

# NORMAN G CLARK

CENTENARY 1919-2019



ON-HIGHWAY



OFF-HIGHWAY



*"Just want a Horton"*



PRODUCT GUIDE



AUSTRALIAN  
MADE FOR  
AUSTRALIAN  
CONDITIONS

[www.ngclark.com.au](http://www.ngclark.com.au)



Norman G Clark have been representing various products in the Australian market since 1919.

Norman G Clark have manufactured, imported and distributed under license to Horton USA since 1963.

Norman G Clark have manufactured all Horton OEM Fan Clutches in Melbourne Australia since 1980.

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# FAN CLUTCHES

## HT/S XD Fan Clutch

### FEATURES & BENEFITS

- OEM Specifications (Pre May 2016)
- High Temp HNBR (Blue) D-Ring & O-Ring Seals
- Standard Fine Spline Assy Bearing
- Longer life
- 30% greater tolerance of temperature extremes
- Less likelihood of o-ring spiral fatigue
- Less breakage and leakage
- Extended service life

### APPLICATIONS

- Designed for long life and harsh under hood environments
- All 9.5" Disc Horton HT/S Clutches
- Perfect for high run time applications
- For heavy duty diesel engines: B-Doubles & Roadtrains



## HT/S SD OEM Fan Clutch

### FEATURES & BENEFITS

- OEM Specifications (Post May 2016)
- High Temp HNBR (Blue) D-Ring & O-Ring Seals
- Higher Temp Outback Fine Spline Assy Bearing
- Longer life
- 30% greater tolerance of temperature extremes
- Less likelihood of o-ring spiral fatigue
- Less breakage and leakage
- Extended service life

### APPLICATIONS

- Designed for long life and harsh under hood environments
- All 9.5" Disc Horton HT/S Clutches
- Perfect for high run time applications
- For heavy duty diesel engines: B-Doubles & Roadtrains



## HT/S OB Upgrade Fan Clutch

### FEATURES & BENEFITS

- Upgrade of OEM Specifications
- High Temp HNBR (Blue) D-Ring & O-Ring Seals
- Higher Temp Outback Fine Spline Assy Bearing
- Longer life
- Red Piston Friction Disc with finned design for increased heat dissipation
- Extended service life

### APPLICATIONS

- Designed for long life in high ambient temperatures and harsh under hood environments
- All 9.5" Disc Horton HT/S Clutches
- Perfect for high run time applications
- For heavy duty diesel engines: B-Doubles & Roadtrains



## HT/S SOB Premium Fan Clutch

### FEATURES & BENEFITS

- Upgrade of OEM Specifications
- High Temp HNBR (Blue) D-Ring & O-Ring Seals
- Higher Temp Outback Fine Spline Assy Bearing
- Longer life
- Green Piston Friction Disc with finned design for increased heat dissipation
- Single Higher Temp Outback DRAC Pulley Bearing
- Extended service life

### APPLICATIONS

- Designed for long life in high ambient temperatures and harsh under hood environments
- Selected 9.5" Disc Horton HT/S Clutches\*
- Perfect for high run time applications
- For heavy duty diesel engines: B-Doubles & Roadtrains
- Premium kit for Severe Outback Duty

*Please note the SOB clutch is compatible for a selection of Norman G. Clark clutches. Contact Norman G Clark to check availability.*





# FAN CLUTCH REPAIR KITS

## F35008HD Heavy Duty HT/S Repair Kit

### FEATURES & BENEFITS

- Standard Temp NBR (Black) D-Ring & O-Ring Seals
- Standard Fine Spline Assy Bearing
- Longer life

### APPLICATIONS

- All 9.5" Disc Horton HT/S Clutches
- For heavy duty diesel engines: Singles



## F35008SD Super Duty OEM HT/S Repair Kit

### FEATURES & BENEFITS

- OEM Specifications (Post May 2016)
- High Temp HNBR (Blue) D-Ring & O-Ring Seals
- Higher Temp Outback Fine Spline Assy Bearing
- Longer life
- 30% greater tolerance of temperature extremes
- Less likelihood of o-ring spiral fatigue
- Less breakage and leakage
- Extended service life

