

**DOMESTIC SALES:**

Please note that the prices published in this catalog apply only to purchases made with credit cards issued by US banks and shipped to destinations within the US.

**INTERNATIONAL SALES:**

Because of the excessive processing fees associated with credit cards issued by foreign (*including Canadian*) banks, international prices will generally be quoted 25% higher than those in this catalog.

**OUR STANDARD FREIGHT CARRIERS AND INSURANCE:**

We ship via Federal Express or United Parcel Service, FOB our plant in Mills, Wyoming. Next Day Air and Early AM delivery are available at extra cost for most ZIP codes in the continental US, as is Saturday delivery. Freight insurance is free up to USD100.00 value, and rises on a very reasonable sliding scale. We ship everything insured for its full value. We can also ship freight collect on your FedEx or UPS account. Orders for parts in stock will generally ship the same day if received before noon Mountain Standard Time.

**USING OTHER CARRIERS:**

Alternatively, we can hold for pickup by the carrier of your choice. However, in these cases we cannot create waybills or submit the export declaration electronically. If your carrier requires that we manually complete their shipping documents we will have to charge for the time. Also, you should be aware that freight companies not having a base of operations in the US will subcontract the pickup to UPS or FedEx and sometimes this can add a week or more before the parcel can actually be placed in transit.

**RETURNS OF MERCHANDISE:**

Returned parts may be subject to a charge of up to 20% to defray the cost of inspection, restocking, and repackaging. Returned merchandise must be unused, unmarked and not over 30 days old. We will make adjustment via exchange or credit only. Special order parts, damaged or rusted parts, or "basket cases" are not returnable except in connection with repair orders.

**SPECIAL ORDER PARTS:**

In this catalog, most categories of parts are available in a range of standard lengths and sizes to fit different race cars at no extra cost. Other categories of parts are only manufactured on a made-to-order basis. Please note that parts built or assembled to customer specifications are generally specialized enough to be otherwise unsalable, and consequently these are not returnable.

## Limitation of Warranty

The items in this catalog are designed and manufactured specifically for use in race cars. Woodward Machine Corporation does not warranty or guarantee race car components for the following reasons, among others:

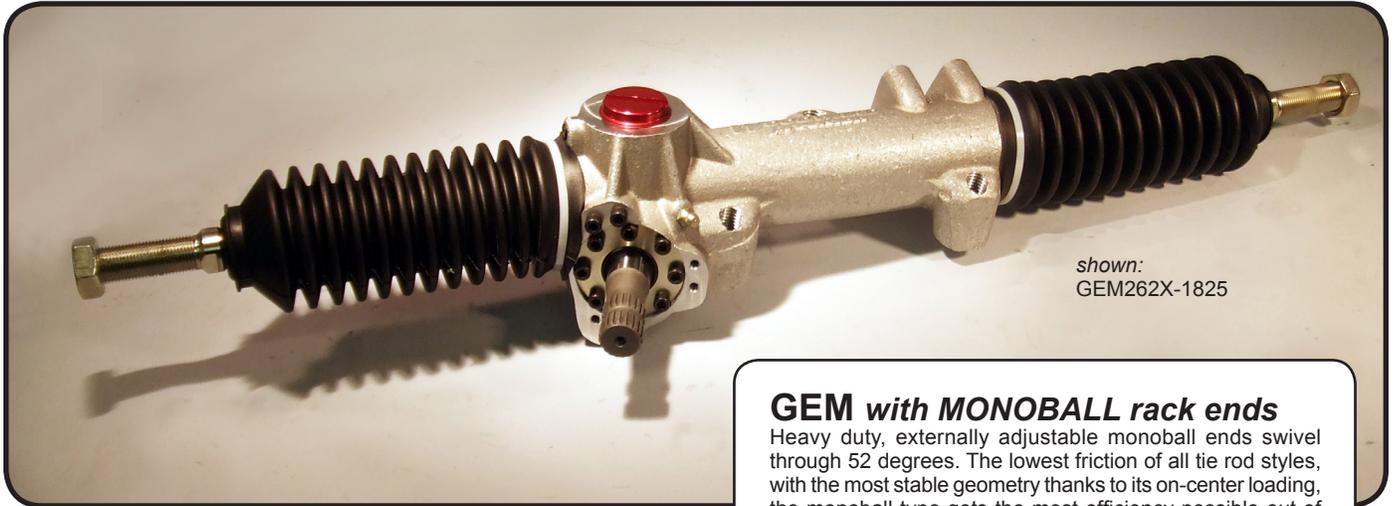
- (1) The conditions of end use are normally hazardous and unpredictable, and are entirely beyond our control; and*
- (2) The decision as to the suitability of said components for a particular manner of use, or in a particular installation, is made by the user and is likewise beyond our control.*

Liability of Woodward Machine Corporation is therefore limited to the replacement or repair, at our option, of any of our products that we find, upon our inspection, to be defective in materials or workmanship, specifically excluding items damaged as a result of collision, misuse, or neglect.

