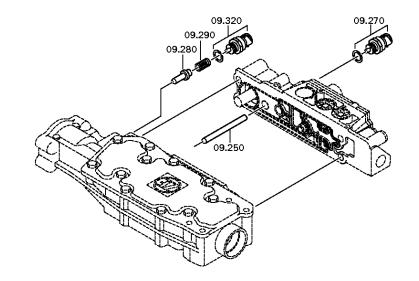
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Material number: 1342.002.015 Plant: 068.09.08-1 CONNECTING PARTS



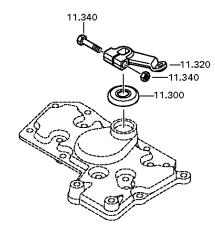


# Plant

Page 1 from 2

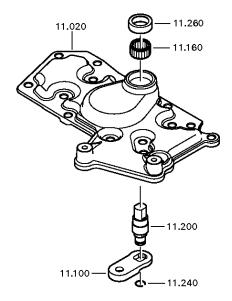
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Material number: 1342.002.015 Plant: 068.10.08-1 SELECTOR LEVER





# Plant

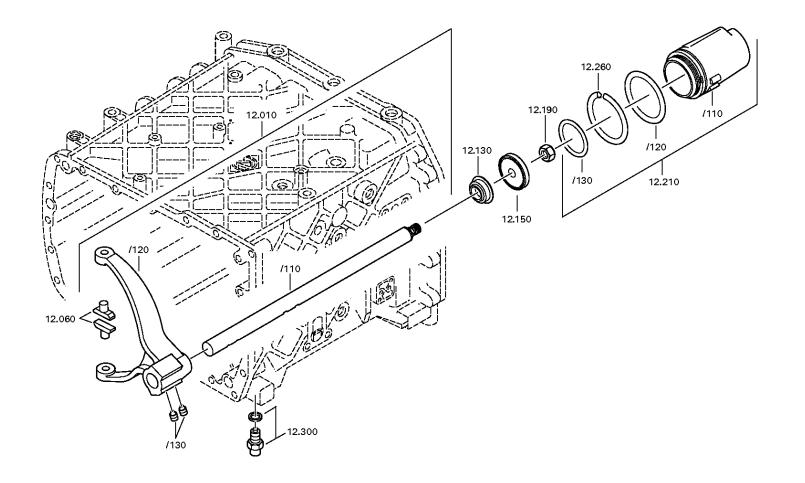
Page 1 from 1

Material number: 1342.002.015 Plant: 068.12.25-1 Material-assembly-group-no: 1341.149.011



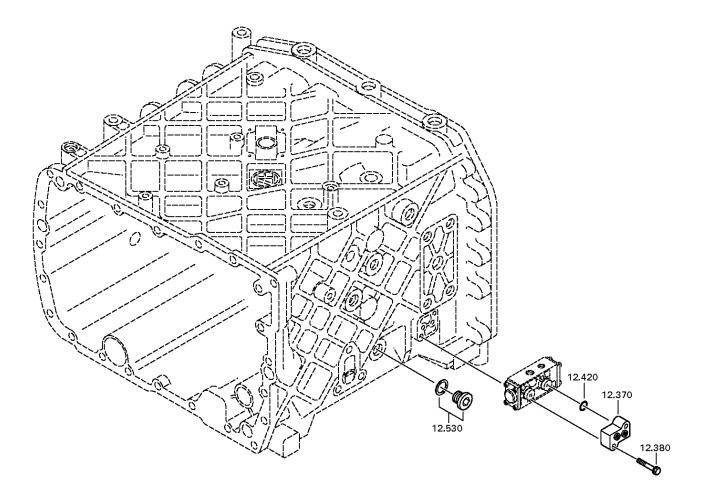
Material number: 1342.002.015 Plant: 068.40.04-1 **GV-SHIFT SYSTEM** 





