INJECT-O-METER

C-FACE PARTS MANUAL and OPERATING INSTRUCTIONS

FOR AGRICULTURE AND INDUSTRIAL USES

This manual covers the following injection pumps:

I-70:	**Piston Sizes:**	**3/4", 5/8", 1/2", 3/8", AND 1/4"**
HVI-88:	**Piston Size:**	**7/8"**
HVI-82:	**Piston Size:**	**1 ¼”**
IOM-96:	**Piston Size:**	**1 7/16"**
69-I:	**Piston Size:**	**1 ¼” OR 1 ½”**
POLYPROPYLENE:	**Piston Size:**	**I-70, HVI-82**
‘ KYNAR®:	**Piston Size:**	**3/4, OR 1 1/4**

Inject-O-Meter Mfg. Co., Inc.
820 Thornton Street
Clovis, NM 88101

Phone: 575-763-4461 Toll Free: 800-545-4440 Fax: 575-762-2497
E-mail: sales@inject-o-meter.com,

Website: www.inject-o-meter.com

INSTRUCTION MANUAL PRICE - $25.00

*****CAUTION*****

READ INSTRUCTIONS BEFORE OPERATING UNIT

INJECT-O-METER Pumping and Mixing Equipment is designed to handle most, but not all, types of ag chemicals and fertilizers that are to be injected into irrigation systems. Due to the complexity of today's chemical formulations, it is impossible to incorporate into a piece of equipment, standard fittings and components that will stand up against all types of Ag Chemicals and Fertilizers that may be used.

WARNING: TO PREVENT SERIOUS INJURIES AND OR DEATH READ ALL INSTRUCTIONS

INJECT-O-METER MFG. CO., INC. will not be held liable for injury or damages of any kind, direct, consequential, or contingent, to persons or property from the use of its equipment. Furthermore, our warranty does not extend to loss of crops, loss of chemical, losses caused by delays or any other expense or loss of labor, supplies, rental machinery, prospective profits, or any other reason. **THERE ARE NO WARRANTIES, WHICH EXTEND BEYOND THE DESCRIPTION PROVIDED HEREWITH.**

IMPORTANT NOTICE:
EPA LABEL IMPROVEMENT PROGRAM (PR NOTICE 87-1)
FOR PESTICIDES APPLIED THROUGH IRRIGATION SYSTEMS (CHEMIGATION)

The user of this equipment or any other product manufactured or sold by INJECT-O-METER MFG. CO., INC. assumes the responsibility for its use and proper installation. **(Installation and use that does not conform to PR Notice 87-1 is done so at the discretion of the user and INJECT-O-METER WILL NOT BE HELD LIABLE.)**

FOR FURTHER INFORMATION REGARDING USE OF THIS EQUIPMENT CALL OR CONTACT:

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Phone: 575-763-4461 Fax: 575-762-2497
Toll Free: 800-545-4440
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INSTALLATION OF THE INJECTION SYSTEM

Always position or locate the pumping units as close as possible to the electrical or powersource and to the point of injection. Unit should be placed as close as possible to the liquid storage tank or container it will be pumping from.

PIPING:

Pumps are supplied with ball checkvales on both the suction and discharge sides of the pump. The **TOP** valve and pipe is the **DISCHARGE** and the **BOTTOM** valve and pipe is the **SUCTION** side of the pump. Connect piping of the same size or one pipe size larger (depending on viscosity) than the pipe thread in suction and discharge valves. Pumps usually require flooded suction for ideal operating conditions. Under some conditions, the drafting or suction capabilities of larger piston pumps are such that flooded suction is not necessary. (If in doubt about a specific operation, contact the nearest dealer or the factory for recommendations.) When metering small amounts, the liquid being pumped should flow into the pump by gravity, to assure constant availability of liquid to the suction valve.

WARNING!!!
ONLY A QUALIFIED OR LICENSED ELECTRICIAN SHOULD MAKE ELECTRICAL CONNECTIONS.

WARNING!!!
NO CHEMICAL SHOULD BE INTRODUCED INTO AN IRRIGATION SYSTEM THAT HAS NOT BEEN LABELED FOR CHEMIGATION BY THE EPA

IMPORTANT
WHERE POSSIBLE, UNIT SHOULD BE CONNECTED TO POWER SOURCE THAT WILL DISRUPT POWER SUPPLY TO THE PUMP SHOULD THE SPRINKLER SYSTEM SHUT DOWN.

HOSE KIT INSTALLATION

1. Connect submersible strainer to one end of suction hose. (Use clear EVA hose and fittings as supplied in hose kit or compatible hose for product being pumped.)
2. Drop strainer through top opening in tank and position at bottom.
   NOTE: Suction hose to pump may be installed using bottom fittings from tank. (Using an Inject-O-Meter Special Hose Kit.)
3. Connect clear EVA suction hose from tank to BOTTOM (suction valve plumbing) valve and fittings.
4. Connect one end of reinforced discharge hose to the TOP (discharge valve plumbing) valve and fittings.
5. Install waterline checkvalves pipe nipple into irrigation waterline. Be sure to install the injector pipe downstream of any water faucets or in-line back-checkvalves located on the irrigation system. The injector pipe should be installed downstream of any anti-siphoning devices that are incorporated on the system. The threaded pipe nipple (supplied in hose kits) is furnished to enable you to weld it permanently in place on the main waterline or to thread it into an existing outlet.
   (NOTE: It is not necessary to install the injection pipe nipple extending into the main stream of the water.)

1. Thread the waterline checkvalve onto the injector pipe nipple. **(NOTE: Teflon tape or a sealant is recommended to be used on all threaded parts.)**
2. Thread hose adapter into other end of waterline checkvalve.
3. Connect other end of discharge hose to hose adapter on waterline checkvalve.
4. **Or attach Max 94 WLCV into injection port on some center pivot models.**

NOTE; BEFORE STARTING PUMP, CHECK TO ENSURE THAT ALL FITTINGS AND CLAMPS ARE TIGHTENED SECURELY..

IMPORTANT: TO PREVENT LARGE PARTICLES FROM RESTRICTING OPERATION OF PUMP VALVES, ALWAYS USE 20-40 MESH STRAINER ON SUCTION SIDE OF PUMP.

METERING ADJUSTMENT

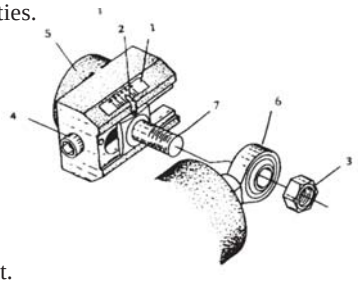
Bearing assembly does not need to be removed from T-bolt for metering adjustment.

NOTE: All pumps are fitted with a capacity scale, graduated from 0-10. This scale is located on the eccentric and represents at each incremental setting, the amount of liquid that can be pumped (GPH) at that particular setting. The scale relates to a percentage in GPH output based on the maximum output capabilities of the pump arm being used.

