

THE COMBINATION OF GEAR PUMP



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GRH POWER

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GRH专业提供液压元件及液压技术的系统解决方案。

持续的改进和对液压领域的专注，超过三十年的设计及制造经验，GRH从1986年至今取得了引人注目的成功。

产品的研发和技术创新是GRH前进的动力

ISO9001和TS16949的标准是GRH遵守的程序化准则

员工的能力和创造性是GRH不同于竞争对手的主要因素

GRH设计并生产：液压齿轮泵/片式多路阀/整体多路阀 /比例多路阀（带负载敏感及压力补偿）/液压齿轮马达/液压分流马达；这些零部件主要应用于工业机械、物料搬运、工程机械、农业和工业领域。

GRH充分意识到客户在设计阶段作出的贡献及其产品设计输入的重要性。除了供应GRH目录上的产品，GRH还与客户密切协作提供液压技术的系统解决方案。客户可以依靠GRH在液压元件及系统设计方面的经验及GRH 技术专家去实现他们的设想。

GRH已关注到电子控制与液压系统集成的重要性，为了优化设计及节约能源，GRH在系统的电子控制及集成化方面正在做出自己的努力。

GRH：上海国瑞液压科技有限公司—GRH的海外营销中心

江苏国瑞液压机械有限公司—GRH的生产制造基地

GRH愿意与合作伙伴一起，为液压技术的创新提供动力。

Over thirty years in manufacture and design of hydraulic field

GRH is specialized in providing hydraulic components and solutions to hydraulic systems.

With persistent improvement and enthusiasm over the past 30 years, GRH has been an emerging power in fluid power industry since it was established in 1986.

Research and innovations on new products are the driving force that keeps GRH making progress. Standards of ISO9001 and TS16949 are our guiding principles. Employees' capabilities and creativities are major factors that differed GRH from other competitors.

GRH designs and produces hydraulic gear pumps / gear motors, mono-block valves, sectional stack valves, proportional valves and gear motor flow dividers. These components are mainly used on industrial machineries, material handling, construction machineries, agricultural and industrial fields. Beside the products in GRH catalogue, GRH have a close cooperation with our customers by offering them solutions to hydraulic systems. We are fully aware of the contributions that customers have made during the system design process. Our customers can count on GRH's extensive system design and application experiences when they design their hydraulic systems.

GRH has designed and developed a series of load sensed proportional stackable valves to help customers to improve valve's operating performances as well as to improve system efficiency.

GRH : Shanghai Guorui Hydraulic Technology Co., Ltd is responsible for sales abroad

Jiangsu Guorui Hydraulic Machinery Co., Ltd.—Manufactory and is responsible for domestic sales

GRH will work together with the customers to create a better future.





齿轮泵的组合/ THE COMBINATION OF GEAR PUMP

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双联泵前泵轴伸和排量的选择：一旦双联泵前泵轴伸的形式确定下来，在一定压力下，前后泵的最大排量也就确定了下来，见下表。在这个表格中，我们假设前后泵的压力是一样的，如果前后泵的压力有差异，请联系我们的技术人员。我们也列出了常用泵的排量系列，供参考。

The choice of pump shaft extension and displacement in the pump: once the pump shaft is in the form of the pump shaft is determined, the maximum displacement of the front and rear pump can be determined under certain pressure. See the table below. In this table, we assume that the pressure of the front and rear pump is the same, and if the pressure of pump is different, please contact our technician. We also listed the pump series for reference.

系列/series	排量 (cc/r)													
1PF/1APF	1.6	2.1	2.7	3.2	3.4	3.7	4.1	4.2	4.8	5.1	5.8	6.1	8	
2PF/2APF	4	6	8	10	12	14	16	18	20	22	24	26	28	30
3PF	22	26	34	39	43	51	60	70	78	89				

GRH代码	齿轮泵轴形式	推荐的前后泵排量之和 (cc/r)		
		The sum of the pump displacement to drive (cc/r)		
GRH CODE	DETAIL OF SHAFT	@160 bar	@200 bar	@250 bar
1DPF/1ADPF (cc/r)				
S01	9T/20/40 DP	16	13	10
P01	∅ 12.7/3.2Key	15	12	10
2DPF/2ADPF (cc/r)				
S03	9T/16/32DP	31	25	20
S02	11T/16/32DP	50	40	33 (<20 for per section)
D03	9T/B17X14/BIN	36	29	23
P02	∅ 15.88/4.0Key	27	21	17
P03	∅ 19.05/4.8Key	50	40	32
Z17	∅ 17/3.0Key/Taper1:5	52	42	33 (<20 for per section)
Z03	∅ 16.65/3.2Key/Taper1:8	54	43	34 (<20 for per section)
Z17	∅ 16.65/4.0Key/Taper1:8	54	43	34 (<20 for per section)
3DPF (cc/r)				
S05	13T/16/32DP	92	75	60
P16	∅ 22.2/6.3Key	89	72	57
P88	∅ 25.4/6.4Key	94	77	62
Z05	∅ 21.59/4.0Key/M14X1.5	89	72	57

