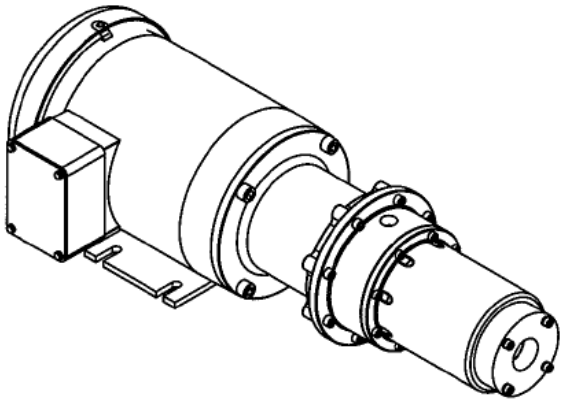
Always the Right Solution™

SERVICE MANUAL
Moyno® Mag Drive 500
300 Series Motorized Pumps with Magnetic Drives
331, 332, 333, 344 MODELS

DESIGN FEATURES

Housing:	PVC or Non-Metallic
Pump Rotor:	Titanium
Pump Stator:	FPM, NBR (Nitrile), EPDM
Seal:	Sealless design
Motor Shaft:	Hardened Carbon Steel
Motor:	.5 and 1 HP, 60 Hz, 1750 RPM, totally enclosed fan cooled (TEFC), C-Faced, 3 Ph, 230/460V (other motor options available; consult sales representative)



INSTALLATION

Mounting Position. Pump may be mounted in any position.

Pre-Wetting. Prior to connecting pump, wet pump elements by adding fluid to be pumped into suction and discharge ports. Turn pump over several times in a clockwise direction to work fluid into pump elements.

Piping. Piping to pump should be self-supporting to avoid excessive strain on pump housings. See Table 1 for suction and discharge port sizes of each pump model. Use pipe "dope" or tape to facilitate disassembly and to provide seal on pipe connections.

Electrical. Follow the wiring diagram on the motor nameplate or inside the terminal box for the proper connections. The wiring should be direct and conform to local electrical codes. Check power connections for proper voltage. Voltage variations must not exceed ±10% of nameplate voltage. Motor is provided with internal automatic overload protection.

To prevent damage to pump, pump rotation must be clockwise when facing pump from motor end.

OPERATION

DO NOT RUN DRY. Unit depends on liquid pumped for lubrication. For proper lubrication, flow rate should be at least 10% of rated capacity.

Pressure and Temperature Limits. See Table 1 for maximum discharge pressure of each model. Temperature limit for any application cannot exceed 140°F.

Caution: Suction pressure should never be greater than discharge pressure.

Table 1. Pump Data

Pump Model	Suction Port (NPT)	Discharge Port (NPT)	Voltage Rating (VAC)	Discharge Pressure (psig)
Mag 331	1"	3/8"	See Motor Nameplate For Voltage Ratings	100
Mag 332	1"	3/8"	See Motor Nameplate For Voltage Ratings	80
Mag 333	1"	3/8"	See Motor Nameplate For Voltage Ratings	50
Mag 344	1"	3/8"	See Motor Nameplate For Voltage Ratings	40

TROUBLESHOOTING

WARNING: Before making adjustments, disconnect power source and thoroughly bleed pressure from system prior to disassembly. Failure to do so could lead to electric shock or serious bodily harm.

Failure to Pump.

1. Motor will not start: Check power supply. Voltage must be ± 10% of nameplate rating when motor is in locked rotor condition.

2. Stator torn; possible excessive pressure: Replace stator; check pressure at discharge port.
3. Wrong rotation: Rotation must be clockwise when facing pump from motor end. Reverse the connections of any two line leads to the motor.

Pump Overloads.

1. Excessive discharge pressure: Check pressure at discharge port for maximum ratings given in Table 1.
2. Fluid viscosity too high: Limit fluid viscosity to 700 CP or 3700 SSU.

Noisy Operation.

1. Suction line too small: Check pipe size. Be sure lines are free from obstructions.
2. Pump cavitates: Pump speed is 1750 RPM. Viscosity of fluid should not exceed 700 CP or 3700 SSU.
3. Insufficient mounting: Mount to be secure to a firm base. Vibration induced noise can be reduced by using mount pads and short sections of hose on suction and discharge ports.

Magnet De-Coupling.

1. High torque due to excessive pressure. Turn the pump off and restart it. If magnet is still de-coupled, bleed the pressure from the discharge. If problem persists, disassemble unit and inspect parts.
2. High torque due to high viscosity product. Turn the pump off, flush it with water. Check the viscosity of the product that is being pumped. Viscosity of fluid should not exceed 700 CP or 3700 SSU.

PUMP DISASSEMBLY

WARNING: Before disassembling pump, disconnect power source and thoroughly bleed pressure from system. Failure to do so could result in electric shock or serious bodily harm.

