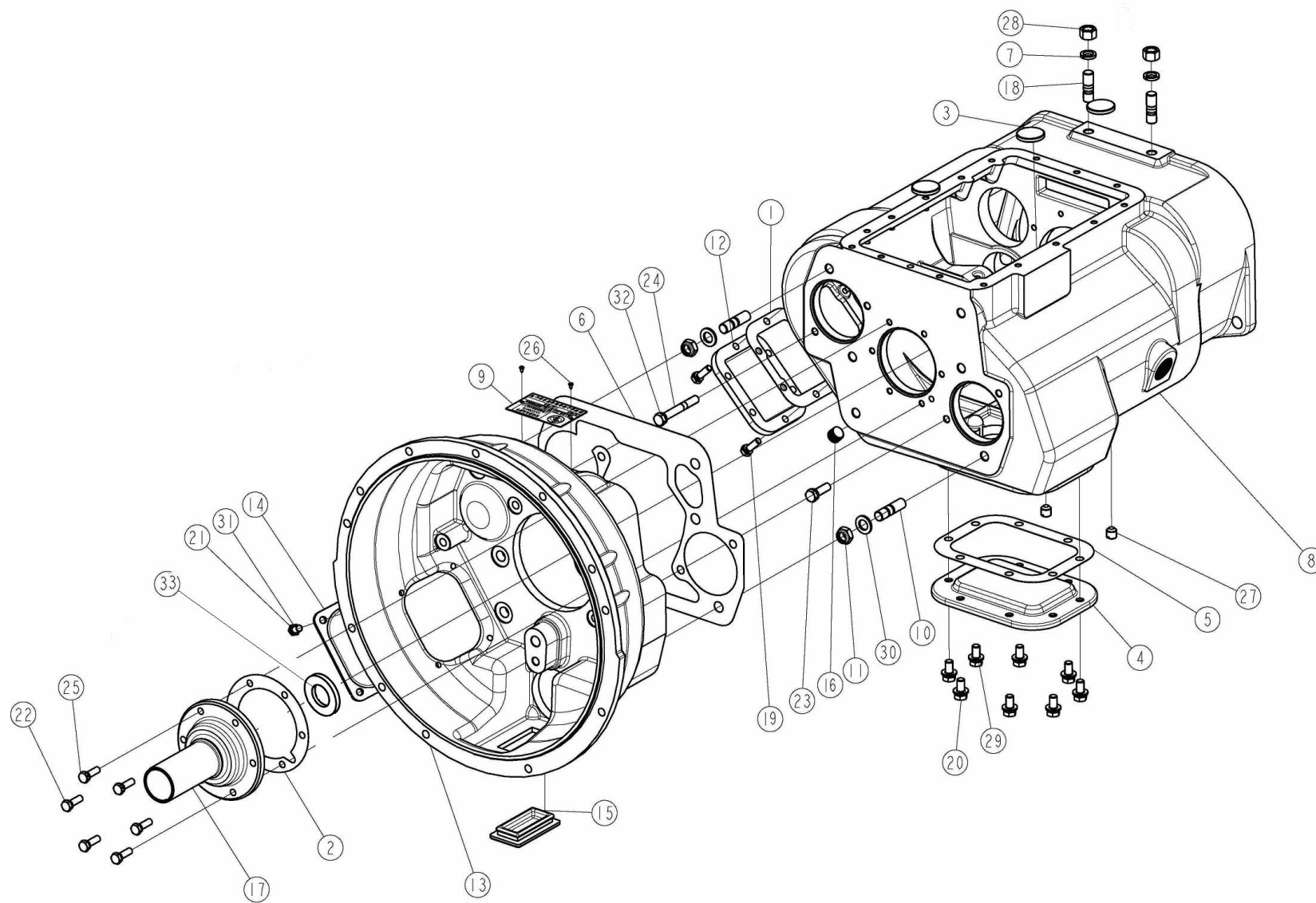


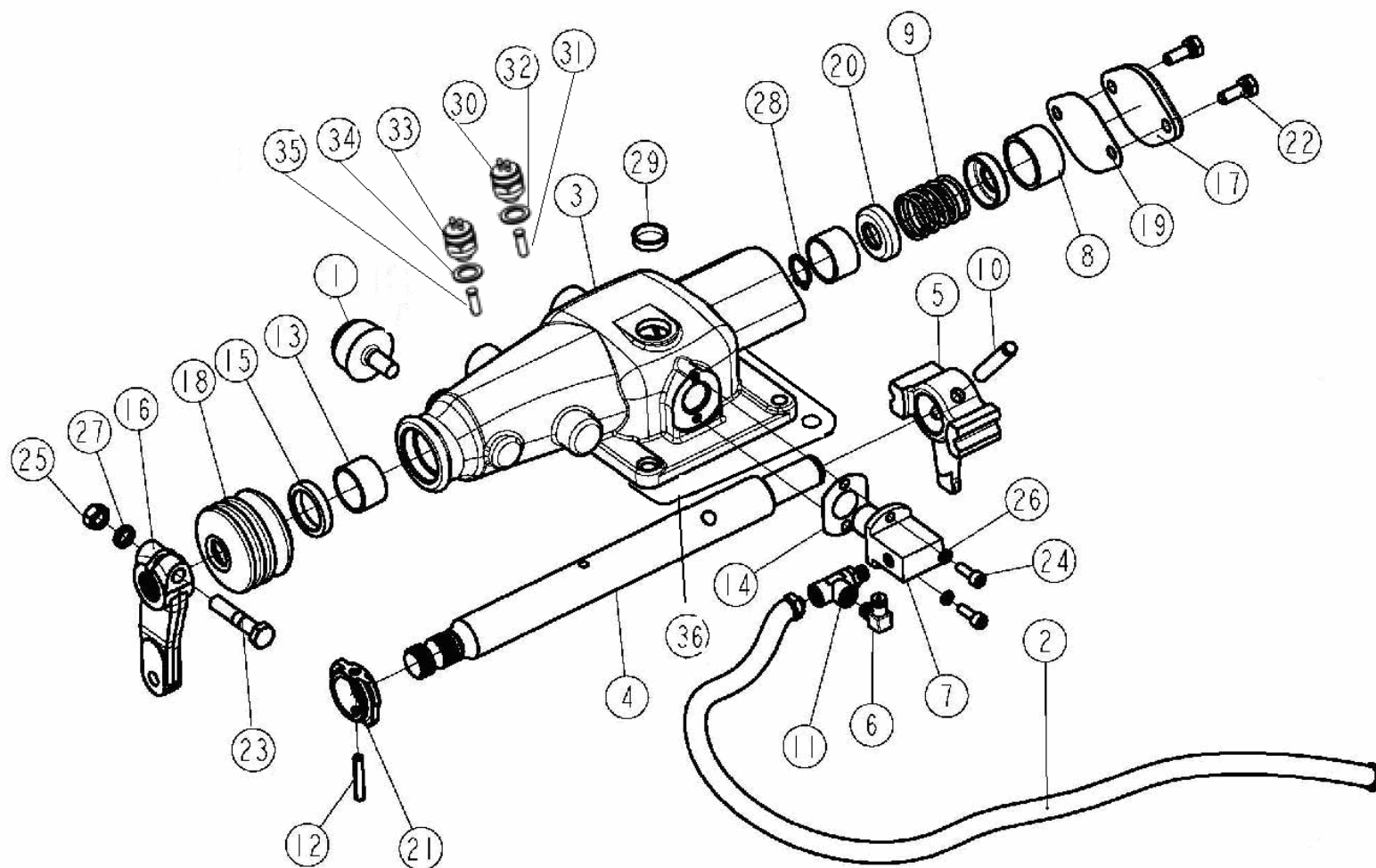
第一节 12JS200TA 变速箱总成拆卸、装配、使用、保养 8-3



No	Part No.	Part Name		Quantity
1	1684	侧取力窗口衬垫	gasket for side PTO window	1
2	14311	一轴轴承盖衬垫	gasket for bearing cover of input shaft	1
3	14373	圆磁铁	Round magnet	3
4	16596	底取力窗口盖	window cover for bottom PTO	1
5	16929	底取力窗口衬垫	gasket for bottom PTO window	1
6	20822	离合器壳体衬垫	gasket for clutch housing	1
7	Q40316	弹簧垫圈	Spring gasket	2
8	12JS160T-1701015	变速器壳体	Housing of transmission	1
9	12JS200T-1702021-3	标牌	tag	1
10	C01056	双头螺栓	Bi-head bolt	6
11	GB890-80-M16X1.5	六角尼龙圈锁紧薄螺母	Hexagonal nylon lock-ring bolt (thin)	6
12	JS130T-1701020	侧取力窗口盖	side PTO window cover	1
13	JS180-1601015-6	离合器壳	Housing of clutch	1
14	JS180-1601016-1	手孔盖	Hand-hole-cover	1
15	JS180-1601016-2	手孔盖	Hand-hole-cover	1
16	Q61304	开槽锥形螺塞	Notch taper plug screw	1
17	JS180A-1701040-3	一轴轴承盖	bearing cover of input shaft	1
18	Q1231630	双头螺柱	Bi-head screw bolt	2
19	Q1421032	六角头螺栓和弹簧垫圈组合件	Hexagonal bolt sand spring gasket	6
21	Q150B1025	六角头螺栓	Hexagonal bolt	4
22	Q150B1032	六角头螺栓	Hexagonal bolt	4
23	Q150B1238	六角头螺栓	Hexagonal bolt	2
24	Q150B1290	六角头螺栓	Hexagonal bolt	2

No	Part No.	Part Name		Quantity
25	Q170B1032	六角头头部带孔螺栓	Hexagonal bolt with hole in end	2
26	Q2713508	十字槽盘头自攻螺钉	Cross-recess-head self-threading screw	2
