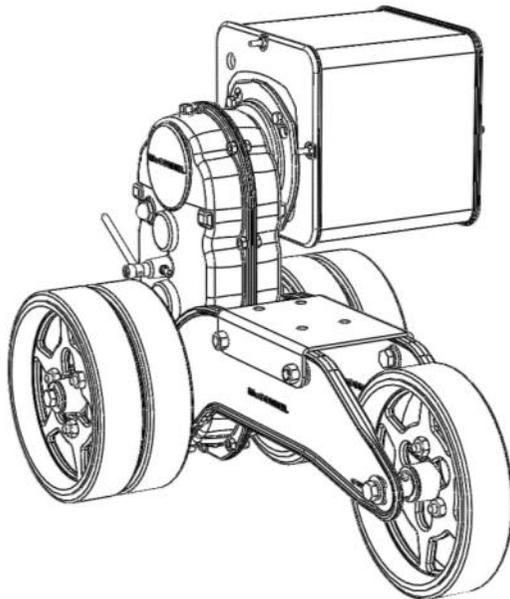


Owners Manual



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McCONNEL

5 Wheel Backing Gate Drive
(Recommended for backing gates 10 to 14m long)

3-Phase and 1-Phase
Electric 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.

Contents

Safety	Pg 4
Installation Requirements	
Yard Design	Pg 4
Gate Design	Pg 4
Gate Drive Installation	
Mounting the Gate Drive	Pg 5
Front Wheel Alignment	Pg 5
Lubrication	Pg 5
Electrical Supply and Wiring	Pg 9
Optional Overload Clutch Adjustment	Pg10
Spare Parts Diagrams	
Gate Drive Exploded View	Pg 6
Gear Casing Exploded View	Pg 8
Motor Assembly Exploded View	Pg 9
Operating Instructions	
General	Pg11
Free wheel clutch operation	Pg11
Maintenance	
Monthly Maintenance	Pg12
Wheel replacement	Pg12
Oil Change	Pg12
Optional Overload Clutch	Pg12

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 pelton wheel 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 the Gate Drive

Position the assembled gate drive under the backing gate, within 1m of the moving end with the drive wheels behind the gate away from the cows being crowded. Position the gate across the centre of the mount saddle and align the rear wheel shaft with the center post with the aid of a string line (see figure 1). Double check alignment before welding the mount saddle securely to the gate. The mount saddle is 255mm above ground level.

Front Wheel Alignment

Next align the front shaft with the center post. Do this by lifting the gate in a safe manner, until the front wheel is just clear of the ground. Loosen the front shaft mount bolts and using a string line from the center post as a guide, align the front wheel shaft so it points directly towards the center post (see figure 1). Tighten the front shaft bolts and lower the gate to the ground again.

