使 用 说 明 书

Instructions

目　　录
Directory

安全事项

1、必须严格按照本说明书正确使用和维护，任何错误的操作均有可能导致机件损坏、人身伤害。

Must be in strict accordance with the proper use and maintenance instructions, and any wrong operation are likely to cause mechanical damage, personal injury

2、若按照本说明书正确使用和维护，可大大增加本机的使用年限。

If you follow the proper use and maintenance instructions, which can greatly increase the useful life of the machine

第一章 主要规格及技术参数
Chapter one Main specification and technical parameters

一、型号与型式 Model and type

1、机型
Model — JK10-20/15-26/20-28/25-30等系列

2、型式
type — 轮胎式、铰接转向
Wheel ,Articulated steering

二、基础参数 General parameters

1、额定载重质量 kg
Rated load quality — 具体以实物为准
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2、标准铲斗容量 m^3
Standard bucket capacity

3、发动机功率 kw
Engine power

4、机器质量 T
Total weight

5、最大卸载高度 mm
maximum discharge height

6、相应的最小卸载距离 mm
minimum discharge distance

7、工作装置动作时间 The working device action time
提升 s rise
下 降 s fall
前倾 s forerake

8、崛起力 KN The rise of the force

9、行驶速度（进退相同）
Running speed (Forward and withdraw the same)
高档 km/h High speed
低档 km/h Low speed

10、转弯半径 m Turning radius

11、制动距离 m Brake distance

12、爬坡能力° Climbing ability

13、轴距 mm Axle distance

14、轮距 mm wheel track

15、离地间隙 mm Ground clearance

16、外形尺寸 Dimension
长 mm long
宽 mm wide
高 mm high

三、容积参数 Volume parameters

1、水散热器 L Water radiator — 见柴油机说明书 refer to the diesel engine instruction

2、发动机油底壳 L — 见柴油机说明书 refer to the diesel engine instruction

3、燃油箱 L fuel tank — 见柴油机说明书 Refer to the diesel engine instruction

4、传动箱 L Transmission case

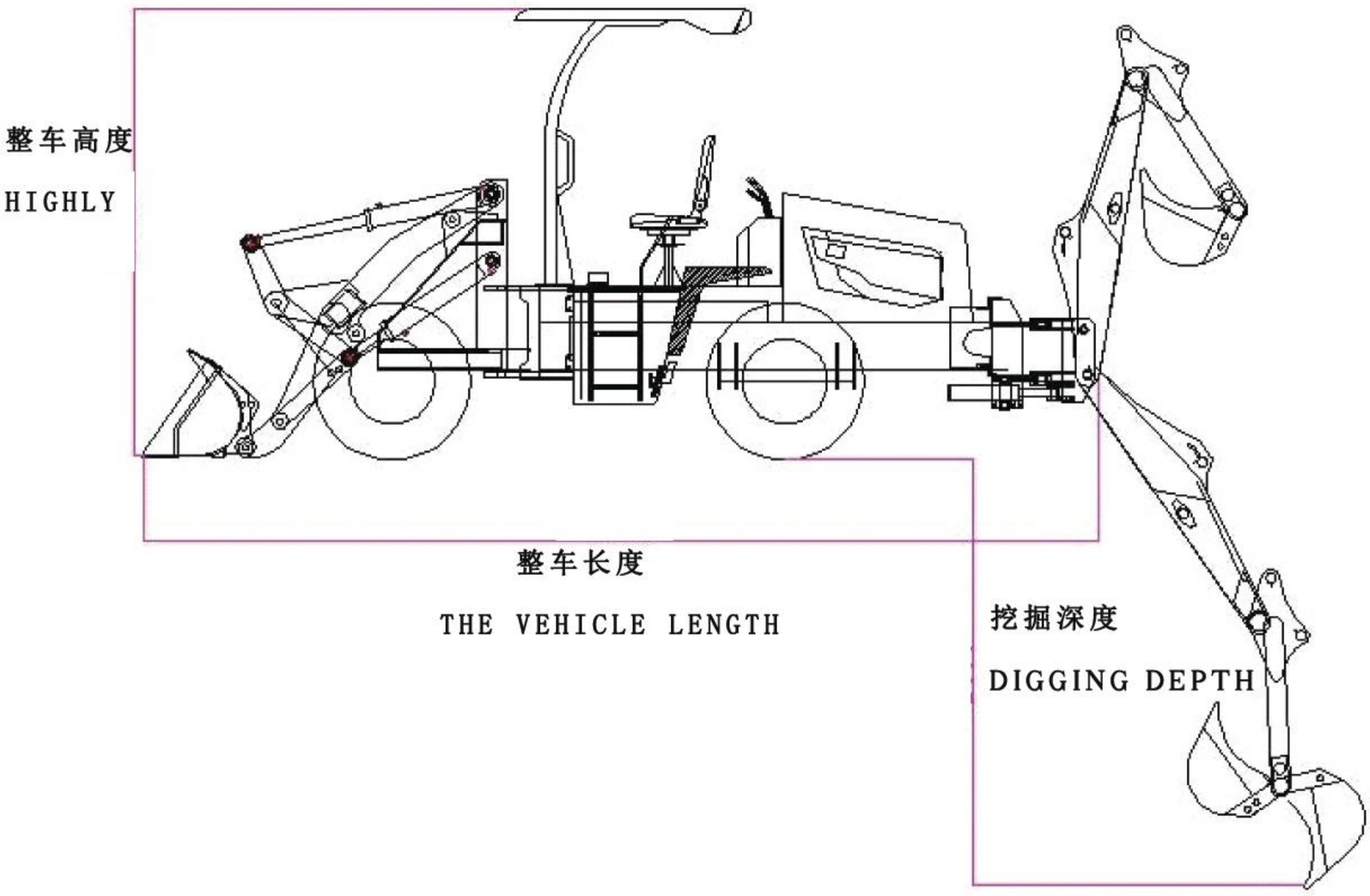
5、后桥 L Real axle — 具体以实物为准
SPECIFIC IN KIND PREVAIL

