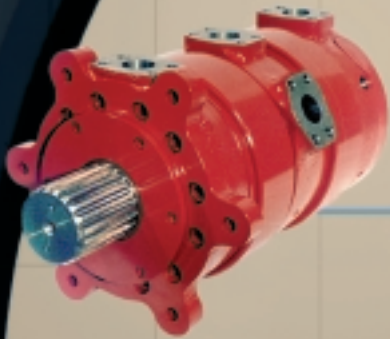




# Product

*With over 50 displacements to choose from, combined with optional features, Rineer Hydraulics is uniquely positioned to meet or exceed the demands of today's industrial requirements.*

## OVERVIEW



**125 Series**

*4-ported motor*



**125 Series**

*standard motor*



**57 Series**

*standard motor*



**37 Series**

*standard motor*



**15 Series**

*standard motor*

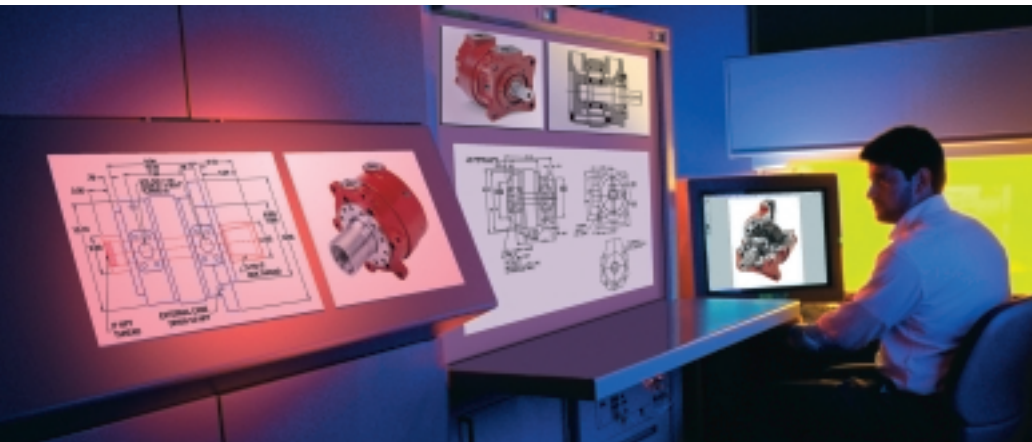
W e l c o m e t o



Rineer Hydraulics was formed in 1967 and has been supplying hydraulic motors to the marketplace for over 30 years. Applications in industrial, marine, and mobile industries have been the proving ground for our durable and adaptable high-torque motors.

## Research & Development

We constantly strive to improve our motors, testing a diverse range of ideas and materials. A team of dedicated engineers working with a state-of-the-art CAD System responds quickly to customer requests. Once a design modification is completed, drawings are forwarded to a separate manual department for machining. Upon completion, units are sent to the R&D Lab for extensive mechanical and hydraulic testing. The lab is equipped with computer monitored dynamometers with capabilities exceeding 1000 horsepower. Coupled with numerous special devices, we can perform a wide array of testing. Customers are welcome to share ideas with our staff in order to assure complete satisfaction.



**Current production** motors include 6 through 250+ cubic inch displacement, with a variety of shaft and bearing arrangements to fit most requirements. The unique, patented design of the Rineer motor creates the optimum power to weight ratio available for a given displacement.

**Our major effort** is devoted to providing our customers with a reliable and performance proven product, while working in concert with them to solve unusual or difficult applications. We are driven

to find a better solution for our customers, and as a part of that process we are continuously improving and broadening our product line.

**All major components** of the Rineer Motor (i.e., housings, valve plates, shafts, etc.) are produced in-house on modern production machines assuring control over tolerances and quality. Each motor is assembled and dynamometer tested to insure it will perform to the high expectations our customers have come to depend upon for their demanding applications.

### *A Few of Our Options...*

- 2-speed versions
- Double motors for higher torque and high speed
- Through hole shafts
- High load radial & thrust bearings
- Drill motor versions w/API threads
- Displacement choices beyond catalog listings
- High Performance series for increased pressure and speeds