### APPLICATIONS

- Designed for long life and harsh under hood environments
- All 9.5" Disc Horton HT/S Clutches
- Perfect for high run time applications
- For heavy duty diesel engines: B-Doubles & Roadtrains



## F35008OB Outback Upgrade HT/S Repair Kit

### FEATURES & BENEFITS

- Upgrade of OEM Specifications
- High Temp HNBR (Blue) D-Ring & O-Ring Seals
- Higher Temp Outback Fine Spline Assy Bearing
- Longer life
- Red Piston Friction Disc with finned design for increased heat dissipation
- Extended service life

### APPLICATIONS

- Designed for long life in high ambient temperatures and harsh under hood environments
- All 9.5" Disc Horton HT/S Clutches
- Perfect for high run time applications
- For heavy duty diesel engines: B-Doubles & Roadtrains



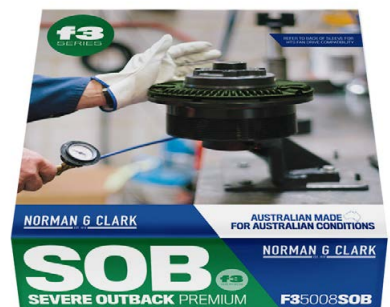
## F35008SOB Severe Outback Premium HT/S Repair Kit

### FEATURES & BENEFITS

- Upgrade of OEM Specifications
- High Temp HNBR (Blue) D-Ring & O-Ring Seals
- Higher Temp Outback Fine Spline Assy Bearing
- Longer life
- Green Piston Friction Disc with finned design for increased heat dissipation
- Single Higher Temp Outback DRAC Pulley Bearing
- Extended service life

### APPLICATIONS

- Designed for long life in high ambient temperatures and harsh under hood environments
- Selected 9.5" Disc Horton HT/S Clutches\*
- Perfect for high run time applications
- For heavy duty diesel engines: B-Doubles & Roadtrains
- Premium kit for Severe Outback Duty





**HORTON**

# FAN CLUTCH REPAIR KITS

GENUINE PARTS MADE IN AUSTRALIA

STANDARD  
TEMP  
BLACK  
SEALS

HIGH TEMP  
BLUE SEALS

HIGH TEMP  
F/SPLINE  
BEARINGS

HIGH TEMP  
FINNED  
DISC

HIGH TEMP  
SINGLE  
DRAC PULLY  
BEARING

**HD** f3 SERIES  
HEAVY DUTY REPAIR KIT



**SD** f3 SERIES  
SUPER DUTY OEM KIT



**OB** f3 SERIES  
OUTBACK UPGRADE KIT



**SOB** f3 SERIES  
SEVERE OUTBACK PREMIUM



THE ONLY OPTION FOR  
YOUR **HORTON** HT/S FAN CLUTCH

MADE IN AUSTRALIA BY 

**NORMAN G CLARK**  
CENTENARY 1919-2019



# ON/OFF & 2 SPEED FAN CLUTCHES

## DM Advantage Two-Speed Fan Clutch

Horton's latest innovations assure you of maximum reliability and long-life performance. Hundreds of thousands of OEM installed Horton DM Advantage Fan Clutches have performed flawlessly in the highest-heat under hood applications.

### APPLICATIONS

- Buses
- Truck cranes
- Rear-engine cement mixers
- Other on- and off-highway equipment without ram air

### FEATURES & BENEFITS

- Alternates eddy-current and spring-actuated cooling to moderate operating noise, increase available horsepower, conserve fuel and minimize radiator abrasion
- Allows faster engine warmups in cold weather for operating efficiency
- Premium sheave bearing and long-wearing friction liner for maximum reliability and long operating life
- Fail-safe design and lower parts count for easy installation and maintenance
- Offers high torque for turning larger fans
- Low speed powered by eddy current
- Spring actuated when additional cooling is needed



## DM Advantage On/Off

DM Advantage On/Off Fan Clutches are spring-engaged and air-disengaged for maximum efficiency. They are lighter, have high torque for turning larger fans, a fail-safe design and a low parts count for simplicity.

