Features of the 15 Series Standard Motor: Standard Motor - 3000 PSI (Code 61)

- Eight fixed displacement motors ranging from 6 in³ to 15 in³.
- Starting and stall torques equal to 90-94% of theoretical torque.
- Speed to 2,000 RPM continuous.
- Up to 75 HP continuous.
- Conforms to SAE 'C' mounting specification.
- Weighs 43 lbs.
15 Series Wheel Motor

- Tapered roller bearings for radial and axial loading.
- Available in single or two speed.
- Eight displacements ranging from 6 in³ to 15 in³.
- Envelope dimensions remain the same regardless of displacement.
- Starting and stall torques equal to 90-94% theoretical torque.
- Speed to 2,000 RPM continuous.

15 Series Two Speed

- All available displacements of standard motor.
- Spool valve shift from full to partial displacement.
- Standard shift ratio is 2:1 - Some special ratios available.
- Shift on the run.
- Typical applications - winch, track and wheel drives.

15 Series Retractable

- Shaft easily retracted from driven mechanism while allowing full torque through SAE C mount.
- Manual rear knob for fast, easy disengagement.
- Spring loaded shaft engages easily back into mechanism.
- Shaft held in retracted position by user supplied spacer between knob and rear housing.
VANE CROSSING VANE
The Rineer patented vane crossing vane design produces much higher volumetric and mechanical efficiencies than is possible with a standard vane type design. This design provides a sealing vane between cavities to improve mechanical and volumetric efficiencies.

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 15 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.

BEARING LOADING
The bearings in the 15 Series can accept radial load per the radial capacity chart. Thrust load is not recommended under most conditions. Consult with a Rineer Application Engineer for optional bearing configurations to match your application.

SEALS
Buna N seals are supplied as standard on the Rineer 15 series motors. Viton seals may be ordered as an option.

ROTATING GROUP - 1S or 1H
Under most operating conditions, 1S (standard rotating group parts) should be used. Under some high speed conditions 1H can be specified.

ROTATION
The 15 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 port "A".

HORSEPOWER LIMITATION
Maximum horsepower limitations may vary with different applications. When using the 15 Series Motor above 75 HP, consult a Rineer Application Engineer.

FILTRATION
25 micron minimum.

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.

CASE DRAIN
The 15 Series Motor is designed for either internal or external case drain. Two case drain ports are supplied. When using internal case drain, simply plug the two ports. When using external case drain, use the port at the highest elevation. We recommend case drain pressure of 35 PSI or less when using the standard seals.

CASE DRAIN CIRCULATION
Fluid should be circulated through the case when a temperature differential exists between the motor and the system in excess of 50°F. Should this occur, contact a Rineer Application Engineer.

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

INTERMITTENT CONDITIONS
Intermittent conditions are to be less than 10% of every minute.

OTHER AVAILABLE MOTORS
For information on additional Rineer Motors, request one of the following publications:
- 37 Series ..............................................Publication DS371003
- 57 Series ..............................................Publication DS571003
- 125 Series ............................................Publication DS1251003

RETRACTING THE SHAFT
The shaft is spring loaded into the engaged position. Pulling on the knob attached to the shaft at the rear of the motor will move the shaft 1.25 inches into the motor.

CAUTION: Retracting the shaft must be done when the motor and driven mechanism are not in operation and are unloaded.

RE-ENGAGING THE SHAFT
This is accomplished by releasing the shaft, then rotating it clockwise until the splines of the shaft line up and engage the splines of the driven mechanism.

CAUTION: Re-engaging the shaft must be done when the motor and driven mechanism are not in operation and are unloaded.

BEARING LOADING
The 15 series Retractable is not suitable for applications which require radial or axial loading of the shaft.

MOUNTING
The mounting position is unrestricted. CAUTION: The shaft extension and knob at the rear of the motor rotates when the motor is in operation.
DISPLACEMENT CHANGE
When a motor is shifted from full to partial displacement the motor is changed to 50\%, 35\%, or 28\% of its original displacement depending on its shift ratio.

STANDARD SHIFT RATIO
The standard 15 Series displacements of 15, 13, 9.5, 8, 7, and 6 CID are available in the 15 Series Two Speed with a shift ratio of 2:1. For example, a 15 CID motor shifted to partial displacement becomes a 7.5 CID motor.

SPECIAL SHIFT RATIOS
There are two special displacements available in the 15 Series Two Speed which offer higher shift ratios, the 10.5 and the 11.5 CID. The 10.5 CID motor has a shift ratio of 3.5:1, which when shifted becomes a 3 CID motor. The 11.5 CID motor has a shift ratio of 2.875:1, which when shifted becomes a 4 CID motor.

SHIFTING METHOD
Selecting between full and partial displacement is accomplished by shifting the two-position spool valve incorporated in the motor. Motors are available in either single or double pilot configurations.

SINGLE PILOT
Single pilot motors require a pilot line to be connected to port "C". When port "C" is pressurized the spool shifts the motor to partial displacement. When port "C" is vented to tank, an internal spring shifts the spool, returning the motor to full displacement.

DOUBLE PILOT
Double pilot motors require two pilot lines. One line is connected to port "C" while the other line is connected to port "D". The motor is in full displacement when port "D" is pressurized and port "C" is vented to tank. The motor is in partial displacement when port "C" is pressurized and port "D" is vented to tank.

OPEN DURING CROSSOVER SPOOLS
Open during crossover spools allow port "A" to be directly connected to port "B" when the spool is shifting between full and partial displacement. Motors with -62 or -65 designs are open during crossover.

WARNING! IN SOME WINCH APPLICATIONS, OPEN DURING CROSSOVER SPOOLS (-62 or -65) ARE NOT RECOMMENDED.

CLOSED DURING CROSSOVER SPOOLS
Closed during crossover spools do not allow port "A" to be directly connected to port "B" when the spool is shifting between full and partial displacement. Motors with -63 or -67 designs are closed during crossover. These motors contain an internal factory preset relief valve. This valve protects the motor during shifting only and is not a system relief valve.

PILOT PRESSURE
A minimum of 100 PSI over case drain pressure is required to shift the spool. The maximum allowable pressure to port "C" or "D" is 3,500 PSI.

SHIFT ON THE RUN
The 15 Series Two Speed Motor may be shifted on the run while loaded or unloaded.

MAXIMUM SPEED
Maximum rated speed is the same for either full or partial displacement as stated in the performance data.

CASE DRAIN AND CROSS PORT LEAKAGE
The combined case drain and cross port leakage of the 15 Series Two Speed Motor is approximately 1 GPM per 1,000 PSI. This will vary with the oil viscosity.

OTHER INFORMATION
All other information as specified under Technical Information also applies to the 15 Series Two Speed Motor. (See page 5)
The above performance data was obtained at 140°F with ISO 46[DTE 25]. These values must be maintained to obtain the performance indicated. Contact Rineer Hydraulics, Inc. for additional displacements.
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.

Applications

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.

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