EXAMPLE:

1. Maximum pump output = 30 GPH @ setting of 10 (100%) on the scale.
2. Desired amount of liquid to be pumped is 15 GPH.
3. Scale pointer should be adjusted to a setting of "5" or 50% on the capacity scale.
4. "5" or 50% of 30 GPH = 15 GPH.

Once you have determined the maximum GPH output of any pump arm assembly, all settings or adjustments of the pointer on the capacity scale will indicate the percentage pumping capabilities of the pump as relates to maximum GPH capabilities.



METER ADJUSTMENT PROCEDURE

1. Disengage or stop pump.
2. Loosen locknut
3. Turn allen head adjusting screw locating pointer to desired position on capacity scale,
4. Tighten locknut securely.

WARNING; Do not attempt to make capacity adjustments or changes without first loosening the eccentric locknut. Be sure locknut is securely tightened before resuming operation. ***FAILURE TO DO THIS WILL CAUSE DAMAGE TO THE PUMP.***

STARTING THE PUMPING OPERATION

V-BELT POWERED UNITS:

NOTE: All drive shafts from engines to gearhead are not the same circumference and engines operate at various RPM's. As a result, various RPM's are achieved and may dramatically change the output potential of your pump. ALL PUMPS ARE PRE-TESTED AND CALIBRATED AT THE FACTORY FOR 1725 RPM'S INPUT TO THE GEAR REDUCER. The pulley on V-Belt powered unit is variable speed and may be adjusted to increase or decrease RPM factor as possible. Refer to the RPM correction chart on the operating instructions for specific output as related to various RPM's.

Once RPM factor has been established, (if other than 1725) be sure to note the maximum output capabilities and adjustments made on eccentric capacity scale. All calibrations will be percentage of that maximum.

ELECTRIC OPERATED UNITS:

The electric motors, both single and three phase 60 Hz, used on all pumps are rated at 1725 RPM's.

NOTE: 50 Hz electric motors operate at 1446 RPM's and must be calibrated accordingly. See output chart for 50 Hz operation.

GASOLINE OPERATED:

Engine RPM's are pre-adjusted at the factory for optimum pump output.

LUBRICATION

Depending on the environment in which the pump is operated (i.e. dusty, hot or dry), your pump should be lubricated as follows:

INSTRUCTIONS TO ROTATE THE MOTOR AND GEARBOX:

On the motor fan cover there is a plastic cap in the center of the fan cover. **MAKE SURE THE PUMP IS NOT RUNNING.** Please remove this cap.

Inside you will see a straight slot in the shaft. You can use a flat head screw driver and turn the motor shaft either direction to turn the eccentric on the pump to your desired position for easier adjustment.

PUMP AND ECCENTRIC GREASE FITTINGS

Lubricate each grease fitting at least **ONCE A WEEK** on continous operation with Mobil Lith AW2. In hot or dusty environment's more frequent greasing will increase the life of the equipment. Grease the crosshead and eccentric until clean grease appears on the outside of the bearing area. **GREASE ECCENTRIC BEARING AT LEAST ONCE DAILY**.

CAUTION – DO NOT ATTEMPT TO GREASE ECCENTRIC BEARING WHILE PUMP IS IN OPERATION.

PURGE PORT

A purge plug is located at the end of the cylinder for your convenience of installing an air bleed valve or pressure relief valve.

O'RING REPLACEMENT (IMPORTANT)

Do not attempt to remove cylinder from pump frame casting for o'ring replacement. The cylinder is aligned and adjusted at the factory and should not be removed for the purpose of changing o'rings.

1. Disconnect power supply before any maintenance procedure;
2. Remove pump arm;
3. Slide entire crosshead – piston assembly out of pump frame casting and replace o'rings;
4. Insure that inside of cylinder is clean and free from any obstructions;
5. Lightly lubricate o'rings and crosshead with a light hypoid grease;
6. Carefully slide assembly back into cylinder and pump frame casting;
7. Connect eccentric bearing to eccentric T-Bolt and tighten locknut; and
8. Manually turn through 2-3 complete cycles to ensure smooth operation.

WARRANTY

Products manufactured by INJECT-O-METER MFG. CO., INC. are guaranteed to be free from defects in material or workmanship for a period of one (1) year. (1 ½ years on exports outside the North American Continent) Damages or failure caused by improper installations are to be assumed by the buyer and in no way are to be considered a part of this warranty.

ELECTRIC MOTORS AND COMPONENTS ARE SUBJECT TO WARRANTY GUIDELINES OF THEIR MANUFACTURER.

INJECT-O-METER or their authorized representative(s) reserve the right to inspect any suspected faulty parts or materials. Materials returned for inspection will have transportation charges prepaid and will be at the expense of the purchaser. C.O.D. deliveries will not be accepted.

Materials determined to be defective will be replaced or credit given for value of consideration at no cost to the customer. Replacement costs will include the value of the material plus freight or surface transportation charges to the original shipping point inside the Continental United States. INJECT-O-METER MFG. CO., INC. assumes no liability for shipping costs outside the Continental United States.

TROUBLE SHOOTING

A. UNIT WILL NOT PRIME

1. Check to ensure there are no obstructions in valves (suction valves and discharge valves) that would keep valve balls from seating.
2. A. Disconnect discharge hose from waterline checkvalve and fill suction hose with liquid;
   B. Activate pump and run until liquid begins to move through hose and is pumping through to discharge side.
3. Remove purge plug in end of cylinder to bleed off air that may have caused an air lock in system. When liquid starts into cylinder, replace plug.
3. When pumping at low rates flooded suction is recommended. **PUMPS CAN LOSE SUCTION CAPABILITIES PROPORTIONATELY AS THE STROKE LENGTH OF PISTON IS REDUCED WHEN PUMPING SMALLER AMOUNTS**.

B. UNIT STOPS PUMPING

1. Check to ensure there are no obstructions in valves (suction and discharge valve) that would keep valve balls from seating.
2. Valve balls and seats worn out. (rework or replace valves)
3. Pump is pulling in air on suction side. (check all fittings for tightness or liquid level in storage tank)

C. UNIT WILL NOT START

1. ELECTRIC MODELS:

A. Check wiring to ensure motor is wired to source properly and to correct voltage. (Single Phase can be operated on 110 or 220 volts – Three Phase can be operated on 220 or 440 volts)
B. Check to ensure that power is getting to motor.
C. After checking the above, if motor still does not operate, contact dealer or the factory for further instructions.

2. V-BELT MODELS

A. Check V-type drive belt for tightness and tension.

D. LIQUID LEAKS WHERE THE PISTON ENTERS THE CYLINDER

A. Replace O'rings or packing

E. UNIT DOES NOT PUMP DESIRED AMOUNT

1. Re-check calibrations and eccentric meter adjustment.
2. Check eccentric and crosshead bearing for excessive wear and replace if necessary.
3. Check to see that eccentric pointer is not bent or out of alignment.
4. (V-Belts) – Check RPM input and adjust to 1725 RPM's if possible. If not able to achieve 1725 RPM's on input shaft of gearbox, calibrate the maximum GPH you will achieve at the final RPM factor used. (Use the RPM correction chart furnished with pump for calculations.)
5. Check to ensure there are no obstructions in valves (suction and discharge valves) that would keep valve balls from seating.