### APPLICATIONS

- Heavy-duty trucks
- Medium-duty trucks
- Buses
- Off-highway equipment

### FEATURES & BENEFITS

- Premium sheave bearing and long-wearing friction liner for maximum reliability and long life
- On- and off- operation reduces noise and conserves fuel
- Low parts count for ease of installation and maintenance
- High torque capable of turning larger fans for a range of application
- Engine coolant temperatures kept at optimum operating efficiency to increase durability
- Superior solution for some of the highest heat-under-hood applications



## RCV250 Fully Variable Fan Clutches

Lighter with a compact design, RCV250 Fully Variable Fan Drives are engineered to turn larger fans that require higher torque. The RCV250 is an integrated belt-driven fan drive that can be mounted in various locations to eliminate the vibration inherent in traditional driveshaft-mounted fan drives.

- Fully variable speed control reduces operating noise, lowers fuel costs and provides cold weather performance advantages
- Innovative design provides for faster response time and lower off-speed decreasing parasitic loss to preserve horsepower and provide effective cooling
- Compact and lighter weight vs. competition with Horton's one-piece design for ease of installation

- Unexposed control harness means no drive replacement if belt breaks
- Industry-leading, double row, angular contact (DRAC) bearing for increased durability and product life
- Smooth fan engagements and fan modulation
- Maintenance free
- No friction liners or wear parts to replace

|                |                                                                                      |
|----------------|--------------------------------------------------------------------------------------|
| Maximum torque | Up to 2,113 in.-lbs. [250 N-m] (on/off)<br>1,991 in.-lbs. [225 N-m] (fully variable) |
|----------------|--------------------------------------------------------------------------------------|

|                               |                                                                       |
|-------------------------------|-----------------------------------------------------------------------|
| Fan blade capacity (diameter) | Configurations of 6 – 13 blades 26 – 43 in. [660 – 1,092 mm] diameter |
|-------------------------------|-----------------------------------------------------------------------|

|                         |                                |
|-------------------------|--------------------------------|
| Engine horsepower range | 469 – 671 hp<br>[350 – 500 kW] |
|-------------------------|--------------------------------|





# REPAIR KITS

## Quick Fit Repair Kits

The Horton Quick Fit kits have the front FMFD section of the Horton DM, DMA or DMA-2S fan clutch pre-assembled, for ease of installation and to reduce the time of repair.

The DMA Single Speed Quick Fit Kits have the liner, clutch pack and FMFD pre-assembled.

The DMA-2S Quick Kits are installed the same but the DMA-2S sub-assemblies have the magnets and O-ring pre-assembled as well.

### QUICK FIT KIT ADVANTAGES

**Quicker First Fit Repair** – as the Front Assembly is already pre-assembled, it removes steps in the installation process to make it quicker.

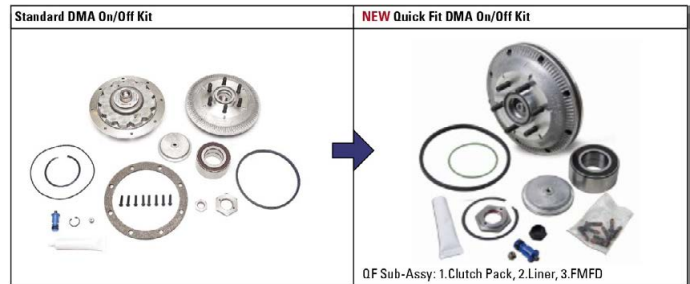
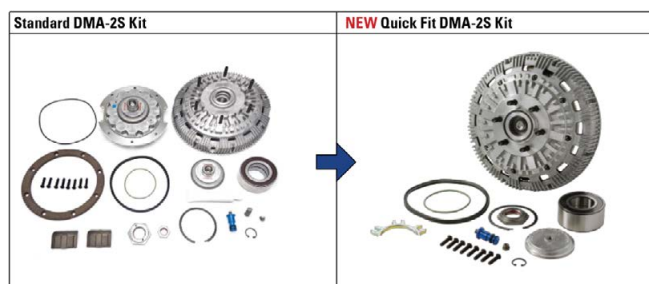
**Fewer Installation Errors** – As the FMFD is already pre-assembled, there is no need to supply air during the installation of the FMFD to ensure it is seated correctly and eliminates a common installation failure mode.