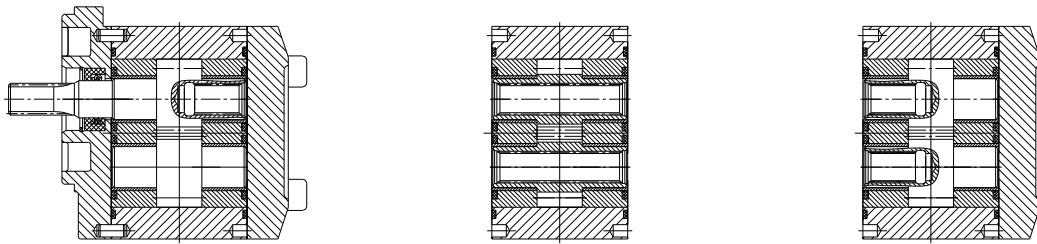


2ABFF*****-TS ONLY USE AS TANDEM PUMP OR TRIPLE PUMP**

STEP 1: 2APF-F***-TSF**

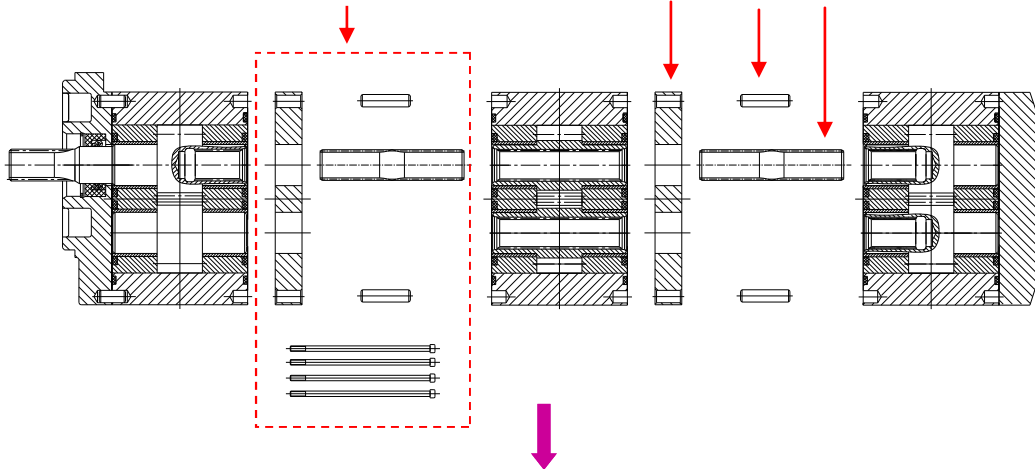
STEP 2: 2APF-F***-TSM**

STEP 3: 2APF-F***-TSR**



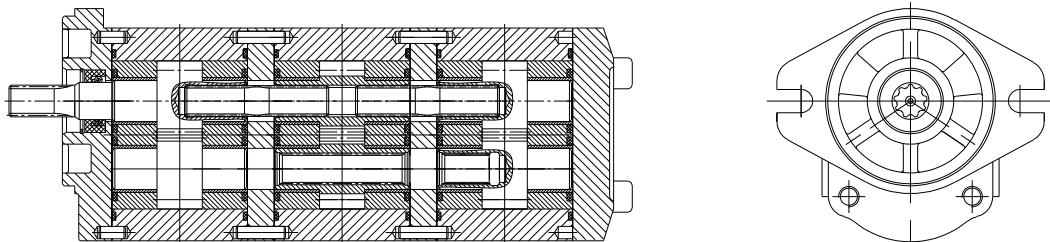
STEP 4: add kit 2ABPF-TS-K

(plate /pin/spline/bolt)