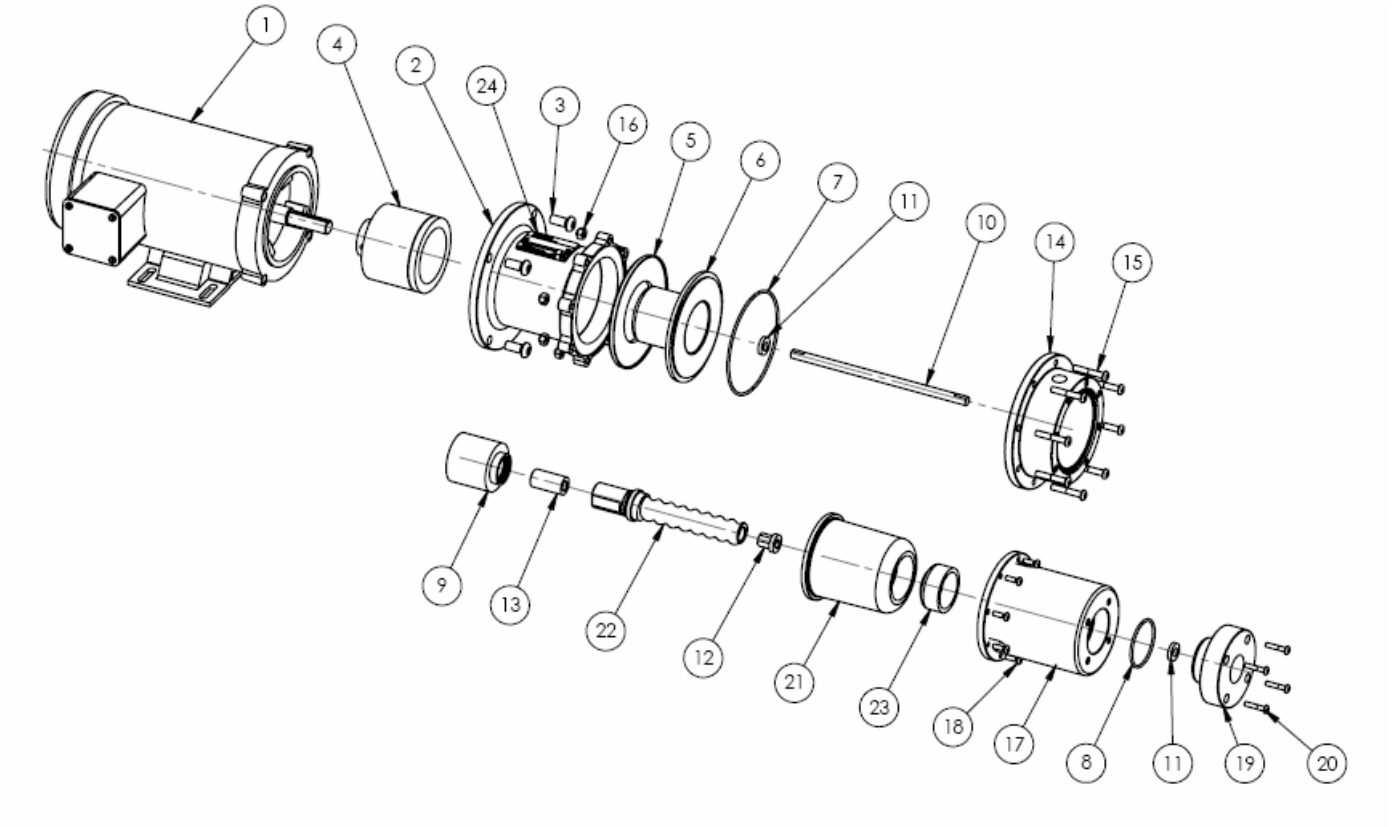
The magnets used to drive this pump are powerful. Do not place your hands or fingers in between the magnets at any time during the assembly or disassembly procedure.

1. Remove four socket head cap screws (3) connecting the drive adapter (2) to the motor (1).
2. Remove entire pump assembly from the motor (1) and outer magnet (4). Due to the magnet, there will be some significant resistance when trying to pull the pump assembly/inner magnet from the outer magnet (4) and motor (1).
3. Place the pump assembly with the drive adapter (2) bore flat on a table.
4. Remove four socket head cap screws (20) connecting the suction housing (19) to the stator housing (17).
5. Remove the suction housing (19) from the stator housing (17) and remove the O-ring (8) from the suction housing (17).
6. Remove the eight socket head cap screws (15) connecting the stator housing (17) to the discharge housing (14).
7. Remove the stator housing (17).
8. Remove the thrust bushing (11) and rotor bushing (12) from the rotor (22) and rotor shaft (10).
9. Remove stator (21) and stator ring (23) (on 331 and 332 models only).
10. Remove the thrust washer (11) from the rotor shaft (10).
11. Remove the rotor (22), inner magnet (9), shaft bushing (13), and rotor end bushing (12) as an assembly.
12. Remove the rotor bushing (12) from the rotor (22), being careful not to damage it. **NOTE: Rotor shaft (10), thrust washer (11) and end bushing (12) are all very fragile.**
13. Press the inner magnet (9) off of the rotor (22).
14. Remove the shaft bushing (13) from the drive end side of the rotor (22).
15. Remove rotor shaft (10) and thrust washer (10) from the drive adapter (2)
16. Remove eight socket head cap screws (15) and nuts (16) connecting the discharge housing (14) to the drive adapter (2).
17. Remove the discharge housing (14) from the drive adapter (2).
18. Remove the spacer plate (5) and magnet casing (6) from the drive adapter (2)
19. Remove the outer magnet (4) from the motor (1) by loosening set screws in the outer magnet (4) and sliding the outer magnet (4) off of the motor drive shaft.