DO….

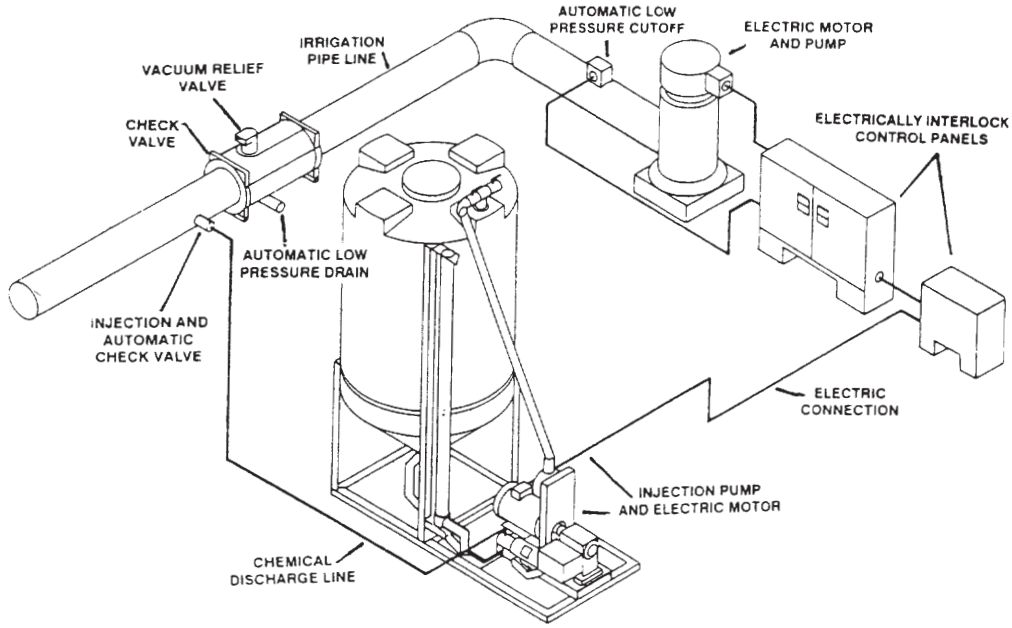
1. Make sure that you have the proper size pump and properly powered unit to do the job you intend to do.
2. Use at least a 40 mesh screen or strainer on suction side of pump for any liquid you intend to pump.
3. Always flush pump after use. Use diesel fuel, anti-freeze or water to flush pump. ONE SUGGESTED METHOD: Immediately after last use, use standard garden hose with slight pressure, attach to suction hose and flush for approximately three (3) minutes or until fertilizer and/or chemicals are cleared from discharge hose.
4. Ensure that all fittings are properly tightened prior to use.
5. Make sure that electrical units are properly connected to proper source and connections are weathertight.
6. Use a qualified electrician for installation of electrical units.
7. Use standard safety procedures as required around all types of machinery and in handling various chemicals and fertilizer.
8. Lubricate and maintain pump as outlined in operating instructions.
9. Inspect pump daily during chemigation process, where possible.
10. Call your dealer of contact the factory at 800-545-4440 if in doubt about the performance of your pump or for any additional information required.

DON'T….

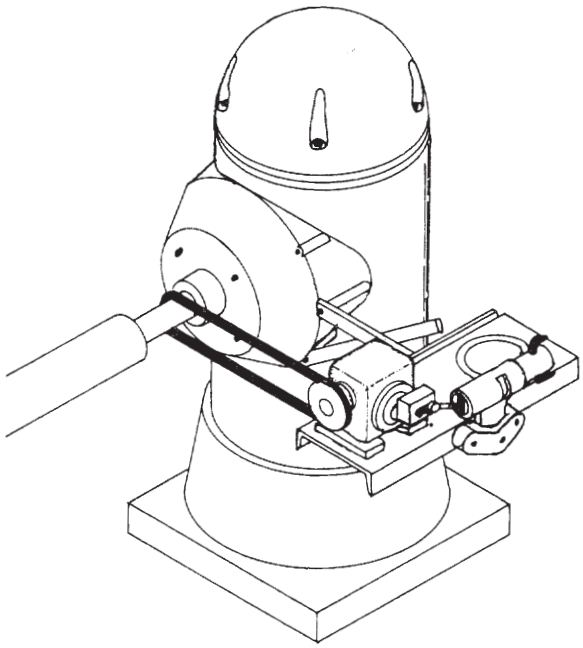
1. Use hoses for suction or discharge that are not properly rated for the liquid and/or pressure to be obtained.
2. Pump or meter materials to be injected without using at least a 40 mesh line strainer on suction side of pump.
3. Attempt to lubricate eccentric bearings while pump is operating.
4. Discard worn pump valves without first checking with the dealer or factory to see if they can be rebuilt.
5. Hesitate to let the dealer or the factory know if you have encountered a problem or are unsure about your particular set up.

Typical Installations

Schematic for an Inject-O-Meter Pump on an Irrigation System



Schematic for an Inject-O-Meter V-Belt Driven Pump Installed on a Gearhead

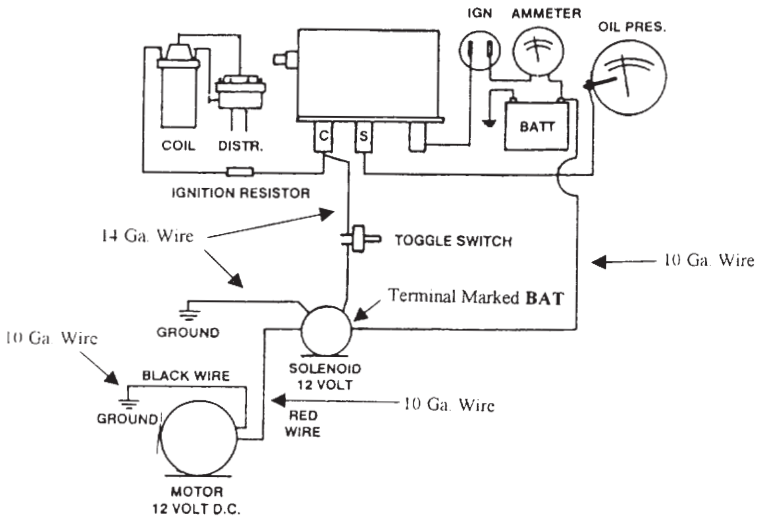


1. Attach V-Belt mounting bracket to the gearhead.
2. Attach injection pump to mounting bracket.
3. Disconnect u-joint on drive shaft from gearhead.
4. Install v-type belt around drive-shaft (v-belt not furnished with injection pump) selecting a belt in length that will allow pump to maintain a level position.
5. Connect u-joint on drive-shaft to gearhead and Install v-belt on injection pump pulley.
   NOTE: At this point, injector should be totally suspended by the mounting bracket and the v-belt. Unit should be as level as possible with an allowance of ± 15 degrees.