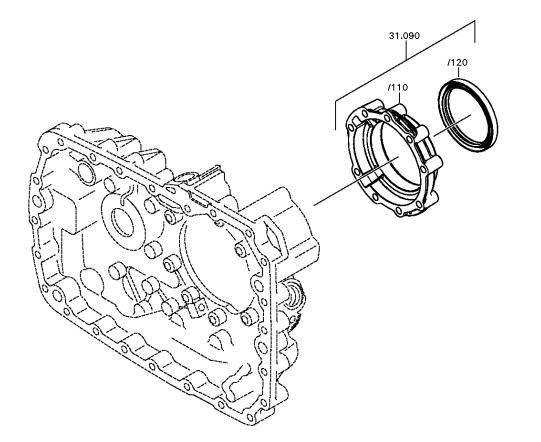
Material number: 1342.002.015 Plant: 068.40.43-1 **GV-SHIFT SYSTEM** 





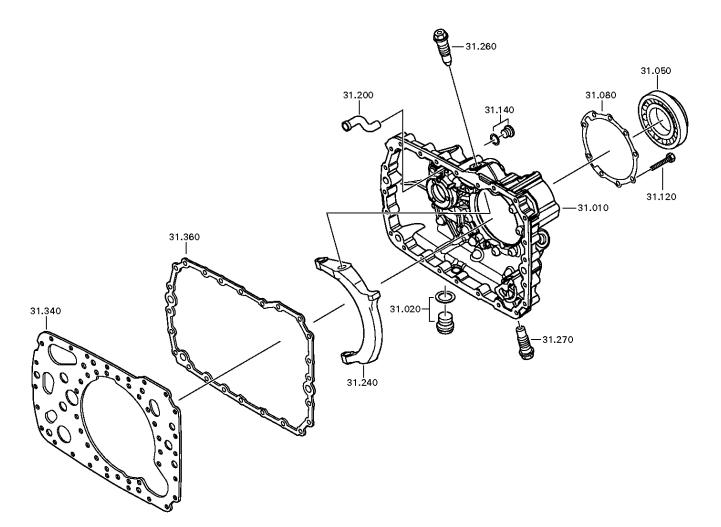
Material number: 1342.002.015 Plant: 068.43.21-1 COVER





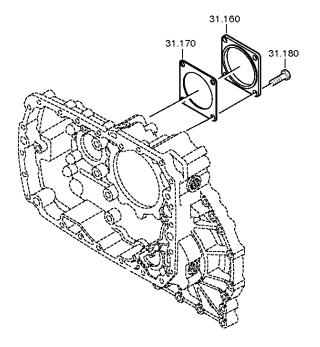
Material number: 1342.002.015 Plant: 068.43.06-1 COVER





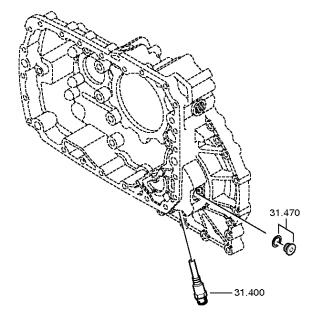
Material number: 1342.002.015 Plant: 068.43.40-1 COVER





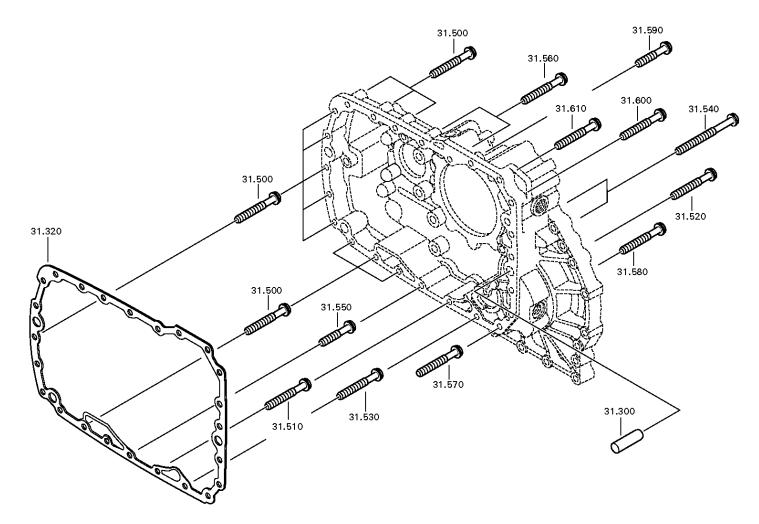
Material number: 1342.002.015 Plant: 068.43.41-1 COVER