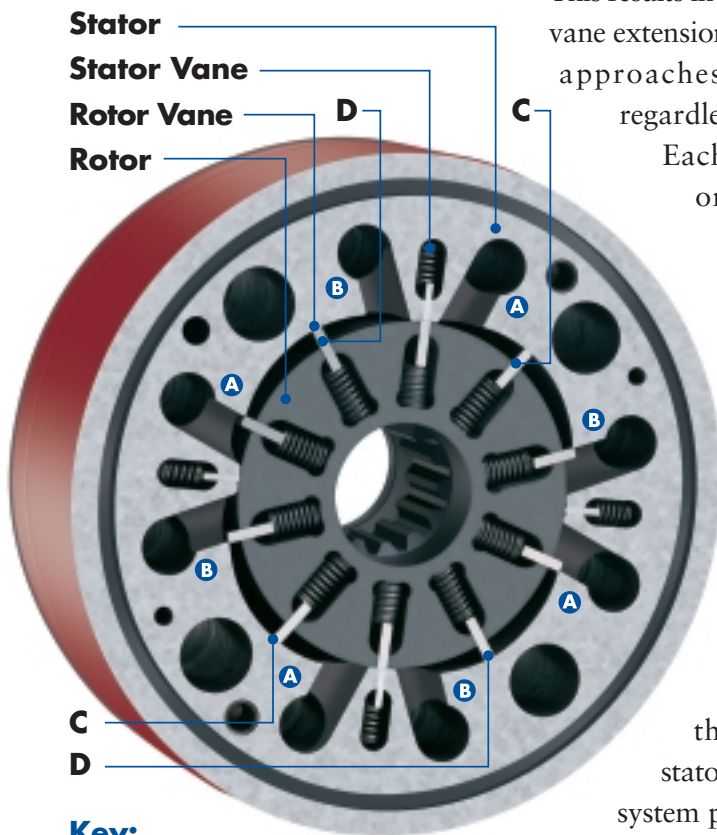
**Made in USA**

# features & advantages

**At the heart** of the Rineer motor is a patented vane crossing vane design, a unique idea in fluid power transmission. This design allows for low speed high torque and high speed high torque, making it one of the most versatile motors in the industry.

**The Rineer motor is** a bi-rotational rotary power converter utilizing working vanes in the rotating member (rotor) and sealing vanes in the stationary member (stator), see figure below. These vanes are hydraulically and spring loaded, and are radiused on their

## 15 Series rotor-stator package



**Key:**  
Refer to text.

crossing edges. The rotor vanes, when acted upon by a differential pressure, exert rotational force on the rotor. As oil enters the “A” ports, the rotor turns clockwise towards the “B” ports. As each rotor vane is finishing its work cycle in a cavity, the next vane starts its work cycle in that cavity.

**There are four rotor vanes** working at any given time. For example, as the two vanes marked “C” have just started their work cycle and are continuing to “cam out”, the two vanes marked “D” are just past the midpoint of their work cycle and are camming back. This results in approximate constant vane extension therefore the output approaches constant torque regardless of radial location.

Each rotor vane works once per cavity per revolution resulting in 40 power strokes in a four-cavity (10 rotor vane) motor.

As the rotor vanes approach the stator vanes, only the radius of the vane tips come into contact, allowing each vane to ride past the other. Rotor and stator vanes have the same system pressure behind them.

**The stator vanes** function as high pressure to low pressure seals between adjacent inlet and outlet ports. This enables the incorporation of more working cavities in less area, thus improving both the mechanical and volumetric efficiencies.

## The PC Advantage (Pressure Balanced)

New versions of the Series 37, 57 and 125 motors, called “PC,” have been introduced to replace the original design. With this recently patented feature, the timing plates are hydraulically balanced with approximately equal force towards the rotor to better control crossport and case leakage.

PC motors operate with increased efficiency over the entire performance range relative to the original design. They retain the excellent low-speed torque efficiency of the original, but have *improved overall efficiency*.



## THE RINEER VANE-CROSSING-VANE DESIGN

### Stall & Starting Torque

The torque curves are virtually flat with maximum torque output at start and stall conditions.

### More Power Strokes Per Revolution

The 15, 37 and 57 Series have four stator cavities and 10 rotor vanes while the 125 Series has six stator cavities and 16 rotor vanes. Since each rotor vane works in each stator cavity once per revolution, the 15, 37 and 57 Series have 40 power strokes per revolution; the 125 Series has 96 power strokes per revolution.

