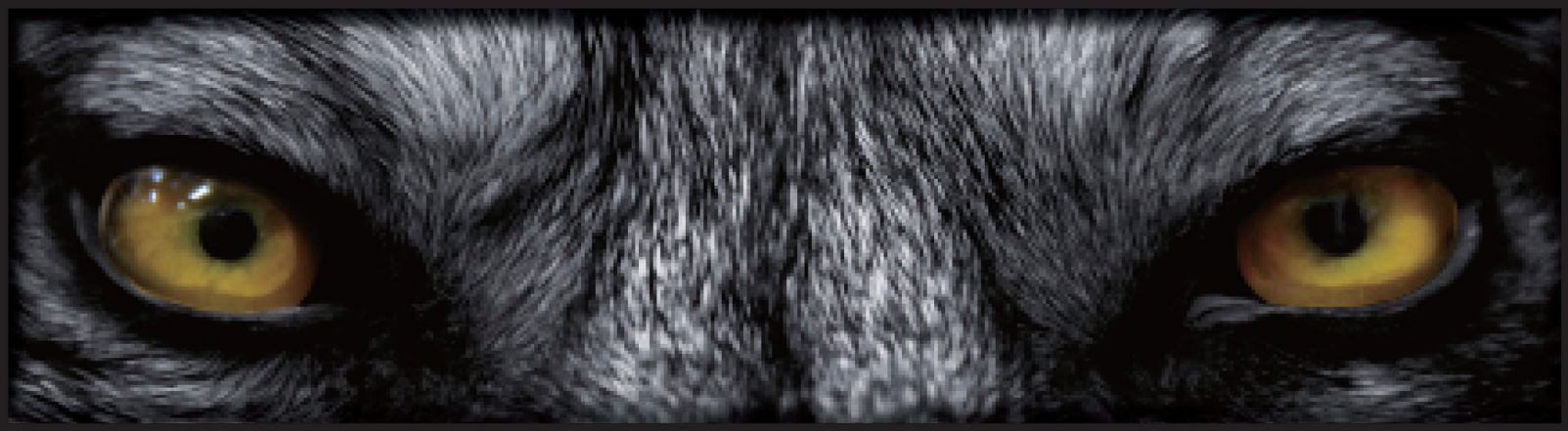
FLOMORE®

Different By Design

3500 Wolf Series



Simplex

www.flomore.com

FLOMORE
Different By Design

Maintenance Instructions to Inspect and Replace Plunger Packing

1. Turn off the pump. Isolate injection point from back flow or pressure.
2. Remove suction & discharge lines. (Caution: Pressure might be trapped inside head or lines.)
3. Loosen packing gland nut, then slide the nut back from the head.
4. Depending on pump model, loosen the brass jam nut from the yoke or body. You can now unscrew and remove the head body.
5. Remove packing gland from head if needed. This might remain on the plunger nut.
6. Inspect the plunger for wear. If the plunger needs to be replaced, remove the plunger pin and slide the plunger out. Insert the new plunger and reinstall the pin. (If plunger is good, move to step 7.)
7. Remove the plunger packing with a pick or small screwdriver. (Take note of packing orientation for reinstall.)
8. Inspect the throat of the head body for pitting and wear. Replace if needed.
9. Install new plunger packing one ring at a time, ensuring that each ring is seated flush.
10. Reinstall the packing gland. Insert the head onto the plunger and yoke. Thread the head back into the yoke until the jam nut touches. Align body into correct vertical position and tighten the jam nut securely. (Head should not be able to spin.)
11. Reinstall the packing gland nut until it makes contact with the packing. Apply an additional 1/4" turn into the packing.
12. Reinstall the suction and discharge lines. Open injection point valve and check for leaks.
13. Turn on the pump. Open the priming valve to bleed air from the suction lines and head. Confirm the pump is pumping and check for leaks.
14. Adjust the plunger packing as needed. Run the pump for 15 minutes and check for packing nut contact. If loose, tighten nut 1/4" at a time. (Make sure to bleed the head before making packing adjustments.)

3500 Simplex

The Flomore 3500 Series chemical injection pumps are electric driven, positive displacement pumps utilizing C-faced motors and common gear reducers. The gear reducers are available in 15, 30, 60, or 120 strokes per minute configurations. By utilizing flexibility of a wide variety of plunger sizes, the 3500 Series can handle many application requirements of different flow and pressures.