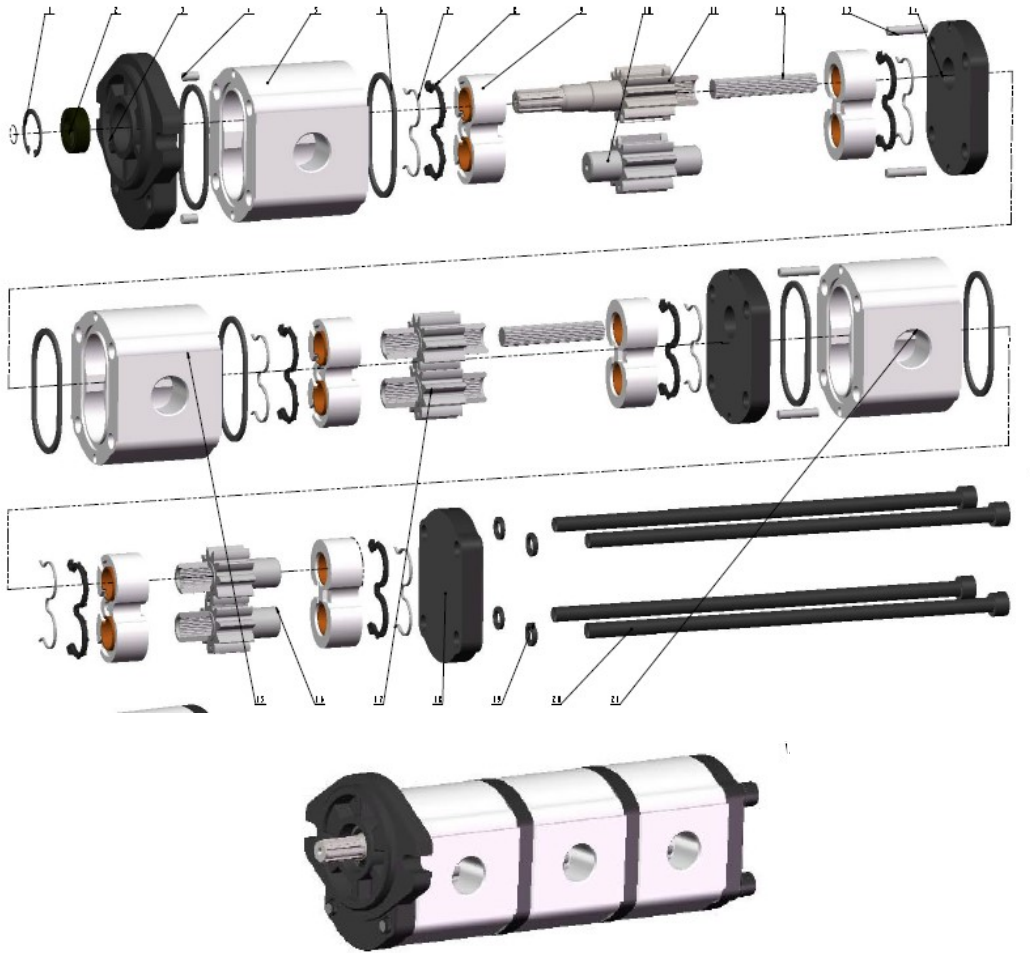
STEP 5: tighten bolt 4XM10 /60Nm

To remove 4XM10 short bolt and use 4XM10 long bolt



爆炸图和订单编码

Exploded view and order code



sequence	name	order code	number	note
1	Gear pump	2ABF**F***** -TSF	1	Front pump
2	Gear pump	2ABF**F***** - TSM	1	middle pump
3	Gear pump	2ABF**F***** - TSR	1	Rear pump
4	kit	2ABF-TS-K1	1	Used in tandem pump
4.1	pin	2ABF-TS-KP	2	
4.2	plate	2ABF-TS-KPL	1	
4.3	spline	2ABF-TS-KSP	1	
4.4	bolt1	2ABF-TS-KB1	4	Used in tandem pump
5	kit	2ABF-TS-K2	1	Used in triple pump
5.1	pin	2ABF-TS-KP	2	
5.2	plate	2ABF-TS-KPL	1	
5.3	spline	2ABF-TS-KSP	1	
5.4	bolt2	2ABF-TS-KB2	4	Used in triple pump