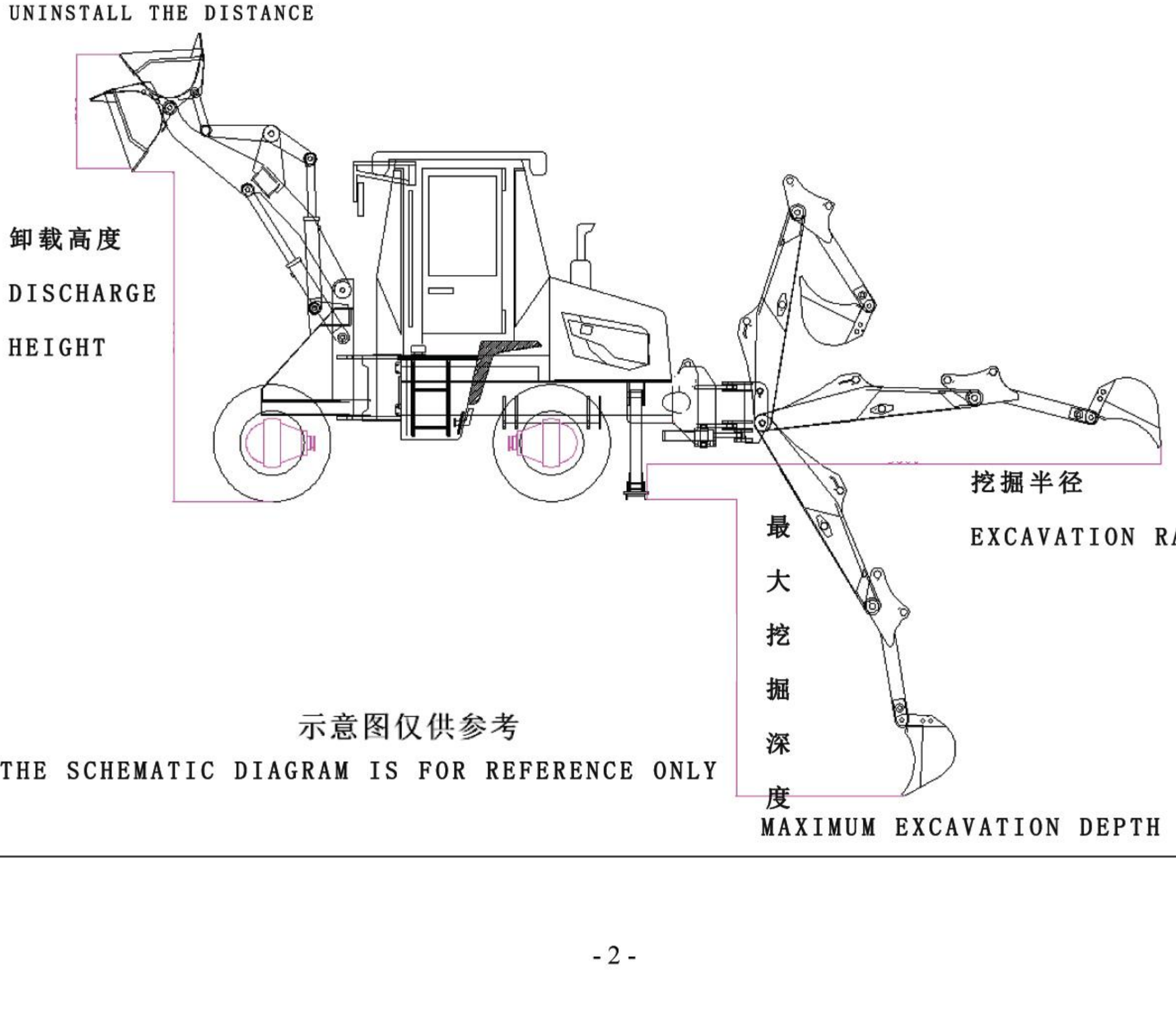
6、制动系 L Brake system

7、液压油箱 L hydraulic oil tank

第二章 产品的主要结构

Chapter two The product main structure





示意图仅供参考

THE SCHEMATIC DIAGRAM IS FOR REFERENCE ONLY

一、发动机 Engine

1、型号 model　　选配 Choose equipped

2、型式　　四缸直列、水冷、四冲程

type　　four cylinder ,water-cooled,four stroke

3、燃油消耗率 g/kw.h

Fuel consumption rate　　≤284.8

4、起动方式 Starting method　　电起动 Electric start

二、传动系 Transmission system

1、型式　　液压传动与机械

Model　　Hydraulic drive and mechanical

2、传动箱 Transmission case　　高低速机械操作 high low speed mechanical operation

3、传动轴 Transmission shaft　　双十字轴万向节 Double cross shaft universal joint

4、前后桥 Front axle and rear axle　　整体式（及螺旋锥齿轮主减速器带行星）

三、制动系 Brake system

1、主制动器 The main brake　　蹄片 lining 作用于前后桥双轮。

Acting on the wheel between the front axle and rear axle

四、系统额定压力 The system pressure rated Mpa

工作：举升 Work :lift　16

收斗 16 Bucket roll-in　　翻斗 Bucket roll-out 11

1、转向器 redirector　　BZZ5-250C

2、油缸 Oil cylinder　　双作用单活塞杆式 HSG-01 系列工程油缸

Double acting single piston HSG-01 series project cylinder

3、多路换向阀 Multiple directional control valve　　ZL15.3　ZL20.3

五、电器仪表 Electrical instrument

1、型式 Model

24V 单线制 负极搭铁　24V single wire system negative iron

2、发电机 Engine

JFW25B-1　28V-500W

3、调节器 Regulator

ZF　28V　　JFT249T-28V-1000W

六、工作装置 Working device

单板焊接式动臂，反转单摇臂连杆结构、标准铲斗不带斗齿，容量 0.5m³，铰接销轴为密封式。

Veneer jointing boom, reversing a single rocker arm connecting rod structure, standard bucket without bucket teeth, capacity 0.4m3, the hinge pin is sealed

七、车身 The machine body

1、闭式车身，驾驶室内装有电风扇，并有隔音装饰。

Closed body, driving room equipped with electric fans, and the sound insulation decoration

注：—符为选配机型范围，定制机型包括抓头等辅具，以实物为准。

Note: - operator for matching models range, custom models include grab assistive devices, to prevail in kind

第三章 使用与操作
Chapter three use and operation

一、操纵结构 Manipulation of structure

1、档位手柄 Gears handle　　档位指示 Gears instruct

2、动臂操纵手柄 Arm control handle　　前推-降臂 push forward - drop arm

后拉-升臂 pull back- up arm

3、铲斗操纵手柄 Bucket control handle　　前推-放斗 Push forward- put bucket

后拉-收斗 Pull back -collect bucket

4、熄火 Flameout　　拉起 Draw back

5、制动踏板 Brake pedal　　同一般车辆 like the general vehicle

6、其他 Other　　同一般车辆 like the general vehicle

二、新车磨合 New car break

新车及大修后必须经过 45 小时磨合。方可正式投入使用。

Must go through 45 hours after running a new car and overhaul. Be officially put into use.

1、发动机空转磨合 30 分钟，其中怠速 10 分钟，中速 15 分钟，高速 5 分钟。

Running the engine idling for 30 minutes, 10 minutes in which idling, medium speed for 15 minutes, 5 minutes high speed

2、工作装置空磨合操纵工作装置做各种动作，各不少于 30 次。

Empty running-working device to manipulate the device to do a variety of actions , each less than 30 times

3、空载行驶磨合 12 小时、高档、低档、前进、后退各不少于 2 小时。

No-load with the run 12 hours, high-grade and low-grade, forward, backward, less than two hours each

4、50％负荷下磨合 12 小时。

Run-in 12 hours at 50% load

5、75％负荷下磨合 18 小时。

Run-in 18 hours at 75% load

磨合过程中应密切注意各部件的工作情况和紧固情况，磨合完毕后应对整机进行全面检查并趁热机状态更换各种油液，清洗各滤清器，通过检查保养确定装载机技术状态良好时，方可正式投入使用。

Running-in process should pay close attention to the work of the various components and fastening, after the run is completed a comprehensive response to the machine status check and replace a variety of hot oil, wash each filter, determined by inspection and maintenance Loader in good condition , be officially put into use only.

三、驾驶 Driving

（一）、起动 Start

档位手柄置空档，检查各仪表信号指示是否正常，确定正常后，顺时针方向旋转起动开关，轻踩油门，起动开关，每次起动时间不超过 5 秒，若不能起动应

间隔 15-20 秒。若连续 3 次不能起动，则应查明原因并排除后继续起动。发动机起动后应注意观察机油压力，若不正常应立即停机排除。

Gear lever in neutral position, check the instrument signal indicating whether normal, determine the normal, pull decompression, clockwise rotation starter switch, light throttle, release the pressure after starting the engine, the starter switch, each starting time less than 5 seconds, if the interval 15-20 seconds should not start. If you can not start for three consecutive times, you should identify the cause and eliminate continue after starting. After starting the engine oil pressure should be observed, if not properly should immediately stop exclusion

停放时间较长时，发动机燃油系内可能混有空气导致起动困难，可按下述方法排除后起动：

Parked a long time, it may be mixed with the air in the engine fuel system cause starting difficulties, according to the following method to exclude after start

1、松开柴油滤清器放气螺塞，旋开输油泵手柄，用手往复泵油至燃油流出不冒气泡，紧固放气螺塞。

Loosen the fuel filter bleed plug, unscrew the pump handle, hand reciprocating pump oil to fuel outflow is not fizzy, tighten the bleed plug

2、松开喷油泵放气螺塞，用于泵油排气，无气泡时紧固放气螺塞。

Loosen the bleed plug the fuel pump for pumping the exhaust, tightened when no bubbles deflate plug

操作详见柴油机使用说明书。

Please refer to the diesel engine operation instruction for operating

（二）、换档 Gear Shift

本产品行驶中根据地面阻力手动变速。因此在行驶工况与作业工况变换时必需换档，长距离行驶时使用高档，铲装作业时使用低档，前推换档手柄为低档，后拉为高档，高低档之间为空档。换档必须在车辆停稳后进行，并且严禁边推拉进退手柄边挂档。

This product is based on a manual transmission driving resistance ground. Therefore necessary when driving conditions and operating conditions change gear, when long-distance driving using a high-grade , the use of low-grade jobs when shoveling, pushing foreward the shift lever is low, the pull between the high-end, high and low for the neutral. Shift must be parked in the rear of the vehicle, and the non-side sliding side hanging file handle back and forth.

(三)、起步与行驶 Starting with driving

1、发动机起动后由低速至中速空运转 5-10 分钟，各仪表信号指示正常，各部件无异常声响时松开驻车制动手柄。

Release the parking brake lever after engine start from the low-to medium-speed idling for 5-10 minutes each instrument signal indicating normal, no abnormal sound components

2、车辆停放时间较长时，起步前应往复转动方向盘及操纵工作装置做各种动作各 3-5 次，以排除系统内空气，若转向沉重，说明油温低，应继续使发动机中速运转，方向轻便时，方可起步。

Vehicles parked longer time, should start before turning the steering wheel back and forth and do a variety of actions to manipulate each working device 3-5 times to eliminate air in the system, if the steering heavy, indicating oil temperature low, engine speed should continue to operate medium speed, when the direction of light, starting walking

3、起步后及行驶中应平缓均匀地加大或减小油门，除特殊情况外，不得突然加载或卸载。

After starting and driving should increase or decrease the throttle uniformly and gently , except in special circumstances, shall not be suddenly loaded or unloaded

4、减速或制动时应减小油门，按规范操作及时踏下制动踏板。

Deceleration or braking should reduce the throttle , according to standard operating the brake pedal in time

5、换向行驶(前进变后退或后退变前进)，应首先减小油门，踩下制动踏板，待车完全停止后，再操纵换档手柄，严禁车辆停稳前向相反方向扳动进退手柄。

Commutation travel (forward or backward variable change back forward), you should first reduce the throttle, brake pedal, until the vehicle is completely stopped, and then manipulate the shift lever, It is strictly prohibited to vehicles stopped before throw in a handle to the opposite direction

6 、注意观察各仪表和指示灯，出现异常应及时停车排除。

Observe all gauges and lights, abnormalities should be parking exclude promptly

（四）停车与驻车 Parking

1、减小油门，降低车速。Reduce the throttle and reduce speed

2、档位手柄置空档。Gear lever in neutral position

3、放下动臂，放平铲斗。Lay down the boom, bucket flat

(五)、熄火(停机) Turn off (shutdown)

1、发动机卸载后，中速空运转 3-5 分钟，以冷却发动机，向前拉起熄火手柄，待发动机确实熄火后松开复位。

After unloading the engine, the speed of air operation for 3-5 minutes to cool the engine, turn off the handle pull forward until the engine actually stalled after reset release

2、紧急情况下，向前拉起熄火手柄，发动机立即熄火，除紧急情况外，不得在发动机高温时熄火；

Case of emergency, pull forward flameout handle, turn off the engine immediately, except in emergency situations, when you can not turn off the engine temperature

3、将起动开关逆时针方向旋转至空档，取出钥匙。

The neutral start switch is rotated counterclockwise to remove the key

4、冬季停车后及时打开散热器放水阀及发动机放水阀，放净冷却水，如加防冻液则不需放水。

In the winter after parking timely open the radiator drain valve and drain valve engine, put the net cooling water, such as adding antifreeze is not required drainage

四、作业。Operation

装载作业时可采用一次铲装法或复合铲装法，换档手柄置低档。

During the loading operation can be a shovel method or composite shovel method, shift lever set low

（一）取料 Reclaimer

1、工作装置处于预备取料状态，即下放动臂，放平铲斗。

Reclaimer device is ready to work state, mean put the boom down, bucket flat

2、平缓前推进退手柄。

Push the handle before gently

3、接近料堆时，斗刃(斗齿)接触地面，加大油门，全力插入料堆，然后收斗提臂，使铲斗与动臂铰点离地约 310 毫米。

Near the pile, bucket edge (Tooth) touches the ground, stepped on the gas, to insert the pile, then closed bucket arm, bucket and boom hinge point of about 310 mm from the ground