27	Q2821616	开槽平端紧定螺钉	grooved flat-end fastening bolt	2
28	Q341B16	1 型六角螺母	1 type hexagonal nut	2
29	Q40112	平垫圈	Flat gasket	8
30	Q40116	平垫圈	Flat gasket	6
31	Q40310	弹簧垫圈	Spring gasket	10
32	Q40312	弹簧垫圈	Spring gasket	4
33	F500A-1802191	骨架油封总成	Oil-sealing of framework	1

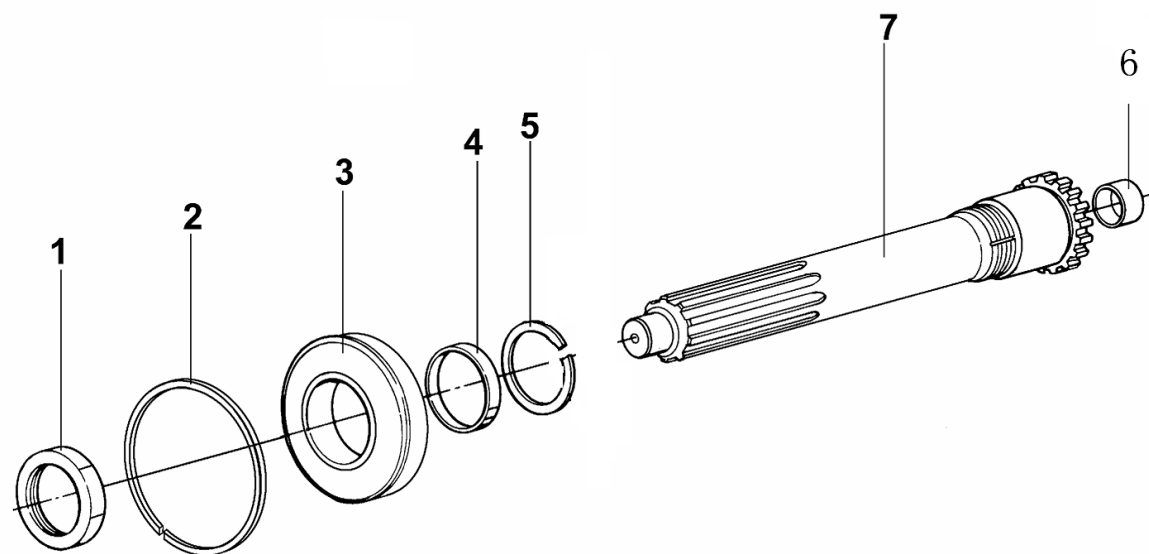
5.1换挡操纵机构爆炸图



No	Part No.	Name		quantity.
1	15276	通气塞	Breather plug	1
2	55534	气管总成	Pipe assembly	1
3	12JS160T-1703015	操纵装置壳体	housing of controlling device	1
4	12JS160T-1703017	横向换档杆	horizontal shifting lever	1
5	12JS160T-1703018	拨头	plug	1
6	12JS160T-1703021	90° 快换接头	90° quick shift connector	1
7	12JS160T-1703022	气路控制阀	gas path controlling valve	1
8	12JS160T-1703024	限位套	Spacing sleeve	1
9	12JS160T-1703027	压缩弹簧	Compressed spring	1
10	C03030	圆柱销	Column pin	1
11	C03052	三通管接头	Three ways connector	1
12	C09035	弹性圆柱销	Spring column pin	1
13	F91345	横向换档杆衬套	Bush of horizontal shifting lever	2
14	F91353	双 H 气阀衬垫	Double H valve gasket	1
15	F91444	油封	Oil sealing	1
16	F96035—17	LRC 外换档臂	LRC outer shifting arm	1
17	F99666-2	侧板	Side baffle plate	1
18	F99669	套	sleeve	1
19	F99672-2	端垫	End gasket	1
20	F99673-1	弹簧座	Spring pedestal	2
21	F99681	低倒挡开关控制块	control device for low and reverse speed switch	1
22	Q1420822	六角头螺栓和弹簧垫圈组合件	hexagonal bolt and spring gasket	2
23	Q151B1050	六角头螺栓-细牙	fine-teeth hexagonal bolt	1