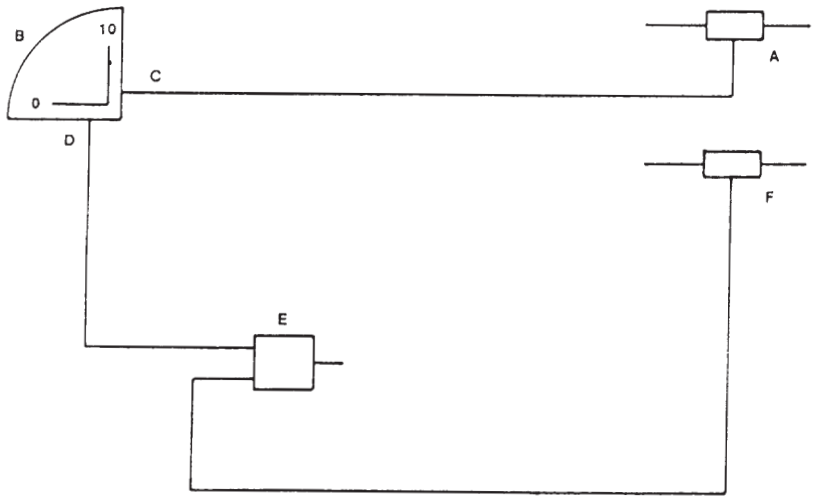
Typical Installations

Battery Ignition Engines
12 Volt D.C. Schematic

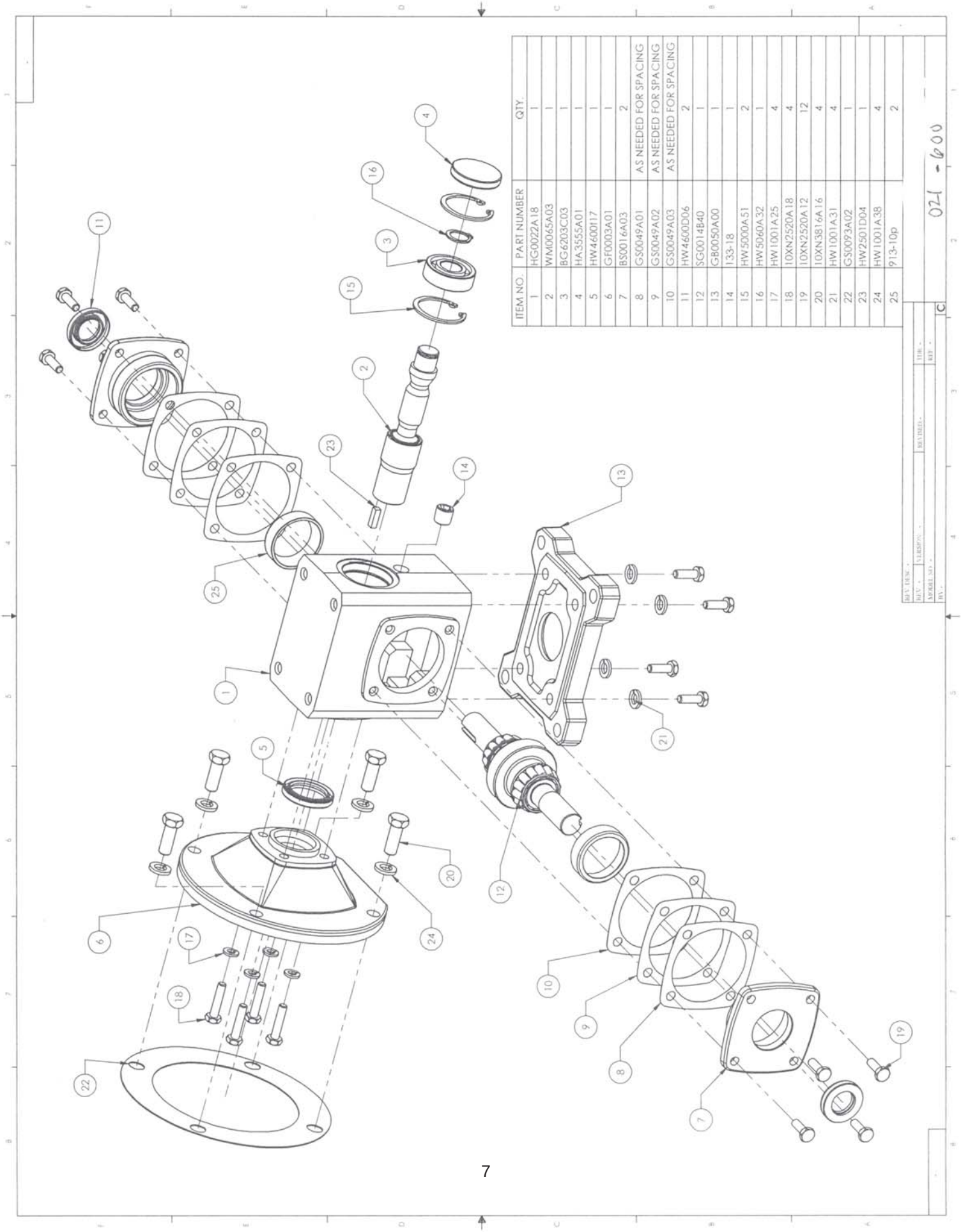
Wire shown on this schematic is not supplied with the system, due to variables in the installation process. The D.C. motor should be located as close to the battery as possible to reduce the wire lengths.



Schematic for an Inject-O-Meter Pump on a T & L Hydraulic Pivot System



A: Inline adapter "red" high-pressure
B: Flow control valve
C: Inlet flow control valve
D: Control flow outlet
E: bi-directional hydraulic motor
F: Inline adapter " black" low-pressure return

