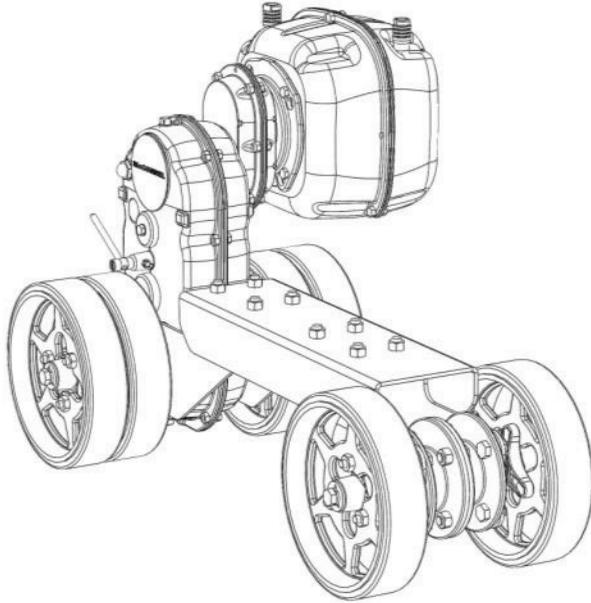


# Owners Manual



**McCONNEL**

**6 Wheel Backing Gate Drive**

(Recommended for backing gates 14 to 18m long)

**2-Way Water Powered**

**WARNING**

Never operate your backing gate with people in the yard.

# Limited Warranty

K H McConnel Ltd. (McConnel) warrants to the purchaser of a new Gate Drive Unit, that it will be free from defects in material and workmanship for a period of one (1) year from the date of purchase, subject to the following terms and conditions.

## 1. Remedies

During the limited warranty period McConnel or it's authorised service agent will repair or replace, at McConnel's option, any defective products or parts thereof with new or factory rebuilt replacement items. All replaced parts or product shall become the property of McConnel.

Repaired product will be warranted for the balance of the original warranty.

## 2. Place of Repair

For repair under warranty the Gate Drive Unit must be returned to McConnel or their authorised service agent. This warranty does not include freight, travel time or travel time associated with transporting the gate drive to or from McConnel or their authorised service agent. No charge will be made for parts or the labour in repairing or replacing the product.

## 3. Exclusions

The warranty does not apply if the Gate Drive Unit becomes faulty due to:

- Operation at voltages other than those shown on the motor name plate.
- Improper installation
- Misuse
- Neglect
- Accident
- Act of God
- Unauthorised repair or modification
- Service performed by other than competent persons

The warranty also does not apply if the purchaser fails to:

- Obtain a "warranty service authorisation number" from McConnel prior to having remedial work done.
- Notify McConnel within the warranty period.

## 4. Electric Motors

Proof of mains connection by a registered electrician is required for the warranty to include the electric motor. This should be provided by your electrician at the time of installation.

This warranty only covers new electric motors supplied and fitted by McConnel to the Gate Drive Unit.

## 5. Wheels

The limited warranty covers the bond of the rubber to the rim and the rim only. No warranty is given on the life of the rubber itself.

## 6. Limitation of Liability

McConnel accepts no responsibility for consequential loss, damage or injury to person or property arising from any defect in the Gate Drive Unit or the installation to which it is connected.

## 7. Making a Warranty Claim

Should a fault occur during the warranty period, the purchaser must in the first instance telephone McConnel (+64 7 849 2122) to obtain a "Warranty Service Authorisation Number". The following information will be required;

- a. Purchasers name
- b. Physical address where the gate drive is installed
- c. Serial number of the Gate Drive Unit (Top of the gear casing opposite oil filler plug)
- d. Place and date of purchase
- e. Installing electrician if electric powered.

After discussion of the problem and available local service agents McConnel will initiate servicing under the terms of this warranty.

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Warning: All gate drives are shipped without oil.

**Please fill the gear casing to the sight glass with (approx. 4 litres) SAE EP 90 grade gear oil before use.**

## **Safety**

**Never operate your backing gate with people in the yard.**

McCONNEL backing gate drives are designed to move heavy animals. If people are accidentally subject to the same loads, serious injury may result.

Your holding yard should be designed to avoid trap points where an animal may become trapped between the backing gate and a fixed object.

## **Installation Requirements**

### **Yard Design**

The Gate drive unit is designed for operation on a circular or semi circular concrete surface with an even drainage fall, free of steps or drainage channels. An uneven surface can cause premature failure of the wheels and stop the gate from moving by lifting the drive wheels off the ground.