No	Part No.	Name		quantity.
24	Q218B0618	内六角圆柱头螺钉	inner hexagonal column head bolt	2
25	Q341B10	1 型六角螺母	1 style hexagonal nut	1
26	Q40306	弹簧垫圈	Spring gasket	2
27	Q40310	弹簧垫圈	Spring gasket	1
28	Q43120	轴用弹性挡圈	Spring baffle plate for axles	1
29	Q72224	碗形塞片	Bowl-shape patch	1
30	0041KS	压力开关	Pressure switch	1
31	F99702	开关启动销	switch launch pin	1
32	Q72318T3	密封垫圈	Sealing gasket	1
33	0068DS	压力开关	Pressure switch	1
34	C03015	垫密圈	Sealing ring	1
35	15899	开关启动销	switch launch pin	1
36	1642	操纵窗口衬垫	Gasket for controlling window	1

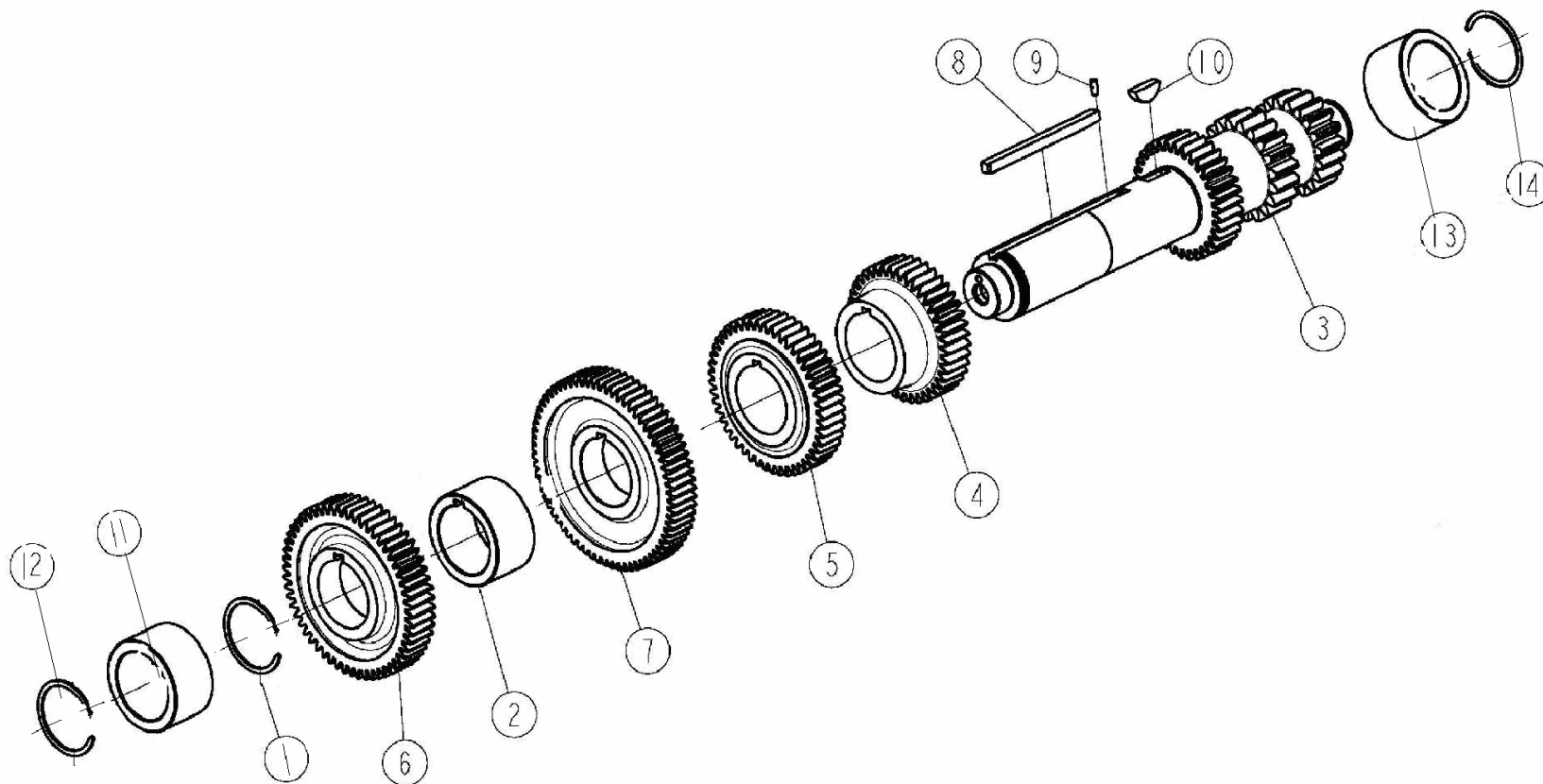
5.2 主变速器构造



No.	N	Part No.	Name		Quantity.
1		JS180A-1701036	一轴螺母	nut of input shaft	1
2		C01020	止动环	Stop ring	1
3		150212K	一面带止动槽和防尘盖 的单列向心球轴承	uniline centripetal ball bearing, with stop groove and dustproof cover	1

4	16463	齿轮隔垫	Gasket for gears	1
5	14750	止动环	Stop ring	1
6	16566	二轴导套	Guide sleeve for main shaft	1
7	JS180A-1701030-3	一轴	Input shaft	1