PUMP ASSEMBLY

1. Place the drive adapter (2) on a table; the motor side of the drive adapter should be flat on the table.
2. Place the spacer plate (5) onto the drive adapter (2).
3. Place magnet casing (6) into the spacer plate (5).
4. Place O-ring (7) onto the magnet casing (6).
5. Place the discharge housing (14) onto the drive adapter (2).
6. Place one thrust washer (11) into the bore in the magnet casing (6) and place the rotor shaft (10) through the washer into the bore, making sure the flat in the rotor shaft (10) lines up with the flat in the thrust washer (11) and bore.
7. Press the shaft bushing (13) into the magnet side of the rotor (22).
8. Press the rotor (22) into the inner magnet (9), making sure the flat on the rotor lines up with the flat on the ID of the magnet.
9. Place the rotor (22), magnet (9), and shaft bushing (13) assembly onto the rotor shaft (10).
10. Install the stator ring (23) **(Note: this is only supplied on the 331 and 332 models)** into the suction side of the stator (21) if applicable. Then install the stator (21) onto the rotor (22).
11. Place the rotor bushing (12) into the end of the rotor (22).
12. Place the stator housing (17) over the stator (21).
13. Place second thrust washer (11) onto rotor shaft (10), making sure that the flat in the washer lines up with the flat in on the rotor shaft (10).
14. Place the O-ring (8) onto the suction housing (19).
15. Place the suction housing (19) and O-ring (8) onto stator housing, making sure that the flat in the bore of the suction housing lines up with the flat machined onto the rotor shaft.
16. Align all bolt holes for the entire assembly.
17. Using eight socket button head cap screws (15) and nuts (16) secure the discharge housing (14) to the drive adapter (2).

18. Using eight socket button head cap screws (18), secure the stator housing (17) to the discharge housing (14).
19. Using four socket button head cap screws (20), secure the suction housing to the stator housing.
20. Place the outer magnet (4) onto the motor (1) drive shaft and secure into place with set screws on the outer magnet (4). The motor drive shaft should be flush with the back face of the large ID bore (4.395") of the outer magnet (4).
21. Place the pump assembly onto the motor (1) and outer magnet assembly (4), **being careful not to put any fingers or hands between the two magnets**. Secure the pump assembly to the motor using four socket button head cap screws (3).



Mag Drive Parts List

Item No.	Description	Pump Model Numbers			
		331	332	333	344
1	Motor .5HP, 1750 RPM, 230/460V, TEFC	4231190001			
	Motor 1.0 HP, 1750 RPM, 230/460V, TEFC	4231190002			
	Motor .5HP, 1200 RPM, 230/460V, TEFC	4231191001			
	Motor 1.0 HP, 1200 RPM, 230/460V, TEFC	4231191002			
2	Drive Adapter	4252633000			
3	But Screw .375-16X.88LG, 18-8	6191232140			
4	Outer Magnet	4252631000			
5	Spacer Plate	4241971000			
6	Magnet Casing	4252632000			
7	O-Ring	3207902157			
8	O-Ring	3207902136			
9	Inner Magnet	4252630000			
10	Rotor Shaft	4252621011			
11	Thrust Washer	4231186001			
12	Rotor Bushing	4220895001			
13	Shaft Bushing	4220896001			
14	Discharge Housing	4252627001			
15	But Screw .25-20X1.50 LG, 18-8SS	6191112240			
16	Hex Nut .25-20, 18-8SS	6140252010			
17	Stator Housing	4252628001			
18	But Screw 10-24X.62 LG, 18-8SS	6191202100			
19	Suction Housing	4252629001			
20	But Screw 10-24X1.0 LG, 18-8SS	6191202160			
21	Stator, Nitrile	3403501120	3403502120	3403503120	3403504120
	Stator, EPDM	3403501320	3403502320	3403503320	3403504320
	Stator, FPM	3403501520	3403502520	3403503520	3403504520
22	Rotor, Titanium	4252622011	4252623011	4252616011	4252645011
23	Stator Ring (331 and 332 Only)	3207812000		Not Applicable	

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