

High Torque Vane Motors

MV015, MV037, MV057, MV125



Unique vane crossing vane design provides maximum versatility

This motor is created around the patented “vane crossing vane” design, a leading-edge concept in fluid power transmission, which allows for low speed/high torque and high speed/high torque. With over 50 displacements combined with a variety of optional features, this is one of the most versatile hydraulic motors in the world.

Optimum power-to-weight ratio

Four frame sizes with displacements ranging from 6 to 250+ cubic inch (98 to 4096+ cc) displacements (CID).

Starting & stall torque

Applications requiring maximum torque at zero rpm benefit from the vane crossing vane design. Torque curves are virtually flat, with maximum torque at start and stall conditions.

Smooth output over a wide speed range

From less than 10 rpm to 2000 rpm and beyond, this motor generates low torque ripple and steady acceleration for smooth operation.

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 does not affect motor integrity.

4-ported series

4-port motors are available in the 37, 57, and 125 Series. These motors are made up of two cartridges separated by a center ported housing. Equal or dissimilar displacements may be combined to attain desired total cc/rev (CID). When supplied with external valving, they can be used as either 2- or 3-speed motors.

High performance series

The 37D, 57D, and 125H are now part of the family of motors. This high performance design is for 4500 psi (310 bar) “continuous” service, and boosts torque and horsepower by 50% providing the same wide speed range of standard motors.

The power difference –

Vane crossing vane patented technology

The vane crossing vane motor is a bi-rotational power converter utilizing working vanes in the rotating member (rotor) and sealing vanes in the stationary member (stator).

With 10 rotor vanes working in four cavities, the motor provides an uninterrupted output torque regardless of angular position. This equates to 40 power strokes per revolution, delivering higher average torque with low torque ripple.

The stator vanes function as seals between high- and low-pressure ports within the stator. This allows for more displacement in the stator, giving the motor an optimum power-to-weight ratio.

With this patented technology (vane crossing vane design), the motor produces improved mechanical and volumetric efficiencies—the **Power Difference**.



The broadest vane motor product line for a variety of fluid power demands



▲ **MV015 – 2000 rpm, 509 lb-ft (690 Nm)**
Offered in single, two-speed, double output shafts, wheel-bearing style, and retractable shafts along with splined, tapered, or straight keyed shafts. Through-hole and thrust bearing options also available. SAE C mount.



▲ **MV057 – 500 rpm, 3016 lb-ft (4089 Nm)**
Offered in A [3000 psi (207 bar)] or D version [4500 psi (310 bar)]. The same features offered in the 37 Series are available in a motor that's one inch longer. Modified SAE D mount.



▲ **MV037 – 1000 rpm, 2007 lb-ft (2721 Nm)**
Offered in A [3000 psi (207 bar)] or D version [4500 psi (310 bar)]. Splined, tapered, straight keyed, and double output shafts are standard, along with through holes to 1 1/2". Optional thrust and radial load bearings with substantial capacity, tach pickups, double stacks (up to twice the torque), and brake mounts available. SAE D mount.



▲ **MV037/057 4-Port – 500 rpm, 6032 lb-ft(8178 Nm)**
Combines any two displacements from the 37 and/or 57 series displacement choices in a 4-port configuration. Allows for 2- or 3-speed operation using external valving. Available in both A and D designs. Many of the same optional choices listed above are available.

High-torque motors manufactured to the tightest tolerances for maximum volumetric efficiencies



▲ MV125 – 300 rpm, 6903 lb-ft (9359 Nm)

Offered in A [3000 psi (207 bar)] or H version [4500 psi (310 bar)]. Splined, tapered, straight keyed, female, and double output shafts are standard, along with through holes to 3". Optional thrust and radial load bearings with substantial capacity, tach pickups, double stacks, and brake mounts available.



▲ Drill Motors

Available in 37, 57 and 125 series as 2 or 4 port models. Numerous bearing/shaft configurations and through-hole options are available, including API box threads. Sublock system is standard.



▲ MV125 4-Port – 300 rpm, 13,806 lb-ft (18,718 Nm)

Combines any two displacements for the 125 A or H series in a 4-port configuration. Allows for 2- or 3-speed operation using external valving.