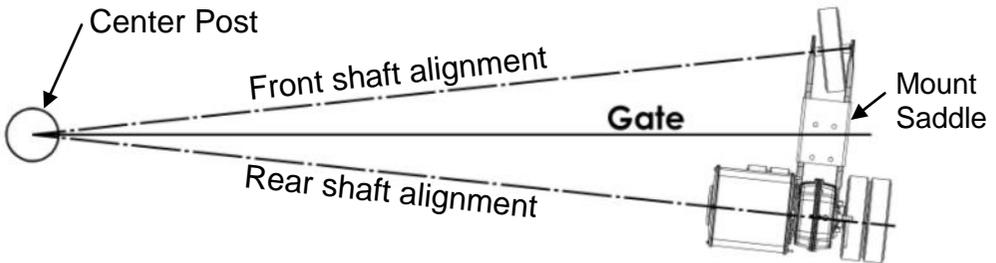


Figure 1: Gate drive attachment to gate and alignment of wheels

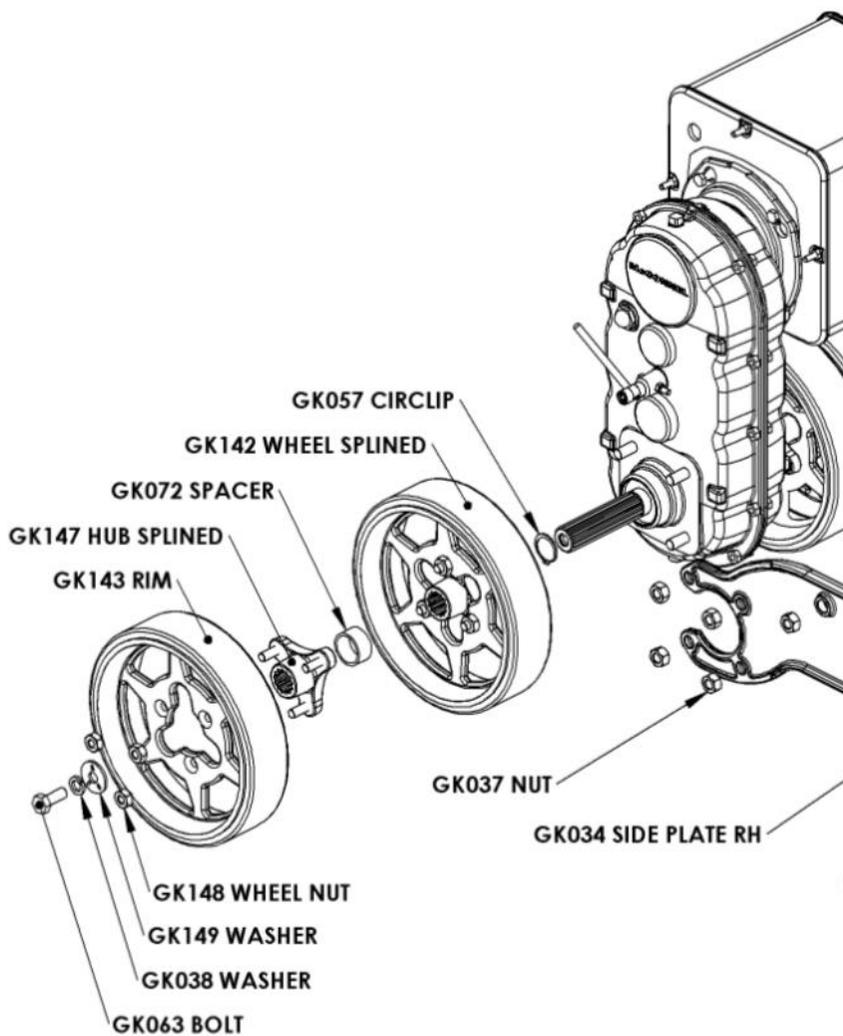
Lubrication

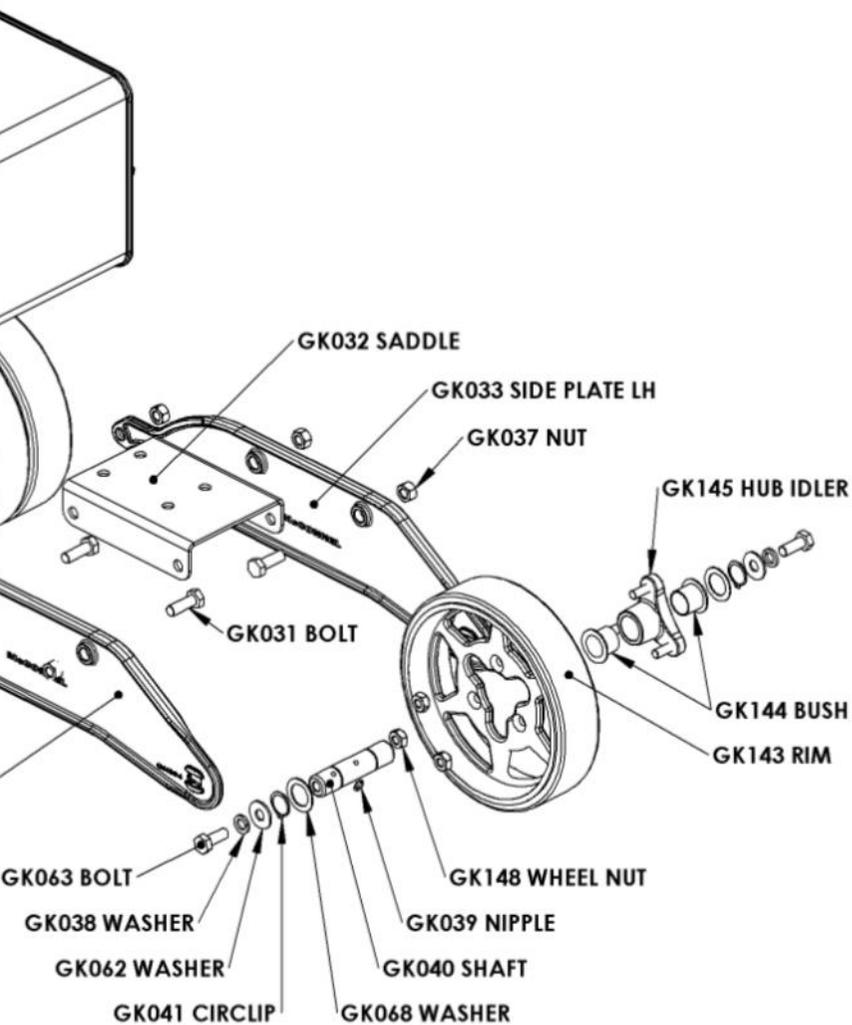
All gate drives are shipped without oil.