Additional Information

- Maximum Discharge Pressure:
  6000 PSI with a 3/16" plunger
- Maximum Volume = 139 gallons per day with a 1/2" plunger
- Head is adjustable while the pump is running
- Available in Simplex or Duplex
- Available in four stroke rates:
  15, 30, 60, or 120 strokes per minute
- 1/2 horsepower motor standard; 1 or 3 phase, TEFC or explosion proof; 50 or 60 hertz
- Available with 3/16", 1/4", 3/8", or 1/2" plunger

Model Designation

35 - 6 3

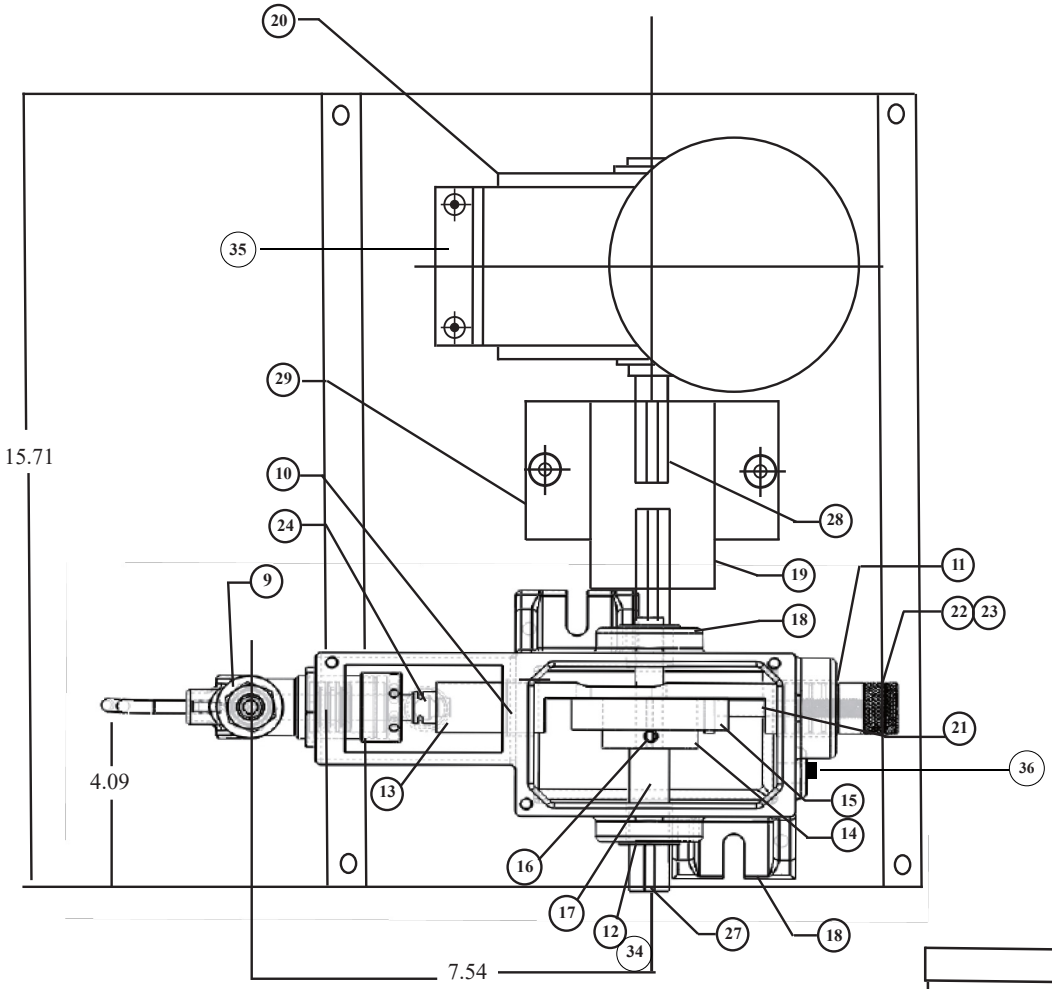
- 3500 Series
- Stroke Speed
  - 6 - 60 SPM
  - 3 - 30 SPM
- Plunger Size
  - 1 - 1/4"
  - 3 - 3/8"
  - 4 - 3/16"
  - 5 - 1/2"