**Easier Installation** – There is no special equipment or processes, i.e. Torx Plus bit and LH Thread, as the FMFD is already pre-assembled, only 1 x Allen key for the 8 liner screws.

**Quicker Next Repair** – The only requirement for dis-assembly will be to align the FMFD holes with the 8 liner screws and remove the whole front assembly, no complicated LH thread or special Torx Plus Bit required.



### QUICK FIT DEIFFERENCES



# FANS

## FANS - 8/9/11 BLADE

### FEATURES & BENEFITS

- Various Fan Diameters 26in - 32in
- Various Pilot Diameters 2.0in / 2.56in / 5.0in
- Multiple Plate Positions : Flat Plate, Dished Forward & Dished Rearward
- Pusher & sucker fans



## MS8 Nylon Fan

Less aggressive, 8-blade design for lower power engines. Available diameter range: 559 - 813 mm [22" - 32"]



## HS11 Nylon Fan

Unique, 11-blade design meets cooling needs of EGR engines. Available diameter range: 711 - 864 mm [28" - 34"]



## Index Heavy Duty Temperature & Pressure Switches

### FEATURES & BENEFITS

- Specially designed for long life on heavy-duty equipment — up to 1,000,000 cycles
- Special time delay and diagnostic features available
- Pressure indication, interlock, and control for engines, transmissions, hydraulics, fluid tanks and similar industrial applications
- Broad media compatibility: air, oil, water, coolant, hydraulic fluid, transmission fluid, and more
- Tight tolerances where high precision is needed
- Choice of fittings and connectors
- Stable, drift-free switching temperatures



## Klondike Fan Drive Repair Kits To Suit Kysor K26RA + K26 FA

### FEATURES & BENEFITS

- Horton quality and reliability
- Reliable industry-leading support
- Interchangeable with original equipment fan clutches and parts.
- Fan clutch replacement engages without air pressure to keep the engine cool
- Applications
- Replacement Fan Drive for Kysor® K26RA & Repair Kits for K26RA and K26FA
- Medium-duty trucks
- Heavy-duty trucks
- Buses



## Solenoid Fan Drive Controls

### FEATURES & BENEFITS

- Designed for all vehicle cooling applications
- Designed for excessive heat and vibration
- Developed for the most extreme under-hood applications
- Toughest valve on the market
- The solenoid valve is the key to proper fan drive operation
- Available in 12V & 24V
- Solenoid valve and filter sold separately in universal kit
- Fully assembled kits also available



## Fan Drive Diagnostic And Maintenance Kit

### FEATURES & BENEFITS

- Rugged molded plastic case with die cut foam to securely store tools and other kit components
- Preventive Maintenance, Inspection and Air Pressure Test Procedure instruction manuals for DMA-2S and HT/S clutches.
- Cage Nut tool for safe removal, repair and re-installation of spring-loaded Horton clutches
- Pressure gauges, T-fittings with quick connect, standard air supply line fitting and tubing, configured for diagnosing clutch air supply problems
- Torx T-55 Plus bit and 1/2" drive bit holder for clutch disassembly
- Soapy water spray bottle for identifying air leaks
- FMFD tool for disassembly of DMA clutches