### Smaller & Lighter than Typical Motors

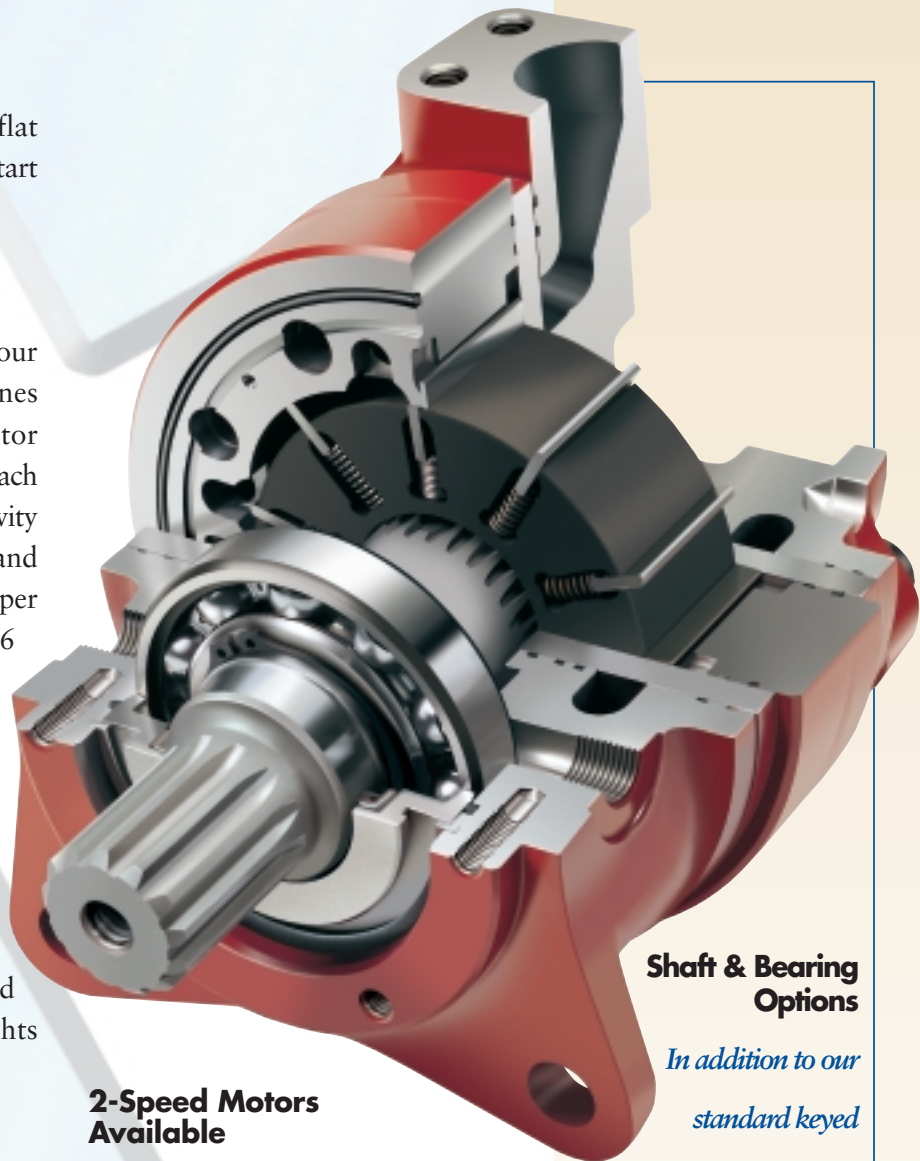
The Rineer design results in a smaller and lighter envelope package for a given displacement. For example, a 15 cubic inch motor weighs only 43 pounds and the 125 cubic inch motor weighs only 225 pounds.

### Smooth Output Over a Wide Speed Range

The increased number of power strokes per revolution, plus the flat torque curve, generates a smooth operation from less than 10 rpm to 2000 rpm and beyond, depending on the series.

### Improved Efficiencies

The use of stator vanes plus the overall smaller package size improves the volumetric efficiency. Mechanical efficiency is enhanced due to more working rotor vanes coupled with low breakaway pressures.



### Shaft & Bearing Options

*In addition to our standard keyed and splined shaft motors, we offer special mounts, shafts, and bearing designs to suit the needs of the OEM.*

### 2-Speed Motors Available

15 Series motors are available in 2-speed versions. The rear housing incorporates a spool valve which shifts between full and partial displacement. 2 or 3-speed can be achieved with 37, 57, and 125 series 4-port models. External valving is required to shift from one or two cartridge mode.

### Dynamic Braking

The motor is constructed of hardened materials and does not include any non-ferrous metals. This is a plus when designing for dynamic braking and overrunning loads. The cavitation that typically occurs in these circuits seldom affects the integrity of the motor.



# *a p p l i c a t i o n s*



**Rineer Hydraulics has over 30 years experience designing and manufacturing hydraulic motors for a wide variety of applications. Unlike most other hydraulic manufacturers, we are dedicated solely to the production of hydraulic motors.**

Whether your industry is the oil field, marine, forestry, agriculture, transportation, construction or communications, we provide thorough application and design expertise. Tough jobs are the norm.