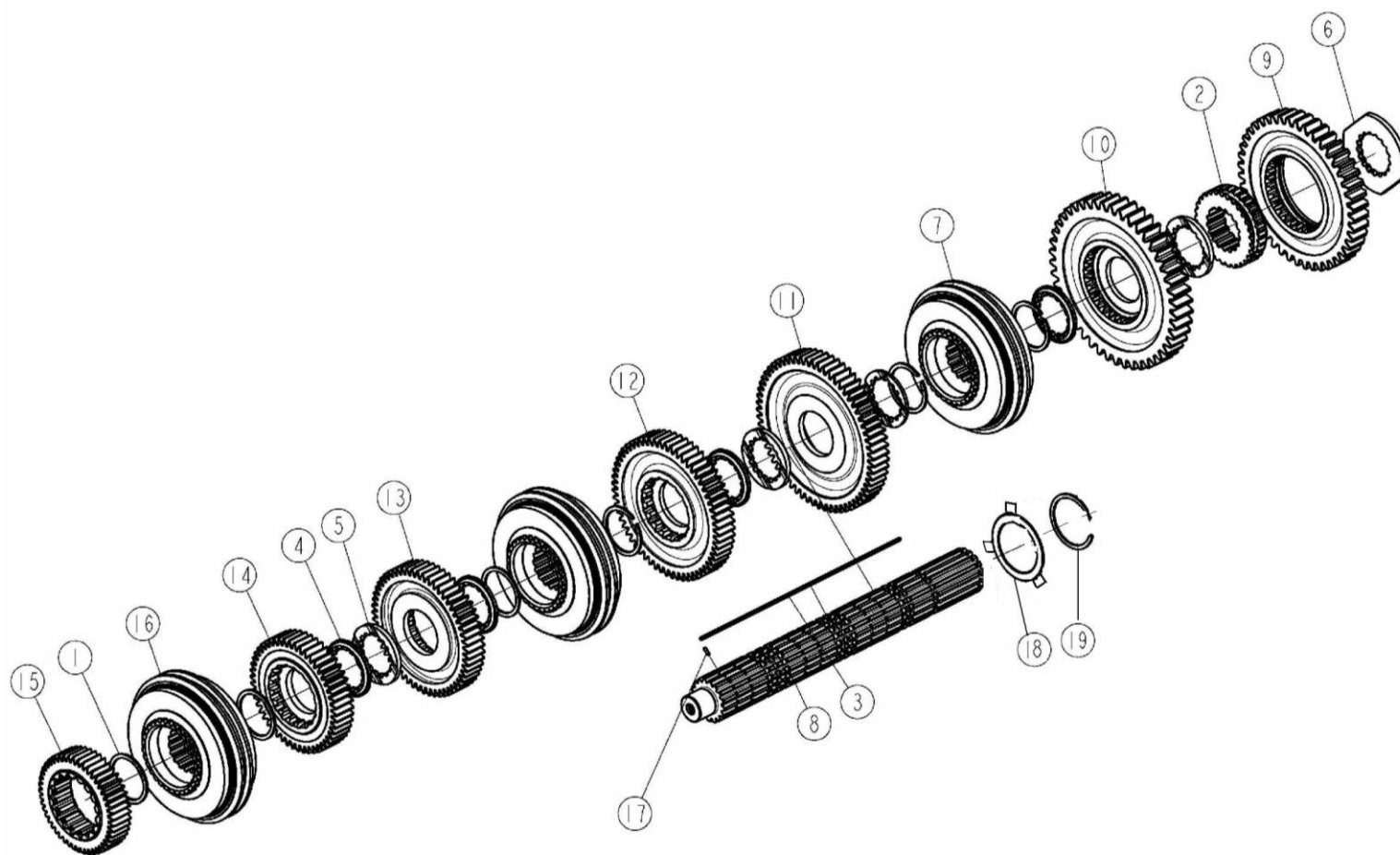
5.3 中间轴总成爆炸图



	Current Part	Description	Qt
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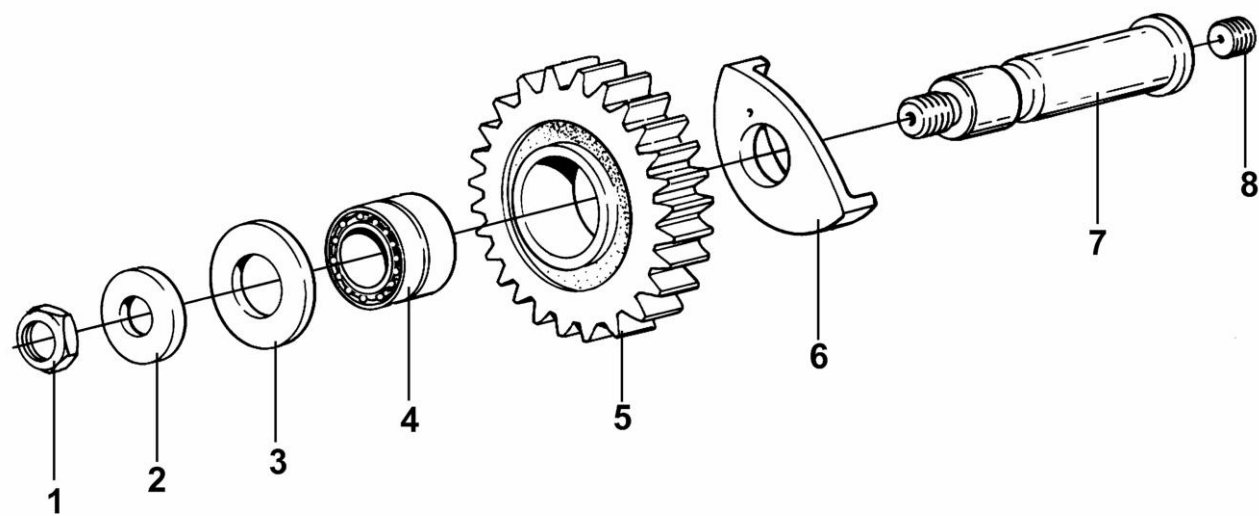
It em				y.
1	19198	中间轴止动环	stop ring of countershaft	1
2	12JS160T-1701057	隔套	Distance sleeve	1
3	12JS200T-1701048	中间轴	countershaft	1
4	12JS200T-1701050	中间轴三档齿轮	3 rd speed gear of counter shaft	1
5	12JS200T-1701051	中间轴四档齿轮	4 th speed gear of counter shaft	1
6	12JS200T-1701056	中间轴传动齿轮	Drive gear of countershaft	1
7	12JS200T-1701052	中间轴五档齿轮	5 th speed gear of counter shaft	1
8	16JS200T-1701055	中间轴四方键	Square key of countershaft	1
9	Q5280514	弹性圆柱销	Spring column pin	1
10	X-6-E	半圆键	Semi-circular key	1
11	192309E	短圆柱滚子轴承	short column roller bearing	2
12	C01021	止动环	Stop ring	2
13	102309E	短圆柱滚子轴承	short column roller bearing	2
14	Q43145	轴用弹性档圈	baffle ring for axles	2