▲ Cross Series 4-Ports

37, 57 and 125 Series can have a rear motor from a smaller series, including the 15 Series. This allows for many displacement combinations or speed ratios when used in 2- or 3-speed circuits. Available in both pressure designs.

Motor specifications

| Standard Series Code 61 | Displacement | | Pressure | | | | Speed | | *Torque @ 3,000 psi (207 bar) | |
|-------------------------|------------------------|------------------------|------------|-------|--------------|-------|------------|--------------|-------------------------------|------|
| | (in ³ /rev) | (cm ³ /rev) | Continuous | | Intermittent | | Continuous | Intermittent | Continuous | |
| | | | (psi) | (bar) | (psi) | (bar) | (rpm) | (rpm) | (lb-ft) | (Nm) |
| MV015 | 6 | 98 | 3000 | 207 | 3500 | 241 | 2000 | 2600 | 183 | 248 |
| | 7 | 115 | | | | | 1900 | 2600 | 230 | 312 |
| | 8 | 131 | | | | | 1800 | 2600 | 274 | 372 |
| | 9.5 | 156 | | | | | 1700 | 2300 | 308 | 418 |
| | 10.5 | 172 | | | | | 1600 | 2300 | 352 | 477 |
| | 11.5 | 188 | | | | | 1600 | 2300 | 395 | 536 |
| | 13 | 213 | | | | | 1500 | 2000 | 428 | 580 |
| | 15 | 246 | | | | | 1500 | 2000 | 509 | 690 |
| MV037 A, C | 12 | 197 | 3000 | 207 | 3500 | 241 | 1000 | 1200 | 410 | 556 |
| | 16 | 262 | | | | | 1000 | 1200 | 553 | 750 |
| | 20 | 328 | | | | | 1000 | 1200 | 722 | 979 |
| | 26 | 426 | | | | | 800 | 1000 | 920 | 1247 |
| | 32 | 524 | | | | | 700 | 950 | 1143 | 1550 |
| | 37 | 606 | | | | | 600 | 800 | 1315 | 1783 |
| MV057 A, C | 48 | 787 | 3000 | 207 | 3500 | 241 | 500 | 600 | 1702 | 2308 |
| | 55.5 | 909 | | | | | 500 | 600 | 1976 | 2679 |
| MV125 A, C | 60 | 983 | 3000 | 207 | 3500 | 241 | 350 | 400 | 2188 | 2967 |
| | 68 | 1114 | | | | | 350 | 400 | 2507 | 3399 |
| | 82 | 1344 | | | | | 300 | 350 | 3024 | 4100 |
| | 98 | 1606 | | | | | 300 | 350 | 3589 | 4866 |
| | 113 | 1852 | | | | | 300 | 350 | 4130 | 5600 |
| | 125 | 2048 | | | | | 300 | 350 | 4602 | 6239 |

* – Torque values are average performance data measured at maximum speeds with 102 SUS (21cSt) and standard rotating group.

Note:

- When considering double stack or 4-port motors, any two (2) displacements in a given series can be combined. The resultant torque is the sum of the two (2) displacements. This does not apply to the 15 series.
- Higher speeds may be permissible under certain conditions. Consult factory.

| High Performance Series Code 62 | Displacement | | Pressure | | | | Speed | | *Torque @ 4,500 psi (310 bar) | |
|---------------------------------|------------------------|------------------------|------------|-------|--------------|-------|------------|--------------|-------------------------------|------|
| | (in ³ /rev) | (cm ³ /rev) | Continuous | | Intermittent | | Continuous | Intermittent | Continuous | |
| | | | (psi) | (bar) | (psi) | (bar) | (rpm) | (rpm) | (lb-ft) | (Nm) |
| MV037 D | 12 | 197 | 4500 | 310 | 5000 | 345 | 1000 | 1200 | 637 | 864 |
| | 16 | 262 | | | | | 1000 | 1200 | 851 | 1154 |
| | 20 | 328 | | | | | 1000 | 1200 | 1104 | 1497 |
| | 26 | 426 | | | | | 800 | 1000 | 1399 | 1897 |
| | 32 | 524 | | | | | 700 | 950 | 1735 | 2352 |
| | 37 | 606 | | | | | 600 | 800 | 2007 | 2721 |
| MV057 D | 48 | 787 | 4500 | 310 | 5000 | 345 | 500 | 600 | 2553 | 3461 |
| | 55.5 | 909 | | | | | 500 | 600 | 3016 | 4089 |
| MV125 H | 60 | 983 | 4500 | 310 | 5000 | 345 | 300 | 350 | 3282 | 4450 |
| | 68 | 1114 | | | | | | | 3761 | 5099 |
| | 82 | 1344 | | | | | | | 4536 | 6150 |
| | 98 | 1606 | | | | | | | 5383 | 7298 |
| | 113 | 1852 | | | | | | | 6194 | 8398 |
| | 125 | 2048 | | | | | | | 6903 | 9359 |