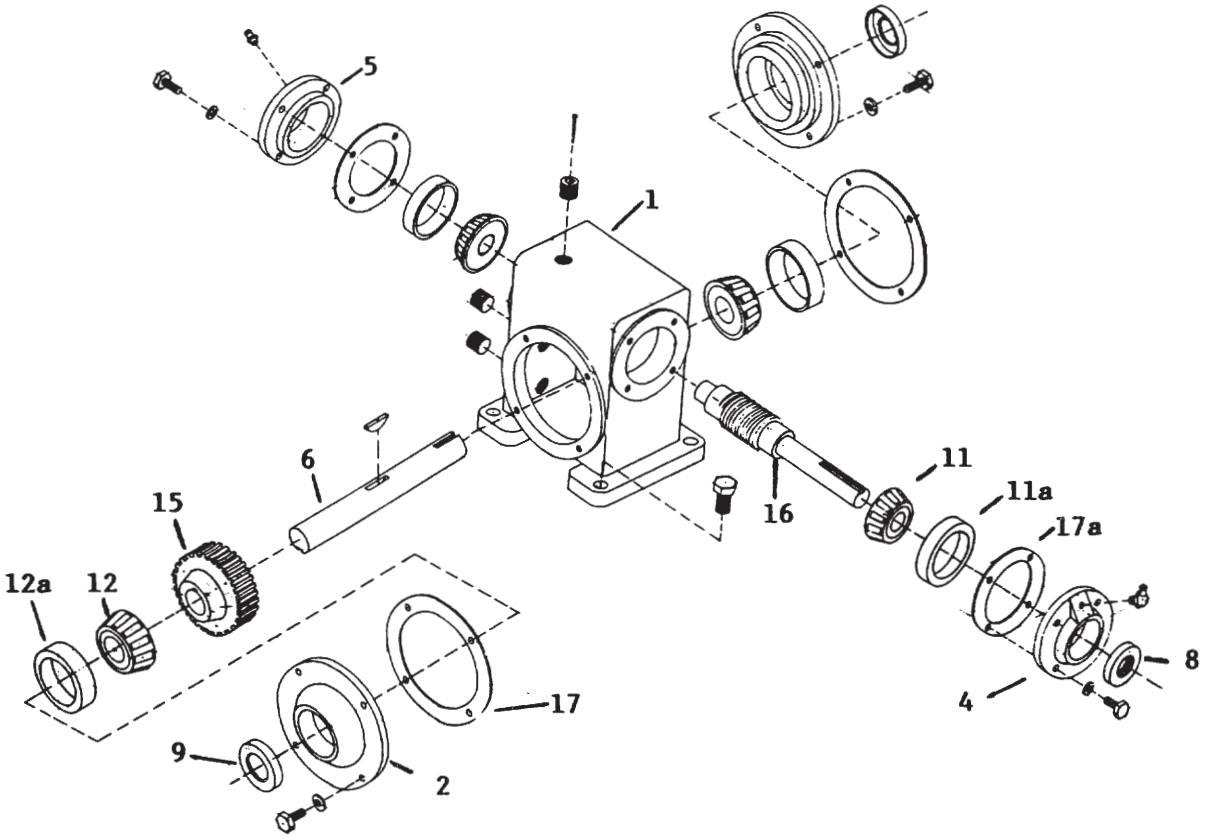


ITEM NO.	PART NUMBER	QTY.
1	HG0022A18	1
2	WM0065A03	1
3	BG6203C03	1
4	HA3555A01	1
5	HW4600f17	1
6	GF0003A01	1
7	BS0016A03	2
8	GS0049A01	AS NEEDED FOR SPACING
9	GS0049A02	AS NEEDED FOR SPACING
10	GS0049A03	AS NEEDED FOR SPACING
11	HW4600D06	2
12	SG0014B40	1
13	GB0050A00	1
14	133-18	1
15	HW5000A51	2
16	HW5060A32	1
17	HW1001A25	4
18	10XN2520A18	4
19	10XN2520A12	12
20	10XN3816A16	4
21	HW1001A31	4
22	GS0093A02	1
23	HW2501D04	1
24	HW1001A38	4
25	913-10p	2

021 - 600

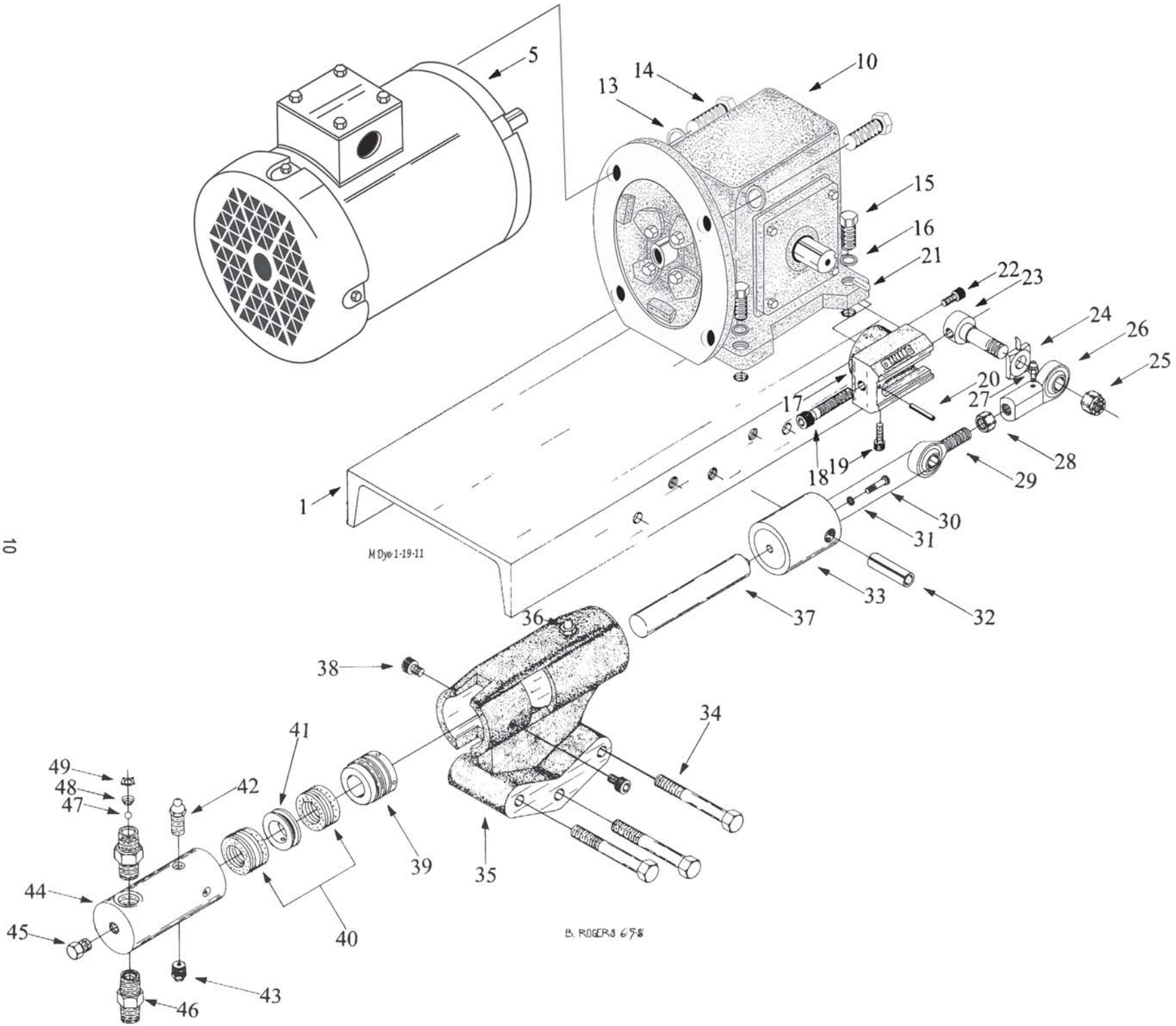
69I SERIES

GEAR REDUCER PARTS



PART NO.	REF. NO.	DESCRIPTION
024-024	1	HOUSING
024-025	2	SLOW SPEED COVER – OPEN
024-027	4	HIGH SPEED COVER – OPEN
024-028	5	HIGH SPEED COVER – CLOSED
024-029	6	SLOW SPEED SHAFT (DBL EXTENSION)
021-007	8	HIGH SPEED OIL SEAL
024-033	9	SLOW SPEED OIL SEAL
024-034	11	ROLLER BEARING – HIGH SPEED SINGLE ROW
024-112	11A	ROLLER BEARING RACE – HIGH SPEED
024-035	12	ROLLER BEARING – SLOW SPEED
024-113	12A	ROLLER BEARING RACE – SLOW SPEED
024-036	13	SLOW SPEED SPACER
024-037	15	SLOW SPEED WORM GEAR – BRONZE 20:1
024-114	15A	SLOW SPEED WORM GEAR – BRONZE 15:1
024-038	16	HIGH SPEED WORM SHAFT – INTEGRAL 20:1
024-115	16A	HIGH SPEED WORM SHAFT – INTEGRAL 15:1
024-184	17	GASKETS – SLOW SPEED (2 REQUIRED)
024-179	17A	GASKETS – HIGH SPEED (2 REQUIRED)
042-130		GEAR OIL, GALLON

