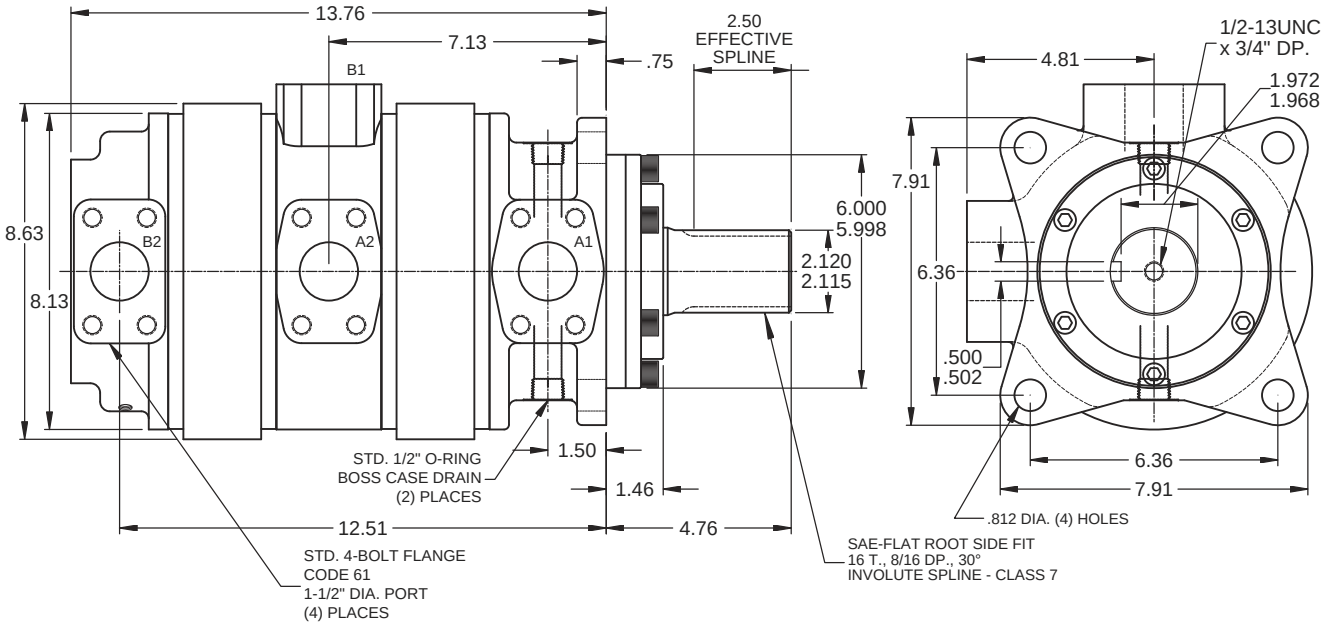
Motor Selection Guide

Features of the 37- 57 Series 4-Port Motor: Standard Motor - 3000 PSI (Code 61)

- A variety of fixed displacement motors ranging from 24 in³ to 111 in³.
- Two-speed operation w/ external valving.
- Starting and stall torques equal to 90-94% of theoretical torque.
- Speeds to 1,000 RPM continuous.
- Up to 190 HP continuous.
- Modified SAE 'D' mounting specification.
- Weight - 37S 171 lbs. / 57S - 205 lbs.