5.4 二轴总成爆炸图



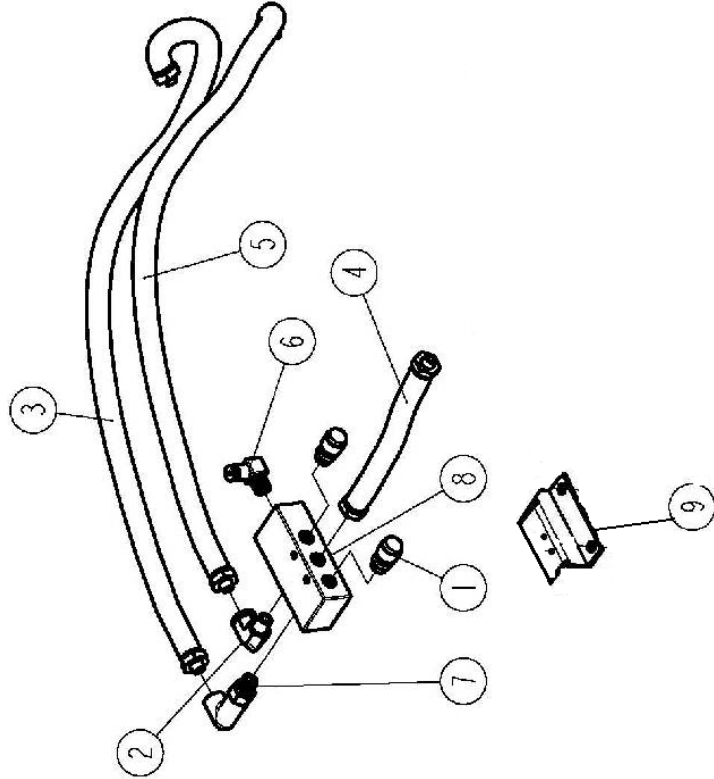
Item	Current Part	Description		Qty.
1	16763	止动环	Stop ring	6
2	12JS160T-1701108	滑套	Sliding bush	1
3	12JS160T-1701121	二轴六角键	Hexagonal key of main shaft	1

4	12JS160T-1701122	二轴齿轮花键垫	spring gasket of main shaft gears	5
5	12JS160T-1701123	二轴齿轮隔垫	gasket for main shaft gears	3
6	12JS160T-1701125	二轴倒档齿轮垫片	gasket for reverse gear of mainshaft	1
7	12JS160T-1701170	一二档同步器总成	Synchronizer of 1-2 speed gears	1
8	12JS200T-1701105	二轴	Main shaft	1
9	12JS200T-1701110	二轴倒档齿轮	Reverse gear of main shaft	1
10	12JS200T-1701111	二轴一档齿轮	1 st speed gear of main shaft	1
11	12JS200T-1701112	二轴二档齿轮	2 nd speed gear of main shaft	1
12	12JS200T-1701113	二轴三档齿轮	3 rd speed gear of main shaft	1
13	12JS200T-1701114	二轴四档齿轮	4 th speed gear of main shaft	1
14	12JS200T-1701115-1	二轴五档齿轮	5 th speed gear of main shaft	1
15	12JS200T-1701116-1	一轴齿轮	Gears of input shaft	1
16	JS130T-1701180	三四档同步器总成	3 rd and 4 th speed synchronizer assembly	2
17	Q5280310	弹性圆柱销	spring column pin	1
18	12JS160T-1701106	主轴齿轮垫圈	gasket for gears of main shaft	1
19	12JS160T-1701107	倒档齿轮卡环	block ring of reverse gear	1



Item	Current Part	Description		Qty.
1	GB890-86	螺母 M20×1.5	Nut M20×1.5	2
2	JS220-1701088	倒档中间轴垫圈	gasket ring of reverse countershaft	2
3	JS220-1701087	倒档止推垫圈	Thrust washer for reverse gear	2
4	DS100-1701085	滚针轴承	Roller needle bearing	2
5	12JS200T-1701083	倒档中间齿轮	Reverse countershaft gears	2
6	12JS160T-1701084	杯形倒档垫圈	cup-shape reverse gasket	2
7	JS220-1701082	倒档中间轴	reverse countershaft	2
8	Q2821212	平端紧定螺钉	flat-end fastening bolt	2

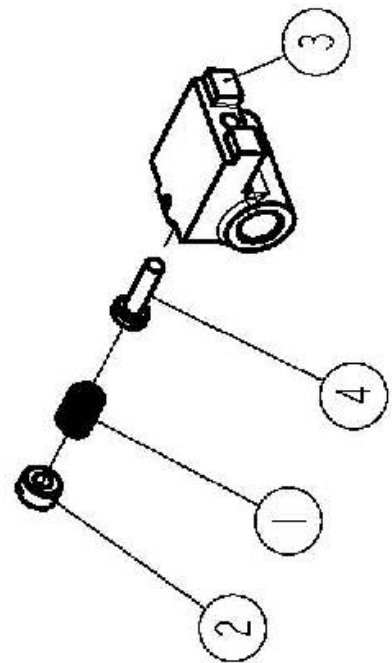
单 H 阀总成爆炸图



Item	Current Part	Description		Qty.
1	7935	通气塞	Breather plug	2
2	12845	90 度弯管接头	90 degree syphon plug	1
3	55511	气管总成	Pipe assembly	1
4	55512	气管总成	Pipe assembly	1
5	55521	气管总成	Pipe assembly	1
6	12JS160T-1703021	90° 快换接头	90 degree syphon connector	1
7	12JS160T-1703051	90° 弯管接头	90 degree syphon connector	1
8	12JS160T-1703052	单 H 阀	Single H valve	1

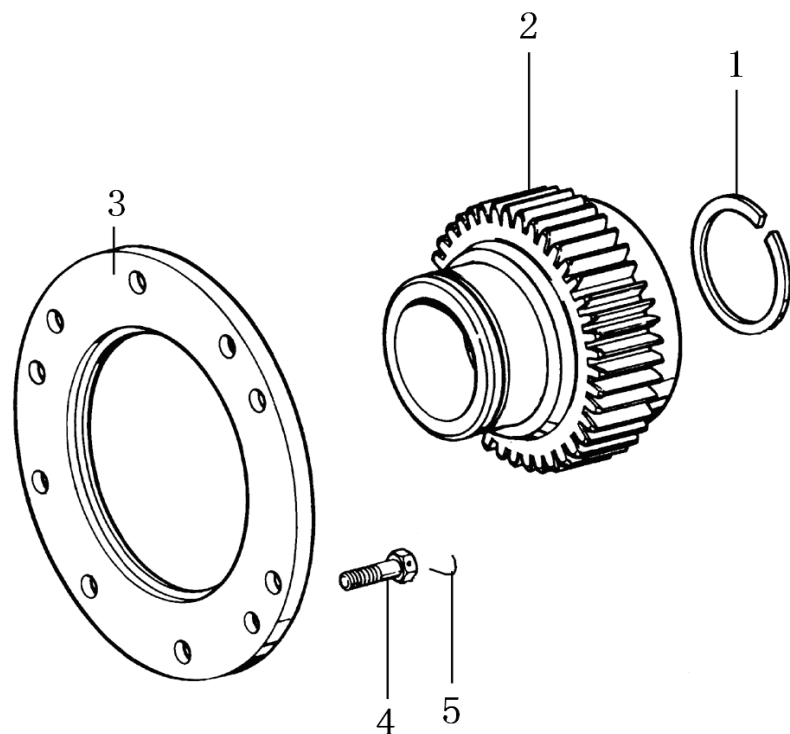
9	12JS160T-1702095	单 H 阀支座	Single H valve pedestal	1
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倒档导块总成爆炸图