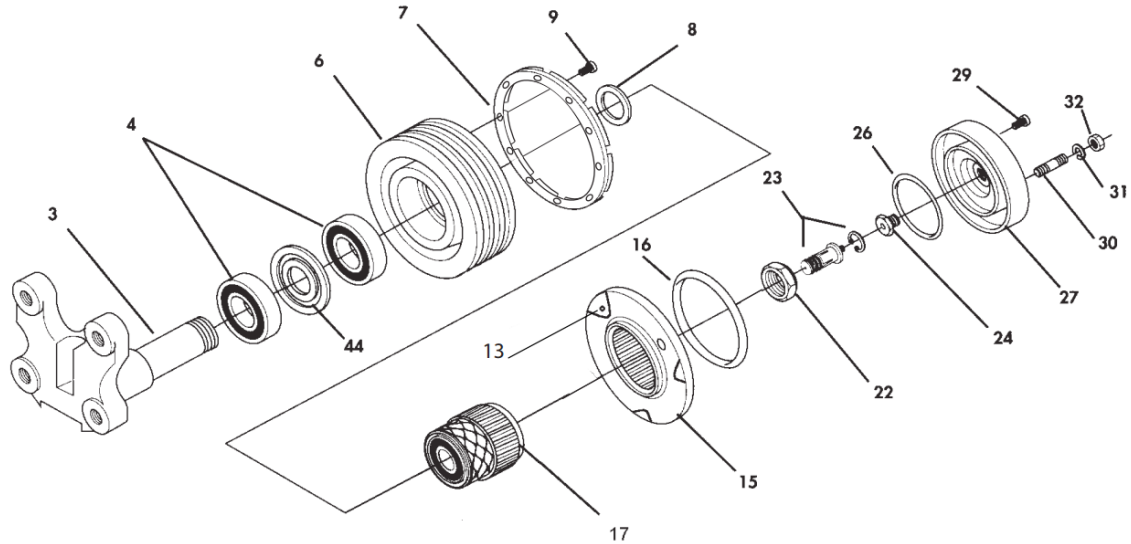


Scan Here For **HORTON** HTS & Drivemaster Repair Videos.





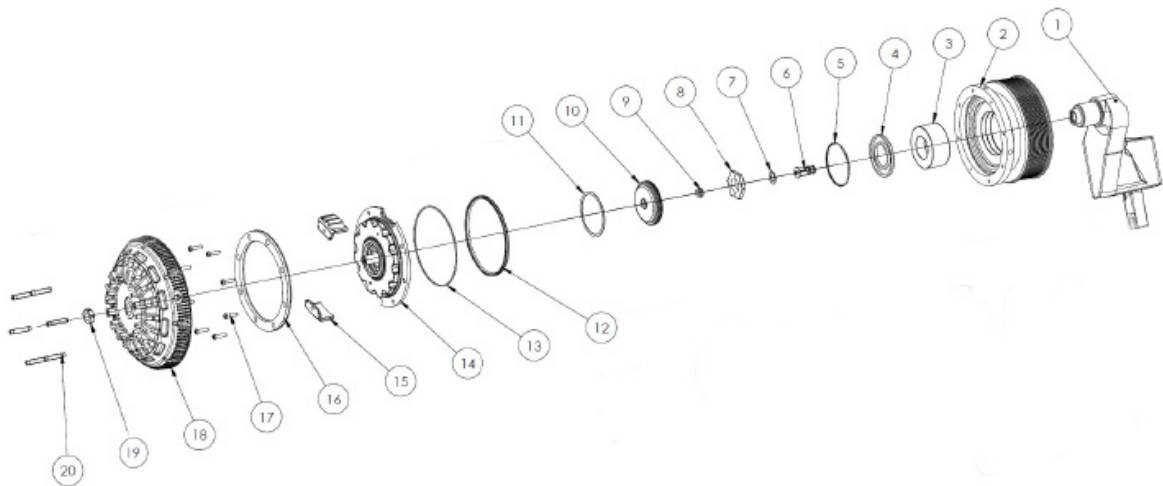
## S & HT/S Horton Fan Clutch - Generic View



| ITEM | DESCRIPTION                         | QTY | ITEM | DESCRIPTION                             | QTY |
|------|-------------------------------------|-----|------|-----------------------------------------|-----|
| 3    | JOURNAL BRACKET                     | 1   | 22   | LOCK NUT                                | 1   |
| 4    | PULLEY BEARINGS (MATCH GROUND PAIR) | 1   | 23   | CARTRIDGE ASSY (INCLUDES CIRCLIP)       | 1   |
| 6    | PULLEY/SHEAVE                       | 1   | 24   | FACE SEAL                               | 1   |
| 7    | FRICTION FACING (SINTERED BRONZE)   | 1   | 26   | O-RING 'SMALL'                          | 1   |
| 8    | JOURNAL SPACER (1/4\" OR 3/4\")     | 1   | 27   | AIR CHAMBER 2\" PILOT                   | 1   |
| 9    | SOCKET FLAT HEAD SCREWS             | 8   | 29   | SOCKET HEAD SCREWS (AIR CHAMBER)        | 8   |
| 13   | SYSTEM SENTRY (NOTE: LH THREAD)     | 1   | 30   | STUD                                    | 6   |
| 15   | PISTON FRICTION DISC ASSEMBLY       | 1   | 31   | WASHER                                  | 6   |
| 16   | D-RING 'LARGE'                      | 1   | 32   | NUT                                     | 6   |
| 17   | FINE SPLINE HUB ASSEMBLY            | 1   | 44   | SET OF BEARING SPACERS (ON SOME MODELS) | 1   |