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

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

Gate Drive Exploded View

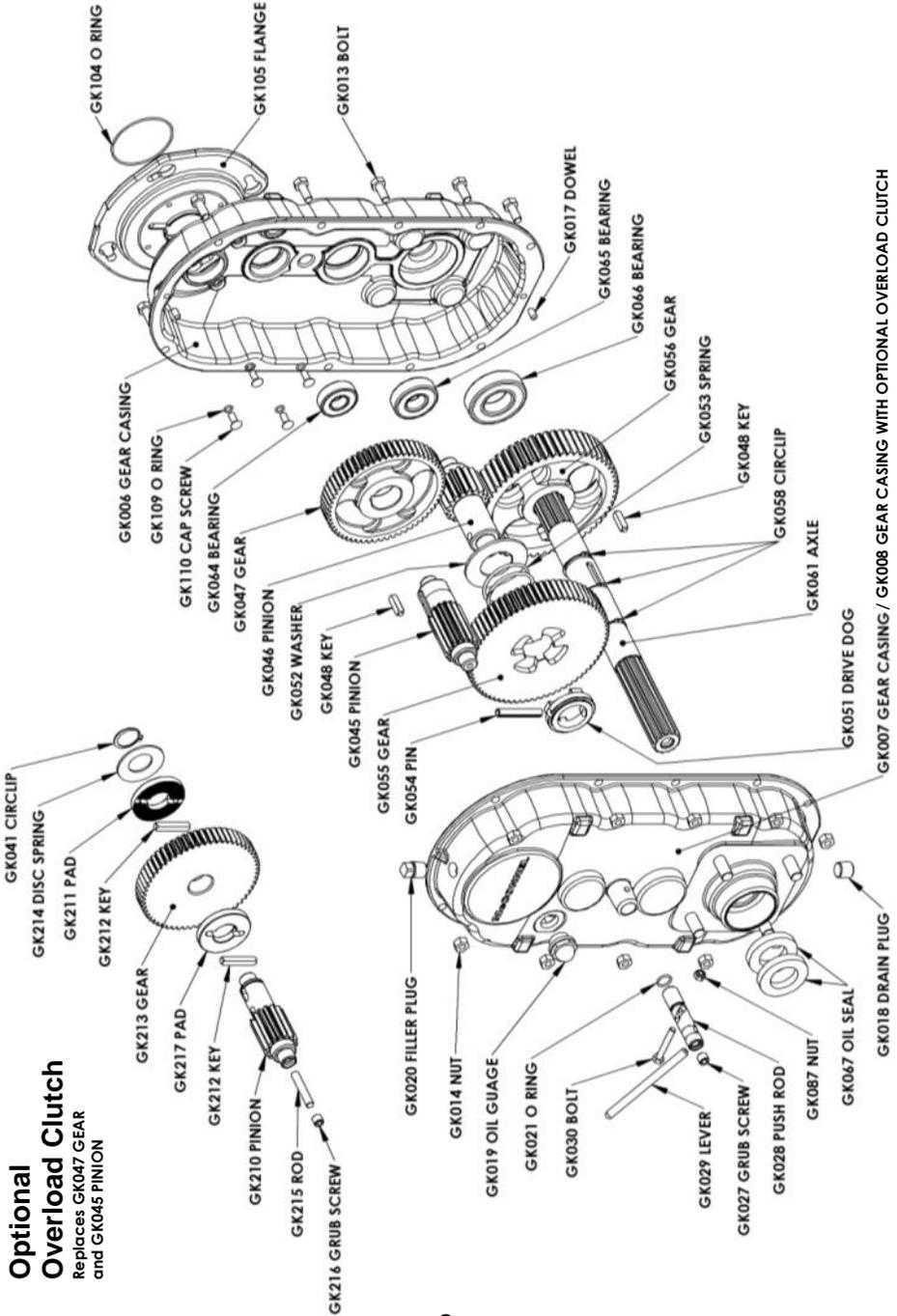




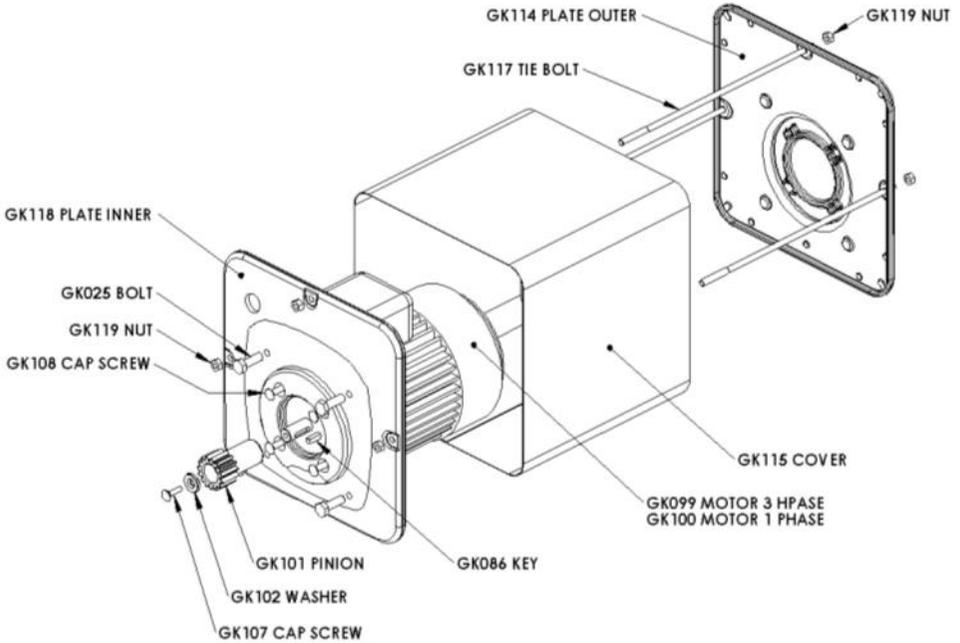
Gear Casing Exploded View

Optional Overload Clutch

Replaces GK047 GEAR
and GK045 PINION



Motor Assembly Exploded View



Electrical Supply and Wiring

Three phase motors are dual voltage and can be configured for use on the following three phase power supplies;

230v 50Hz (1.9A) or 260v 60Hz (1.9A), delta connection.

400v 50Hz (1.1A) or 460v 60Hz (1.9A), star connection.