4、当物料块度较大或料堆硬实时，一次插入困难，可在插入过程中边收斗边提臂，提臂困难时，可踩下制动踏板。

When the larger pieces of material or stockpile hard real-time, once inserted into difficulties ,closing the bucket during insertion side edge to mention arm, reference arm difficulties may depress the brake pedal

（二）、运料 Move material

1、低速驶离料堆。

Leaving stockpiles in low speed

2、接近运输车辆或卸料位置时提升动臂至卸料高度。

Enhance the boom to the discharge height when close the transport vehicle or unloading location

(三)卸料 Discharge material

前倾铲斗卸料，当物料粘积铲斗时，可往复操纵转斗油缸，使之抖落。为了减小冲击，应平缓操纵转斗油缸。

Forward bucket discharge, when the material stick plot bucket, the bucket can be operated reciprocating cylinder, make shake. In order to reduce the impact should be operate the bucket cylinder gentle

五、注意事项 attention

1、本产品配置高速直喷柴油机，燃油必须清洁，应经 24 小时以上沉淀并经过滤后使用。连续作业时，视油质优劣，每隔 3-5 日在起动前松开燃油螺塞，排放水及污物。

The product configuration high-speed direct injection diesel engine, the fuel must be clean, shall be approved by more than 24 hours after precipitation and filtration use. Continuous operation, depending on the merits of oil, every 3-5 days release oil drain plug before starting to the discharge of water and dirt

2、发动机冷却水应为清洁软化水，含矿物质较多的硬质水应经软化处理或煮沸，并经沉淀后使用。

The engine cooling water should be clean softened water, with more rigid mineral water should be boiled or treated by softening, and use after precipitation

3、发动机不得在未经预热的情况下高速高载运转，并且不得长时间高速高载运转。

The engine shall not in high-speed high load operation when without warm-up, and not long time high-speed high load operation

4、发动机冷却水沸腾时应使发动机中速运转，待水温下降后再熄火补充冷却水。

When the engine cooling water boiling the engine should in medium speed operation, and turn off when the water temperature dropped then add the cooling water

5、工作中应经常观察机油压力、水温、电流等仪表或指示信号，并注意液压油温，发动机油正常压力为 0.15-0.55Mpa，怠速时不低于 1Mpa，正常出水温度 80-95℃同，低于 55℃时不得高速运转，液压油正常工作温度 30-70℃，低于 30℃时不得高速或高载运转。

Work should always observe the oil pressure, water temperature, current meter or indicator signal, and note the hydraulic oil temperature, engine oil pressure is normal 0.15-0.55Mpa, idling is not less than 1Mpa, normal water temperature 80-95 ℃ with temperature low than 55 ℃ shall not in high-speed operation , hydraulic oil normal operating temperature is 30-70 ℃, high speed or high load operation may not be lower than 30 ℃

6、行车时注意检查制动系，转向系工作是否灵敏可靠，工作装置动作是否正常，工作中注意各工作部件的工作情况和声响，发现异常应及时停车检查排除。

Note that while driving check the brake system, steering system work is sensitive and reliable operation of the device is working properly, pay attention to the work of the working parts and sound, any abnormal should parking timely to exam and exclude

7、行车时工作装置应处于运输状态(收斗、动臂与铲斗铰点离地约 310 毫米)；装载后不得高空运输或急刹车；停车(驻车)时工作装置应处于取料状态(降下动臂、放平铲斗)。

Working device while driving should be in the transport state (closed bucket, boom and bucket hinge point of about 310 mm from the ground); After loading height shall not transport or brakes; parking (parking) when the device should work in reclaiming state (lower boom, flat bucket)

8、回转方向盘应平缓，不得过急过锰，除非必要(拖车等)，尽量不要在发动机熄火后转向。

Gently turning the steering wheel should not be too hasty manganese, unless necessary (trailers, etc.), try not to turn on the engine flameout

9、应平缓操纵油门及各操作手柄，不得猛起猛停或反复操纵某一手柄用冲击的办法取料，卸料或加速减速。

Gentle manipulation of the accelerator and its operation should handle shall Meng Meng stop or repeated manipulation of the handle with the impact of a way to take the material, unloading or acceleration and deceleration.

10、除非必要，不得带载降臂，以免操纵不稳时发生纵向倾翻或损坏零部件，必须带载降臂时，应平缓前推动臂操纵手柄。动臂下降过程中，不得加速、减速、抖料或停顿。

Unless necessary, may not load down the arm, to avoid tipping when manipulating longitudinal instability or damage parts, must bring loads down the arms should pushing the arm joystick before gently. Boom-down process, not acceleration, deceleration, shaking material or pause

11、在凹凸不平或横坡上作业是应谨慎操作，以免发生横向倾覆；坡上起步应平缓(特别是空载上坡或重载下坡时)，坡上行驶时不应急刹车；行车或作业时出现前轮或后轮离地现象在及时卸载，但取料时出现后轮轻微离地现象可继续作业。

In the cross-slope operation is uneven or should exercise caution to avoid lateral overturning; gentle slope should start (especially when the load uphill or downhill overloading), the slope should not slam the brakes when driving; driving or operating time appeared the phenomenon front or rear wheels off the ground should unloaded in time ,but appears the phenomenon that the rear wheel slightly off the ground can continue operating

12、下班前应清洗车辆，检查排除故障或泄漏，冬季应放净冷却水，尽量放在温暖库房。

Vehicles should be cleaned before get off work, check the troubleshooting or leaks, winter should put the net cooling water, try to put the warmth of the Treasury

13、务请按说明书操作使用，否则出现非制造方面问题，后果自负。因产品不断改时，改进型号恕不通知。

Please refer to the instruction to operate, otherwise non-manufacturing problems at your peril. Due to the product still improved ,the models which improved will without notice

第四章 润滑与保养
Lubrication and maintenance

一、润滑 Lubrication

（一）、润滑周期 Lubrication cycle

序号	润滑部件 Lubricated parts	部位 Position	点数	润滑油 Lubricating oil	工具 Tool	润滑周期 Lubrication cycle			
						周 week	月 month	半年 half of a year	一年 year
1	传动箱 Transmission case	加油口 Filler	1	齿轮油 Gear Oil	油壶 Oiler			√	×
2	前桥 Front axle	—	1	双曲线油 Hyperbolic oil	—			√	×
3	后桥 Rear axle	—	1	—	—			√	×
4	制动系统 Braking Systems	贮存罐 Storage tank	1	制动液 Brake fluid	—		√	×	
5	液压油箱 Hydraulic Tank	加油口 Filler	1	液压油 Hydraulic Oil	—			×	√
6	传动轴 Transmission shaft	油杯 Oil Cup	4	润滑脂 Grease	油枪 Oil gun		√		
7	前轮毂 Front wheel hub	—	2	齿轮油 Gear Oil	—			√	×
8	后轮毂 Rear wheel hub	—	2	齿轮油 Gear Oil	—			√	×
9	车架铰点 Frame hinge point	—	2	润滑脂 Grease	—	√		×	
10	液压缸铰点 Hydraulic cylinder hinge point	—	6	—	—	√			×
11	工作臂 Work wear mask	—	9	—	—	天	天	天	天
12	操纵机构铰点 Control mechanism hinge point			机械油 Mechanical oil	油壶 Oiler	√			

说明:Explanation

1、发动机及其他随机附件润滑见柴油机及有关使用说明书。

Engines and other random accessories see the diesel engine instruction or relevant instruction

2、表中标记“√”为补充或检查补充，“×”为清洗更换。

Table marked " √ " to supplement or complement inspection, " × " for the cleaning replacement

3、表列周是按正常使用状态标定的，一般情况下润滑周期应等于或小于表列值，特殊情况酌情处理。

Listed week is calibrated according to the normal state, under normal circumstances lubrication cycle should be equal to or less than the tabulated value, exceptional circumstances discretion

（二）润滑油（脂）、燃油的规格牌号 Lubricant (grease), fuel specification grades

序号	名称	夏季 summer	冬季 winter	标准号 standard	应用部位 Application site
1	轻柴油 Light diesel oil	RC-0	RC-10	GB252	燃油箱 Fuel Tank
2	柴油机润滑油 Diesel oil	CD-10W/40	CD-10W/30	GB11122	油底壳 Sump
3	液力传动油 HYDRAULIC TRANSMISSION OIL	8	8	JB/T12194 -2015	传动箱 Transmission case
4	双曲线齿轮油 Hypoid gear oil	HL57-28	HL57-22	SY1102	后桥 Rear axle
5	耐磨液压油 Wear-resistant hydraulic oil	YBLN-46	YBN-32		液压油箱 Hydraulic Tank
6	锂基润滑脂 Lithium grease	ZL-1	ZL-1	SY1412	轮毂、传动轴、油缸铰点等 Wheels, drive shaft, cylinder hinge points, etc.
7	机械油 Mechanical oil	N46	N46	GB443	其余各铰点 The rest of the hinge point

炎热地区夏季应更换 NYBl00 耐磨液压油，严寒地区冬季应更换 NYB32 或 NYB22 耐磨液压油。

Hot in summer wear and should be replaced NYBl00 hydraulic oil, cold winter wear and should be replaced NYB32 or NYB22 hydraulic oil

(三)、润滑注意事项 Lubrication Precautions

1、发动机油底壳，液压油箱的存油量应在油标上下限之间。传动箱、后桥、前桥油面加至油口(观察口)。Engine oil pan, hydraulic oil storage tank should be between a lower limit on the oil standard. Gearbox, rear axle, front axle oil was added to the oil port (viewport).

2、注油前应将油口或油咀清理干净。

Before oiling the ports or oil nozzle should be cleaned

3、传动箱、前、后桥清洗换油，应趁热机状态放净旧油，然后加入轻柴油或煤油(掺 5％机械油)，随即起动发动机空载低速运转 2-3 分钟，放掉清洗油，注入清洗润滑油，同时应清洗通气塞，放油塞等。

Gear box, front and rear axle clean and oil changes, you should put the net of the old oil when the machine state hot , then add light diesel oil or kerosene (mixed with 5% mechanical oil), then start the engine load at low speed for 2-3 minutes, let go of cleaning oil injection cleaning oil, at the same time should clean the vent plug, drain plug, etc.