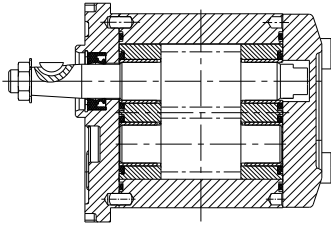
爆炸图和订单编码

Exploded view and order code

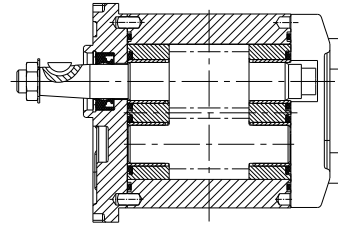


2ABFF*****-TK CAN BE USED AS SINGLE**

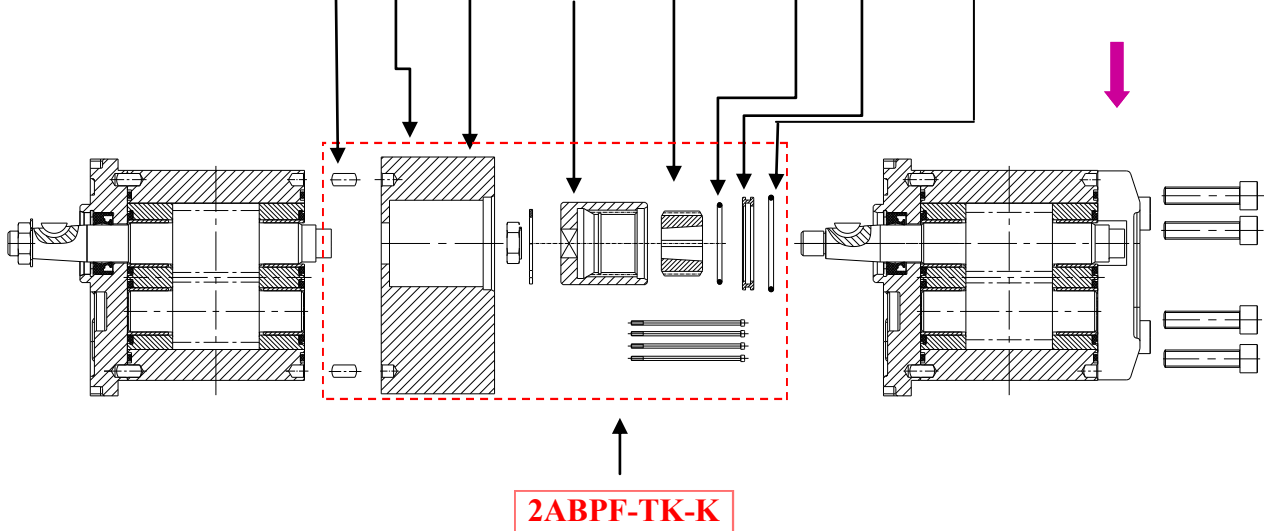
STEP 1: 2ABPFF*****-TK**



STEP 2: 2ABPFF*****-TK**

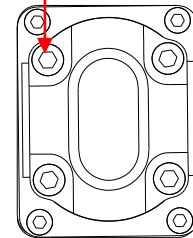
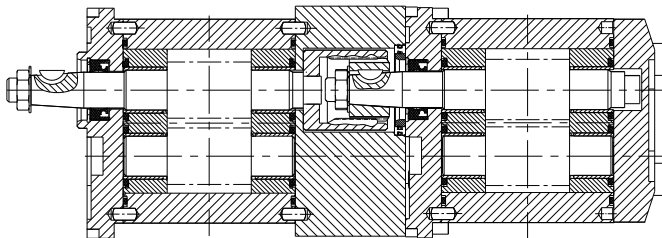