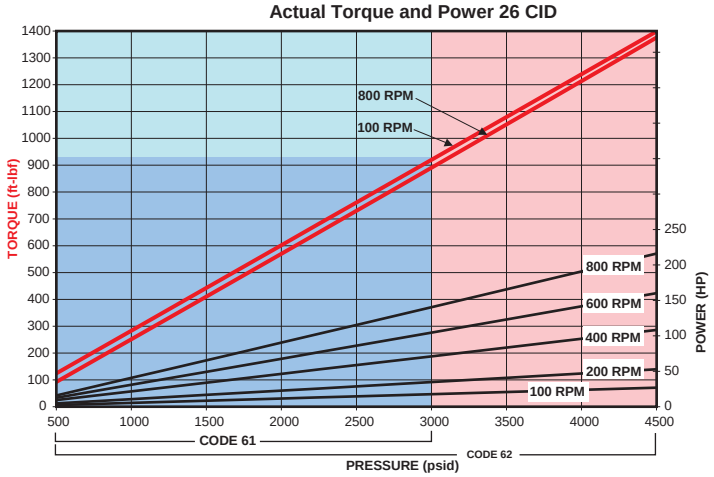
Rexroth
Bosch Group

Performance Data

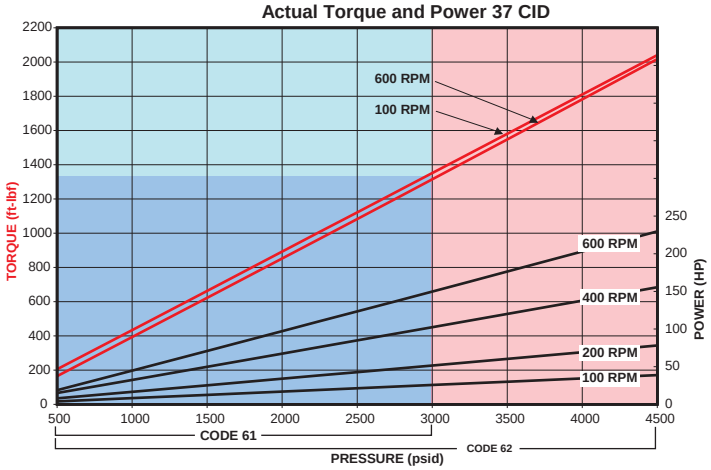
Charts shown are for 26 and 37 CID. See website at www.rineer.com for additional charts. Performance data obtained at 140°F with ISO 46 (DTE 25). Code 61 and 62 data shown. Code 62 extended data applies only to Code 62 High Pressure Series motor.

VANE CROSSING VANE - With it's vane crossing vane design, the Rineer motor produces much higher volumetric and mechanical efficiencies than is possible with a standard vane type design. This design provides a sealing vane between stator cavities to improve mechanical and volumetric efficiencies.