REF. #	DESCRIPTIONS	I-70 (3/4")	(5/8")	(1/2")	(3/8")	(1/4")
	PUMP ARM COMPLETE	**021-150**	**021-140**	**021-141**	**021-142**	**021-143**
	COMPLETE ECCENTRIC	***021-035**	***021-035**	***021-035**	***021-035**	***021-035**
17	ECCENTRIC W / CAPACITY SCALE	021-037	021-037	021-037	021-037	021-037
	CAPACITY SCALE	021-041	021-041	021-041	021-041	021-041
	ROUND HEAD U-DRIVE SCREW (2X)	043-018	043-018	043-018	043-018	043-018
18	ECCENTRIC ADUSTING SCREW	021-104	021-104	021-104	021-104	021-104
19	ECCENTRIC SET SCREW LONG	043-019	043-019	043-019	043-019	043-019
20	ECCENTRIC ROLL PIN	021-108	021-108	021-108	021-108	021-108
21	ECCENTRIC KEY	044-123	044-123	044-123	044-123	044-123
22	ECCENTRIC SET SCREW SHORT	043-049	043-049	043-049	043-049	043-049
23	ECCENTRIC TEE BOLT	021-100	021-100	021-100	021-100	021-100
24	WASHER AND POINTER ASSY.	021-049	021-049	021-049	021-049	021-049
25	ECCENTRIC LOCK NUT	021-101	021-101	021-101	021-101	021-101
	BEARING ASSY. COMPLETE	***021-048**	***021-048**	***021-048**	***021-048**	***021-048**
26	ECCENTRIC CONNECTING ROD BEARING	021-044	021-044	021-044	021-044	021-044
27	ECCENTRIC GREASE FITTING	021-152	021-152	021-152	021-152	021-152
28	CONNECTING ROD JAM NUT	043-072	043-072	043-072	043-072	043-072
29	CROSSHEAD CONNECTING ROD BEARING	021-047	021-047	021-047	021-047	021-047
30	**PISTON RETAINING SCREW**	**021-103**	**021-103**	**021-103**	**021-103**	**021-103**
31	**LOCKWASHER (PISTON RETAINING SCREW)**	**021-099**	**021-099**	**021-099**	**021-099**	**021-099**
32	**CROSSHEAD CLEVIS PIN**	**021-102**	**021-102**	**021-102**	**021-102**	**021-102**
33	**CROSSHEAD**	**021-076**	**021-076**	**021-076**	**021-076**	**021-076**
34	**PUMP FRAME MOUNTING BOLT (3X)**	**043-022**	**043-022**	**043-022**	**043-022**	**043-022**
35	**PUMP FRAMECASTING**	***021-032**	***021-032**	***021-032**	***021-032**	***021-032**
36	PUMP FRAME GREASE FITTING	021-051	021-051	021-051	021-051	021-051
37	**PISTON**	**021-079**	**021-122**	**021-119**	**021-063**	**021-057**
39	**GLAND NUT**	**021-081**	**021-121**	**021-120**	**021-149**	**021-074**
38	**CYLINDER SET SCREW**	**043-021**	**043-021**	**043-021**	**043-021**	**043-021**
40	**PACKING NEOPRENE**	**021-096**	**021-095**	**021-094**	**021-093**	**021-092**
41	**LANTERN RING PVC**	**021-078**	**021-127**	**021-080**	**021-065**	**021-128**
44	**CYLINDER**	**021-085**	**021-072**	**021-069**	**021-067**	**021-061**
42	**CYLINDER GREASE FITTING 1/8"**	**024-014**	**024-014**	**024-014**	**024-014**	**024-014**
43	**CYLINDER GREASE RELIEF FITTING**	**021-052**	**021-052**	**021-052**	**021-052**	**021-052**
45	**CYLINDER PURGE PORT PLUG**	**021-053**	**021-053**	**021-053**	**021-053**	**021-053**
46	**PUMP VALVE 3/8" (2X)**	***021-023**	***021-023**	***021-023**	***021-023**	***021-023**
47	VALVE BALL	021-029	021-029	021-029	021-029	021-029
48	VALVE SPRING	021-252	021-252	021-252	021-252	021-252
49	VALVE SPING KEEPER	021-025	021-025	021-025	021-025	021-025
1	**BASE PLATE - NEMA 48**	**021-024**	**021-024**	**021-024**	**021-024**	**021-024**
5	**ELECTRIC MOTOR 1/3 HP THREE PHASE C-FACE**	**044-601**	**044-601**	**044-601**	**044-601**	**044-601**
	ELECTRIC MOTOR 1/3 HP SINGLE PHASE C-FACE	**044-602**	**044-602**	**044-602**	**044-602**	**044-602**
10	**GEAR REDUCER 15:1 C-FACE (BREAKDOWN ON SEPARATE SHEET)**	**021-600**	**021-600**	**021-600**	**021-600**	**021-600**
13	**LOCKWASHER - MOTOR (4X)**	**043-082**	**043-082**	**043-082**	**043-082**	**043-082**
14	**MOTOR MOUNTING BOLTS (4X)**	**043-017**	**043-017**	**043-017**	**043-017**	**043-017**
15	**GEAR REDUCER BOLT (4X)**	**043-017**	**043-017**	**043-017**	**043-017**	**043-017**
16	**LOCKWASHER - GEAR RUDUCER (4X)**	**043-082**	**043-082**	**043-082**	**043-082**	**043-082**
40	**PACKING TEFLON**	**021-091**	**021-090**	**021-089**	**021-088**	**021-087**
40	**PACKING SPECIAL**	**021-350**	**021-351**	**021-352**	**021-353**	**021-354**
41	**LANTERN RING CHEMICAL-STAINLESS STEEL**	**021-124**	**021-126**	**021-075**	**021-039**	**021-058**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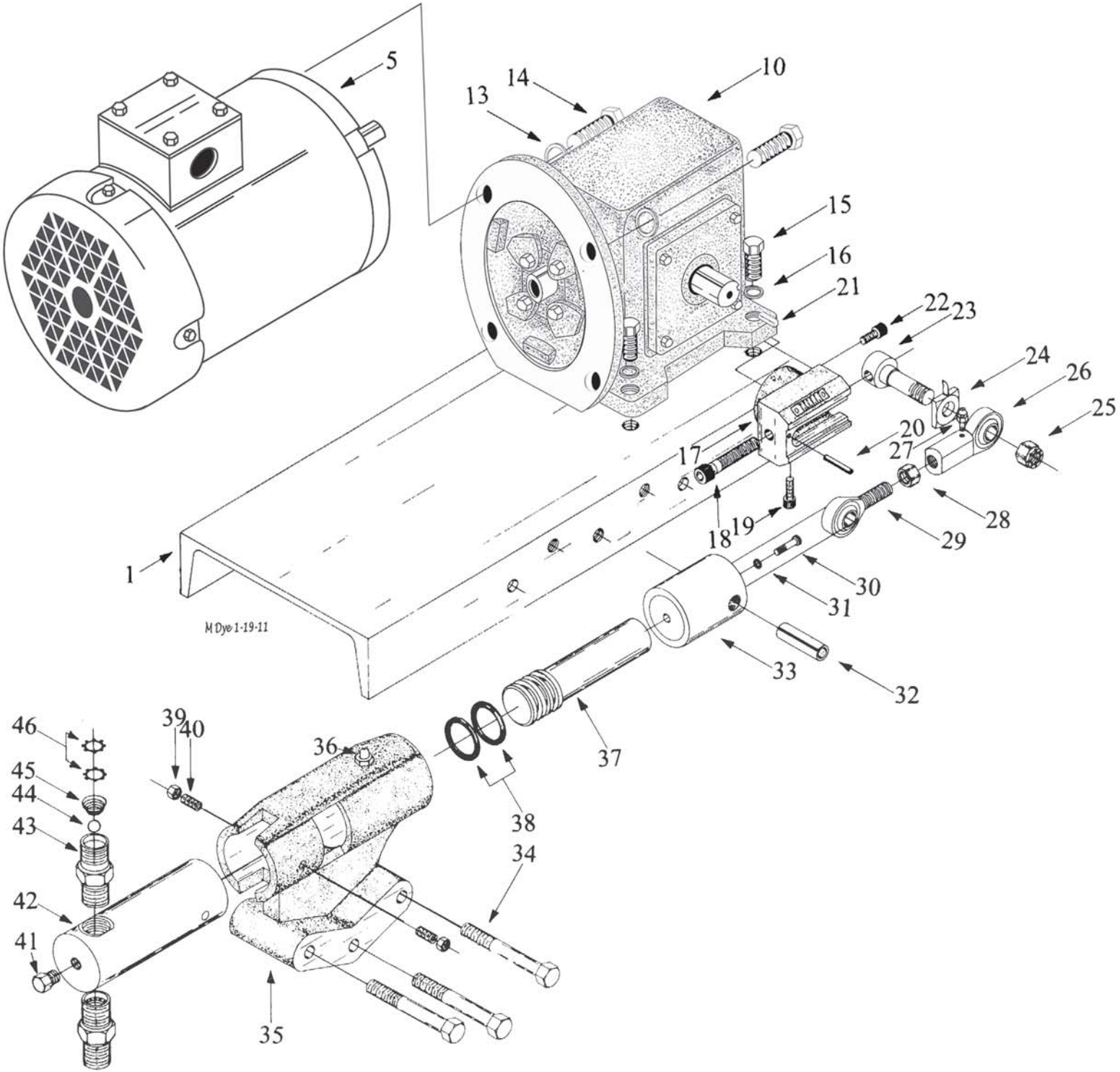
B. ROGERS 6-7-8