## DMA-2 Speed Horton Fan Clutch - Generic View



| ITEM | DESCRIPTION            | QTY | ITEM | DESCRIPTION                       | QTY |
|------|------------------------|-----|------|-----------------------------------|-----|
| 1    | JOURNAL BRACKET        | 1   | 11   | RETAINING RING (AIR CHAMBER CAP)  | 1   |
| 2    | SHEAVE/PULLY           | 1   | 12   | QUAD CUP SEAL                     | 1   |
| 3    | DRAC BEARING           | 1   | 13   | O-RING ASSEMBLY                   | 1   |
| 4    | BEARING SPACER SET     | 1   | 14   | CLUTCH PACK ASSEMBLY              | 1   |
| 5    | O-RING AIR CHAMBER CAP | 1   | 15   | DOVETAIL MAGNETS                  | 2   |
| 6    | AIR CARTRIDGE          | 1   | 16   | FRICTION FACING                   | 1   |
| 7    | CIRCLIP                | 1   | 17   | SOCKET FLAT HEAD SCREW            | 8   |
| 8    | LOCK NUT               | 1   | 18   | FMFD - FAN MOUNTING FRICTION DISC | 1   |
| 9    | FACE SEAL              | 1   | 19   | JAM NUT                           | 1   |
| 10   | AIR CHAMBER CAP        | 1   | 20   | STUDS                             | 6   |



# **HTEC FANS**

**Horton Thermoset Engineered Composite**

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**Increased Airflow Versus  
Comparable Metal Fans**

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**Reduced Fuel Consumption**

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**Higher Speed Rating Than  
Comparable Metal Fans**

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**OEM Approved**

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**Compatible With  
All Fan Drives**

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**Best in Class Durability**

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**Significant Noise Reduction**