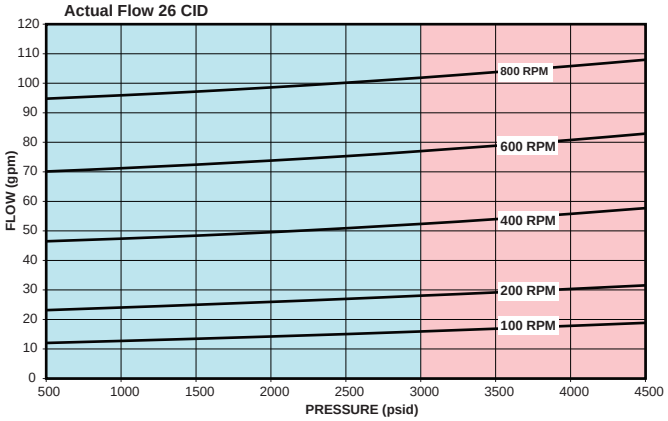
Actual Torque and Power 26 CID



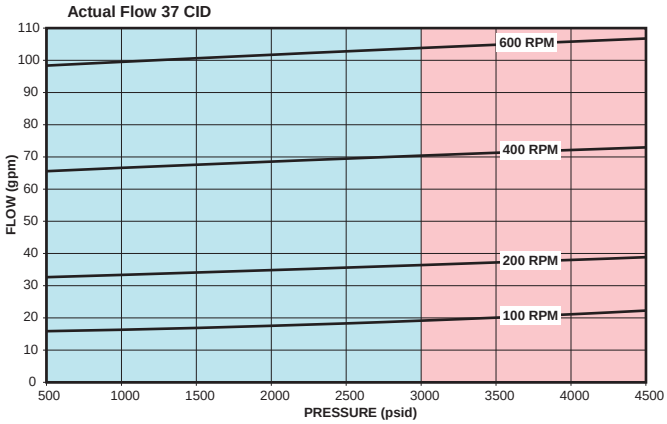
Actual Torque and Power 37 CID



Actual Flow 26 CID



Actual Flow 37 CID



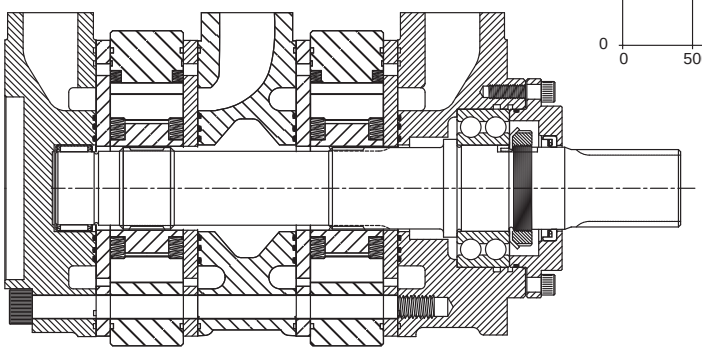
Performance of the Rineer 37 Series Motor has been greatly enhanced by internal design changes resulting in a pressure balanced rotating group. Benefits of this new design include reduced cross port leakage and increased efficiency as well as greater reliability at higher pressures. This patented design has been in effect for over 5 years.

Bearing Data - Standard Motor

BEARING LOADING - The bearings in the 37-57 Series 4-Port can accept radial load per the radial capacity charts to the right. Thrust loading is not recommended for the standard motor. For thrust-type applications, see the thrust capable motor bearing chart on the opposite page.

HORSEPOWER LIMITATION - Maximum horsepower limitation may vary with different applications. When using the 37 Series standard motor above 175HP, or the 57 Series standard motor above 190HP, consult a Rineer Application Engineer.

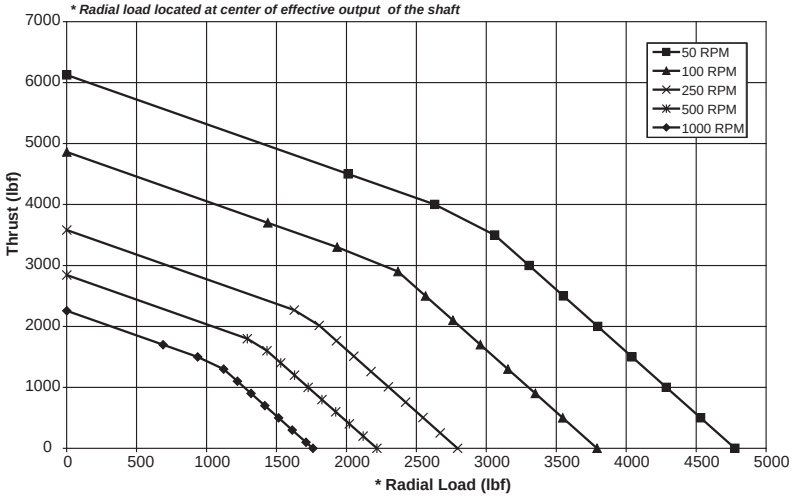
CONFIGURATION - 4-Port motors have displacements ranging from 24 in3 to 111 in3 and are comprised of two rotor stator packages, one located on either side of a center housing. Any of the single stacked rotor stator packages may be used to form a 4-Ported motor. This would include combining a 37 and 57 package, if desired.



B3: 5212C, B3216

COMBINED LOAD AT 3,000 HRS L_{10} BEARING LIFE

** Radial load located at center of effective output of the shaft*



Envelope - Double Spline

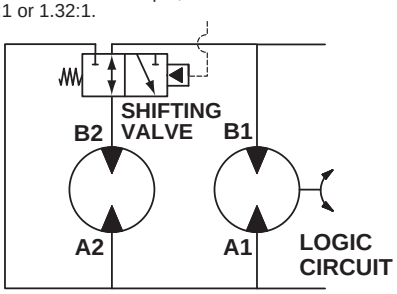
STARTING AND STALL TORQUE
The Rineer motor produces torque curves which are virtually flat, with starting and stall torque equal to approximately 90-94% of theoretical torque.

MORE POWER STROKES PER REVOLUTION
The 37-57 Series has four stator cavities and 10 rotor vanes. Each rotor vane works in each stator cavity once per revolution, which results in 40 power strokes per revolution. This helps produce higher mechanical efficiency and flatter torque curves.

