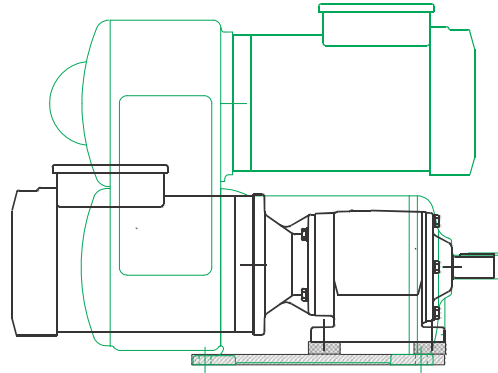


Reeves[®] INNOVAdrive[™]

Adjustable Speed Industrial Power Transmission

Drop-In Replacement for Reeves MotoDrive



WARNING: Because of the possible danger to person(s) or property which may result from improper use of products, it is important that correct procedures be followed. Products must be used in accordance with the Engineering information specified in the catalog. Proper installation, operation and maintenance procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided, and are neither provided by Master Power Transmission nor are the responsibility of Master Power Transmission. This unit and its associated equipment must be installed, adjusted and maintained by qualified personnel who are familiar with the construction and operation of all the equipment in the system and the potential hazards involved. When risk to persons or property may be involved, a failsafe device must be an integral part of the driven equipment beyond the speed reducer output shaft.



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REEVES INNOVADRIVE GENERAL INFORMATION

DATA PLATES AND INFORMATION PLATES

The primary plate is attached to the MASTER APG gearcase. This rectangular stainless steel plate contains vital information about your Reeves INNOVADrive. Gearmotor and C-face reducer input constructions may have an equally important data plate on the motor. Information plates may be attached to any component to provide operational instructions or precautions. Bolt on accessories will usually have their own data plates. All plates are to be considered important. The information they contain will be of help to you throughout the life of the drive. Take care not to damage or paint over any of the plates.

When ordering parts or service, or asking a question about your Reeves INNOVADrive, please provide all the information found on the motor, gearcase or AC drive. If your drive has an accessory, provide that information also.

ACCEPTANCE OF SHIPMENT

Thoroughly inspect the equipment before accepting shipment from the transportation company. If any of the goods called for in the bill of lading or express receipt are damaged or missing, do not accept the shipment until the freight or express agent makes an appropriate notation on your freight bill or express receipt. If any concealed loss or damage is discovered later, notify the agent at once and request an inspection. Though MASTER will be happy to assist you with claims for loss or damage in shipment, the transportation company is responsible for reimbursing you for such claims. Claims for loss or damage in shipment must not be deducted from the MASTER invoice, nor should payment of the MASTER invoice be withheld awaiting adjustment for such claims. The carrier, not MASTER, guarantees safe delivery.

If considerable damage or shortage has occurred and the situation is urgent, contact the nearest MASTER Sales Office for assistance.

SAFETY

DANGER

HIGH VOLTAGE AND ROTATING PARTS CAN CAUSE SERIOUS OR FATAL PERSONAL INJURY AND PROPERTY DAMAGE. THE USE OF ELECTRICAL MACHINERY, LIKE ALL OTHER UTILIZATION OF CONCENTRATED POWER AND ROTATING EQUIPMENT, CAN BE HAZARDOUS. INSTALLATION, OPERATION AND MAINTENANCE OF ELECTRIC MACHINERY SHOULD BE PERFORMED ONLY BY QUALIFIED ELECTRICAL AND MECHANICAL MAINTENANCE PERSONNEL FAMILIAR WITH NEMA SAFETY STANDARDS, THE NATIONAL ELECTRICAL CODE AND SOUND LOCAL PRACTICES. THE MANUAL IS TO BE STUDIED THOROUGHLY BY PERSONNEL RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF THIS EQUIPMENT BEFORE INSTALLATION IS BEGUN. PERSONNEL MUST BE FAMILIAR WITH THE POTENTIAL HAZARDS INVOLVED. IF THIS WARNING IS NOT OBSERVED, PERSONAL INJURY AND/OR PROPERTY DAMAGE MAY RESULT. KEEP THIS MANUAL FOR FUTURE REFERENCE.