Unlike most other hydraulic motors, the distinctive design of the Rineer Rotating Element lends itself to a wide variety of special applications. Drill heads have become a natural extension of the product line due to through-hole capability of the shaft. Rineer drillheads are currently in service on underground mining, water well, blast hole, and horizontal directional drills. The through-hole shaft is also used in our unique coaxial style motors. This product is comprised of two motors with one shaft being driven through the center of the other. The two motors are independent of each other and shafts may be rotated at different speeds and directions. Another variation of this hollow shaft motor is the piggyback. In this design, two independent motors are combined by plugging one motor directly into the shaft of the other. These unique through-hole shaft motors can be customized to fit your application.

15 Series motors are available with a retractable shaft design which allows the shaft to be disengaged from a gearbox or drive train. These motors are available with manual or hydraulic shift. The 15 Series is also available as a combination motor/flow divider used to synchronize speeds of independent actuators. In this design, inlet flow is divided with a portion of the flow powering the motor. The remaining flow is diverted to a third port supplying oil to a second actuator.

The new 4-port motor is now available in the 37, 57, and 125 Series. These motors are made up of two rotary elements separated by a center housing. Equal or dissimilar displacements may be combined to attain desired total CID. When supplied with external valving, they can be used as either 2 or 3-speed motors.

*Our new high-performance motor* (5000 PSI & higher speeds) is currently available for prototype applications. Models include 37, 57, & 125 Series.

*It is impossible to list all styles and applications in this overview. If you have a unique application or would like to learn more about the Rineer Motor Line, please feel free to contact the factory at:*

**(210) 341-6333, or via the internet at [www.rineer.com](http://www.rineer.com)**

# d e s c r i p t i o n

## BY SERIES

Our Standard Motors are designed for 3000 psi continuous and 3500 psi intermittent. Torque ratings are actual @3000 psi. All motors are Dynamometer tested to insure performance.



**15 Series:** Brochure DS 151001. Eight fixed displacements ranging from 6 to 15 CID with torques from 216 ft. lbs. to 560 ft. lbs. Speeds to 2600 RPM. Conforms to SAE “C” mount.

**15 Series Two Speed:** Brochure DS 151002. Has the same displacement choices as the 15 series with the added feature of shifting from full to partial displacement via an integral valve.

**15 Series Wheel Motor:** Brochure DS 151003.

Incorporates large roller bearings that accommodate both radial and axial loads. Available in both single and 2-speed versions.

**15 Series Retractable:** Brochure DS 151004.

A unique concept that allows the shaft of the motor to be disengaged from the mechanism being driven.



**37 Series:** Brochure DS 371003. Six fixed displacements ranging from 12 to 37 CID with torques of 424 ft. lbs. to 1383 ft. lbs. Speeds to 1200 RPM. Conforms to SAE “D” mount.



**57 Series:** Brochure DS 571003. Two fixed displacements, 48 and 55.5 CID with torques of 1776 ft. lbs. and 2076 ft. lbs. Speeds to 600 RPM. Hybrid SAE “D” mount (longer pilot and larger shaft).



**37/57 Series 4-Port:** Brochure DS 37/571009. Combines any two displacements from the 37 and/or 57 series choices in a 4-port configuration. Allows for 2 or 3-speed operation using external valving.



**125 Series:** Brochure DS 1251003. Six fixed displacements ranging from 60 to 125 CID with torques from 2154 ft. lbs. to 4625 ft. lbs. Speeds to 350 RPM. By combining any two displacements, torque can be as much as 9245 ft. lbs.



**125 Series 4-Port:** Brochure DS 1251009. Combines any two displacements from 60 to 125 CID in a 4-port configuration for up to 250 CID. Allows for 2 or 3-speed operation using external valving.



**Drill Motors:** Available in 37, 57, and 125 Series as 2 or 4-port models with numerous bearing and shaft configurations, including API.

**For durable hydraulic motors that meet your demands, specify RINEER.**

For over 30 years, we have specialized in only one thing – engineering the right motor for your needs. Rineer delivers the performance you can count on.

### Limited Warranty Policy

Rineer Hydraulics warrants that, at the time of shipment to Purchaser, our product will be free of defects in the material and workmanship. The above warranty is LIMITED to defective products returned by Purchaser to Rineer Hydraulics, freight prepaid within four hundred and fifty-five (455) days from date of shipment, or one (1) year from date of first use, whichever expires first. We will repair or replace any product or part thereof which is proved to be defective in workmanship or material. There is no other warranty, expressed or implied, and in no event shall Rineer Hydraulics be liable for consequential or special damages. Dismantling the product, operation of the product beyond the published capabilities or for purposes other than that for which the product was designed, shall void this warranty.

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