4、新车或大修后工作 50 小时(一周)更换液压油，磨合前后一般半年换油一次，油液未变质或变色可适当延长，但不得超过一年。换油时应仔细清洗油箱及清滤器。粗滤器装于油箱内吸油口，必要时更换滤芯(滤网)。液压油应经过 48 小时沉淀后经过加油口滤网(建议使用绸布过滤)注入油管。同时还应紧固管接头及其他连接件，必要时更换密封件。滤清器一般每月清洗一次。滤芯破损或污物较多时应更换。

After the new or overhaul work 50 hours (one week) to replace the hydraulic oil, oil change before and after the run is generally six months once the oil is not deterioration or discoloration may be extended, but not more than one year. Oil change should be carefully cleaned the tank and clean the filter. Strainers installed in the tank suction port, replace the filter (filter) if necessary. Hydraulic oil should go through 48 hours after the precipitation through the oil filler strainer (recommended for silk filter) into the tubing. It should also tighten fittings and other connections, replace the seals if necessary. Filter general cleaning once

a month. the filter should be replaced when the filter is damaged or more dirt

5、液压缸活塞杆外露部分半年左右涂一次润滑脂。

Exposed parts of the hydraulic cylinder piston rod about half a year with grease-coated

6、零部件拆检、修理或更换后，有关部位应进行润滑。

Parts dismantling, repair or replacement, the relevant parts should be lubricated

7、保养 Maintenance

(一)发动机保养 Engine maintenance

见柴油机使用说明书　Refer to the diesel engine operation instruction

(二)日常保养(例行保养)Routine maintenance (routine maintenance)

每日工作前，作业中及收车后的例行保养，日常保养以检查为重点完成：

The regular maintenance before daily work ,at work and after work　are focus on check completed

1、检查各种油液及冷却水是否充足，各油箱、管件、液压元件等有无泄漏现象，检查各铰点润滑情况，必要时注油(脂)或紧固。

Examine the various oil and cooling water adequacy ,each tank, pipe fittings, hydraulic components whether have the presence of leakage, check the hinge point of lubrication, grease (grease) or tighten if necessary

2、检查轮胎气压是否符合规定值。

Check the tire pressure whether confirm to the standard value

3、发动机运转是否正常，有无异常声响，机油压力是否正常。

Whether the engine is running normally, with or without abnormal noise, oil pressure is normal or not

4、转向、制动及其它操纵机构是否灵敏可靠，仪表信号是否正常，连接件是否紧固，工作装置工作是否灵活，工作装置结构件是否有明显变形或脱焊。

Steering, braking and other control mechanism is sensitive and reliable instrument signal is normal, the connections are tight or not , working devices work is flexible or not , working device structures for visible deformation or desoldering

5、发现异常应及时排除，不得在机器状态不良的情况下工作。

Abnormal should be promptly removed, may not work in the case of poor state of the machine

6、班后做好清洁工作，冬季放净冷却水。

After work doing the cleaning work good, put the cooling water net in winter

(三)一级保养(50 小时，每周)以润滑为重点。

First lever maintenance (50 hours per week) focus on lubricate

1、完成日常保养的各项工作。

Completion of the work routine maintenance

2、对全车的压注式油杯(黄油咀)加油润滑油(脂)油门，进退手柄等操作机构的暴露铰点滴注机械油。

The injection pressure of the whole car oil cup (butter Tsui) fuel oil (fat) accelerator, exposed hinges retreat injection machine oil drip handle operations such institutions

3、检查液压面高度，必要时补充。

Check the hydraulic surface height, supplement if necessary.

4、用气压表检查轮胎气压，必要时补气。

Check the tire pressure with a barometer, if necessary to fill gas

5、清洗过滤器，机油滤清器及燃油滤清器，排放燃油箱中积水及污物(油质较差时应每日班前排放)。起动发动机，倾听发动机在低速、中速、高速运转时有无异常声响，注意发动机有关部位有无漏油、漏水、漏气、漏电现象。

Cleaning filters, oil filters and fuel filters, fuel tank discharge water and dirt (when the oil quality is poor should be emissions every day). Start the engine and listen to the engine operation at low speed, medium-speed, high-speed with or without abnormal sound, pay attention to whether the relevant parts of the engine oil spills, leaks, leak, leakage phenomenon

6、检查紧固部件紧固件、连接件，应特别注意传动轴、车轮铰销等运动部位的紧。

Check the fastening parts fasteners, connectors, pay special attention to drive shaft, tight wheels and other moving parts of the hinge pin

7、检查制动踏板自由行程，必要时调整。

Check the brake pedal free travel and adjust if necessary

(三)、二级保养(200 小时，每月)

Second lever maintenance (200 hours per month)

二级保养以调整，紧固为重点。

Second lever maintenance focus on adjust and tighten

1、完成一级保养的各项工作。

Completion each work of the first lever maintenance

2、清洗液压系统和发动机系统各滤清器，检查各容器液面高度。必要时补充。

Cleaning Each filter of hydraulic system and engine system, check the container liquid level height . complement if necessary

3、检查各传动部件、行走部件上的工作情况，必要时调整或紧固，并对车紧固件连接件进行普遍检查紧固。

Check the transmission parts, chassis parts on the work, if necessary, adjust or tighten, and conduct vehicle checks generally tightening fasteners connectors

4、检查调整离合制动踏板自由行程、没门行程、主制动器及驻车制动器间隙。

Check and adjust the clutch brake pedal free travel, no way trip, the main brake and parking brake clearance

5、检查液压系统工作压力，必要时调整。

Check the hydraulic system working pressure and adjust if necessary

6、检查全车电器仪表系统、润滑发动机、电动机等。清理蓄电池接头污物。

Check all electrical instrumentation system, lubricate the engine, electric motor and so on. Clean up the dirt battery connector

(四)三级保养(半年、1000 小时)

Three lever maintenance (six months, 1000 hours)

三级保养以清洗换油、清除磨损为重点，一般作为换季保养，春季、秋季各一次。

Three lever maintenance focus on oil changes and clean and remove the wear, generally as seasonal maintenance, spring and autumn each time

1、清洗发动机油底壳、然油箱没燃油管路，清洗各油、气滤清器，清理水散热器夹缝中的尘土污物。

Cleaning the engine oil pan, fuel tank fuel line, cleaning the oil, gas filters, cleaning water radiator dirt caught in the dust

2、更换传动箱、后桥润滑油、检查齿轮轴承等使用情况及配合间隙，必要时调整或更换，清洗疏通通气塞。

Replace the gearbox, rear axle oil, check the gears bearings and other usage and fit the gap, adjust or replace if necessary, clean or dredge the vent plug

3、检查前，后轮毂轴承间隙，必要时调整。检查润滑脂使用情况，若变质或污染应更换；若油质较好可适当补充后继续使用，但更换周期不得超过一年。

Before the test, the rear hub bearing clearance and adjust if necessary. Check the grease usage, if spoiled or contaminated should be replaced; if the oil quality is better can continue to use after supplementation appropriate, but shall not exceed one year replacement cycle

4、拆检铲斗三铰点销轴(该处离地近易污染)，必要时拆检其它销轴(至少每年清洗一次)清洗换油，若销轴有伤痕应修复后使用。使用条件恶劣时(粉尘砂土较多)全部销轴(含车架铰点)半年清洗一次。

Three dismantling bucket hinge pin point (where ground near any contamination), dismantling the other pin when necessary (at least once a year to clean) oil clean and change, if the pin injuries should be repaired before use. When harsh conditions (dust sand more) All pin (including frame hinge point) half cleaned once

5、清洗液压系统，更换破损密封件，更损液压油，必要时调整系统压力。若拆检液压元件，必须按照元件制造厂的使用说明书进行。

Cleaning the hydraulic system, replacement of damaged seals, and more loss of hydraulic oil, if necessary, adjust the system pressure. If dismantling the hydraulic components must be carried out in accordance with the component manufacturer's manual

6、全面紧固全车紧固件、连接件。

Fully tighten the entire vehicle fasteners, connectors

7、全面检查电器仪表系统，清理连接处或触点的锈蚀污物。润滑发动机、发动机，必要时调整调节器、起动机等。

Comprehensive inspection of electrical instrumentation systems, clean up connections or contacts rust dirt. Lubricate the engine, the engine, if necessary, adjust the regulator, starter, etc.

8、全面检查工作装置各构件，若有明显变形或脱焊应修复。

Comprehensive inspection of each component device, if there are significant deformation or desoldering should be repaired

9、轮胎换位：左前轮一左后轮一右前轮一右后轮一左前轮。

Tire rotation: left front and left of a right front wheel a left front and right rear wheels a

第五章　机器调整与故障排除

Machine adjustments and troubleshooting

一、机器调整　Machine adjustment

（一）、发动机调整 Engine adjustments

见柴油机使用说明书 refer to the diesel engine operation instruction

(二)后桥 Rear axle

后桥主减速器一般情况下必拆卸调整，只有齿轮磨损，齿隙大于规定值或零件损坏必须更换时才可拆卸调整，调整时应注意：

Rear axle final drive under normal circumstances will be demolished adjustment, only gear wear, backlash is greater than a predetermined value or damaged parts must be replaced when the detachable adjustment, adjustment should be noted:

1、主动齿轮的轴承间隙由内轴承内圈后的垫片调整，以手力能拨动输入法兰盘(不装油封时)为合适。

Pinion gear bearing clearance from the bearing inner ring gasket after adjustment to the hand can toggle the input flange (when not loaded seal) as appropriate

2、从动齿轮端面跳动量在大端测量不大于 0.10mm。

Driven gear runout measuring not more than 0.10mm in big-endian

3、主从动齿轮的配合间隙(在从动齿轮端测量)0.17-0.24mm 调整时应首先旋松差速器轴承盖螺母，取下调整螺母锁片，然后调整两端调整螺母。测量齿隙和从动齿轮端面跳动量时应压紧轴承盖。

Primary driven gear with the gap (in the driven gear end measurement) 0.17-0.24mm adjustment should first loosen the differential bearing cap nut and remove the adjusting nut locking tab, then adjust both ends of the adjusting nut. Measuring driven gear backlash and runout bearing cap should be pressed