## Type GE Manual Racks, lengths 16.25 to 19.75 inches

### General purpose **manual steering** applications

One-piece housing with heavy-duty rackshaft and all-ball-bearing pinion, available in three tie-rod styles. The large 1.25 (31,75mm) diameter rackshaft is more than 2.4 times stiffer in bending than a 1.0 (25,4mm) shaft and has correspondingly wider gear teeth, making it capable of handling the amplified input from a gearmotor-powered steering column.



shown:  
GEM262X-1825

### GEM with MONOBALL rack ends

Heavy duty, externally adjustable monoball ends swivel through 52 degrees. The lowest friction of all tie rod styles, with the most stable geometry thanks to its on-center loading, the monoball type gets the most efficiency possible out of plain manual steering. Set bump steer using shims under the housing.

GEM209X-1625, -1725, -1825 .....	564.90
GEM236X-1625, -1725, -1825 .....	564.90
GEM262X-1625, -1725, -1825 .....	564.90
GEM288X-1625, -1725, -1825 .....	564.90
GEM314X-1625, -1725, -1825 .....	564.90

A 18.25 monoball rack has 6+ inches travel; a 17.25 rack has 5 inches travel; a 16.25 rack has 4 inches travel

Ratios available are 2.09, 2.36, 2.62, 2.88, and 3.14 inches per turn. Ratios quicker than 3.14, although available on special order, are not listed here because they are not generally practical without power assist.

The housing is machined with mounting provisions for later conversion to power steering using the convenient bolt-on GE150B or -C hydraulic cylinder with the appropriate rod bracket. Other parts required are servo, pump, reservoir and hoses (for details see the catalog section showing Power Steering System Components, or the section with GE and HE power racks).



### GEC with CLEVIS rack ends

Includes 5/8 rod ends with 1/2 bolts in double shear. Set bump steer by adjusting the rod ends in the slots. Note that clevises occupy more of the rackshaft than monoballs, so the rack travel is shorter for a given rack length.

GEC209X-1825, -1925, -1975.....	564.90
GEC236X-1825, -1925, -1975.....	564.90
GEC262X-1825, -1925, -1975.....	564.90
GEC288X-1825, -1925, -1975.....	564.90
GEC314X-1825, -1925, -1975.....	564.90

A 19.75 or 19.25 clevis rack has 5.9 inches travel; an 18.25 rack has 5 inches travel



### GE with 5/8-18 vertical holes

Rack is machined with traditional 5/8-18 bolt holes for mounting 5/8 rod ends in single shear. Set bump steer using spacers under the rod ends and/or shims under the rack housing.

GE209X-1725, -1825.....	512.40
GE236X-1725, -1825 .....	512.40
GE262X-1725, -1825 .....	512.40
GE288X-1725, -1825 .....	512.40
GE314X-1725, -1825.....	512.40

Note: this rack end style has no travel stop other than compression of the rubber boots

## Type GL Manual Rack, lengths 20.00 to 31.50 inches

### General purpose *manual steering* applications

Designed to accommodate the longer rack lengths typical of GT race cars, the housing is made to support the rackshaft proportional to its length, with no more overhang than necessary for the required rack travel. Although they can be supplied on special order, ratios quicker than 3.14 are not listed since these are generally not practical to use without power assist. Available in all three tie-rod styles, GLM (monoball), GLC (slotted clevis) and GL ("standard" vertical bolt).

shown:  
GLM262X-2400



#### GLM with MONOBALL rack ends

Heavy duty, externally adjustable monoball ends swivel through 52 degrees. Bump steer is set using shims under the rack housing. *This is the preferred design for all manual steering applications but the rack length and mounting height should be established within fairly close limits. For help with steering geometry, click the Detailed Tech Info button on the home page.*

GLM209X-2000 thru -3150.....	761.25
GLM236X-2000 thru -3150.....	761.25
GLM262X-2000 thru -3150.....	761.25
GLM288X-2000 thru -3150.....	761.25
GLM314X-2000 thru -3150.....	761.25

The two-bolt rack mounting method of the GL series is fabricator-friendly; the chassis bracketry can be a simple 1/4 flat bar with 1/2 inch holes.

Rack lengths other than those listed are available on special order.

For manual steering applications, monoball rack ends are by far the preferred style. They require lower steering effort because they are directly connected on the axial centerline of the rackshaft and do not impose offset loads.

#### GLC with CLEVIS rack ends

Includes 5/8 rod ends with 1/2 bolts in double shear. Set bump steer by adjusting the rod ends in the slots. Since clevises occupy more of the rackshaft than monoballs, the housing on clevis racks is shorter so as to allow the same rack travel. Bump steer is set by adjusting the rod ends vertically in the slots and/or using shims under the rack housing.

GLF209X-2000 thru -3150.....	761.25
GLF236X-2000 thru -3150.....	761.25
GLF262X-2000 thru -3150.....	761.25
GLF288X-2000 thru -3150.....	761.25
GLF314X-2000 thru -3150.....	761.25



#### GL with 5/8-18 vertical holes

The rack is machined with traditional 5/8-18 bolt holes for mounting 5/8 rod ends in single shear. Set bump steer using spacers under the rod ends and/or shims under the housing.

GL209X-2000 thru -3150.....	698.25
GL236X-2000 thru -3150.....	698.25
GL262X-2000 thru -3150.....	698.25
GL288X-2000 thru -3150.....	698.25
GL314X-2000 thru -3150.....	698.25

*Note: this rack end style has no travel stop other than compression of the rubber boots.*