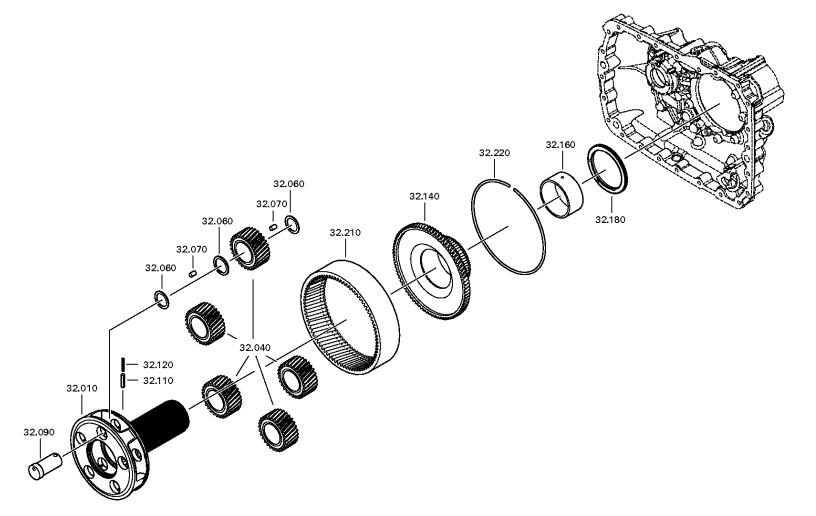
Material number: 1342.002.015 Plant: 068.43.80-1 COVER





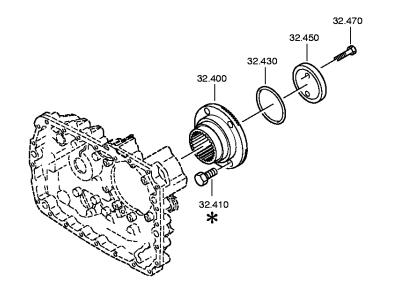
Material number: 1342.002.015 Plant: 068.44.07-1 PLANETARY DRIVE





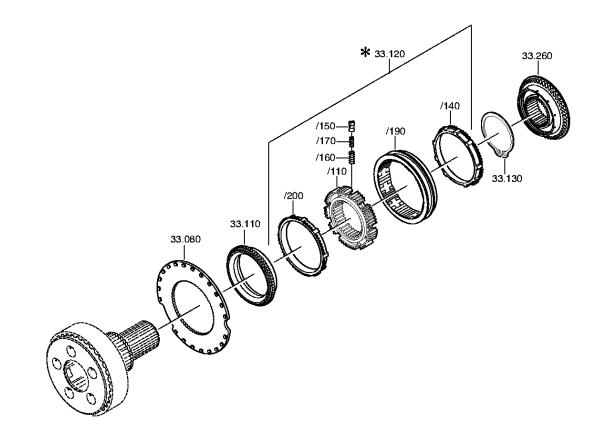
Material number: 1342.002.015 Plant: 068.44.41-1 PLANETARY DRIVE





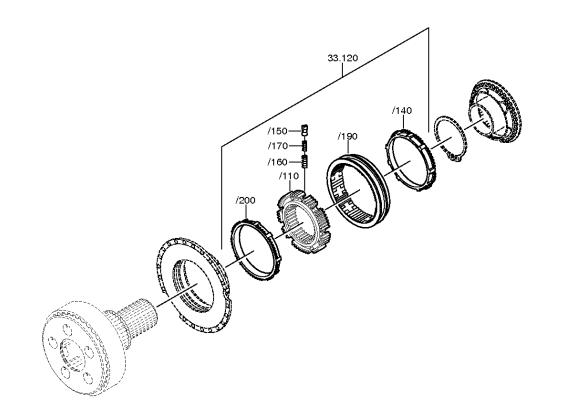
Material number: 1342.002.015 Plant: 068.45.04-1 SYNCHRONIZER