4、齿隙合适后，拧紧两端轴承调整螺母，然后使两螺母分别退一个缺口，装好锁片，最后旋紧轴承盖螺母。

After the proper backlash, tighten adjusting nut bearings at both ends, so that the two nuts were back then a gap, installed locking plate, and finally tighten the bearing cap nuts

5、主动齿轮和从动齿轮的啮合面积应大于面齿的 60％。啮合面积偏小时应调整主动齿轮大齿端与轴承内圈之间的垫片，并使接触位于齿宽的中部稍偏向小端。

The engagement area of the drive gear and the driven gear teeth should be greater than 60% of the surface. Engaging small area should take the initiative to adjust the shims big gear teeth between the client and the bearing inner ring and make contact with the tooth width is located in the middle of the small end is slightly biased

6、调整啮合区域后，必须重新调整齿隙。

After adjusting the engagement zone, you must re-adjust backlash

7、新车使用 3 个月后，应检查后桥主传动的综合间隙，发现异常时应拆检排除。

3 months after a new car, you should check the main drive integrated bridge the gap, should be overhauled to exclude abnormal

后桥轮毂轴承过紧，则行车时轴承过热，润滑油外流；轴承过松则车轮摆动，产生冲击，轴承过松过紧均会导致早期损坏，应予调整。调整步骤如下：

Rear axle wheel bearing too tight, then the traffic bearing overheating, oil outflow; too loose wheel bearing swing an impact, bearing too loose too tight will cause early damage, should be adjusted. Adjusted as follows

1、支起后桥、取出半轴。

Support from the rear axle, remove the axle

2、拆下锁紧螺母(外螺母)及锁紧垫圈。

Remove the lock nut (outer nut) and lock washers

3、用 200-2500Nm 的扭矩旋紧校准螺母(内螺母)。

With 200-2500Nm torque tighten the calibration nut (nut)

4、将校准螺母退回 1/6-1/4 圈，装上锁紧垫圈，此时车轮应能自由转动。

The calibration nut returned 1/6-1/4 circle, and put on lock washers, then the wheels should turn freely

5、按顺序装上其它零件。

Other parts installed in order

6、行驶 10km 左右(最好不要使用制动)如轮毂发热，则轴承过紧，应将校准螺母旋松一点。

Traveling around 10km (best not to use the brake) as the hub of fever, then bearing too tight, loosen the nut should point calibration

(二)前桥

Front axle

前桥轮毂轴承调整可参照后桥轮毂轴承调整进行。

Front axle wheel bearing adjustment wheel bearings can be adjusted with reference to the bridge carried

(三)制动系 Brake System

1、主制动制动踏板自由行程 8-15 毫米，总行程 180 毫米，当制动蹄磨擦片磨损，间隙过大时应调整：

Main brake brake pedal free travel 8-15 mm, 180 mm total stroke, when the brake shoe friction pad wear, the gap is too large should be adjusted

(1)、支架车轮，取下橡胶堵。

Bracket wheels, remove the rubber plug

(2)、用螺丝刀向上拨动调整螺母的牙齿，直至用手转不动车轮为止。

Use a screwdriver to slide upward adjustment nut teeth, not turn the wheel by hand until the date

(3)、向下拨动调整螺母 6-8 个牙齿，此时车轮能自由转动(允许制动鼓与制动蹄有轻微磨擦)。

Turn the adjusting nut down 6-8 teeth, when the wheels turn freely (allowing the brake drum and brake shoe has a slight friction)

制动管路内有空气，更换制动液和贮液罐无存油补充后，需排气：

There is air in the brake lines, replace the brake fluid reservoir tank and no deposit oil supplements, the need to exhaust

1）排气从车轮制动分泵开始，由远至近顺序进行。

Exhaust from the wheel brake cylinder starts from far to near order

2）取下分泵放气阀胶盖，套上放气用软管，管的一端放入容器内。

Remove the slave cylinder bleeder valve plastic cover, put the air-hose, tube end into the container

3）连续数次踩下制动踏板，松开放阀阀气，旋紧放气排后松开制动踏板，继续重复上述动作放气次数，直至空气排尽。

Continuous brake pedal several times, loose open gas valve, tighten the rear air exhaust discharge releases the brake pedal, continue to repeat the action deflated times, until the air drained

4）排气过程中要随时补充制动液，并且贮液罐中必须有一定存液，排气后加足制动液，

制动踏板自由行程由制动总泵的活塞推杆调整。

Be added at any time during the exhaust brake fluid, and there must exist a certain liquid storage tank, and add a little after the exhaust brake fluid, brake pedal free travel of the piston from the brake master cylinder push rod adjustment

2、驻车制动(手制动)

Parking brake (hand brake)

手制动器调整：松开驻车制动手柄，支起一个后轮，取下橡胶堵。用小螺丝刀或专用调整工具(弯板)和内拨动调整螺母。至手力转不动制动鼓为止，反向(向外)拨动调动螺母，倒转 6-7 个齿，至手力能够转动制动鼓即可。

Hand brake adjustment: Loosen the parking brake lever, support from a rear, remove the rubber plug. Use a small screwdriver or a special adjustment tool (bending) and the toggle adjustment nut. To the hand brake drum not turn up, the reverse (outward) toggle mobilize nut, 6-7 reverse gear, to be able to rotate the hand brake drum can be.

调整手制动器后，驻车制动的柄行程仍然较大时，说明操纵机构钢丝拉绳过松，应调整至用力拉紧手柄后，齿条拉出 7-8 个牙齿。

Adjust the hand brake, the parking brake handle travel is still large, indicating the control mechanism of steel 丝拉绳 too loose, should be adjusted to handle the tension force, pull the rack teeth 7-8

3、调整制动踏板自由行程后，必要时应调整液压制动阀拉线(拉线与制动踏板摇臂联动)，调整合适后，行车中踩下制动踏板发动机不熄灭。

After adjusting the brake pedal free travel, as necessary, to adjust the hydraulic brake cable (cable and brake pedal arm linkage), after appropriate adjustments, the engine driving the brake pedal does not go out

（四）、液压系统

Hydraulic system

装载机使用一定时期或液压系统（元件）拆卸，维修后，系统工作压力可能发生变化，使用若工作性能无明显变化可不调整；若产生功能下降，声响异常等明显变化，则应调整。调整时应外接压力表(量程 0-25MPa)接头共两处，分别位于优先阀进油口前和合流阀(多路阀右效第四片)上方，接头螺纹 M16×1.5 可直接用橡胶管引出。

Loaders use a certain period or hydraulic systems (components) demolition, repairs, system pressure may change, the use of performance if no significant change from time to adjust; If the generating function decline, abnormal sound obvious change, should be adjusted. External pressure gauge should be adjusted (range 0-25MPa) of two joints, which are located in the priority valve before the inlet and a mixing valve (right-efficiency multi-way valve fourth piece) above the connector thread M16 × 1.5 can be directly used rubber tube elicit

1、调整部位及额定压力 Adjust the location and rated pressure

安全阀位于多路阀右数第一片下方，开启压力 15MPa，转斗缸大腔过载补油阀位于多路阀右数第三片后方，开启压力 14MPa，转斗缸小腔过载补油阀位于多路阀右数第三片前方，开启压力 11MPa。卸荷阀位于多路阀右数第四片前方，开启压力 12MPa。马达过载补油阀位于多路阀右数第五片，前后各一个，开启压力 16MPa。转向安全阀位于各优先阀后调，开启压力 10MPa。

Multi-way valve valve located rightmost piece below the opening pressure 15MPa, the bucket cylinder fill large cavities overload valve located in multi-way valve from the right rear of the third film, opening pressure of 14MPa, the bucket cylinder fill small cavities overload valve located in the multi-way valve from the right front of the third film, opening pressure of 11MPa. Unloading valve located in multi-way valve from the right front of the fourth film, opening pressure of 12MPa. Motor overload fill valve located on the fifth multi-way valve from the right pieces around each one, opening pressure 16MPa. Steering priority valve safety valve is located after each tune, opening pressure 10MPa

2、调整方法 Adjustment methods

卸下护帽，放松锁紧螺母，旋转调整螺杆(面对杆端，顺时针旋转时开启压力升高)，达额定值后旋紧锁紧螺母及护帽。

Remove the protective cap, loosen the lock nut, rotate the adjusting screw (facing the rod end, opening pressure rises clockwise) and tighten the lock nut and protective cap of ratings

原理、结构及调整方法见液压元件随机使用说明书。

Principle, structure and adjustment methods, see the hydraulic components random instruction.

二、常见故障及排除方法 Common Faults and exclusion method

（一）整机 Machine

故障 Fault	原因 Cause	排除方法 Exclusion method
不行 走 Do not walk	传动箱空档 Gearbox in neutral 行走阀上安全阀卡止 Walking on engaging the valve safety valve 半轴或传动轴扭断 Broken axle or drive shaft 马达损坏 Motor damage 其它使用部件损坏 Other use of component damage	挂档 Hanging file 清洗安全阀 Cleaning valve 更换 Replace 更换 Replace 修复或更换 Repair or replacement
车速低动力小 Speed low power small	发动机动力不足 Lack of engine power 行走压力低 Walking low pressure 安全阀卡止 Valve engagement	调整修理、清洗滤芯 Adjustment repair, clean the filter 调整行走压力 Walking pressure adjustment 清洗调整压力 Cleaning pressure adjustment

（二）发动机 Engine

见柴油机使用说明书

（三）传动箱 Transmission case

故障 Fault	原因 Cause	排除方法 Exclusion method
挂档因难 Difficulties hanging files	操纵杆或拨叉轴变形 Joystick or fork shaft deformation 操作不当 Improper operation	修复或更换 Repair or replacement 按使用说明书操作 By using the manual operation
异常声响 Abnormal noise	油面过低或牌号不符 Oil level is too low or inconsistent with grades 齿轮或键磨损 Wear the gear or key 轴承、隔套磨损或间隙不当 Bearing wear or improper gap spacer 紧固件松动 Loose fasteners	补充或换油 Supplement or oil change 更换 replace 更换或调整 replace or adjustment 紧固 Tightening
温度过高 Temperature too high	油面过低、不洁或牌号不符 Oil level is too low, inconsistent with unclean or brand 轴承过紧、卡死或损坏 Bearing too tight, stuck or damaged 油面过高 Oil level is too high	补充或清洗换油 Supplement or cleaning oil change 调整间隙或更换 Adjust gap or replace 放出多余油 Release excess oil
漏油 Oil spill	油封、垫片损坏 Seals, gaskets damaged 轴颈磨损 Journal Wear 油面过高 Oil level is too high 油脏 Dirty oil 通气塞堵紧 Vent plugs tight 紧固件松动 Loose fasteners	更换 replace 更换 replace 放出多余油 Release excess oil 排出异物、清洗换油 Discharge foreign body, clean oil changes 疏通 Dredge 紧固 Tightening