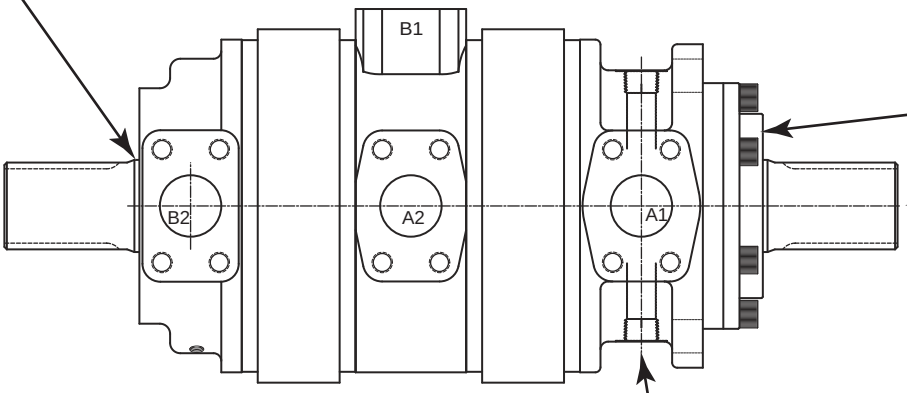
4-PORTED MOTOR CONFIGURATION
4-Ported motors have displacements normally ranging from 24 in^3 to 111 in^3 (in a 57 package configuration) and are comprised of two rotor stator packages separated by a mid-inlet housing. This allows the packages to function individually or in parallel. Any of the standard displacement packages may be combined to satisfy total displacement requirements. The 37 Series 4-Ported Motor is available with the standard splined shaft extending through both the front and rear housings.

CASE DRAIN AND CROSS PORT LEAKAGE
The combined case drain and cross port leakage of the 37 Series motor is approximately 1 GPM per 1,000 PSI per package. This will vary with the oil viscosity and internal clearance selection.

TWO SPEED OPERATION - The 4-ported motor can be used as a two-speed when combined with external valving. Either series/parallel or logic circuits can be used. Series/parallel circuits can only be used when both cartridges are of equal displacement. Logic circuits can be used with equal or unequal displacement cartridges. When using a logic circuit, it should be plumbed to insure adequate mixing and cooling of oil in the circulating cartridge while in partial displacement. Particular attention should be given to the size and flow capacity of the shifting valve, as it must handle the displacement of the circulating cartridge when in the high speed mode. For example, a 37 C.I.D. + 12 C.I.D. = 49 C.I.D. with speed ratios of 4.08:1 or 1.32:1.



SEALS - Viton shaft seals are supplied standard. Buna N static seals are supplied standard. Viton static seals may be ordered as an option.



MODIFIED SAE 'D' MOUNTING - The 37-57 Series 4-Port mounting configuration conforms to a modified SAE 'D' 4-bolt specification, with the exception of the omission of the undercut on the splined shaft.

The mounting position is unrestricted. The shafts, pilots, and mounting faces should be within .002 TIR.

ROTATION - The 37-57 Series motor rotates equally well in either direction and smoothly throughout its entire pressure and speed range. Looking into the end of the shaft, rotation is clockwise when oil is supplied to the ports nearest the shaft output end (A1 and A2).

FLUID - We suggest premium grade fluids containing high quality rust, oxidation and foam inhibitors, along with anti-wear additives. For best performance, viscosity should be maintained between 100 and 200 SUS at operating temperature. Fluid temperature should not exceed 180°F. Elevated fluid temperature will adversely affect seal life while accelerating oxidation and fluid breakdown. Fire resistant fluids may be used with certain limitations. Contact Rineer for additional information.

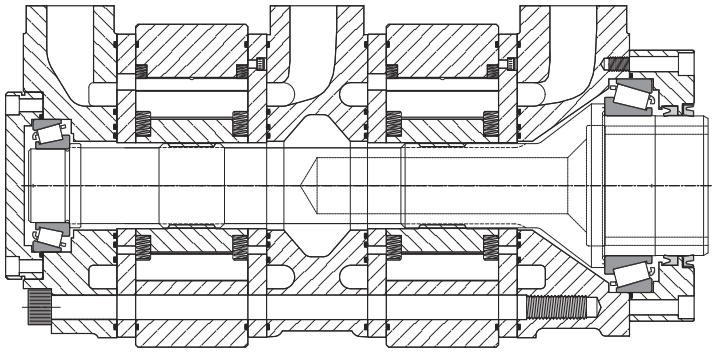
FILTRATION - 25 micron minimum.

