



**OMNI GEAR®**  
**Irrigation Powertrain**  
**Service Manual**



### Cautions

Following are some general cautions. All personnel shall use safe and sound practices and take all necessary precautionary measures to ensure safety.

- ◆ Transport, installation, plumbing, operation, maintenance, and inspections should be handled by properly trained technicians.
- ◆ The unit should be operated only within its design and performance specifications.
- ◆ Do not remove the name plate.
- ◆ Any modifications or alterations of any kind, to the unit, will void the warranty and all subsequent claims.
- ◆ Do not operate the unit without all safety covers in place.
- ◆ The reducer and the lubricant will get very hot during operation. Take safety precautions when handling the Bevel Gear unit and the lubricant.
- ◆ Never approach or touch any rotating parts during operation.
- ◆ Damaged units should be taken off-line and not put back in operation until properly serviced.
- ◆ If the unit performs abnormally, in any way, stop the unit immediately.



## OMNI IRRIGATION POWERTRAIN Selection

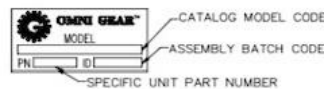
The life and field performance of the OMNI IRRIGATION POWERTRAIN component is dependent on the appropriate unit size and features being selected properly for the specific application. Careful consideration should have been given to the duty cycle, ambient conditions, actual loads, severity of service, reliability, and safety factor. If you have any concerns relative to the suitability of your OMNI UNIVERSAL BEVEL GEARDRIVE for your application, please contact OMNI Gear or your OMNI Gear representative.

## Delivery Inspection

Upon receipt of your OMNI Gear Products, check and document any handling damage to the shipment packing, product packing, or the product itself. During transit, contents of the shipment packing may have moved. Prior to removing the product from the shipment packing, ensure the product is stable and it is safe to unpack the shipment packing.

## OMNI IRRIGATION POWERTRAIN Component Verification

Each OMNI IRRIGATION POWERTRAIN component has a nametag attached to the unit. Check the nametag and verify the nametag unit data corresponds to your product requirements.



- Refer to OMNI IRRIGATION POWERTRAIN component Catalogs for detailed information on model codes designations.
- Always supply complete nametag data when referencing your OMNI IRRIGATION POWERTRAIN unit.

## Storage

OMNI IRRIGATION POWERTRAIN units are shipped prepared for a minimum of 6 months storage upon receipt. The storage environment should be clean, dry, protected from the elements, free from vibration, and not subject to large temperature changes in short intervals. For units requiring longer storage times or being stored in conditions other than those stated above, contact OMNI Gear or your OMNI Gear Representative.

## Lubrication Selection

The use and maintenance of the proper lubrication is critical to the successful operation and performance of the OMNI IRRIGATION POWERTRAIN component. Refer to table 1 to select the appropriate oil for the unit's ambient operating temperature and table 2 for approximate oil quantity. OMNI Gear recommends the use of EP additives for standard IRRIGATION POWERTRAIN units. However, when the unit is used with other components with shared oil baths, check EP compatibility with the other component manufacture. Also, for some special designed OMNI IRRIGATION POWERTRAIN Geardrives, EP additives may not be compatible with special internal components. Contact OMNI Gear or your Lubricant supplier for more details.

Greases may be used dependent on the type of grease and the application. Contact OMNI Gear or your Lubricant supplier for more details.

Synthetic oils may be used but must meet all requirements of the oils shown in table 1. Synthetic oils are recommended for use in both high operating oil temperature and low ambient temperature extremes.

Table 1: Oil type

Ambient Temperature	ISO VG Grade	AGMA No.	SAE Gear Oil
-40 F to 15 F	100	3EP	75W-90
-5 F to 60 F	150	4EP	75W-90
40 F to 120 F	220	5EP	85W-140

**Note 1:** Pour point should be 10 F higher than minimum expected ambient temperature. This may require the use of synthetics or multi weight oils in lower ambient temperatures.

**Note 2:** ISO and SAE reference type does not include EP designation. Check with your oil supplier for exact oil type designations that include EP additives.