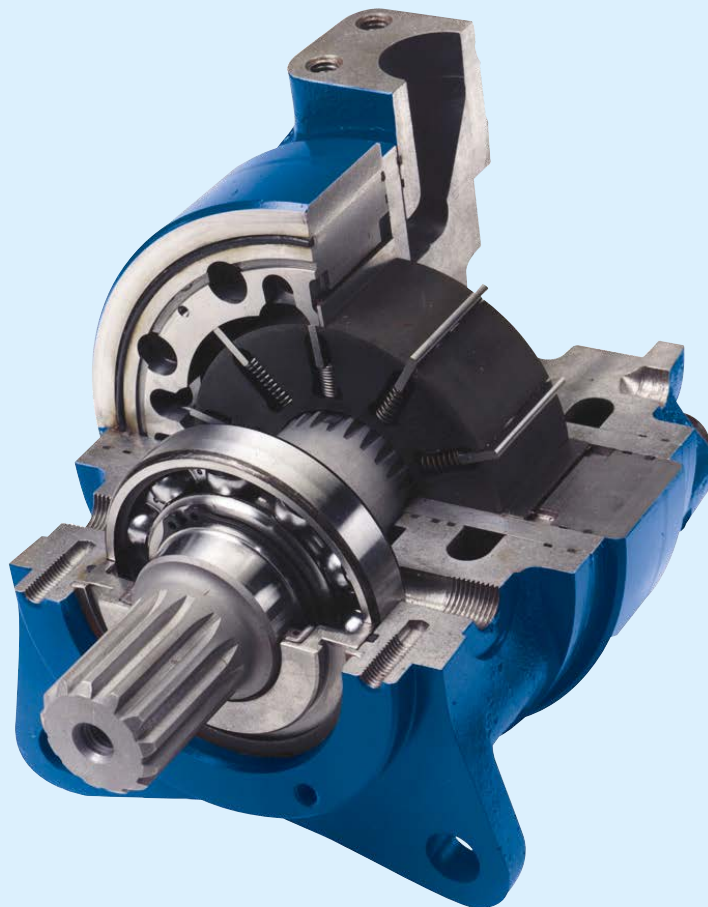
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2. Higher speeds may be permissible under certain conditions. Consult factory.

The first choice for the toughest jobs

- ▶ Augers
- ▶ Blast Hole Rigs
- ▶ Bow Thrusters
- ▶ Conveyors
- ▶ Coring/Drilling
- ▶ Directional Drills
- ▶ Fan Drives
- ▶ Feeder Mixers
- ▶ Injection Molding
- ▶ Planer Tables
- ▶ Power Tongs
- ▶ Pump Drives
- ▶ Roof Bolters
- ▶ Rotary Table Drives
- ▶ Shredders
- ▶ Timber Harvesting
- ▶ Top Head Drives
- ▶ Wheel & Tracks
- ▶ Winches