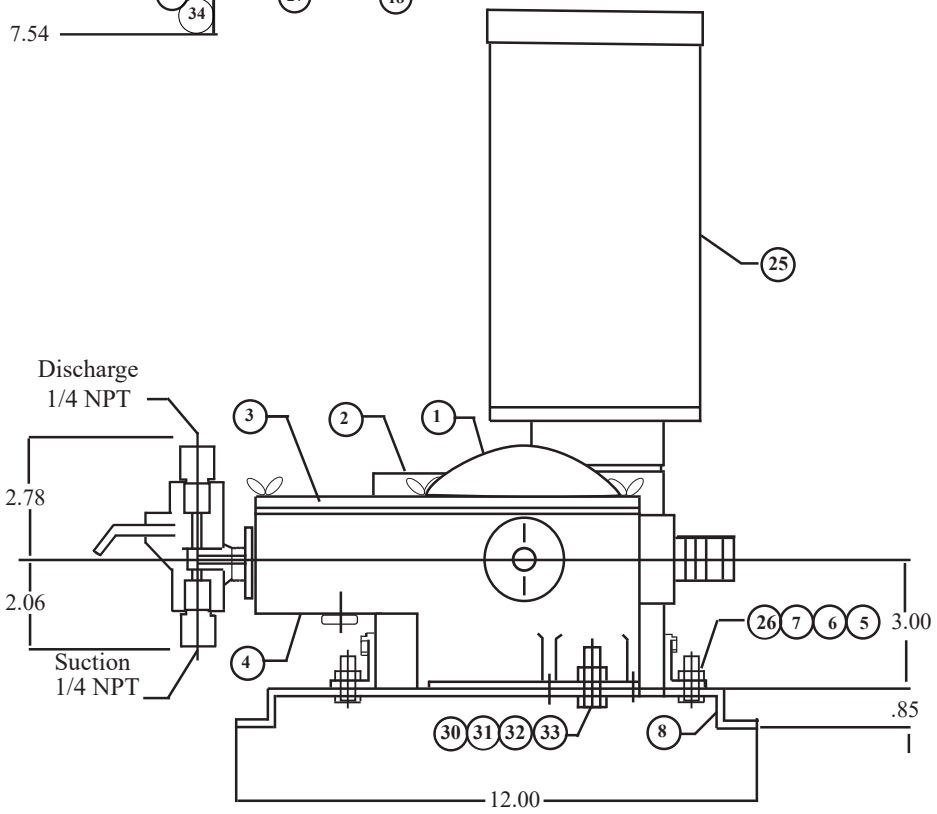
3500 Simplex Parts

Parts List

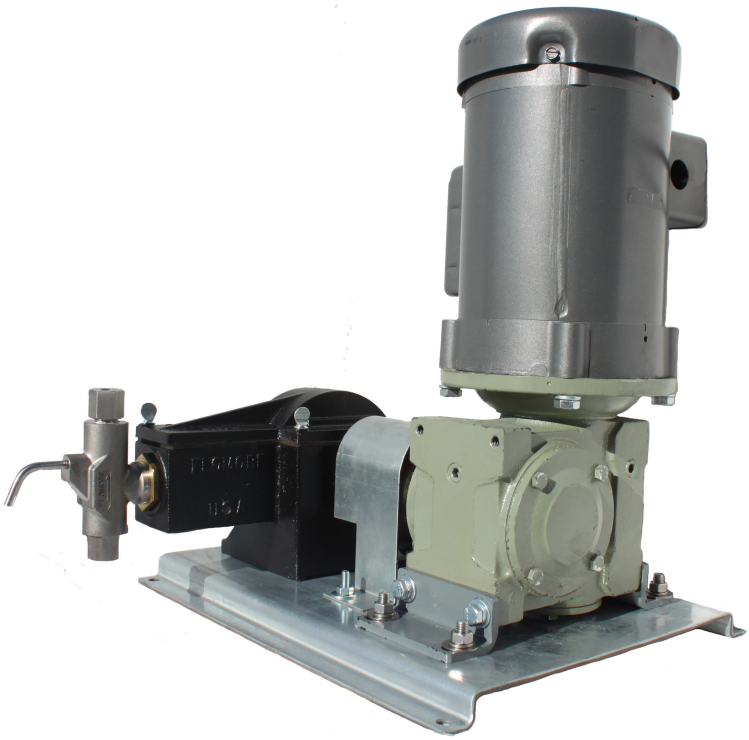
Item	Part #	# Req.	Description	Material
1	B-1483	1	Cover	363F Aluminum
2	A-0136	3	Thumbscrew	Gr 5 Zinc
3	A-5963	1	Cover Gasket	Nitrile
4	C-2048	1	Housing	356T6 Aluminum
5	A-0141	4	Hex Head Bolt 5/16-18	Gr 5 Zinc
6	A-0144	4	Nut 5/16-18	Gr 5 Zinc
7	A-0167	8	Flat Washer 5/16	Gr 5 Zinc
8	C-2197	1	Base Plate	Galvanized Steel
9	See chart on p. 7	1	Head Assembly	316 SS
10	A-5964	1	Crosshead Bearing	PTFE
11	A-5965	1	Crosshead Bearing	PTFE
12	A-6934	1	Driveshaft Bearing	Chrome Steel
13	B-1542	1	Crosshead	316 SS
14	A-5823	1	Eccentric Cam	C1018 Steel
15	A-5830	1	Roller Bearing	Steel
16	A-5831	1	Set Screw	Steel
17	A-6386	1	Key	Steel
18	A-6936	1	Sleeve Bearing	Oil-filled Bronze
19	A-6714	1	Coupling	Steel