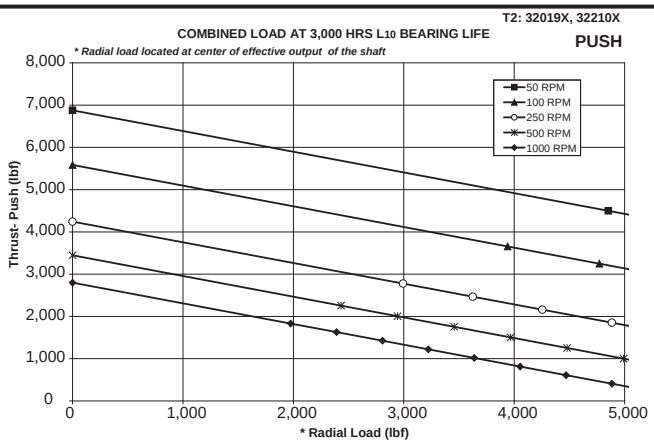
CASE DRAIN - The 37 Series motor requires an external case drain. Two case drain ports are supplied; use the port at the highest elevation. We recommend case pressure of less than 35 PSI.
CASE DRAIN CIRCULATION - Fluid should be circulated through the two case drain ports when a temperature differential exists between the motor and the system in excess of 50°F. ***Should this occur, contact a Rineer Application Engineer.***

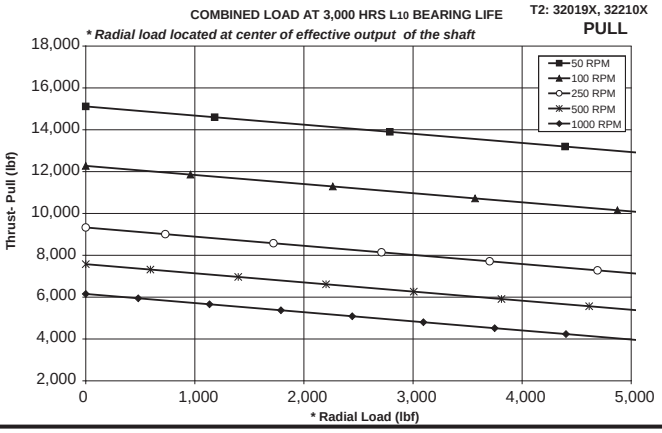
Bearing Data - Thrust Capable

BEARING LOADING THRUST CAPABLE -
The bearings in the 37-57 Series Thrust capable motor can accept thrust and radial load per the push/pull capacity charts to the right. Thrust loading is allowed up to the parameters indicated on the charts with shaft configurations including standard keyed and splined as well as the female shaft type shown below. For applications not requiring thrust, see the standard motor bearing charts on the opposite page.

HORSEPOWER LIMITATION -
Maximum horsepower limitation may vary with different applications. When using the 37 Series standard motor above 175HP, or the 57 Series above 190HP, consult a Rineer Application Engineer.







Model Code

M037(057) - A4 -1S -037 -31 -B1 -TBB -000

M037 = Motor Series
M057 = Motor Series

Port Options:

A4 = 4-Port model w/ 4-Bolt Flange ports

C4 = 4-Port model w/ O-Ring Boss ports

Rotary Group Designation
1S = Code 61 - Standard
1L = Code 61 Low Speed

Displacement Options

4-PORT 37:
024 = 24 in^3 (393cc)/rev.
032 = 32 in^3 (525cc)/rev.
036 = 36 in^3 (590cc)/rev.
040 = 40 in^3 (656cc)/rev.
046 = 46 in^3 (754cc)/rev.
052 = 52 in^3 (852cc)/rev.
058 = 58 in^3 (951cc)/rev.
064 = 64 in^3 (1049cc)/rev.
068 = 68 in^3 (1115cc)/rev.
069 = 69 in^3 (1131cc)/rev.
074 = 74 in^3 (1213cc)/rev.

4-PORT 57:
096 = 96 in^3 (1573cc)/rev.
104 = 104 in^3 (1705cc)/rev.
111 = 111 in^3 (1819cc)/rev.

30 = Keyed Shaft
31 = Splined Shaft
34 = Double Key
35 = Female Key
36 = Female Spline
40 = Double Spline
41 = Tapered Thrust
42 = Keyed w/Opt
43 = Splined w/Opt
44 = Tapered w/Opt
52 = Smooth Shaft
53 = API Thread

Special Code Designator

Seal - Package Selection

Bearing Package Selection

Applications

For durable hydraulic motors that meet your demands, specify Rineer.

For over 35 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, Inc. 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, Inc., 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, Inc. 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.