Many precautions are inserted in this manual to advise personnel of possible hazards. All should be read and understood before any work is begun. Adequate installation, maintenance and safety instructions must be given by the user to personnel responsible for the operation of the equipment. The user is also responsible for the installation of proper guards, signs and safety equipment needed to protect the operating personnel.

WARRANTY

NOTE: SERVICE AND REPAIR UNDER WARRANTY SHOULD BE PERFORMED ONLY BY A MASTER AUTHORIZED SERVICE SHOP. CALL WARRANTY ADMINISTRATION AT 812-376-1100 FOR THE NEAREST LOCATION.

The Reeves INNOVADrive is warranted under the MASTER "Standard Terms and Conditions of Sale."

Warranty claims on any such apparatus must be submitted to the company within one year from date of installation or within three years from date of manufacture, whichever comes first. The Seller's

Warranty applies insofar as the equipment is operated within the rating and service conditions for which it was specifically sold. The warranty does not extend to failures induced by misuse, improper storage or handling, abuse or misapplication.

For warranty service, contact the nearest MASTER Sales Office or Authorized Distributor or call Warranty Administration at 812-376-1100.

UNPACKING

After unpacking and inspecting for possible damage, turn the shafts by hand to be sure there are no obstructions to free rotation. C-Face input devices have a shipping strap around the input shaft which must be cut and removed before the shaft may be turned.

WARNING

KEYWAYS IN SHAFTS HAVE SHARP EDGES. USE APPROPRIATE HAND PROTECTION WHEN HANDLING SHAFTS. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN BODILY INJURY.

Check the packing materials. Save any instruction tags, wiring diagrams or accessory parts and hardware. Inspect the data plate(s) to verify that the drive matches the intended load, application and power supply. If the drive is to go into immediate service, see "INSTALLATION," below. If the Reeves INNOVAdrive is to be stored for some time before going into service, see "STORAGE," below.

IMPORTANT SAFETY REMINDERS

1. To avoid electrical shock, disconnect electrical service prior to installation or any maintenance to the unit. Failure to observe these precautions could result in severe bodily injury or loss of life.
2. Check your power supply against motor nameplate ratings before making electrical connections.

USAGE

1. The Reeves INNOVAdrive has been designed as a drop-in replacement for popular versions of the Reeves MotoDrive, providing identical footprint, output shaft height and output shaft start location. NOTE: output shaft diameter may differ from the original MotoDrive.
2. Reeves INNOVAdrive consists of a physical replacement mounting base, a MASTER APG parallel gearbox, an inverter-duty TEFC 3 phase AC motor, an AC Variable Frequency Drive (NEMA 4X/IP65 enclosure) and required spacers and hardware.

Each component is covered by a separate installation and maintenance manual, available on master-pt.com.

3. Standard assemblies are sized to replace MotoDrives used in the most common constant torque applications. All components are service factored to provide listed horsepower at the output shaft at high speed only. Consult factory for any application that does not conform to this power characteristic.
4. Most mounting adapter arrangements consist of 2 plates, spacers (used to bring APG shaft height to MotoDrive spec) and gearbox mounting hardware. Some do not have spacers, as proper height is achieved by reliefs in the adapter plates. Single stage reducers have two sets of spacers (included) to match standard output shaft orientations. Some arrangements use a single mounting plate.
5. Overlay drawings, showing INNOVAdrive drawn over the equivalent MotoDrive, as well as AutoCAD drawings of MotoDrives, APG gearboxes and motors are available upon request. Overlay drawings include part numbers and AutoCAD drawing numbers.
6. Not all MotoDrive assemblies may be replaced. Double and triple parallel reducer units will replace the following assemblies:
105/105-A
121/121-A
122/122-A
Single stage reducer assemblies:
101/101-A
102/102-A
104-A
113/113-A
114/114-A
Consult factory for other assemblies.
7. Unless otherwise specified, all motors are TEFC and all VFDs are NEMA 4X/IP65 enclosures. Do not install in hazardous or listed locations.
8. Variable Frequency Drives (VFD's) are single-voltage devices and cannot be changed; the VFD must only be used at rated voltage. Voltage is listed on nameplate. Standard voltage is 460 VAC; others are available. Consult factory.
9. The VFD's used in Reeves INNOVAdrive are extremely versatile in control and performance. Settings are beyond the scope of this manual. Consult master-pt.com for VFD instruction manual.
10. The MASTER APG gearbox is filled with correct quantity of lubricant for the specified assembly at

the factory and is ready to use. Consult APG manual for lubricant types and change intervals.