### **Gate Design**

The backing gate should be of sturdy construction capable of withstanding the bending and torsional loads that will be applied to it. For animal safety care should be taken to avoid diagonal bracing where a cow may get its leg trapped in the vee that is created.

Putting a hock rail on the gate is recommended. This is a rail the length of the gate that protrudes in front of the gate at a height of 500 to 600mm above the ground (depending on cow size and breed) that prevents cows from holding the gate up with a straight leg. The hock rail should not be too low or the cows lower leg and feet may be damaged.

Ensure the motor or water turbine and freewheel clutch lever are adequately protected from damage if cows are held on both sides of the gate.

## **Gate Drive Installation**

Correct attachment and alignment of your gate drive will greatly reduce the maintenance required over the life of your backing gate.

### **Mounting of the Gate Drive**

Position the assembled gate drive under the backing gate, within 1m of the moving end. The drive wheels behind the gate away from the cows being crowded. Ensure the steel mount channel is square (i.e. at 90 degrees) to the gate and the gate is positioned between the two sets of wheel assembly mount bolts (see figure 1) before welding securely to the gate. The mount channel is 255mm above ground level.

### **Gate Drive Alignment**

Next align the front and rear wheel shafts with the center post. Do this by lifting the gate in a safe manner, until the wheels are just clear of the ground. Loosen the sets of four mount bolts that connect the front wheel assembly and gear drive to the mount channel. Using a string line from the center post as a guide, align the front and rear wheel shafts so they point directly towards the center post (see figure 1). Tighten the mount bolts and lower the gate to the ground again.