Driven to design better solutions to meet your unique needs

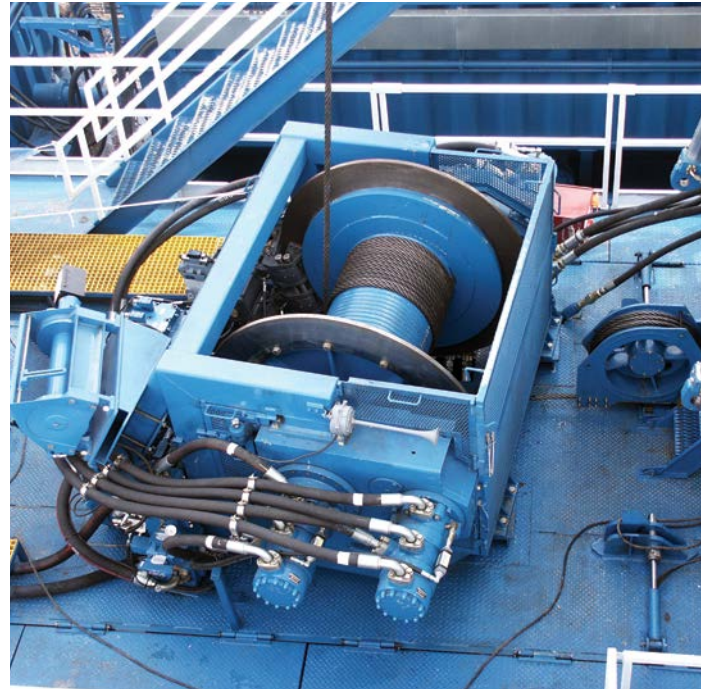
Working together, we constantly strive to deliver more power where you need it, when you need it, to get the job done!



◀ Caisson drill rigs use 4-ported motors along with a multi-speed circuit to vary bit rpm and torque.

▲ Power tongs are a staple of the oil field. Our vane crossing vane motors have been providing the torque to make and break pipe joints for over 40 years.

Designed & manufactured to withstand the most demanding applications



◀ Vane crossing vane motors power top drives for oil and gas exploration.

▲ A large capacity winch is driven by two 4096 cc (250 cubic inch) motors plugged into the drum via a gearbox.

Engineering the right motors for over 40 years

Rineer Hydraulics, Inc. was formed in 1967, and is recognized worldwide as a leading manufacturer of quality hydraulic motors. Rineer has been integrated with Bosch Rexroth since 2008 and is a strong complement to our hydraulic portfolio.

Highly skilled engineers

Our team of dedicated engineers, working with a state-of-the-art CAD system, responds quickly to customer requests.

Extensive R&D testing

Once a design modification is completed, drawings are forwarded to manufacturing for machining. Upon completion, units are sent to the R&D Lab for extensive mechanical and hydraulic testing.

State-of-the-art equipment

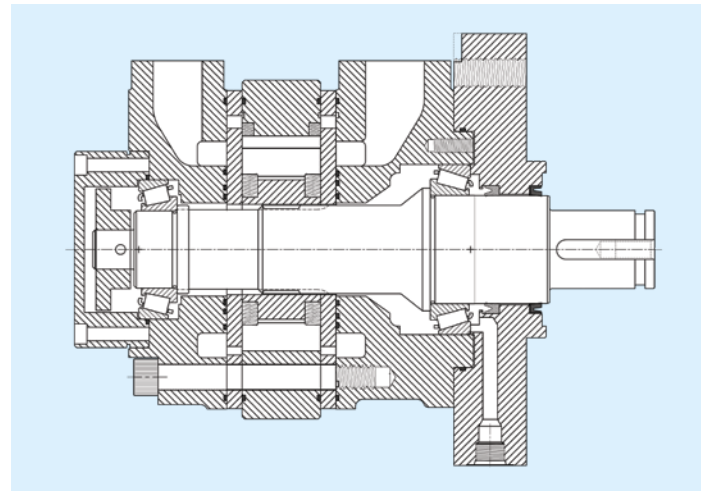
The lab is equipped with computer monitored dynamometers with capabilities exceeding 1,000 horsepower. Coupled with numerous special devices, we can perform a wide array of testing.

Quality assurance

To ensure maximum control over tolerances and quality, all major components of the vane crossing vane motor are manufactured in-house using the latest technology.

Customer satisfaction is our priority

Our company mission is to provide our customers with a reliable, performance-proven product. Customers are welcome to share ideas with our staff in order to assure complete satisfaction.



- ▲ Customized motor with customer specified shaft and mount
- ▲ Load specific bearing selection
- ▲ Speed sense capability

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