Be sure to install the terminal connectors correctly for star or delta connection in accordance with motor name plate and instructions on the motor terminal cover.

Single phase motors should only be connected to a 230v 50 Hz power supply.

To prevent moisture entering the motor from the wiring;

- If the conduit is terminated at the cast cover, the cable must be sealed at the motor terminal box to IP55 specifications.
- If the conduit is terminated at the motor terminal box, the entire conduit including both ends must be sealed to IP55 specifications.

For 3/4 yards, a loop of flexible cable (approx 1m) is needed at the transition from centre post to the gate, to reduce the bending stress on the cable and prevent the cable cores breaking down. This loop must be suitably supported and protected. For full circle yards, where the gates are able to continue the next rotation without reversing, an electrical slip ring at the center post is recommended.

A simple forward-off-reverse switch can be used to operate the backing gate from one location in the shed or a combination of selector switch for forward-reverse and pull switch for on-off will enable operation from any location in the pit. More predictable and convenient control is possible with a purpose built controller such as a McConnel 'Guardian' Backing Gate Controller.

Optional Overload Clutch

Adjustment is required before use.

This gate drive can be fitted with an optional friction overload clutch for added safety during milking.

Adjustment is done from outside the gear casing as follows:

1. Ensure the oil level is up to the sight glass.
2. Chain the end of the backing gate securely to a yard post with the gated drive wheels on a clean yard.
3. Remove the overload cover plug (GK016) from the gear casing. See Figure 2 on page 11.
4. Insert a 5mm AF Allen key into the adjusting screw and turn it anti-clockwise until all tension is released from the clutch.

Caution: For safety, always stand behind the backing gate for parts 5 to 8 of this procedure.

5. Get an assistant to start the gate drive in the forward direction.
6. Turn the Allen key clockwise to slowly tighten the clutch until the electric motor starts to stall or the drive wheels begin to slip and stop the gate drive. Note: the Allen key will rotate if the wheels slip on the yard.
7. Turn the clutch adjustment back a 1/8th turn anti-clockwise.
8. Replace the cover plug taking care not to over tighten it.
9. Finally untie the gate.

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.

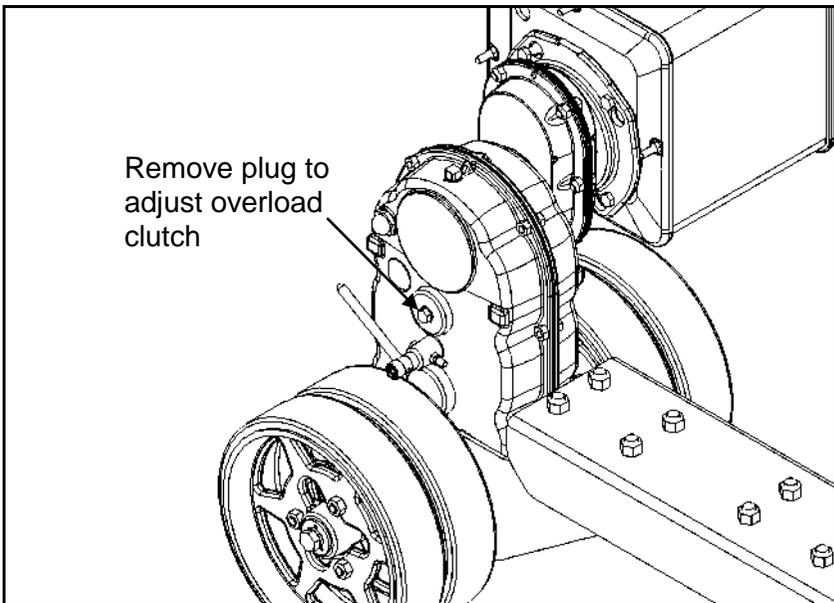


Figure 2: Overload Clutch Adjustment Location

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.
- Grease front wheel bearing.
- 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.

Optional Overload Clutch

Adjust yearly or if the gate drive loses power. Instructions on Pg 10.



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