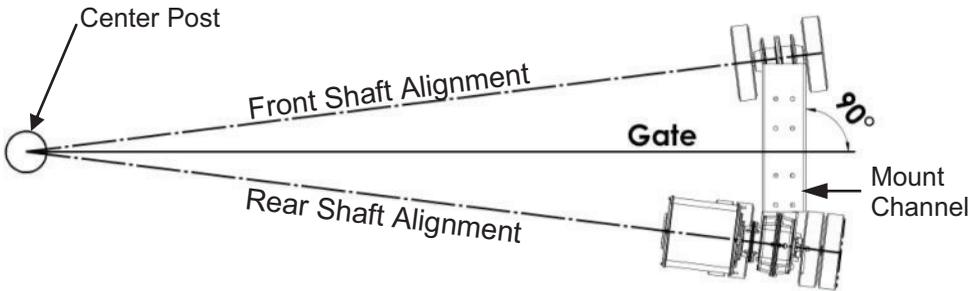


Figure 1: Gate drive attachment to gate and alignment of wheels

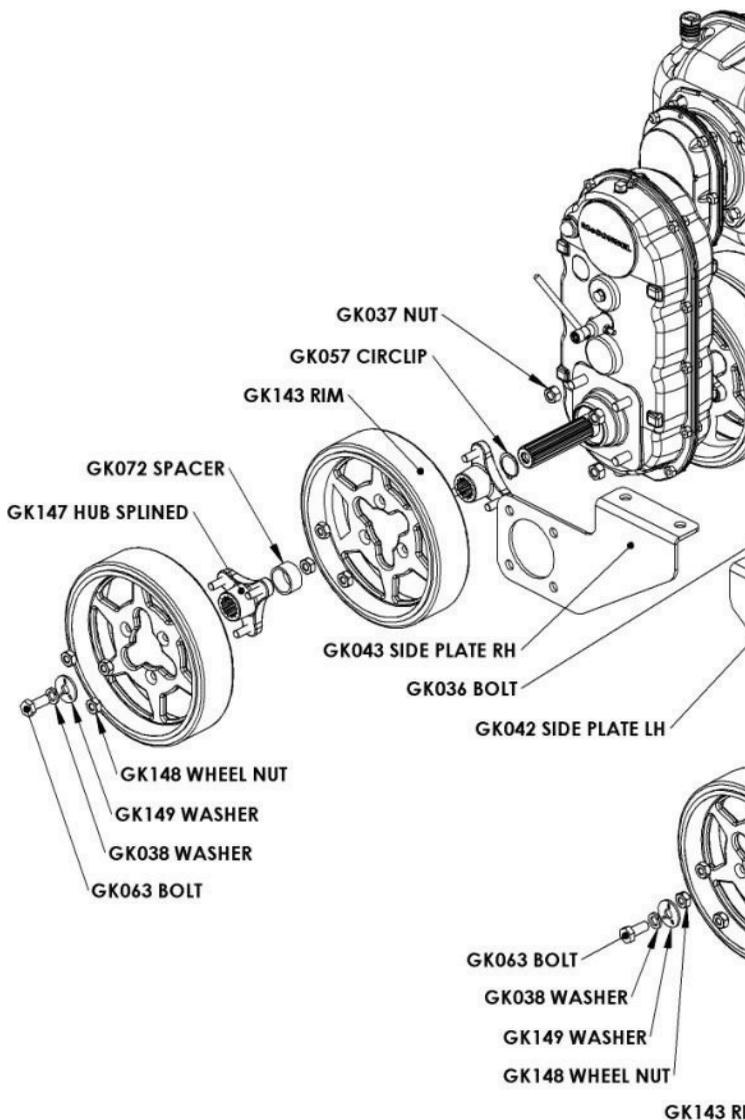
### **Lubrication**

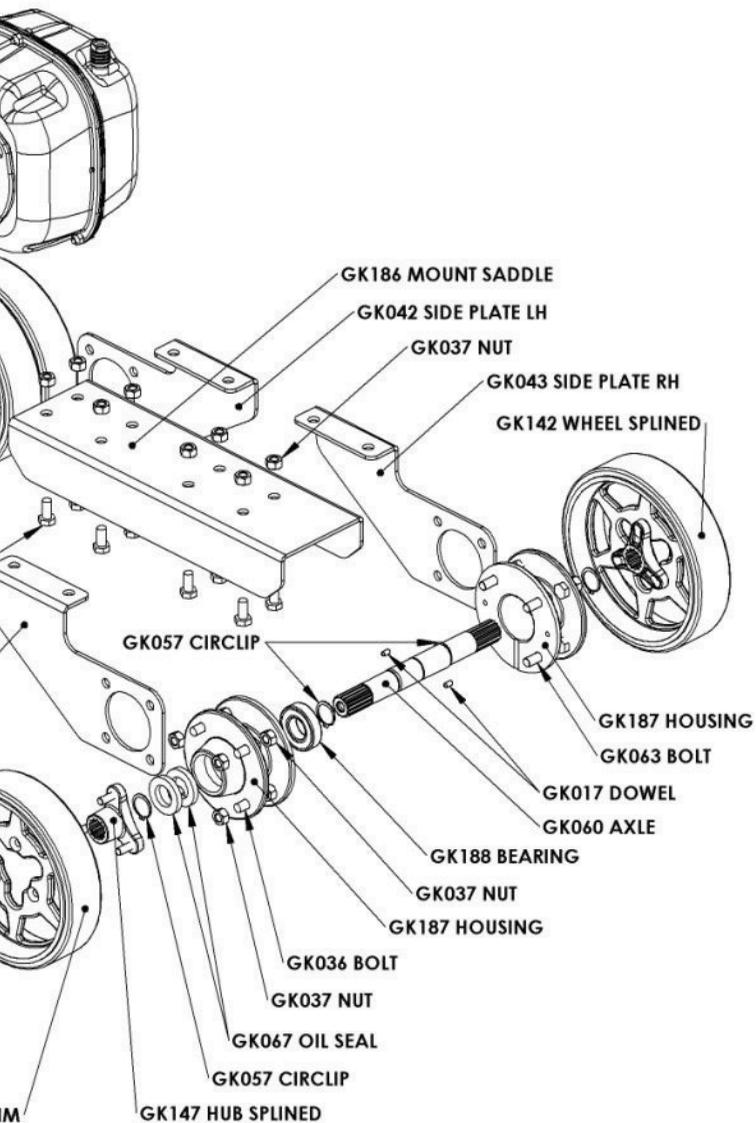
All gate drives are shipped without oil.