（四）前桥、后桥 Front axle, rear axle

故障	原因	排除方法
异常声响 abnormal noise	油面过低或牌号不符 Oil level is too low or inconsistent with grades 主传动齿轮磨损或调整不当 The main drive gear is worn or improperly adjusted 轴承磨损、卡死、或间隙不当 Bearing wear, stuck, or improper gap 差速器损坏 Differential damage 紧固件松动或未锁紧 Locking fasteners loose or	补充或换油 Supplement or oil change 调整或成对更换 Adjust or replace in pairs 调整或更换 Adjust or replace 修复或更换 Repair or replacement 紧固锁紧 Tighten the locking

（五）制动系统 Braking Systems

故障	原因	排除方法
制动不灵 Brake not working	制动器间隙或踏板自由行程过大 Gap or brake pedal free travel is too large 磨擦片严重磨损 Badly worn friction plate 磨擦片沾有油污泥水 Friction plate stained with oil mud 制动液不足、管路漏油或有空气 Insufficient brake fluid, air or pipeline spills 总泵或分泵活塞损坏 Master cylinder or wheel cylinder piston damage 总泵与液压制动阀运动干涉 Master cylinder and hydraulic brake valve movement interference	调整 Adjustment 更换 replace 用汽油清洗 Wash with gasoline 补液、紧固或排气 Rehydration, fastening or exhaust 更换 Replace 调整液压制动阀拉线 Adjust the hydraulic brake cable
异常声音 Abnormal noise	磨擦片破损、松脱、铆钉外露 Friction plates damaged, loose, exposed rivets 回位弹簧弹力小或折断 Small or break force of the return spring 制动鼓变形或破裂 Brake drum deformation or rupture 紧固件连接件松动 Fasteners loose connections	修复或更换 Repair or replacement 更换 replace 更换 replace 紧固 Tightening
温度过高 Temperature too high	制动器间隙或踏板自油行程过小 Gap or brake pedal free travel is too small 回位弹簧力小或折断 Small or broken return spring force 磨擦面有异物 Friction surface of a foreign body 磨擦片过厚或不平 Friction plate is too thick or uneven 行驶中常踩在踏板上 Travel often step on the pedal	调整 adjust 更换 replace 清除 delete 更换 replace 注意正确操作 Note that correct operation

(六)液压系统 Hydraulic system

故障	原因	排除方法
不泵油 Don’t pump oil	油面过低可粘度过大 Low viscosity oil may be too big 吸油管漏气或变形 Suction pipe leak or deformation 吸油滤网堵塞 Suction filter clogging 油泵损坏 Pump damage 油路堵塞 Oil plug	补充或更换 Supplement or replace 紧固或更换 Tighten or replace 清洗或更换 Cleaning or replacement 修复或更换 Repair or replacement 清洗疏通 Cleaning dredge
工作不正常	安全阀、过载阀开启压力低 Safety valve, the valve opening pressure overload low 阀、缸 Valves, cylinders 系统中有空气 Air in the system 供油不足 Inadequate supply 油面过低或不洁 Low or dirty oil 油过稀或过稠 Oil too thin or too thick 机械部分卡死或损坏 Mechanical parts stuck or damaged	调整 adjust 修复或更换密封件 Repair or replace the seals 排气 Exhaust 检修泵系统 Pump system overhaul 补充或清洗换油 Supplement or cleaning oil change 降温、加温换油 Cooling, heating oil change 排除机械故障 Ruled out mechanical failure
油温过度	油面过低或不洁 Low or dirty oil 回油阻力大 Large return oil resistance 内泄过大 The vent is too large 压力过大 Excessive pressure 油泵、轴承损坏 Pumps, bearing damage 油过稀 oil too thin 油过稠 oil too thick 油散开关未打开 Oil scattered switch is not turned 油散风扇损坏或电路故障 Oil casual fan is damaged or circuit failure	补充或清洗换油 Supplement or cleaning oil change 清洗或更换回油滤芯 Clean or replace the oil filter back 检修 Overhaul 调整 adjust 修复和更换 Repair and replacement 降温和更换高度油 The height of the oil cooling and replacement 增加预热时间或更换低粘度油 Warm-up time increases or replace low-viscosity oil 打开油散开关 Open the oil scattered switch 检查修复 Check and repair

续表：

转向失灵 Steering failure	转向油路泄露 Turned to the oil leak 转向油缸内泄 Steering cylinder within the vent 转向器故障 Steering failure 有空气 air inside 油过稠 oil too thick	检修 Overhaul 拆检、更换密封件 Dismantling, replace the seals 拆检 Overhauling 排气 Exhaust 增加预热时间或更换 Plus warm-up time or replace

（七）电器仪表 Electrical instrumentation

故障	原因	排除方法
起 动 困 难 Difficulty in starting	蓄电池亏电 Battery power loss 起动电路连接不可靠 Starting circuit connection is not reliable 起动机故障 Starter failure 保险丝烧断 The fuse has blown 发动机连杆机构死点 Linkage dead engine 燃油中有空气或水 Air or water in the fuel 各操纵手柄未置空档 Each joystick is not set in neutral 发动机故障 Engine failure	充电 Charging 清理接头并紧固 Clean the connector and tighten 检修 Overhaul 更换 Replace 盘机 Dish machine 排放、清洗滤芯 Emissions, clean the filter 正确操作 Correct operation 见柴油机使用说明书 See engine manual
不 充 电 Not charging	发电机、蓄电池搭铁不可靠 Generators, batteries unreliable Ground 保险丝烧断 The fuse has blown 调节器工作不正常 Regulator is not working properly 发电机三角带过松 Generator belt is too loose 发电机故障 Generator failure 线路故障 Line fault	清理接头并紧固 Clean the connector and tighten 更换 replace 调整或更换 Adjust or replace 调整或更换 Adjust or replace 修理 Repair 检查、修理 Inspection, repair

（八）其它配套件 Other accessories

本机随机文件中包括主要配套件的随机文件，使用维修应按照配套件随机使用说明书进行。

This document includes random Random files main supporting member, use and maintenance should be carried out in accordance with the random manual matching pieces

第六章 运输与保管
Chapter six Transportation and storage

一、运输 Transportation

1、放净冷却水，拆除蓄电池搭铁丝

Put the net cooling water, remove the battery wire ride

2、用三角形木块将车轮碾住，用绳索将装载机按规范方法固定在运输车辆上。

Triangular block the wheels grind to live, with a rope fixed to the loader according to standard methods on transportation vehicles

二、保养 Maintenance

1、全面清洗保养、放净冷却水，外露零件涂防锈油。

Comprehensive cleaning and maintenance, put the net cooling water, exposed parts oiled

2、用木块将装载机支起（轮胎离地）。

With support from the wood will loaders (tires off the ground)

3、拆下蓄电池另行保管

Remove the battery separately custody

4、宜存放于通风、干燥库房，库房内无腐蚀性有害物质或气体。

Should be stored in ventilated, dry coffers, non-corrosive and hazardous substances or gases within the Treasury

5、每隔三个月发动壹次，高低档各空转 10 分钟，工作装置动作各 30 次。

One time every three months to launch, each high and low idle for 10 minutes, the operation of each working device 30 times

挖掘机部分

一、用途和特点 Application and features

挖掘装载机是一种高效率的多用途装载设备。主要用于植树造林，农牧施工，管道沟道等修造，用途广泛适用于 1.5×2.5 米左右的中小型巷道。本机的工作条件是：土石的普氏硬度 f 小于等于 12，块度小于 300mm，巷道的坡度小于 10%。

本机靠四轮驱动或履带底盘为载体，体积小，易操作，耐用实用、维修方便。

注：（载体部分请参照载体说明书）

backhoe loader is a highly efficient multi-purpose loading equipment.Mainly used for afforestation, farming construction, pipeline and other built-channel, widely applicable to small and medium roadway around sized 1.5 × 2.5 meters . Working conditions of the machine are: Debris Platts hardness f less than or equal 12, the block is less than 300mm, the slope of the roadway is less than 10%.

This machine by four-wheel drive or tracked chassis as the carrier, small size, easy to operate, durable and practical, easy maintenance.

Note: (Please refer to the instructions of the carrier portion

二、主要技术参数 Main technical parameters

序号 NO.	项 目 Items	数 值 Number
1	斗容 Backhoe bucket capacity	0.1-0.2 m^3
2	挖掘宽度 Digging width	0.2-0.4 m
3	挖掘高度 Digging height	3 m
4	挖掘深度 Digging depth	2m
5	卸载高度 Backhoe bucket height	1.8 m
6	旋转角度 Bucket slewing	180°

四、结构与功能 Structure and function

WZ10-50 由挖掘机构、行走总成、机架总成、液压操纵系统、动力系统、电气系统、液压油箱等部分组成。

WZ10-50 is made by the mining agency, walking assembly, chassis assembly, hydraulic control systems, power systems, electrical systems, hydraulic tank and other components.