REF. #	DESCRIPTIONS	HVI-88 (7/8")	HVI-82 (1 1/4")	IOM-96(1 7/16")
	PUMP ARM COMPLETE	**014-202**	**007-030**	**015-200**
	COMPLETE ECCENTRIC	***021-035**	***021-035**	***021-035B**
17	ECCENTRIC W / CAPACITY SCALE	021-037	021-037	021-037**B**
	CAPACITY SCALE	021-041	021-041	021-041
	ROUND HEAD U-DRIVE SCREW (2X)	043-018	043-018	043-018
18	ECCENTRIC ADUSTING SCREW	021-104	021-104	021-104
19	ECCENTRIC SET SCREW LONG	043-019	043-019	043-019
20	ECCENTRIC ROLL PIN	021-108	021-108	021-108
21	ECCENTRIC KEY	044-123	044-123	044-123
22	ECCENTRIC SET SCREW SHORT	043-049	043-049	043-049
23	ECCENTRIC TEE BOLT	021-100	021-100	021-100
24	WASHER AND POINTER ASSY.	021-049	021-049	021-049
25	ECCENTRIC LOCK NUT	021-101	021-101	021-101
	BEARING ASSY. COMPLETE	***021-048**	***021-048**	***021-048**
26	ECCENTRIC CONNECTING ROD BEARING	021-044	021-044	021-044
27	ECCENTRIC GREASE FITTING	021-152	021-152	021-152
28	CONNECTING ROD JAM NUT	043-072	043-072	043-072
29	CROSSHEAD CONNECTING ROD BEARING	021-047	021-047	021-047
30	**PISTON RETAINING SCREW**	**021-103**	**021-103**	**021-103**
31	**LOCKWASHER (PISTON RETAINING SCREW)**	**021-099**	**021-099**	**021-099**
32	**CROSSHEAD CLEVIS PIN**	**021-102**	**021-102**	**021-102**
33	**CROSSHEAD**	**021-076**	**021-076**	**021-076**
34	**PUMP FRAME MOUNTING BOLT (3X)**	**043-022**	**043-022**	**043-022**
35	**PUMP FRAMECASTING**	***021-032**	***021-032**	***021-032**
36	PUMP FRAME GREASE FITTING	021-051	021-051	021-051
37	**PISTON**	**014-300**	**051-052**	**015-300**
38	**O-RINGS (2X)**	**014-302**	**055-071**	**015-310**
39	**CYLINDER SET SCREW JAM NUT**	**043-067**	**043-067**	**043-067**
40	**CYLINDER SET SCREW**	**043-112**	**043-112**	**043-112**
41	**CYLINDER PURGE PORT PLUG**	**021-053**	**021-053**	**021-053**
42	**CYLINDER**	**014-301**	**051-051**	**015-301**
43	**PUMP VALVE ASSY. (2X)**	***021-285**	***055-069**	***055-069**
44	VALVE BALL	021-286	055-066	055-066
45	VALVE SPRING	N/A	055-068	055-068
46	RETAINING RING (2X)	021-287	055-067	055-067
1	**BASE PLATE - NEMA 48**	**021-024**	**021-024**	**021-024**
5	**ELEC. MOTOR 1/3 HP THREE PHASE C-FACE**	**044-601**	**044-601**	**044-601**
	ELEC. MOTOR 1/2 HP THREE PHASE C-FACE(IOM-96 DUPLEX ONLY)			**044-603**
	ELEC. MOTOR 1/3 HP SINGLE PHASE C-FACE	**044-602**	**044-602**	**044-602**
	ELEC. MOTOR 1/2 HP SINGLE PHASE C-FACE(IOM-96 DUPLEX ONLY)			**044-604**
10	**GEAR REDUCER 15:1 C-FACE(BREAKDOWN ON SEPARATE SHEET)**	**021-600**	**021-600**	**021-600**
13	**LOCKWASHER - MOTOR (4X)**	**043-082**	**043-082**	**043-082**
14	**MOTOR MOUNTING BOLTS (4X)**	**043-017**	**043-017**	**043-017**
15	**GEAR REDUCER BOLT (4X)**	**043-017**	**043-017**	**043-017**
16	**LOCKWASHER - GEAR RUDUCER (4X)**	**043-082**	**043-082**	**043-082**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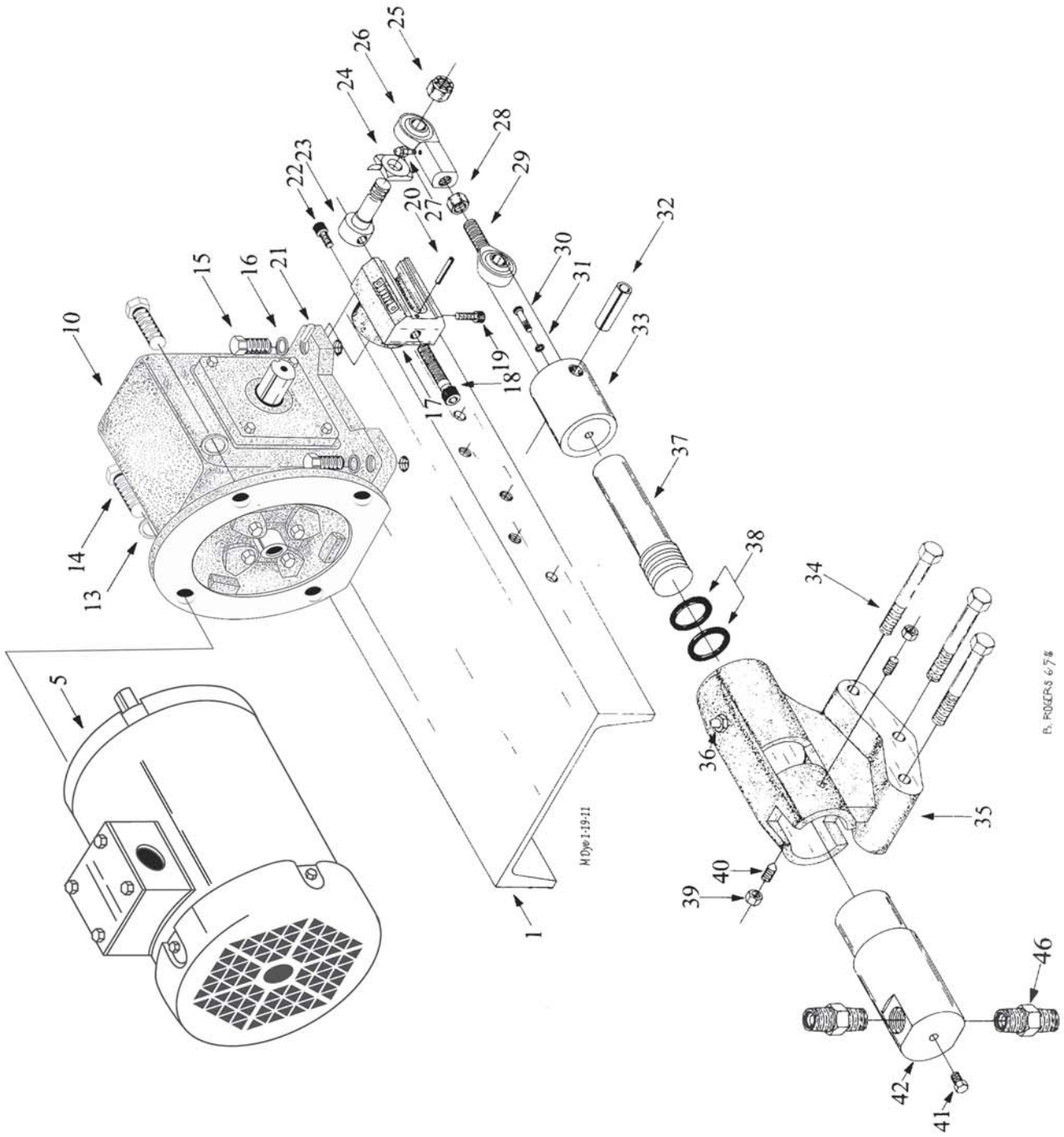
B. ROGERS 6-5-96