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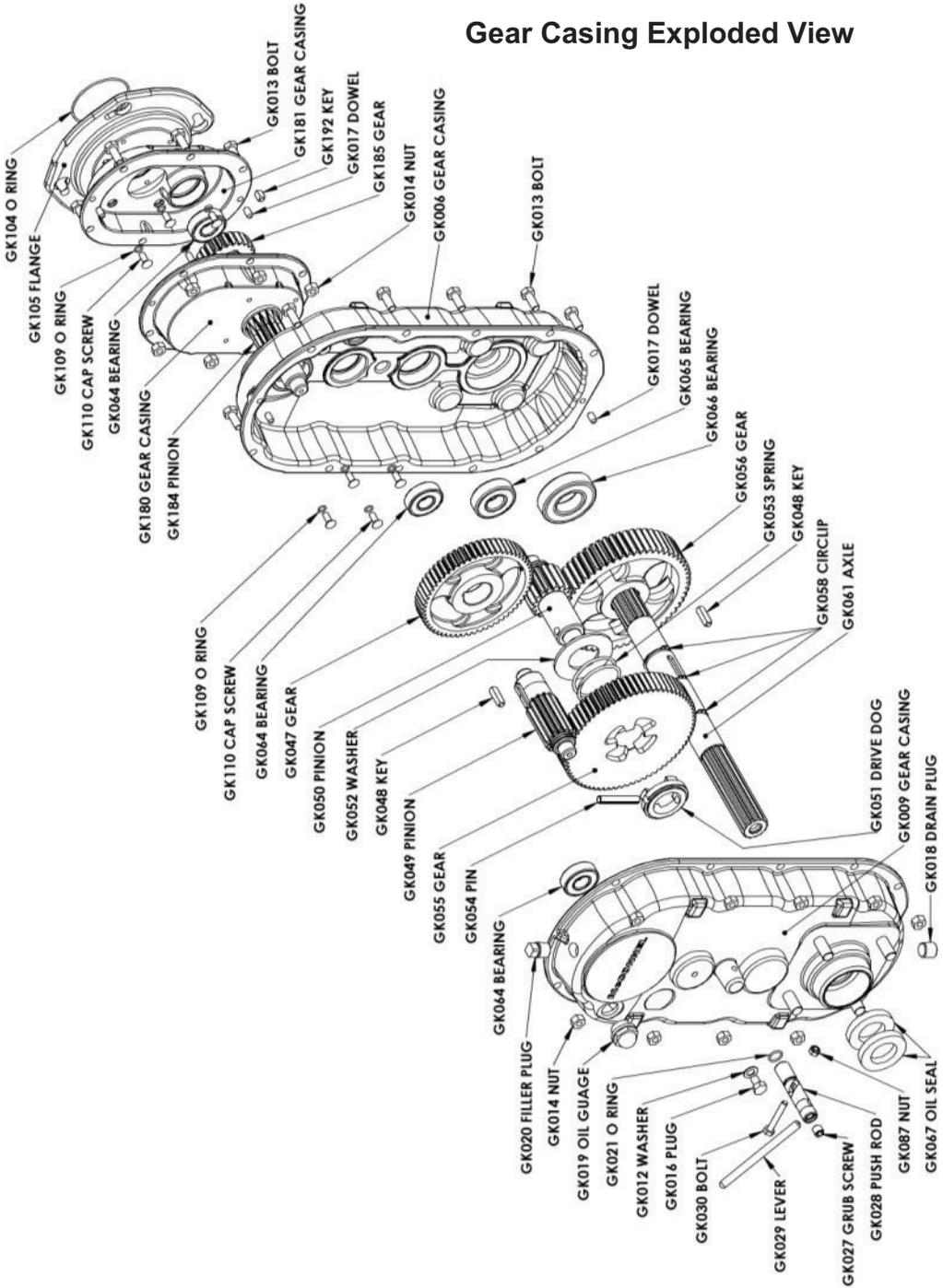
The filler plug is located on top of the gear casing.