11. The INNOVAdrive is assembled and tested at the factory and preset for the nameplate listed output speeds. It is preset for local control and ready to use. The VFD is mounted and wired in place but may be remotely mounted.

INSTALLATION

1. A rigid and flat base is essential for mounting the INNOVAdrive unit.
2. Reeves INNOVAdrive is assembled and tested complete at the factory. It may be necessary to remove the adapter base from the gearbox to facilitate mounting.
3. Mount and fasten the unit into position so that the output (Variable Speed) shaft of the unit is in alignment with the driven shaft of equipment. Use shims when necessary to obtain proper alignment. Shafts of the INNOVAdrive unit should turn freely when it is secured to the mounting.
4. MotoDrives with single-stage gearboxes (any size that ends with a "1", such as "331" or "121") have the output shaft offset from the variable shaft. Standard INNOVAdrive units are assembled to match the original MotoDrive "assembly 101 (or 101-A)" arrangement, where the output shaft is offset to the left, facing the output shaft, relative to the base mounting. On the MotoDrive, the output shaft can be moved relative to the beltcase mounting feet by rotating the gearbox either 90 degrees (assembly 104-A) or 180 degrees (assembly 102/102-A). The INNOVAdrive APG is a single-position gearbox. The adapter plates are drilled and tapped to allow the APG gearbox to be mounted to the left, in the center or to the right, duplicating all common MotoDrive output shaft locations. To change assemblies (location of output shaft relative to mounting holes), remove spacers and studs and reinstall them in the appropriate sets of holes in the adapter plates. Stake studs in from the underside. Longer spacers and studs are supplied for the 104-A position.
5. Connect the output shaft of the INNOVAdrive unit to the driven shaft of the equipment. Note that the new APG output shaft may be smaller than the original MotoDrive output shaft. Accurate alignment of the shafts is very important when flexible or gear couplings are used. In addition to accurate shaft alignment, sprocket or pulley alignment on the shafts to chain or belt connections is imperative.

Overhung drives must always be mounted as close to the gearbox as possible.

6. Connect electrical power to the unit. Follow all electrical codes. Insure that voltage listed for VFD is correct for the installation!

DANGER

The user is responsible for conforming to the National Electrical Code and all other applicable local codes. Wiring practices, grounding, disconnects and overcurrent protection are of particular importance. Failure to observe these precautions could result in severe bodily injury or loss of life.

7. Reeves INNOVAdrive units are set for the specific speed range and tested at the factory. Following proper electrical connections, the drive is ready for immediate use.
8. The Variable Frequency Drive unit may be mounted or controlled remotely, following installation manual recommendations for mounting, wire size and distance between VFD and motor.

STORAGE

Unless an extended warranty has been negotiated prior to sale, time in storage is considered time in service for warranty purposes. If a negotiated extended warranty is in effect, specific storage procedures must be followed to prevent problems when the drive is eventually placed in service. For further instruction on long term storage of Reeves INNOVAdrives please contact the nearest MASTER Sales Office or Authorized Distributor or call Master Power Transmission directly at 812-376-1250.

TROUBLESHOOTING

Refer to the manuals on master-pt.com, listed below.

RENEWAL PARTS

Contact MASTER-REEVES RENEWAL PARTS at (812) 376-1100. Identification numbers will be required.

MANUALS FOR REEVES INNOVADRIVE COMPONENTS.

- Master APG Gear [®]™ Reducers Size 1
<http://master-pt.com/images/pdf/manuals/499983-APG-1.pdf>
- Master APG Gear [®]™ Reducers Sizes 2-8
<http://master-pt.com/images/pdf/manuals/499972-APG-2-8.pdf>
- Variable Frequency Drive Installation and Operation
<http://master-pt.com/images/pdf/manuals/vfd.pdf>