20	Gear Reducer	1	Reducer	N/A
21	A-5822	1	Stroke Adjuster	C1213 C.R.S.
22	A-5824	1	Stroke Adjuster Lock Nut	416 SS
23	A-5825	1	Adjusting Screw	416 SS
24	A-5953	1	Plunger Pin/Clip	302 Stainless Steel
25	Various Available	1	Motor	N/A
26	A-0425	4	Split Lock Washer	Gr 5 Zinc
27	B-1726	1	Drive Shaft	Steel
28	A-6720	1	Drive Shaft Key	Steel
29	B-1700	1	Coupling Guard	Steel
30	A-0139	2	Hex Head Bolt 3/8 - 16	Gr 5 Zinc
31	A-2207	2	Hex Nut 3/8 - 16	Gr 5 Zinc
32	A-0746	4	Flat Washer 3/8	Gr 5 Zinc
33	A-0459	2	Lock Washer 3/8	Gr 5 Zinc
34	A-6932	1	Truarc Ring	Carbon Steel
35	C-2197-F	2	Gear Reducer Bracket	Iron
36	A-0138	1	Drain Plug	Steel

3500 Simplex Parts Drawing





3500 Simplex Performance Data



Simplex Gear Reducers

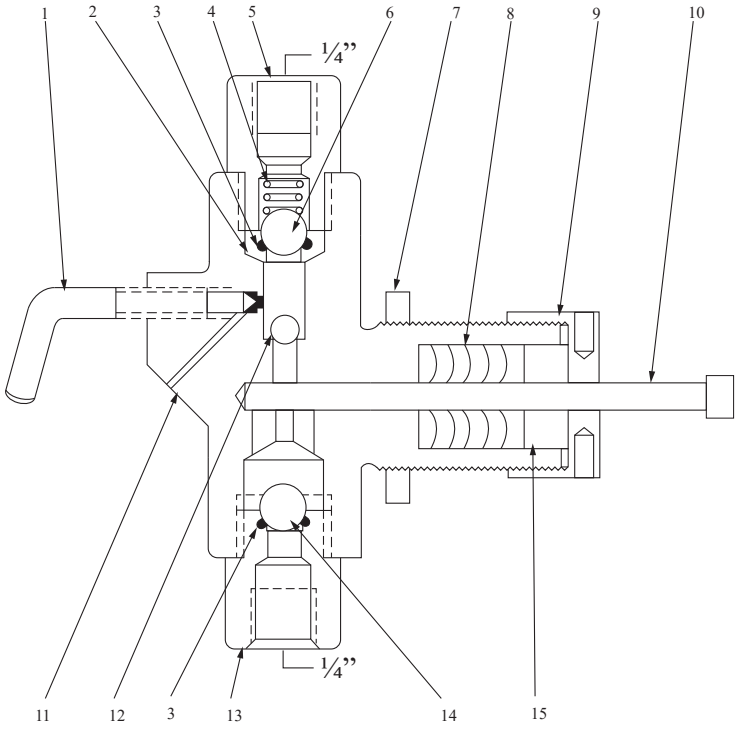
Item #	Gear Ratio	Strokes per Minute
B-1730	30:1	60
B-1731	60:1	30