五、挖掘机构 Mining agency

挖掘机构主要由转臂、转臂油缸、大臂、大臂油缸、小臂、小臂油缸、铲斗、铲斗油缸、立臂和单向节流阀等部件组成。控制转臂油缸伸缩可使工作机构作左右回转，转臂油缸两端装有单向节流阀用来控制回转的速度。控制大臂油缸伸缩可使工作机构作上下运动，大臂油缸的有杆端装有单向节流阀用来控制大臂下降的速度，以防冲击太大损坏构件。控制小臂油缸伸缩可使小臂和铲斗作

扒取动作。控制铲斗油缸伸缩可使铲斗作挖掘动作。铲斗上装有斗齿，磨损以后更换很方便。

Mining agency mainly by the arm, the arm cylinders, boom, boom cylinder, arm, arm cylinder, bucket, bucket cylinder, vertical unidirectional throttle arm and other parts. Telescopic boom cylinder control mechanism can work for about rotation, boom cylinder ends with a one-way throttle valve is used to control the speed of rotation. Telescopic boom cylinder control mechanism can work up and down movement of the boom cylinder rod end mounted way throttle to control the rate of decline arm to prevent the impact of too much damage components. Control arm cylinder telescopic arm and bucket can take action to make grilled. Control of the bucket for bucket cylinder telescopic digging action. Equipped with bucket teeth on the bucket, after replacing the worn very convenient.

机架总成主要由操纵台板组成。机架总成主要起联接本机其它各部件的作用，也是司机站操作的地方。

The frame assembly is mainly composed of the console plate. The frame assembly plays a role of connecting the other components of the machine and the place the driver operations.

六、液压操作系统 Hydraulic control systems

液压操纵系统主要由换向阀、手柄、双联手柄、油管、接头组成。司机通过操纵多路换向阀的操纵台杆来控制七只液压油缸动作，从而完成本机的转臂回转、大臂上下、铲斗挖掘、支腿升降动作。本系统有一个测压点，额定压力调整到 18Mpa。本机推荐使用 46 号抗磨液压油。

Hydraulic control system consists of valve, handle, double handle, tubing, fittings components. The driver by manipulating multiple directional control valve control lever seven to control the hydraulic oil cylinder action ,thus completing the arm swing of the machine, the big arm and bucket digging, lifting leg action. The system has a pressure tap, rated pressure adjusted to 12Mpa. This machine is recommended to use 68 hydraulic oils.

七、使用与操作 Use and operation

1、上机前的准备工作 Preparation

⑴、对操作司机进行培训，司机在上机操作前必须熟读本说明书，了解本机的结构和工作原理，熟悉本机的适用范围、操作方法和维护保养技术，熟悉各按钮的作用和位置，熟悉各操纵杆的作用和位置，经考核合格后方可上机。

For driver training operation, the driver in front of the machine must be familiar with the operating manual to understand the structure and working principle of the machine, be familiar with the scope of the machine, methods of operation and maintenance technology, familiar with the role and position of each button, familiar with the the role and position of the joystick, after passing the examination can operate the machine.

（2）检查油位，正常的油位应在液位液温计的上下限之间。油位低于下限时应及时补充，否则会造成油温过高甚至产生吸空而不能正常工作，油位高于上限时则容易溢出造成浪费。补充的液压油必须符合本机的要求并和油箱内的液压油相同，不同的油不能混合使用，加油的容器必须清洗的

十分干净。

Check the oil level, the normal oil level should be between the upper and lower level liquid temperature gauge. The oil level is below the lower limit should be promptly added, otherwise it will cause the oil temperature too high or suction air and can not work normally. the oil level is higher than the upper limit is easily overflow waste. Add hydraulic oil must meet the requirements of the machine and hydraulic oil in the tank is the same, different oils can not be mixed, fuel containers must be washed very clean.

（3)、检查各处的销轴、螺栓、电器元件、液压元件、液压管、接头是否正常如有异常应及时修复。

Checks throughout the pin, bolt, electrical components, hydraulic components, hydraulic pipes, fittings is normal if there is any abnormal should be repaired timely.

（4)、确保各操纵杆置于中位。

Make sure the joystick in the median

2、操作方法 Operation

在按说明书的要求做完开机前的准备工作之后打开电源总开关，打开钥匙开关，按下启动按钮，发动机开始运转。控制适当油门，根据地形放下两侧支腿，支起车架轮胎不受力为止

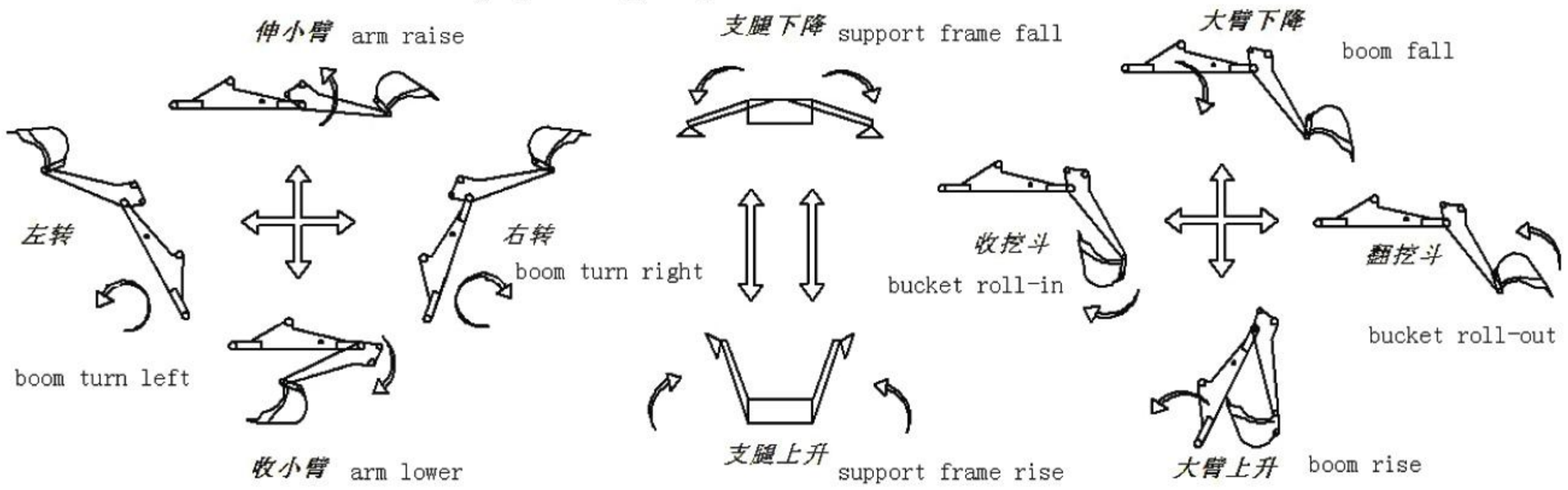
After finish the starting preparatory work witch according to the instruction to open the power switch, turn the key switch, press the start button, the generator starts running. Proper throttle control, depending on the terrain down both sides of the legs, propped up the frame tire from force

操纵双联手柄依次使大臂抬起、小臂伸出、把铲斗放至与小臂约成一线的位置后一般就不动了，然后将大臂放下、小臂收回（同时使大臂上下微动），挖斗翻转掘起，提升大臂完成挖掘。

Manipulation of double-handle turn the boom lift, arm stretched out, to put the bucket and arm after about a line positions generally do not move, then put down the boom, the arm recovery (while the boom jog up and down), flip bucket breakout enhance the arm to complete the excavation.

操作请参照下面示意图：

Please refer to the following operating diagram:



3、注意事项 Attention

⑴本机工作时，非操作人员和设备都不得靠近，以免发生事故；

When the unit is operating, non-operating personnel and equipment are not near, in order to avoid accidents;

⑵机器行走时路面要清除大于 100 毫米的硬物；

When the machine walking the road should be cleared as the surface is more than 100 mm of hard objects;

⑶机器后退时要观察好周围环境人员；

To observe good surroundings personnel when the machine back;

⑷挖掘完成后将大小臂收回最小状态不要长期伸展；

After the completion of digging the mining arm recover to the minimum size do not stretch for a long time

⑸机器停放时应使铲斗接触地面，尽量使各油缸不承受负荷；

When the machine parking the bucket should be touch the ground, try to make each cylinder does not bear the load

⑹机器在斜坡上停放时，应在车轮底下垫放三角木，以防止其下滑；

When the machine is parked on a slope beneath the pad should be placed in a triangular wooden wheels to prevent it from falling

⑺机器停放时应关闭电源总开关；

When the machine parked the power switch should be off

十、调整方法 Adjustment methods

调整六连多路换向阀的工作压力；

Adjust the Six multiple directional control valves work pressure:

把压力表接在六连多路换向阀进油口的测压接头上；

Connect pressure gauge to the Six multiple directional control valves inlet of pressure joints

A、把抬槽油缸升到底，操纵杆继续扳到升槽位置；

The lift cylinder liter tank in the end, pull the joystick continue to rise slot position

B、把六连阀上的安全阀压力调到18 Mpa 后锁紧，让操纵杆回到中位；

Six of the pressure relief valve on the valve transferred 12Mpa after locking joystick back in place

C、拆下压力表，盖上接头；

Remove the pressure gauge, cover joints

十一、维修保养 Maintenance

1. 应经常保持机器的完整和清洁。

Should be kept the machine intact and clean

2.应经常检查并拧紧机器各部位的螺栓、螺钉和螺母，各转销的固定螺栓。

Should always check and tighten all parts of the machine bolts, screws and nuts, bolts each resale

3. 应经常检查各液压元件和管路联接处，消除渗漏，要及时更换已经损坏的密封件或破损较严重的高压较管。

Should always check the hydraulic components and piping connections, eliminating leaks, to promptly replace the damaged or broken seals and more serious high-pressure pipe

4. 应经常检查油面高度及油温，若油面低于油标下限要及时补充液压油。油温若超过 70℃，应暂停使用，检查出原因，及时消除隐患。

Should always check the oil level and oil temperature, if the oil level is below the lower limit to replenish oil standard hydraulic oil. If the oil temperature exceed 70 ℃, should be suspended, check out the reasons and promptly eliminate hidden dangers

5. 定期（每月一次）或在感到机器工作无力时检查并调定正确液压系统各油路的系统压力。

Check regularly (once a month)or when feel the machine work powerless and set correctly hydraulic system pressure of the oil hydraulic system.