**STEP 3: add kit:2ABPF-TK-K
(bolt/pin/block /coupling 1/coupling 2/ seal 1/ seal ring/seal 2)**



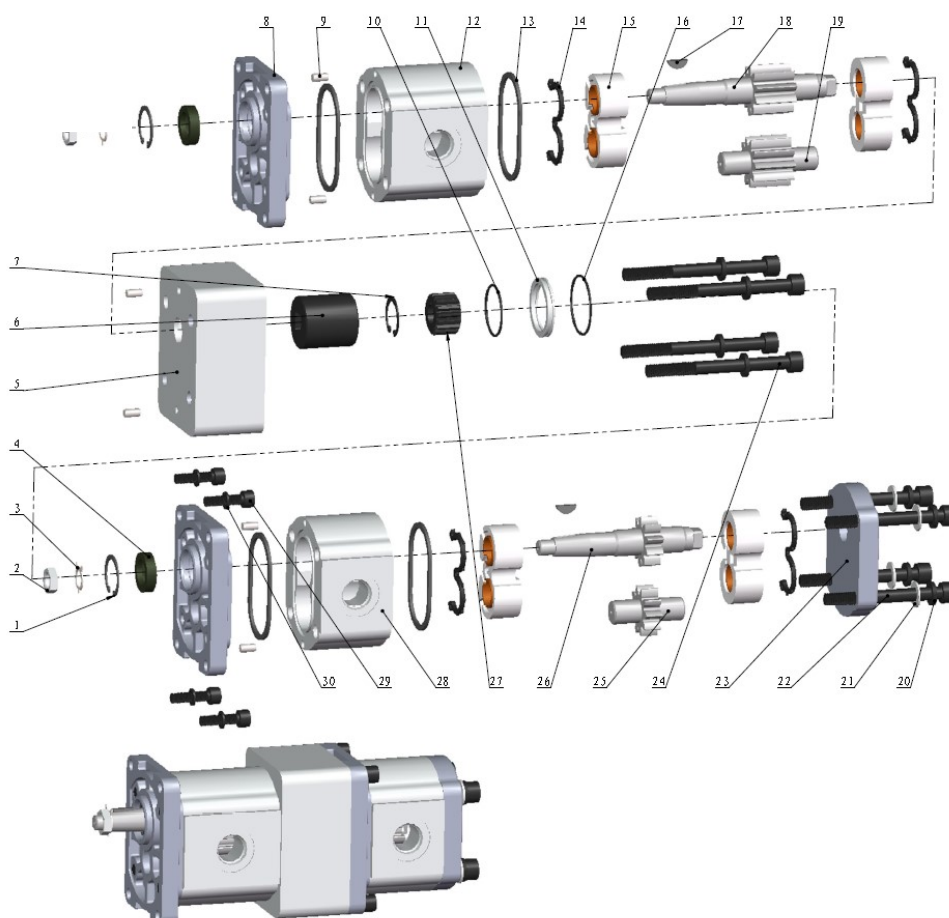
STEP 4: tighten bolt 4XM10 /60Nm

To remove 4XM10 short bolt and use 4XM10 long bolt





2ABFF****-TK CAN BE USED AS SINGLE PUMP**

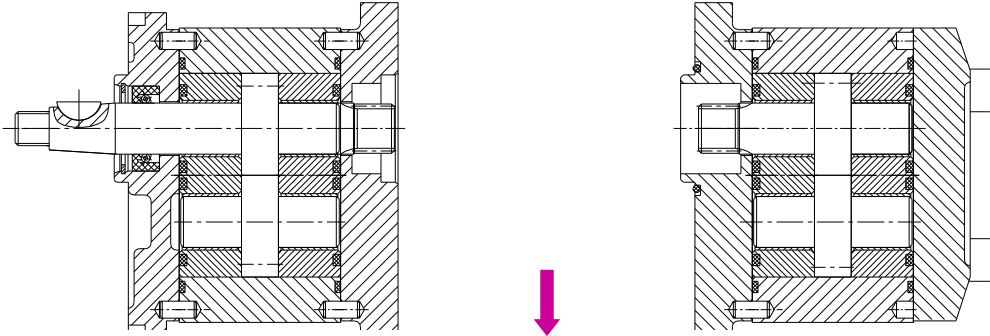


sequence	name	order code	number	note
1	Gear pump	2ABF**F**** - TK	1	Front pump
2	Gear pump	2ABF**F**** - TK	1	Rear pump
3	kit	2ABF-TK-K	1	nutsX4 / whsherX4/ coupling X1/ boltX 4
3.1	pin	2ABF-TK-KP	2	Belong 2ABF-TK-K
3.2	block	2ABF-TK-KBL	1	Belong 2ABF-TK-K
3.3	coupling	2ABF-TK-KC1	1	Belong 2ABF-TK-K
3.4	coupling	2ABF-TK-KC2	1	Belong 2ABF-TK-K
3.5	Seal 1	2ABF-TK-KS1	1	Belong 2ABF-TK-K
3.6	Seal 2	2ABF-TK-KS2	1	Belong 2ABF-TK-K
3.7	Seal ring	2ABF-TK-KSR	1	Belong 2ABF-TK-K
3.8	bolt	2ABF-TK-KB	4	Belong 2ABF-TK-K