Model #	Plunger Size	Strokes per Minute	Gear Ratio	Maximum Discharge Pressure (PSI)	Gallons per Day (per head) Maximum	Minimum
*35-34SS	3/16"	30	60:1	6000	4.9	0.5
*35-64SS		60	30:1	6000	9.8	1
35-31SS	1/4"	30	60:1	4000	8.6	0.9
36-61SS		60	30:1	4000	17.3	1.7
35-33SS	3/8"	30	60:1	1800	19.6	2
35-63SS		60	30:1	1800	39.2	3.9
35-35SS	1/2"	30	60:1	1025	34.8	3.5
35-65SS		60	30:1	1025	69.7	7

Note: Performance Data complies with both Simplex and Duplex pumps.

*Maximum discharge pressure shown only achieved using SDP packing.

Injector Head



Material	Maximum Discharge Pressure (PSIG)			
	3/16"	1/4"	3/8"	1/2"
Buna-N	1500	1500	1500	1500
Viton	3500	3500	3500	3500
Teflon	1500	1500	1500	1500
Super Duty	6000	4000	1800	1025

Alternate Construction

Item #	Part #	Description	Material
2	A-0806	Top Seat Assembly (Metal to Metal)	303 Stainless Steel
2	B-0843	Top Seat - Viton O-Ring	303 Stainless Steel
3	A-2580	O-Ring	Viton
8	A-3967	3/16" Plunger Packing	Viton
	A-3966		Teflon
	A-7170		Super Duty
	A-4102	1/4" Plunger Packing	Viton
	A-1642		Teflon
	A-7171		Super Duty
	A-4101	3/8" Plunger Packing	Viton
	A-1234		Teflon
	A-7172		Super Duty
	A-4103	1/2" Plunger Packing	Viton
	A-1012		Teflon
	A-7173		Super Duty
*13	A-0771	Bottom Seat Assembly (Metal to Metal)	316 Stainless Steel
13	B-0844	Suction Bushing with Viton O-Ring	303 Stainless Steel
*14	A-0053	1/2" Suction Ball	316 Stainless Steel

Recommended Spare Parts

Parts List

Item #	Part # 3/16"	Part # 1/4"	Part # 3/8"	Part # 1/2"	# Req.	Description	Material
	B-1560-0	B-1557-0	B-1558-0	B-1159-0	1	Head Assembly	Stainless Steel
1	A-4027	A-1497			1	Priming Valve	303 Stainless Steel
2	B-0737				1	Top Seat Assembly - Buna	303 Stainless Steel
3	A-0479				1	Suction & Discharge O-Ring	Buna-N
4	A-0077				1	Ball Check Spring	316 Stainless Steel
5	A-1496				1	Top Bushing	303 Stainless Steel
6	A-0054				1	3/8" Large Top Ball	316 Stainless Steel
7	A-0225				1	Lock Nut	Brass
8	A-3969	A-1464	A-1456	A-0959	1	Plunger Packing	Buna-N
9	A-4104				1	Plunger Packing Nut Gland	303 Stainless Steel
10	A-7001	A-7004	A-7002	A-7003	1	Plunger	17-4 pH Stainless Steel
11	C-2040	C-0291	C-0425	C-0349	1	Body	Stainless Steel
12	▲	A-0126			1	1/4" Small Top Ball	316 Stainless Steel
13	B-1216	B-0736			1	Bottom Seat Assembly - Buna	303 Stainless Steel
14	A-0054				1	3/8" Suction Ball	316 Stainless Steel
15	A-4332	A-1463	A-0957	A-1219	1	Plunger Packing Gland	303 Stainless Steel
16	A-0126	▲			1	1/4" Ball	316 Stainless Steel
17	A-4394	▲			1	Suction Bushing Sealing Washer	304 Stainless Steel

Recommended Spare Parts

Installation and Operating Instructions

Installation

1. Plan ahead for proper mounting. Pump location is very important. Position the pump to provide efficient routing of suction, discharge lines, and electrical service.
   - Avoid long suction lines and provide for a flooded suction line whenever possible.
2. Pump fluid lines and connections operate best when there is minimum restriction to the medium flow.
3. Install the proper electrical starters and disconnect switches.

Fluid End

4. All fluid connections, both suction and discharge, should be sealed tight.
   - Fluid end connections are 1/4" NPT.
   - The suction connection is at the bottom of the fluid end and the discharge connection is at the top.