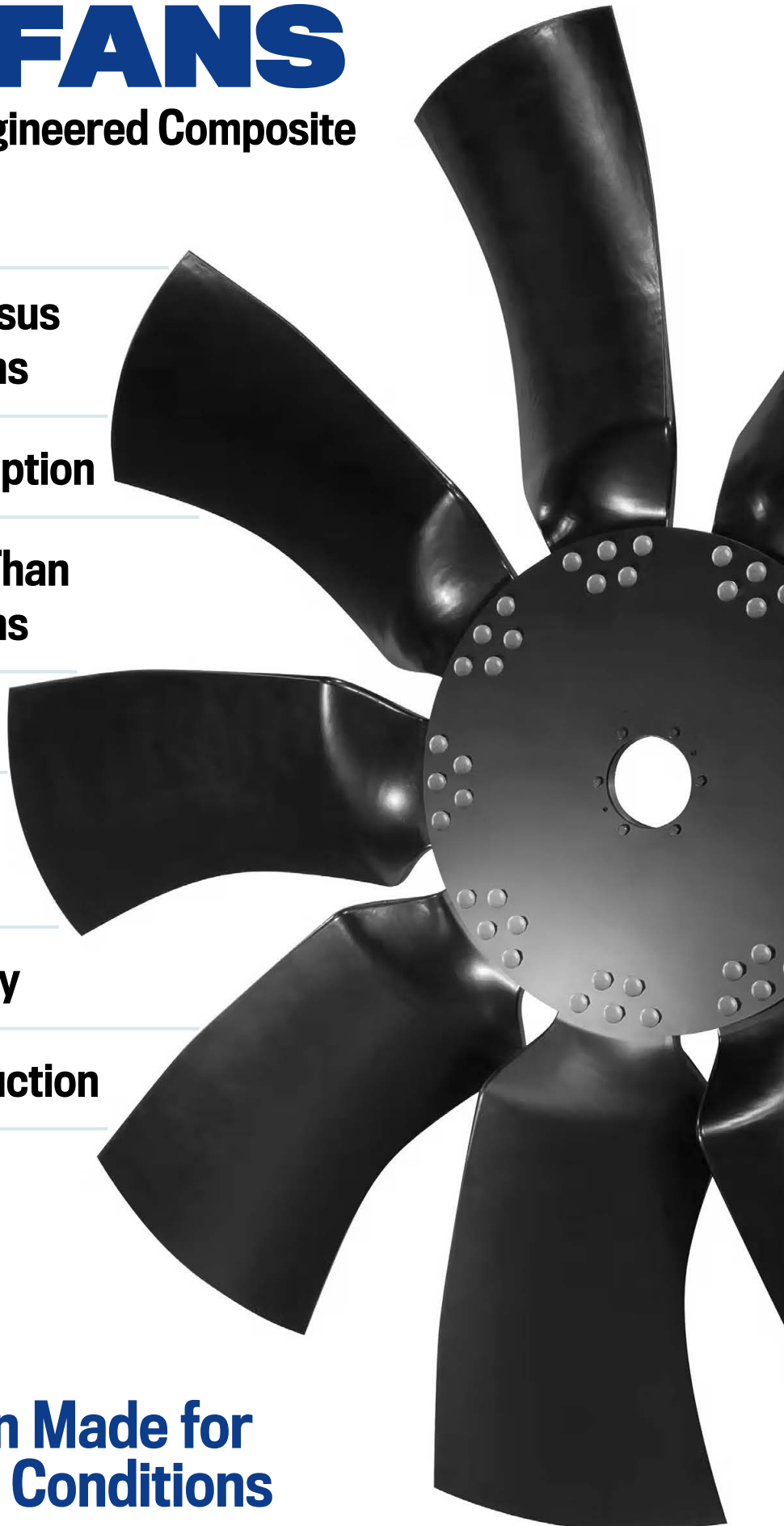
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**WATCH  
THE VIDEO  
← HERE**



**Australian Made for  
Australian Conditions**



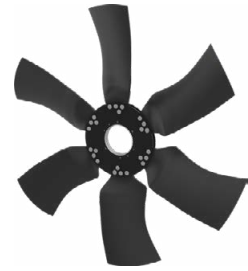


## HM1400 Series Fan

The HM1400 fan utilizes the optimized blade design of the HTEC fan family while providing the reduced weight of the proven Horton nylon. This combination allows efficient, customizable performance to meet your cooling needs in mid-range fan diameters.

### FEATURES & BENEFITS

- Increased airflow and efficiency
- Optimized blade design
- Lightweight durable blades
- Flexible design for most any application
- Available in a variety of blade counts and center-disk diameters
- Highly compatible with Horton and competitive fan drives



## HTEC 1800 Series Fan

Thermoset composite provides for metal like strength but efficiency of moulded nylon. High speed ratings with low noise and corrosion resistant properties. Available diameter range: 1,194 – 1,829 mm [47" – 72"]

|                     |                                                                                    |
|---------------------|------------------------------------------------------------------------------------|
| Diameter            | 47"-72" [1194-1829 mm]                                                             |
| Pilots and Mounting | Standard and customizable mounting available, including straight and tapered bores |
| Weight              | 17 kg [30 lbs] and up                                                              |
| Max Tip Speed       | 112m/sec [22,000 ft/min]                                                           |



## HTEC 2500 Series Fan

Thermoset composite provides for metal like strength but efficiency of moulded nylon. High speed ratings with low noise and corrosion resistant properties. Available diameter range: 1,651 – 2,438 mm [65" – 96"]

|                      |                                                                                    |
|----------------------|------------------------------------------------------------------------------------|
| Diameter             | 65"-96" [1651-2438 mm]                                                             |
| Blade Configurations | 5 to 17                                                                            |
| Pilots and Mounting  | Standard and customizable mounting available, including straight and tapered bores |
| Weight               | 41 kg [90 lbs.] and up                                                             |
| Max Tip Speed        | 112m/sec [22,000 ft/min]                                                           |



## Choose The Right Fan

Norman G. Clark currently have HTEC designs for several Off-Road Makes and Models as listed.