Table 2: Oil capacity

Unit Size	Oil Capacity (Liters)	
	Horizontal	Shaft down
OFD-50 2"	3.9	N/A
OFD-50 2.25"	3.7	N/A
OFD-50 2.5"	3.1	N/A
OFD-50D 2.25"	3.7	N/A
OFD-50D 2.5"	3.1	N/A
<b>OFD-50 G2</b>	3.7	N/A
OFD-50 HD 2.5"	6.3	N/A
OFD-52V 2.25"	3.7	N/A
IR-15	N/A	1.2
IR-20	N/A	1.2
IR-862H	1.6	N/A

**Note 1:** For horizontal units, the oil level to be at center line of unit

**Note 2:** For shaft down units filled horizontally, the oil level to be 7 deg. above center

**Note 3:** For shaft down units filled vertically, oil level to be at mid height of the input spline

**Note 4:** Contact OMNI Gear or your representative for mountings and units not shown here

## Lubrication Performance

Under normal oil lubrication and unit operating conditions, the maximum oil sump temperature is expected to be 160 deg. F. For intermittent peak loading of the unit, the maximum oil sump temperature is expected to be 200 deg. F. These are general guidelines and may vary slightly with each specific application. However, if oil sump temperatures are continually exceeding these guideline maximums, a review of the oil type and operating conditions should be performed. Contact OMNI Gear or your lubricant supplier.

## Lubrication Maintenance

The initial oil should be changed after 50 hours of operation of the unit under operating loads. Additional oil changes should be performed every 1000 hours or each year, which ever comes first. Shorter oil change intervals may be required if the unit operates at high temperatures or at maximum load conditions. Longer oil change intervals may be used dependant on the load conditions and unit environment. However, if longer oil change intervals are used, oil sampling shall be used to confirm the oils actual properties and condition. During oil changes, care should be taken to ensure oil is retained properly during draining from the unit. Waste oil should be disposed of properly and according to local requirements.

## Factory lubrication

OMNI IRRIGATION POWERTRAIN components can be factory filled with lubricant prior to shipment with the proper type and specified brand of lubrication. Please contact OMNI Gear or your OMNI Gear Representative for more details. Note: Even Factory Lubricated units should be checked for proper lubricant level prior to use.

## Installation

The OMNI IRRIGATION POWERTRAIN components should be properly aligned and secured to the mating equipment for proper performance. All fasteners should be properly tightened and secured against loosening during operation. The male and female interface threads on all standard units have been designed to accept a minimum torque values of 90% of the proof load of a ISO grade 10.9 fastener based on a minimum thread engagement of 110% of the nominal thread size. Some threaded holes are also used as oil ports. These threads need to be sealed against oil leaks when installing the fastener.

## Start-Up

The following is a short list of various checks and actions to be taken prior to or during start-up to ensure the safety of personnel and lessen the risk damage to equipment.

- ❖ Verify correct rotation of all equipment.
- ❖ Check for proper lubrication (even on Factory filled units) on all equipment.
- ❖ Check that all plugs and fasteners have been installed
- ❖ Ensure all guards and other safety devices are in place and operational.

It is recommended the units be run for a period of time (4 to 10 hours) under no or light load conditions as installed. This will promote proper wear-in and alignment of all mating components.

## Limited Warranty

Omni Gear warrants its products to be free of defects in material and workmanship when and maintained consistent with Omni Gear's specifications.

Each product is warranted for a period of 12 months from date of retail delivery or 18 months from date of shipment from Omni Gear's facility, whichever shall first occur. All replacement or spare parts supplied by Omni Gear are warranted for a period of 3 months from date of shipment from Omni Gear's facility.

Should any part of Omni Gear product be found, under normal use and service, during the warranty period, to be defective, Omni Gear shall repair or replace, at its sole option, said part FOB Omni Gear's facilities provided the defective gear drive, in whole, is returned to Omni Gear's facility, charges prepaid, accompanied by a Return Goods Authorization (RGA) and defect report detailing the claimed defect, and provide inspection of the original product establishes the claimed defect to the satisfaction of Omni Gear.

In the event a warranty claim is denied, an Omni Gear Customer Service representative shall contact the customer and advise of the cost to repair the Product not covered under warranty. If the customer requests the Product be repaired, the repaired Product shall carry as Manufacturers Remanufactured Warranty of 6 months from date of remanufacture.

Contact Omni Gear for Warranty Disclaimer and Limitations of Liability.



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**G** OMNI GEAR® designs, manufactures and distributes enclosed gear drives utilizing straight bevel, spur, spiral bevel, helical and worm gearing.

With over 70 years of manufacturing experience in the engineering, production, and sale of construction and agricultural equipment, OMNI GEAR® has a solid foundation and vast understanding of the needs of today's equipment builders. With 42 years of manufacturing experience in Asia, OMNI GEAR® has become a recognized leader within the world-wide enclosed gear drive community.



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