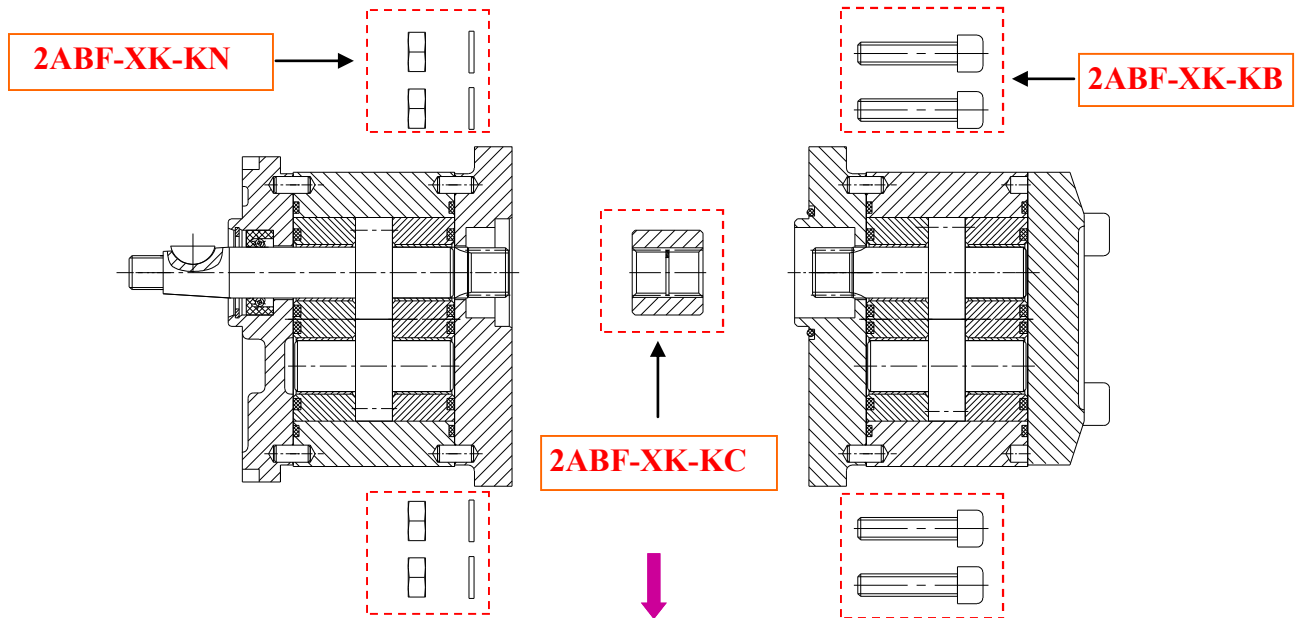
2ABFF*****-XK ONLY USE AS TANDEM PUMP**

STEP 1: 2ABFF*****-XKF**

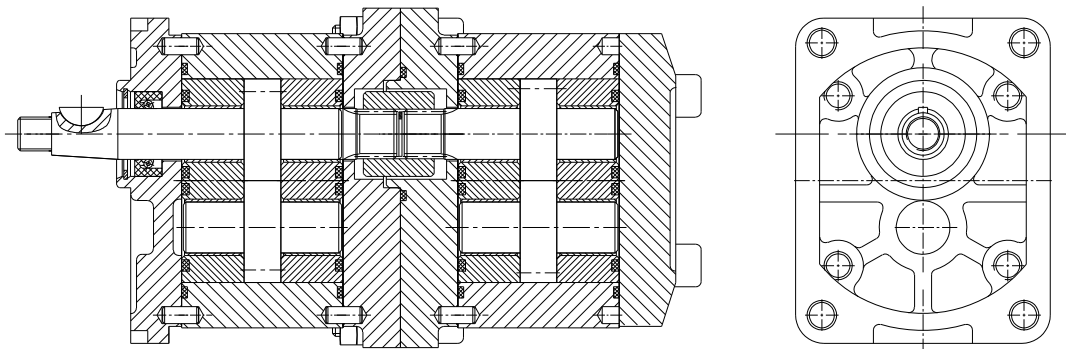
STEP 2: 2ABFF*****-XKR**



STEP 4: add 2ABF-XK-K (nuts 4XM10 / whsher 4X \varnothing 11/ coupling 1/ bolt 4XM10)