Ite m	Current Part	Description		Qty.
1	8774-1	倒档锁弹簧	reverse locking spring	1
2	8968	倒档锁螺塞	Reverse locking bolt	1
3	12JS160T-1702051	倒档导块	Reverse guide block	1
4	DS100-1702061	倒档锁柱塞	Reverse locking column pin	1

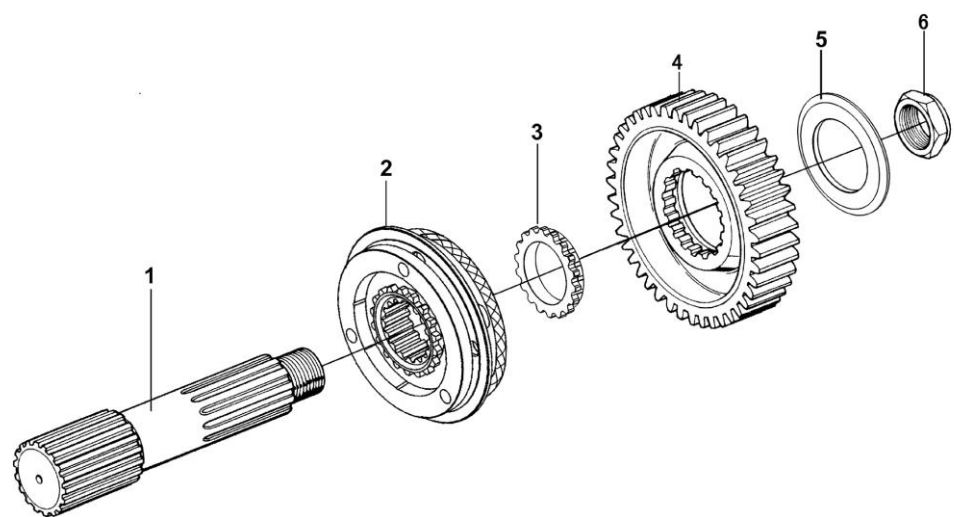
副箱驱动齿轮总成爆炸图



Item	Current Part	Description		Qty.
1	16763	止动环	Stop ring	1
2	12JS200T-1707030	副箱驱动齿轮	Drive gears of auxiliary case	1
3	JS220-1707031	副箱轴承定位盘	allocation plate of bearing in auxiliary case	1

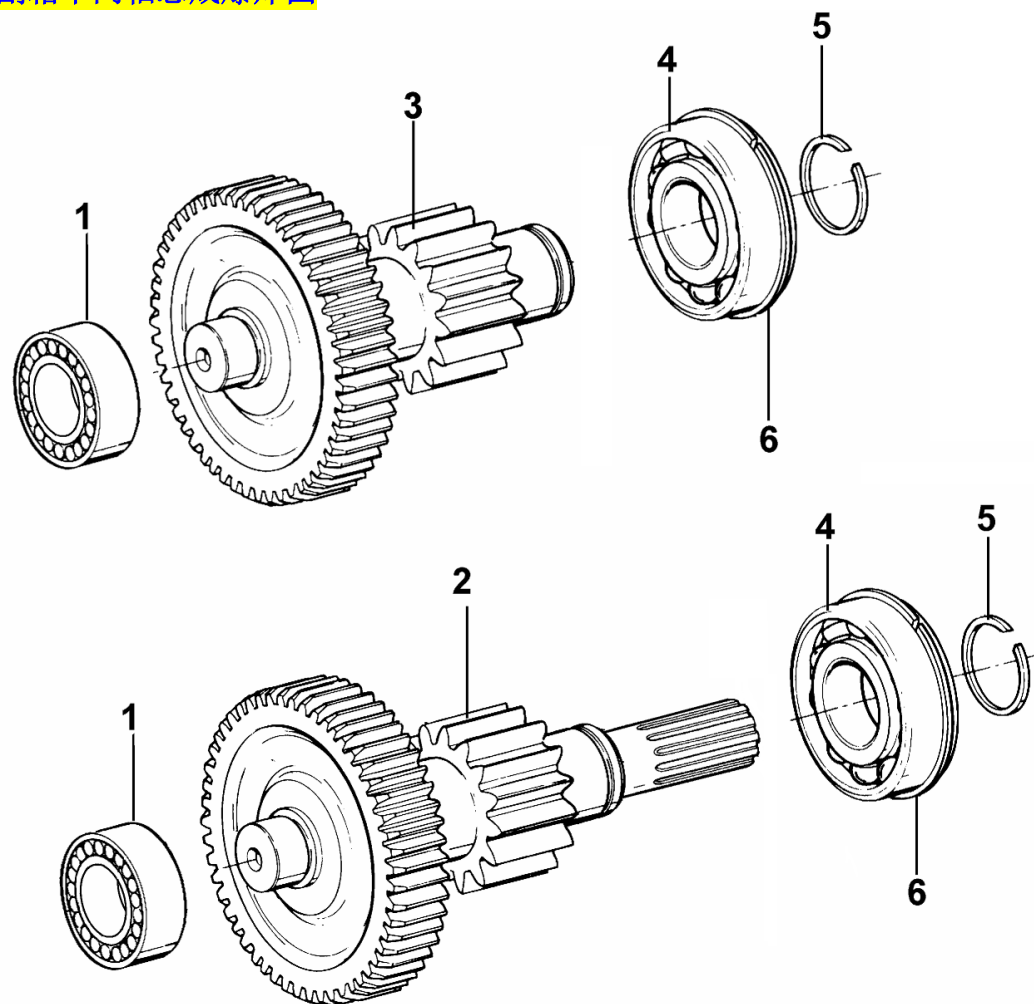
4	C09032	小六角头头部带孔螺栓 M10×22	Small hexagonal bolt, with hole in the head M10×22	6
5	1819	铁丝	iron wire	按需要

副箱主轴总成爆炸图



Item	Current Part	Description		Qty.
1	12JS200T-1707105	副箱主轴	Main shaft of auxiliary case	1
2	12JS160T-1707140	高低档同步器总成	high speed synchronizer	1
3	12JS200T-1707107	副箱主轴垫圈	main shaft gasket, auxiliary case	1
4	12JS200T-1707106	副箱主轴减速齿轮	reduction gears of main shaft auxiliary case	1
5	12JS160T-1707108	副箱主轴齿轮压板	baffle plate of main shaft gears	1
6	F96006	凸缘螺母	Flanged nut	1