6、液压油累计工作 800 小时更换，换油时一同更换滤芯，同时还要将油箱清洗干净。

Accumulated 800 hours of hydraulic oil work replacement, replace the filter and oil, also clean the tank

7、挖掘机构每天加润滑脂一次，连续使用半年后应全面检修一次。

After digging bodies grease once a day, six months of continuous use should be overhauled once

8、如果轴套磨损严重及时更换。

If the bushing wear severe change in time

9、斗齿磨损后要及时更换，以免损坏斗齿板，齿板损坏后要及时用气割切除，磨平后用焊条焊上新的斗齿板。

After fighting tooth wear should be replaced in time to avoid damage to the bucket tooth plate ,after plate tooth damage should be promptly removed by gas cutting, welding electrode on the polished with a new bucket tooth plate

十二、常见故障与排除方法 Common faults and exclusion method

故 障 Fault	可能原因 Possible Cause	排除方法 Exclusion method
无动作或动作缓慢无力 No action or slow weak	1、 油泵损坏 Fuel pump damage 2、 液压系统压力偏低 Hydraulic system pressure is low	1、 修理或更换油泵 Repair or replacement of the fuel pump 2、 把系统压力调整正确 Adjust the system pressure correctly
无动作或动作缓慢无力 No action or slow weak	1、吸入空气 Inhalation of air 2、油面太低 Oil level is too low 3、吸油滤芯堵塞 Suction oil filter clogging 4、油缸内有空气 Oil cylinder with air 5、液压油不合格或粘度太高 hydraulic oil Failure or viscosity is too high	1、检查吸油管路，更换密封件，排除渗漏 Check the suction line, replace the seals, eliminate leakage 2、加油至油标中位 Come to the oil standard median 3、清洗或更换汲油滤芯 Clean or replace the oil filter 4、把油缸接头处的软管拧松，来回运动排气 Cylinder hose joints loosen, exhaust back and forth movement 5、按要求更换液压油 Replace the hydraulic oil as required
渗漏 Leakage	1、 接头松动 Connector loose 2、 密封垫或圈失效 Seal ring or gasket failure 3、 焊缝渗漏 Weld penetration	1、 拧紧接头 Tighten the connector 2、 更换垫圈 Replace the gasket 3、 补焊 Welding

工作泵常见故障及排除方法
Working pump Common Faults and exclusion method

故 障 Fault	可 能 原 因 Possible cause	排 除 方 法 Exclusion method	
泵吸不上油或吸油不足 No or inadequate pumping oil suction	1、 油箱内油面过低 Tank oil level is too low 2、 油的粘度过高 Oil viscosity is too high 3、 进油管太细、太长、阻力大 Inlet pipe is too small, too large resistance 4、 进油管破损 Inlet pipe breakage 5、 进油管法兰密封圈损坏 Inlet pipe flange ring damage 6、 进油口或滤网堵塞 oil inlet or filter clogged 7、 泵的旋转方向不对 The pump in the wrong direction of rotation 8、 从自紧油封处吸入空气 Inhalation of air from the self-tight seal at	1、 加油至油面规定高度 Come to the height of the oil requirements 2、 更换粘度适宜的油液 Replace the appropriate oil viscosity 3、 更换油管 Replace the tubing 4、 更换油管 Replace the tubing 5、 更换新密封圈 Replace with new seals 6、 清洗滤网，除去堵塞物Cleaning the filter, remove the blockage 7、 改变泵的旋向 Change the pump rotation 8、 更换损坏的油封 Replace damaged seals	

泵压力升不上去 Pump pressure does not rise up	1、 侧板磨损轴向间隙过大，引起泄漏 Side wear axial gap is too large, causing leaks 2、 轴承处密封圈损坏 the bearings seals ring damage 3、 自紧油封损坏 Since the tight seal damage 4、 液压阀的调整压力太低 Hydraulic valve to adjust the pressure is too low 5、 泵的旋转方向不对 In the wrong direction of rotation of the pump 6、 压力表开关堵塞 Pressure gauge Switch plug	1、 更换侧板清理堵塞污物 Replace the side panel and clean clogged dirt 2、 更换新品 Replace with new 3、 更换新品 Replace with new 4、 重新调整压力 adjust the pressure 5、 调整旋向一至 Adjustments consistent rotation 6、 清洗压力表开关 Cleaning gauge switch
产生噪音 Produce noise	1、 吸油管的局部堵塞 Partial blockage of the suction pipe 2、 吸油管路吸入空气 Suction line of the intake air 3、 油的粘度过高 Oil viscosity is too high 4、 进油滤清器的通流面积过小 Flow into the oil filter area is too small 5、 泵轴和电动机轴不同轴 Different pump shaft and motor shaft axis	1、 更换吸油管清理堵塞污物 Replace the suction pipe and clean clogged dirt 2、 更换吸油管和密封件 Replace the suction pipe and seals 3、 更换符合要求的液压油 Replace the hydraulic oil witch meet the requirements 4、 清洗或更换进油滤清器Clean or replace the inlet filter 5、 调整至同轴 Adjusted to the coaxial
严重发热 Severe fever	1、 轴向间隙过大或密封环损坏，引起内泄漏 Axial gap is too large or sealing ring is damaged, causing the leak 2、 调压太高，转速太快引起密封环、侧板烧坏 Regulator is too high, the speed is too fast caused the seal ring, side burn 3、 油箱容量太小散热条件差 Fuel tank capacity is too small and poor heat dissipation 4、 未进行冷却 No cooling	1、 检查修复或更换损坏件Check the repair or replace the damaged parts 2、 按泵规定条件进行作业，更换损坏件 The pump Operating by conditions specified , replace the damaged parts 3、 增大油箱容量 increased the Fuel tank capacity 4、 接通冷却水 Turn on the cooling water

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产生外泄漏 Generate external leakage	1、油液的粘度太低 The viscosity of the oil is too low 2、出油口法兰密封不良 Bad seal oil outlet flange 3、紧固螺栓松动 Loose fastening bolts 4、自紧油封损坏 Self- tighten oil seals damage 5、泵体与泵盖间的大密封圈损坏 Large ring damage between the pump and the pump cover	1、更换粘度适宜的油液 Replace the appropriate oil viscosity 2、检查清洗污垢毛刺 Check cleaning dirt glitch 3、拧紧螺钉 Tighten the screws 4、更换新品 replace with new 5、更换新品 replace with new

液压缸常见故障及排除方法
Hydraulic cylinder Common Faults and exclusion method

主要检查部位 Main site inspection	发生故障的情况 Case of failure	处理方法 Exclusion method
缸筒内面 The cylinder surface	1、浅线状的拉伤伤痕或点状伤痕 Shallow linear strain injuries or scars punctate 2、纵状拉伤伤痕 Vertical scar-like strain	1、可用极细砂纸或油石修整后继续使用 Continue to use very fine sandpaper or available Whetstone trimmed 2、重新制作缸筒 Reworked cylinder
活塞杆的滑动面 The sliding surface of the piston rod	1、浅线状的拉伤伤痕或点状伤痕 Shallow linear strain injuries or scars punctate 2、局部镀铬层因磨损产生剥离形成纵状伤痕 Local chrome plating peeling due to wear and tear like vertical scar formation	1、可用极细砂纸或油石修整后继续使用 Continue to use very fine sandpaper or available Whetstone trimmed 2、除去原镀铬层重新镀铬或重新制作活塞杆 Remove the original chrome plating or re-re-chromed piston rod production
密 封 seal	1、因唇边挤出而断裂 Fracture due lips Extrusion 2、唇边或摩擦面有轻微的磨损或轻微伤痕 Slight lip or friction surface wear or slight scar	1、更换新密封件 Replace with new seals 2、最好更换新密封件 The best replacement seals
活塞杆导向套的内面 The inner surface of the piston rod guide sleeve	不均匀磨损的深度在 0.5mm 以上时 Uneven wear depth of 0.5mm or more	更换新导向套 Replacement of the guide sleeve

多路换向阀常见故障及排除方法

Multiple directional control valve Common Faults and exclusion method

故　障 Fault	可 能 原 因 Possible cause	排除方法 Exclusion method
滑阀不能复位或在定位位置不能定位 Spool valve can not be reset or can not locate the positioning location	1、复位弹簧变形 Return spring deformation 2、定位弹簧变形 Positioning spring deformed 3、定位套磨损 Positioning liner wear 4、阀体与滑阀之间不清洁 Between the body and the slide valve dirty 5、阀外操纵机构不灵 Valve outside the control mechanism is not working 6、联接螺栓拧得太紧，使阀体产生了变形 Coupling bolts too tight, so that the body produces deformed	1、更换复位弹簧 Replace the return spring 2、更换定位弹簧 Replace the positioning spring 3、更换定位套 Replace the positioning sleeve 4、清洗 Clean 5、调整阀外操纵机构 External adjustment valve control mechanism 6、重新拧紧联接螺栓 Re-tighten the bolts
外泄漏 External leakage	1、换向阀两端 O 形密封圈损坏 Valves at both ends of the O-ring damage 2、各阀体接触面间 O 形密封圈损坏 The contact surface between the valve O-ring damage	1、更换 O 形密封圈 Replace the O-ring 2、更换 O 瑚密封圈 Replacing O coral ring
溢流阀压力不稳定或压力调不上 Pressure relief valve or pressure regulator is not on unstable	1、调压弹簧变形 Regulator spring deformation 2、锥形阀磨损 Cone valve wear 3、阀芯节流孔堵塞 The valve orifice blockage 4、锁紧螺母松动 the locknut loosen 5、工作泵有故障 Working pump is faulty	1、更换调压弹簧 Replace the pressure regulator spring 2、更换锥形阀 Cone valve replacement 3、清洗阀芯 Cleaning spool 4、拧紧锁紧螺母 Tighten the lock nut 5、修理或更换工作泵 Repair or replacement of the pump
滑阀在中立位置时工作机构明显下沉 Spool in neutral position when working bodies obviously sinking	1、阀体与滑阀间因磨损间隙增大 Between the body and the slide valve gap increases due to wear 2、滑阀位置有对中 There on the spool position 3、锥形阀处磨损或被污物垫住 Cone valve wear or be dirt block	1、修复或更换滑阀 Repair or replacement of the valve spool 2、使滑阀位置保持对中 keep the spool position 3、更换锥形阀或清除污物 Replace the cone valve or removal of dirt