# Gate Drive Exploded View

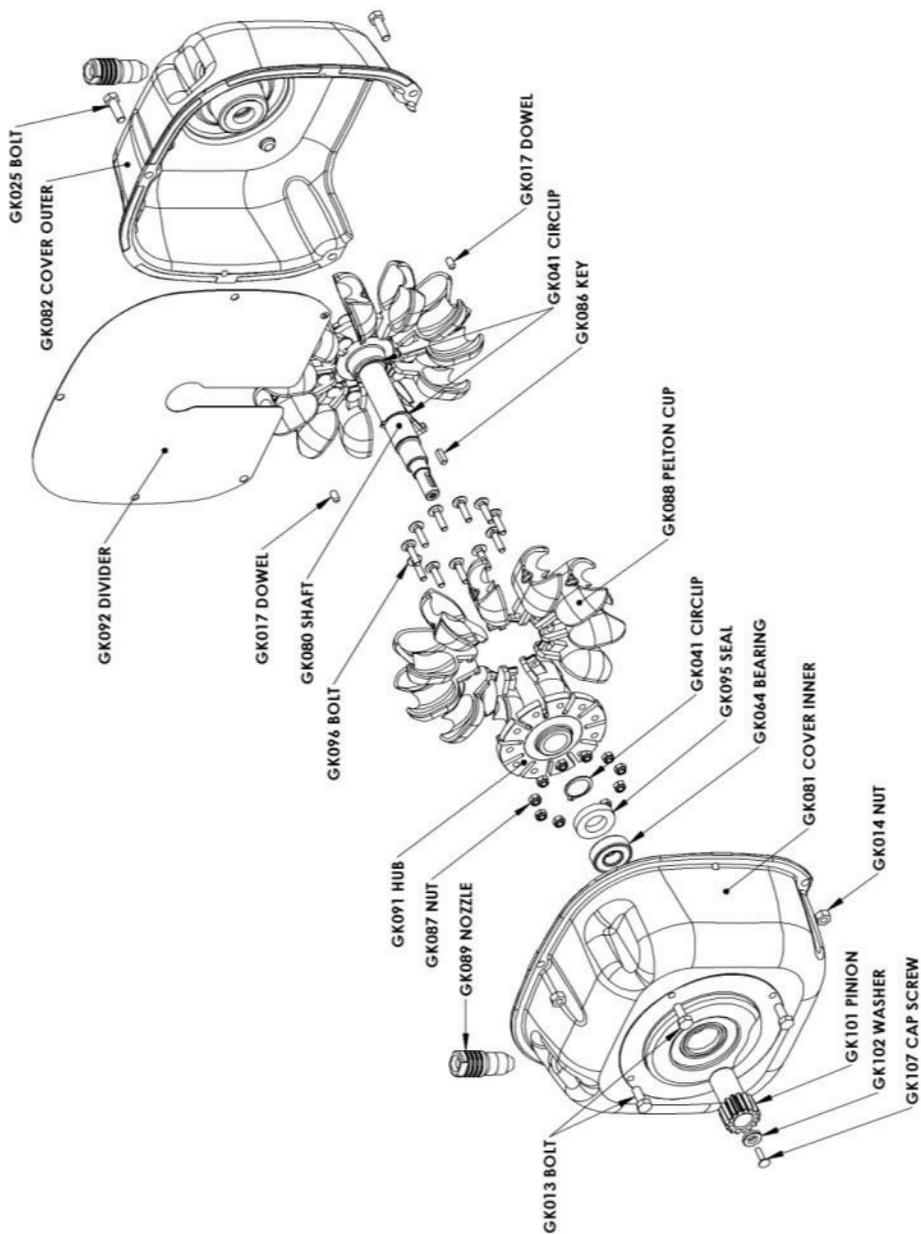




# Gear Casing Exploded View



# Pelton Wheel Exploded View



## **Water Supply**

A suitable water supply must be available for the entire milking season at a water pressure of approx. 40 psi (2.75 bar) and flow rate of 20 gallons per minute (90 l/min) at the gate drive. Each water wheel on the gate drive has a nozzle with a 25mm tail to attach the water supply to.

The supply line should be made self draining to prevent freezing in cooler areas.

When run off a pressurised water supply, the gate drive can be controlled by operation of a simple ball valve or a solenoid valve. Where a pump is required the gate drive can be controlled by the pump starter. For two-way water powered gate drives, it is convenient to have two supply lines and select the forward or reverse supply from the milking shed.

The power of the gate drive can be adjusted by restricting or increasing the water flow to the gate drive. For example, reducing water flow can reduce excessive wheel spin.

More predictable and convenient control is possible with a purpose built controller such as a McConnel 'Guardian' Backing Gate Controller.

For 3/4 circle yards a loop of flexible hose at the center post gives enough movement to prevent the feed hose kinking through the gates travel. For full circle yards, as when two gates are used in one yard, a center post gland such as a McConnel 2" Wash Union will be required.

## **Operating Instructions**

### **General**

A backing gate is intended to prompt cows into the milking shed. To do this it is recommended that the gate be used in short frequent movements to prevent overcrowding in the yard. The backing gate should never be left crowding cows that cannot move.

### **Free Wheel Clutch**

All gate drives are fitted with a free wheel clutch to allow manual movement of the gate. The clutch must be fully disengaged before moving the gate manually or damage to the clutch may result. Also the clutch should not be operated when the gate is in powered operation or when the gate is being pushed.

Re-engage the clutch by releasing the clutch lever when the gate is stationary and push the gate slowly until the clutch re-engages. Do not start powered operation of the gate again until the clutch is fully engaged.

## **Maintenance**

Your gate drive is a robust unit designed to give many years of reliable service if operated and maintained properly.

### **Monthly Maintenance**

- Check oil level and top up with SAE EP90 or equivalent grade gear oil as required.
- Check wheel wear. Replace the rim if it is worn down to the aluminium. Failure to replace wheels at this time may result in permanent damage to the gear casing.
- Check for any loose fasteners or damage.

### **Wheel Replacement**

It is recommended that the drive wheels be replaced as a set to prevent uneven loading on the gate drive unit.

### **Oil Change**

Change oil every 5 years or if milky due to water contamination.

Manufactured and distributed by;

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