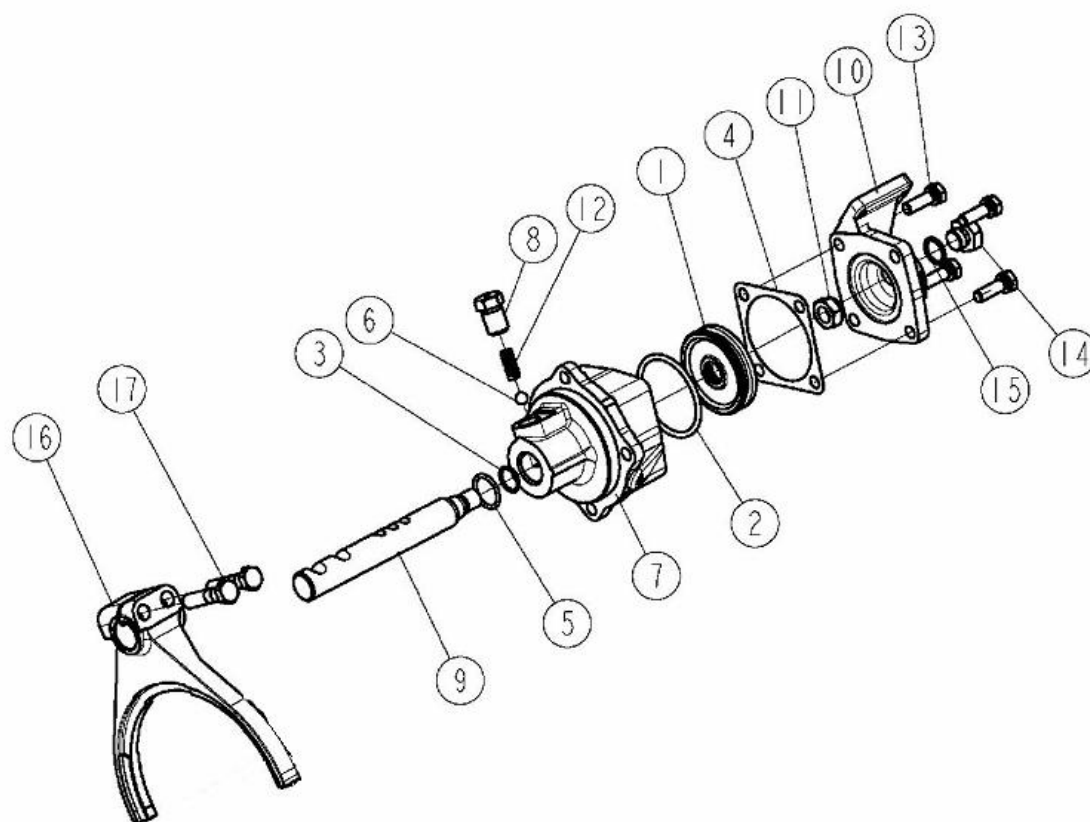
副箱中间轴总成爆炸图



Item	Current Part	Description		Qty.
1	42308E	短圆柱滚子轴承	short column roller bearing	2
2	12JS200T-1707047	副箱加长中间轴焊接总成	lengthened countershaft welding	1

			assembly. Aux.	
3	12JS200T-1707050	副箱中间轴焊接总成	Countershaft welding assembly. Aux.	1
4	192311E	短圆柱滚子轴承	short column roller bearing	2
5	JS180-1707051	止动环	Stop ring	2
6	GB305-82	止动环 120/129.7	Stop ring 120/129.7	2