Material number: 1342.002.015 Plant: 068.45.40-1 SYNCHRONIZER





Material number: 1342.002.015 Plant: 073.R0.01-1 SYNCHRONIZER



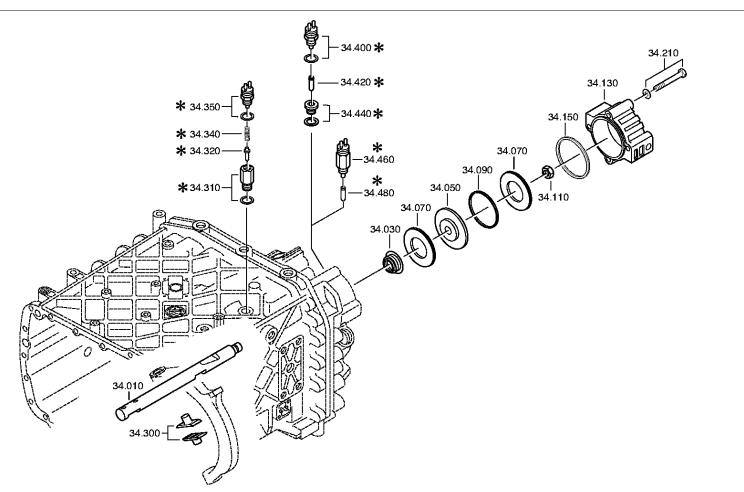


## Plant

Page 1 from 2

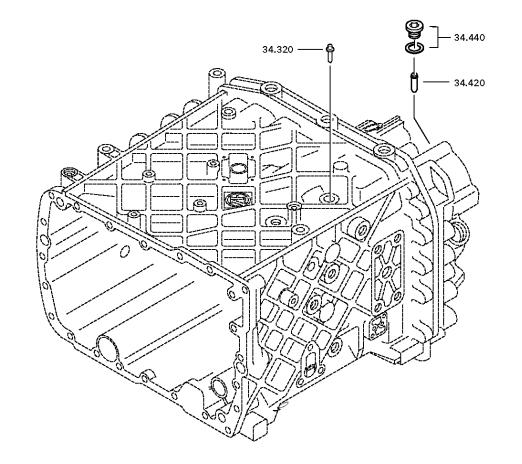
Material number: 1342.002.015 Plant: 068.46.02-1 **GP SHIFT SYSTEM** 





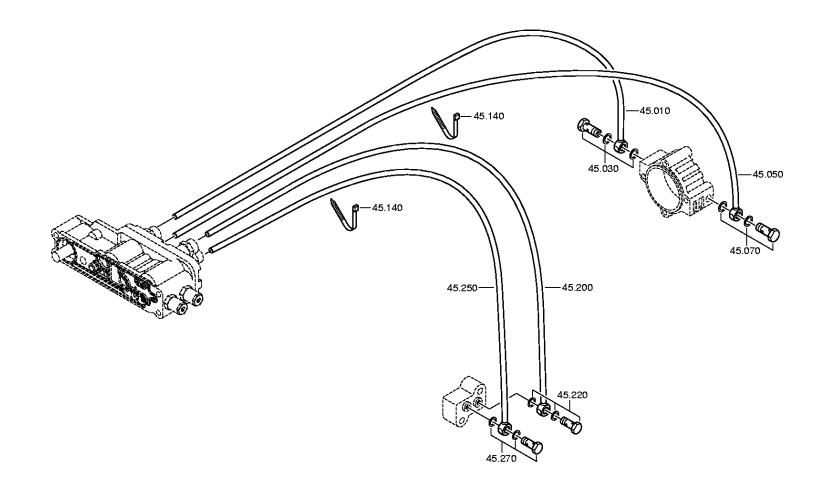
Material number: 1342.002.015 Plant: 068.46.41-1 GP SHIFT SYSTEM





Material number: 1342.002.015 Plant: 068.57.12-1 Material-assembly-group-no: 1316.145.012





## Plant

Page 1 from 1

Material number: 1342.002.015 Plant: 068.93.95-1 Material-assembly-group-no: 1315.168.019