Motor

5. A conduit connection is provided at the motor for electrical connections.
   - Ensure the proper electrical service has been provided.
   - Ensure all connections are tight, in their proper location, properly grounded, and fused.

Gear Reducer

6. Check the oil level of the gear reducer.
   - If the oil level is below the output shaft oil plug, refill to the plug with API approved oil.

Start Up

7. Open the priming valve on the fluid end assembly and start the pump motor.
8. Allow the pump to run until a clear, bubbleless stream of media comes out of the priming valve.
9. Close the priming valve.
10. Check the packing for proper sealing.
    - If it leaks, stop the pump and make necessary adjustments. Adjust the stroke knob to obtain the desired flow rate.

Preventive Maintenance

11. Check periodically (minimum of once per month) and apply a small amount of grease to the cam bearing and crosshead areas that cycle through the linear bearings.
    - Check the packing regularly. If leakage is observed, stop the pump.
    - Make small adjustments by turning the gland nut.
    - Restart the pump, but do not overtighten the packing as this will reduce the packing life and possibly damage the plunger.

***** It is always important to ensure the packing material is compatible with the media being pumped. Check for swollen or deteriorated seals.***

Richart Distributors, Inc.
3415 S. I-35 Service Road
Oklahoma City, Ok 73129
866-843-5654
www.flomore.com

A-5964 CROSSHEAD BEARING INSTALLATION INSTRUCTIONS

*NOTE: IMPROPER CURE TIME FOR RETAINING COMPOUND, **WILL** CAUSE THIS BEARING TO WORK ITSELF OUT OF THE PUMP BODY. OUR WARRANTY POLICY DOES NOT ALLOW FOR IMPROPER INSTALLATION/MISUSE OF PRODUCT*

STEP ONE: REMOVING OLD BEARING

- We recommend the use of a vise, to clamp body into place for removal *and* installation.
- Most 13/16" sockets will match the OD of the **A-5964**, but please double check, with the tools you have on hand, so as not to damage the body.
- Pump cavity is machined for a press-fit, so that the **A-5964** maintains proper geometric alignment with the thru-shaft.
- Damaging the cavity could cause misalignment/excessive wear and tear.

INSTRUCTIONS:

- With pump properly secured in vise, place socket along the outer edge of bearing
- Gently tap socket, until you feel movement.
- Continue to gently tap socket through body cavity
- Dispose of **A-5964**.

STEP TWO: INSTALLATION OF NEW BEARING

We recommend the use of Loctite 680, High-Strength Retaining Compound. This allows for proper fit/alignment, and can still be removed if needed.
A vise is *not* needed for installation, but is recommended.
Apply small bead to portion of bearing facing the body cavity of pump, an 1/8" from the bottom lip of the **A-5964.** (as shown in **Figure A**)

[**Figure A]**

Place **A-5964** against body cavity, and hand-press it into opening (as shown in **Figure B**)

[Figure B]

Gently tap bearing into place, (as shown in **Figure C**)

[Figure C]

!!IIMPORTANT!! : technician *must* allow for a full 24-hours for retaining compound to set.
***Not* allowing retaining compound to cure, WILL cause bearing to work itself back out of pump body.**

ADDITIONAL NOTES

The **A-5964 CROSSHEAD BEARING** will last as long as the average life cycle for this style of pump, and therefore it is rare that these bearings need to be replaced. Hopefully these instructions will assist our valued customers out in the field, and if you have any questions at all, please don't hesitate to call our OKC office .

1-866-843-5654
www.flomore.com

Notes

FLOMORE

Different By Design

Corporate Office

Richart Distributors, Inc.
3415 S. I-35 Service Rd.
Oklahoma City, OK 73129
(405) 843-5654

Rex Haymaker - Executive VP
Cell: (405) 206-4807
Rex.Haymaker@flomore.com

North Dakota

533 East Villard Suite B
Dickinson, ND 58601
(701) 483-8267

Robert Olson
(701) 226-7814
roberto@rmow.com

Contact Us

Byron Guinn
Senior Sales Consultant
(405) 843-5654
byron.guinn@flomore.com

Matt Duncan
Production Manager
(405) 843-5654
matt.duncan@flomore.com

Scott "Coach" Mick
Outside Sales/Business Development
Office: (405) 843-5654
Cell: (405) 343-7322
scott.mick@flomore.com

Chris Smith
Purchasing Manager/Inventory Control
(405) 843-5654
chris.smith@flomore.com