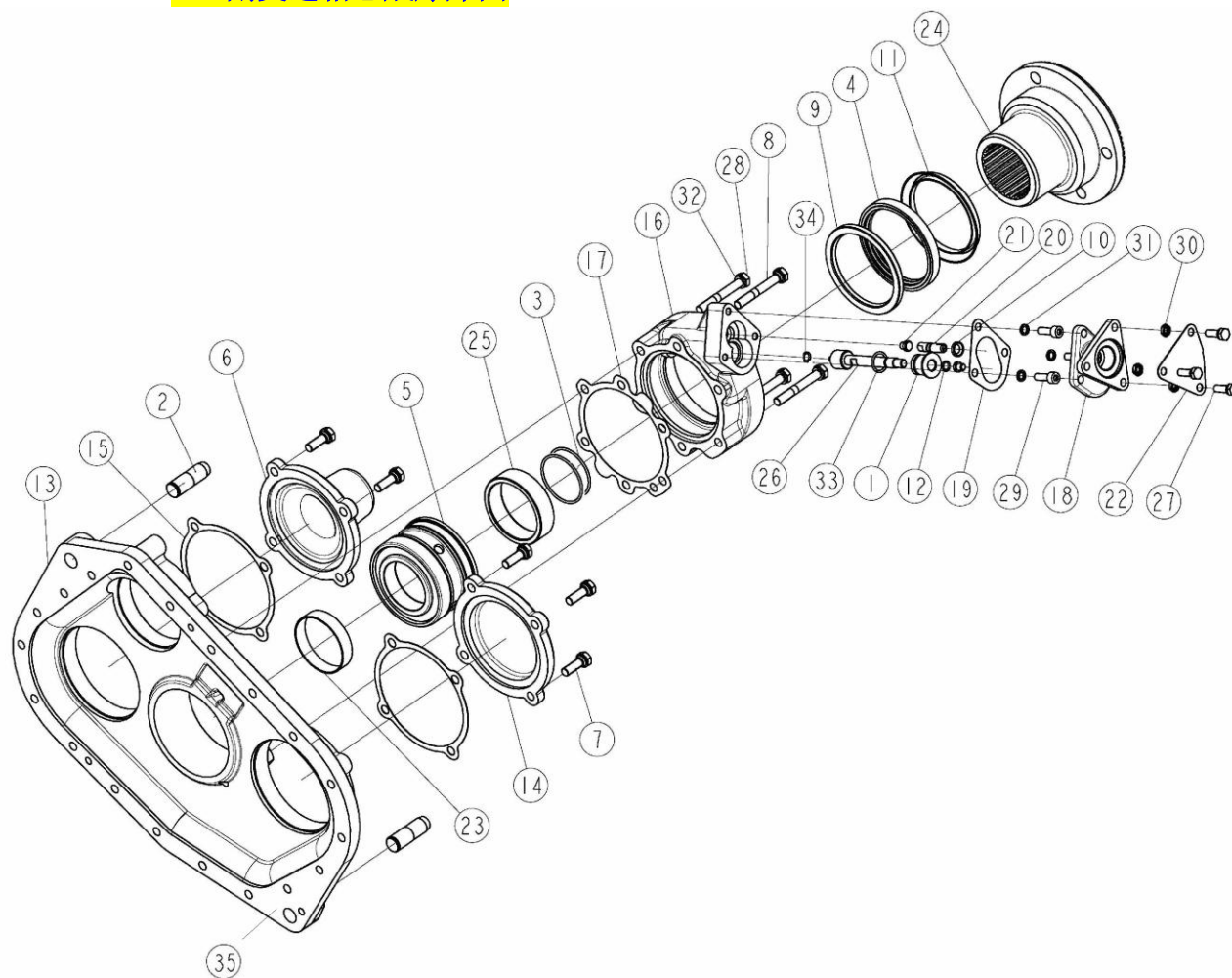
副箱换挡汽缸总成爆炸图



Item	Current Part	Description		Qty.
1	14341	范围档气缸活塞	range speed cylinder piston	1
2	14344	O 型密封圈	O-shape sealing ring	1
3	14345	O 型密封圈	O-shape sealing ring	1
4	14349	气缸盖密封垫	sealing gasket of cylinder cover	1
5	14765	O 型密封圈	O-shape sealing ring	1
6	10G100BGB-T308	钢球	Steel ball	1
7	12JS160T-1707062	范围档气缸	range speed cylinder	1
8	12JS160T-1707063	螺塞	bolt	1
9	12JS160T-1707061	范围档拨叉轴	range speed yoke shaft	1
10	F99857	副箱换挡气缸盖	shifting cylinder cover. Aux.	1
11	GB890-80-M16X1.5	六角尼龙圈锁紧薄螺母	hexagonal nylon ring lock-fastening thin nut	1
12	J80-1702080	定位弹簧	Allocating spring	1
13	Q1421032M	预涂胶六角头螺栓和 弹簧垫圈组合件	hexagonal bolts with gluewater And spring gasket compound	4
14	0069GS	压力开关	Pressure switch	1
15	X11511	褶皱铜垫圈	Drape bronze gasket	1
16	16775	副箱拨叉	Yoke of auxiliary case	1
17	Q171B1250	六角头头部带孔螺栓	hexagonal bolt with hole on head	2

倒挡齿轮、齿轮轴的安装、力矩值。（见附录 B）

5.6 副变速箱总成爆炸图



Item	Current Part	Description		Qty.
1	7992-1	里程表被动齿轮轴套	gear axle bush of odometer passive	1
2	14334	后盖定位销	allocating pin of rear cover	2
3	12JS160T-1707112	O 型密封圈	O-shape sealing ring	2
4	19109	油封	Oil-sealing	1
5	JS220-1707109	圆锥滚子轴承	taper-rolling bearing	1
6	10JS160-1707052	加长中间轴盖	length countershaft cover	1
7	A-C09008	螺栓总成	Bolt assembly	8
8	A-C09009	螺栓总成	Bolt assembly	1
9	C01032	主轴后轴承盖油封	Oil-sealing of rear bearing cover of main shaft	1
10	F91008-1	油封	Oil-sealing	1
11	F96119	防尘罩	Dust-proof cover	1
12	HG4-333-66(12X1.9)	O 型密封圈	O shape sealing ring	1
13	JS220-1707015	后盖壳体	Housing of rear cover	1
14	JS180-1707052	副箱中间轴盖	Countershaft cover, aux. case	1
15	JS180-1707053	副箱中间轴盖衬垫	gasket of countershaft cover of auxiliary case	2
16	JS180-1707155-2	主轴后轴承盖	rear bearing cover of main shaft	1
17	JS180-1707156	副箱主轴后轴承盖衬垫	gasket for rear bearing cover of main shaft, aux. case	1
18	JS180-1707157-2	里程表接头	connector of odometer	1
19	JS180-1707158-2	里程表接头衬垫	gasket for connector of odometer	1
20	JS180-1707160-1	里程表输出轴	output shaft of odometer	1
21	JS180-1707161-1	平头销	flat-end pin	2

22	JS180-1707162-1	里程表接头盖板	cover plate of connector of odometer	1
23	JS220-1707111	里程表主动齿轮衬套	bush sleeve of odometer active gear	1
24	JS220-1701159-1	输出法兰盘	output flange	1
25	LF35-3082033	里程表主动齿轮	odometer active gear	1
26	LF35-3802034	里程表被动齿轮	odometer passive gear	1
27	Q150B0825	六角头螺栓	hexagonal bolt	3
28	Q150B1075	六角头螺栓	hexagonal bolt	5
29	Q218B0825	内六角圆柱头螺钉	inner-hexagonal column-head bolt	3
30	Q350B08	六角薄螺母	hexagonal thin nut	3
31	Q40308	弹簧垫圈	spring gasket	6
32	Q40310	弹簧垫圈	spring gasket	5
33	ZHLQ-1703031	O 型圈	O-shape ring	1
34	7992	里程表被动齿轮轴套	axle bush of odometer passive gear	1
35	14335	后盖衬垫	rear cover gasket	1

5.8 变速箱使用与保养

正确全理地操作使用变速器,定期进行维护保养,对于保证汽车安全可靠的行驶和延长变速器的使用寿命非常重要,请遵循下面的使用要求。

1、润滑油牌号

变速器内须加注 85W/90 车辆齿轮油。

2、正确的油面位置

加油时拆掉变速器壳体侧面的锥形油面检查孔堵,油加至从孔口溢出即可。具

体注油量参考第一章技术参数。

3、换油周期

新变速器在行驶 2000-5000 公里时,必须更换润滑油。

第行驶 10000 公里应检查润滑油的油面高度和泄漏情况,随时进行补充。

第行驶 50000 公里应更换润滑油。

4、工作温度

变速器在连续工作期间温度不能超过 120℃。工作温度超过 120℃时,会使润滑油分解并缩短变速器的使用寿命。

下列情况可引起变速器的工作温度超过 120℃。

(一)连续在低于 32KM/H 的速度以下工作超过 1 小时以上。

(二)发动机高速运转。

(三)环境温度高。

(四)涡流环绕着变速器。

(五)排气系统太靠近变速器。

(六)大功率超速运转

工作温度高,需要频繁地更换润滑油。如车辆的使用工况无法避免以上情况,请在变速器上加装冷却系统以降低工作温度。

5、工作倾斜角

变速器的工作倾斜角度超过 12° 时,润滑可能不充分。工作倾斜角等于变速器

在底盘上的安装角加上坡度角。

6、拖行或滑行

变速器在工作过程中，要求变速器的主轴齿轮和中间轴不停的转动，以便为变速器提供充分的润滑。但当车辆在后轮着地，传动系联接的情况下被拖行时，上述齿轮并不旋转，主轴却被后轮带动高速旋转，主轴上的调整垫在主轴的带动下高速旋转。由于转速差极大和缺乏润滑，将会引起变速器严重损坏。

警 告

变速器空档滑行也会造成变速器严重损坏，严禁空档滑行。

当车辆需要拖行时，可抽出半轴或脱开传动轴，也可使驱动轮离地拖行。

不同季节柴油、机油、防冻液使用规格表（见附录）