### CUSTOM FANS

If you have a specific application not listed please speak with a Norman G. Clark representative as we can design and assemble a HTEC fan in Australia that best suits your application and needs: be it increased durability, improved air flow and efficiency and/or reduced fan noise.

| MAKE       | TRUCK/EXCAVATOR | HTEC FAN TYPE                 |
|------------|-----------------|-------------------------------|
| KOMATSU    | 830E            | 2500CW                        |
|            | 930E-4SE        | 2500CW                        |
|            | HD785-7         | 1800CW                        |
|            | WA1200-3        | 2500CCW                       |
|            | WA1200-6        | 2500CCW                       |
| CAT        | 789C            | 1800CW                        |
|            | 793C            | 1800CW                        |
|            | 789D            | 2500CW                        |
|            | 6060            | ENG: 2500TCCW, OIL: HM1400CCW |
|            | 6090            | ENG: 2500TCCW, OIL: 1800CCW   |
| HITACHI    | EH5000 AC2      | 2500CW                        |
| LIEBHERR   | T282            | 2500CW                        |
| TEREX      | MT4400          | 2500CW TRIM                   |
| LETOURNEAU | L2350G284       | 2500CCW                       |

# **HORTON** MODULAR FANS

## Windshift™ Fans

Innovative clamshell knuckles attachment system provides flexibility in terms of pitch angles and three different blade shapes for optimized performance. Available diameter range: 610 – 1,320 mm [24" – 52"]



## Shogun Modular Fans

Ideal for reduced-emission engines with flexibility in terms of blade counts and bolt circles fastened by rivets to a durably-constructed centre disk. Available diameter range: 406.4 – 559 mm [16" – 22"]



## Metal Standard Fans

Highly customisable, with multiple blade configurations in steel or aluminum. Available diameter range: 254 – 2,438 mm [10" – 96"]



# **HORTON** VARIABLE SPEED FAN CLUTCHES

## RCV1000 Fully Variable Fan Clutches

The RCV1000 Fully Variable Fan Drive offers precision cooling for large-bore diesel applications. This large bore engine fan drive boasts innovations throughout all aspects of the design to improve reaction time and control of modulation, yielding fuel savings, productivity and the reliability required by tough off-highway applications.

- Full-range variable speed control reduces operating noise, lowers fuel costs and provides cold weather performance advantages
- Near-zero fan off-speed decreases parasitic loss to preserve horsepower and provide efficient cooling

- Does not use engine oil or hydraulic lines
- Smooth fan engagements and fan modulation
- Simpler and cleaner installation with low part count
- No maintenance
- Integral fan speed sensor for closed-loop control

|                            |                                           |
|----------------------------|-------------------------------------------|
| Maximum torque             | Up to 900 N-m<br>[8850 in.-lbs.] (on/off) |
| Typical Fan Blade Size     | 1220 – 1828 mm<br>[48-72 in.]             |
| Typical Engine Power Range | 522–2,237 kW<br>[700–3,000 hp]            |



## RCV2000 Fully Variable Fan Clutches

The RCV2000 Fully Variable Fan Drive is designed for precision cooling of large-bore diesel applications and specifically, for high horsepower off-highway applications with 50-Liter engines and larger. The RCV2000 boasts innovations throughout its design to improve reaction time and control of modulation to yield fuel savings, productivity and the reliability required by tough off-highway applications.

- Full-range variable speed control reduces operating noise, lowers fuel costs and provides cold weather performance advantages
- Near-zero fan off-speed decreases parasitic loss to preserve horsepower and provide efficient cooling

- Does not use engine oil or hydraulic lines
- Smooth fan engagements and fan modulation
- Simpler and cleaner installation with low part count
- No maintenanceIntegral fan speed sensor for closed-loop control
- Integral fan speed sensor for closed-loop control

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Maximum torque             | Up to 2,500 N-m<br>[22,126 in.-lbs.] (on/off) |
| Typical Fan Blade Size     | 1,829 mm – 2,743 mm<br>[72 in. – 108 in.]     |
| Typical Engine Power Range | 1,100 – 3,000 kW<br>[1,475 – 4,023 bhp]       |