STEP 5: tighten bolt 4XM10 /60Nm

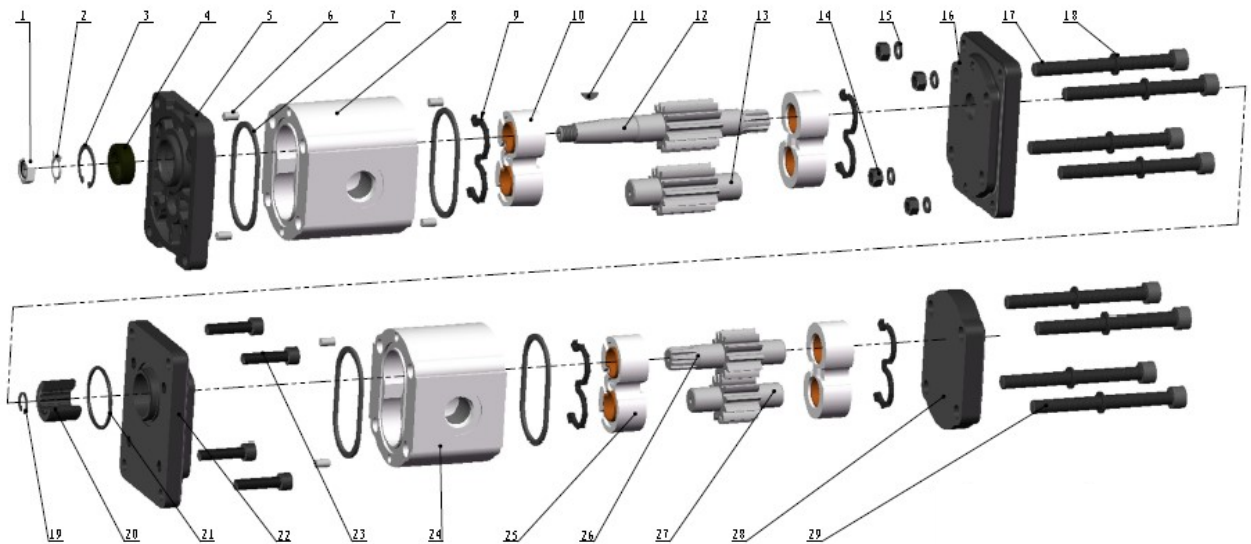


爆炸图和订单编码

Exploded view and order code



2ABFF*****-XK ONLY USE AS TANDEM PUMP**



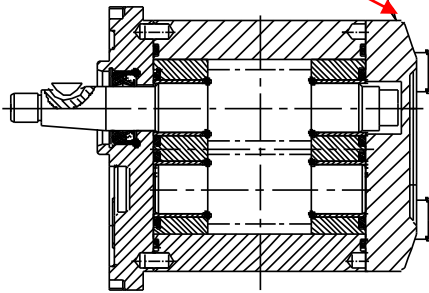
sequence	name	order code	number	note
1	Gear pump	2ABF**F***** - XKF	1	Front pump
2	Gear pump	2ABF**F***** - XKR	1	Rear pump
3	kit	2ABF-XK-K	1	nutsX4 /whsherX4/ coupling X1/ boltX 4
3.1	nut	2ABF-XK-KN	4	Belong 2ABF-XK-K
3.2	coupling	2ABF-XK-KC	1	Belong 2ABF-XK-K
3.3	bolt	2ABF-XK-KB	4	Belong 2ABF-XK-K

爆炸图和订单编码

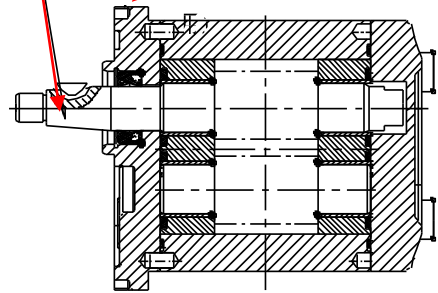
Exploded view and order code

2ABFF*****-FK CAN BE USED AS SINGLE PUMP**

STEP 1: move rear cover

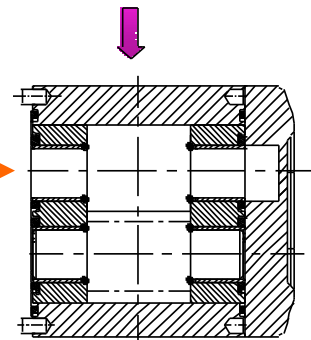
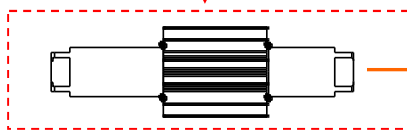


STEP 2: move driving gear

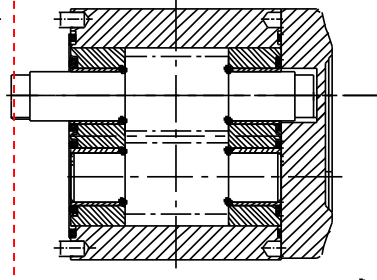
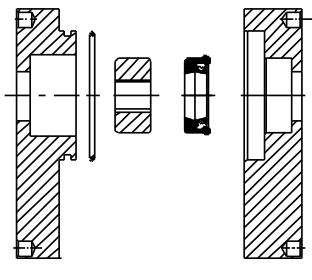
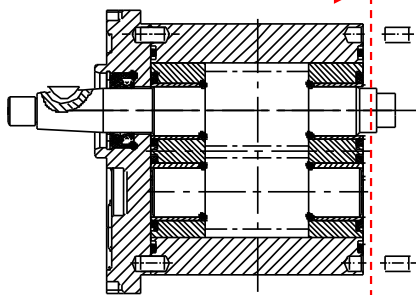


STEP 3: move front cover

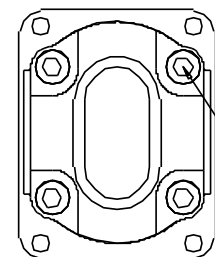
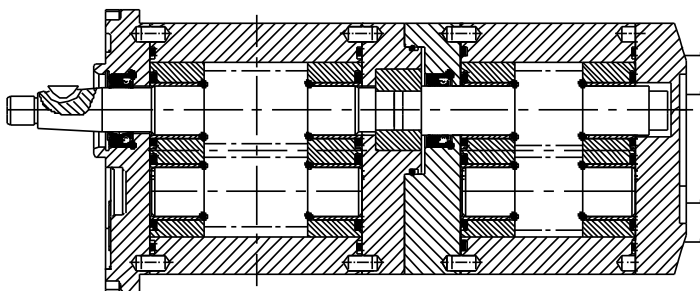
STEP 4: to use 2ABPFFK-G replacing moved driving gear**



STEP 5: add 2ABPF-FK-K



STEP 6: tighten bolt 4XM10 /60Nm



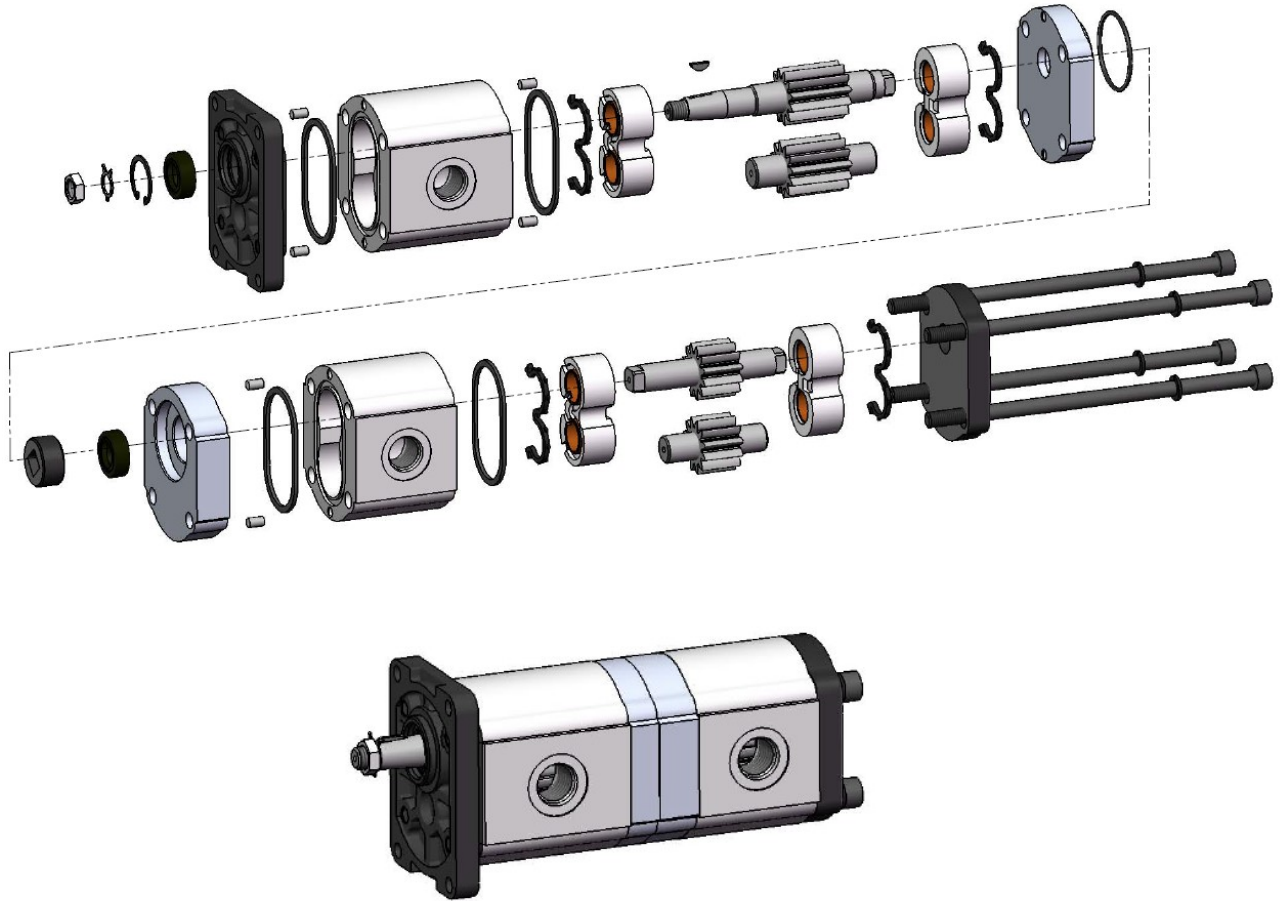
To remove short bolt and use long bolt

爆炸图和订单编码

Exploded view and order code



2ABFF*****-FK CAN BE USED AS SINGLE**



sequence	name	order code	number	note
1	Gear pump	2ABF**F***** - FKF	1	Front pump
2	Gear pump	2ABF**F***** - FKR	1	Rear pump
3	Gear	2ABF**-FK-G	1	**—cc/r
4	kit	2ABF-FK-K	1	
4.1	pin	2ABF-FK-KP	2	Belong 2ABF--FK-K
4.2	Plate 1	2ABF-FK-KPL1	1	Belong 2ABF-FK-K
4.3	Seal	2ABF-FK-KS	1	Belong 2ABF-FK-K
4.4	coupling	2ABF-FK-KC	1	Belong 2ABF-FK-K
4.5	Shaft seal	2ABF-FK-KSS	1	Belong 2ABF-FK-K
4.6	Plate 2	2ABF-FK-KPL2	1	Belong 2ABF-FK-K

爆炸图和订单编码

Exploded view and order code

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