REF. #	DESCRIPTIONS	I-70 POLY	KYNAR 3/4	KYNAR 1 1/4	HVI-82 POLY
	PUMP ARM COMPLETE	**021-260**	**021-425**	**051-200**	**051-075**
	COMPLETE ECCENTRIC	***021-035**	***021-035**	***021-035**	***021-035**
17	ECCENTRIC W / CAPACITY SCALE	021-037	021-037	021-037	021-037
	CAPACITY SCALE	021-041	021-041	021-041	021-041
	ROUND HEAD U-DRIVE SCREW (2X)	043-018	043-018	043-018	043-018
18	ECCENTRIC ADUSTING SCREW	021-104	021-104	021-104	021-104
19	ECCENTRIC SET SCREW LONG	043-019	043-019	043-019	043-019
20	ECCENTRIC ROLL PIN	021-108	021-108	021-108	021-108
21	ECCENTRIC KEY	044-123	044-123	044-123	044-123
22	ECCENTRIC SET SCREW SHORT	043-049	043-049	043-049	043-049
23	ECCENTRIC TEE BOLT	021-100	021-100	021-100	021-100
24	WASHER AND POINTER ASSY.	021-049	021-049	021-049	021-049
25	ECCENTRIC LOCK NUT	021-101	021-101	021-101	021-101
	BEARING ASSY. COMPLETE	***021-048**	***021-048**	***021-048**	***021-048**
26	ECCENTRIC CONNECTING ROD BEARING	021-044	021-044	021-044	021-044
27	ECCENTRIC GREASE FITTING	021-152	021-152	021-152	021-152
28	CONNECTING ROD JAM NUT	043-072	043-072	043-072	043-072
29	CROSSHEAD CONNECTING ROD BEARING	021-047	021-047	021-047	021-047
30	**PISTON RETAINING SCREW**	**021-103**	**021-103**	**021-103**	**021-103**
31	**LOCKWASHER (PISTON RETAINING SCREW)**	**021-099**	**021-099**	**021-099**	**021-099**
32	**CROSSHEAD CLEVIS PIN**	**021-102**	**021-102**	**021-102**	**021-102**
33	**CROSSHEAD**	**021-076**	**021-076**	**021-076**	**021-076**
34	**PUMP FRAME MOUNTING BOLT (3X)**	**043-022**	**043-022**	**043-022**	**043-022**
35	**PUMP FRAMECASTING**	***021-032**	***021-032**	***021-032**	***021-032**
36	PUMP FRAME GREASE FITTING	021-051	021-051	021-051	021-051
37	**PISTON**	**021-258**	**021-400**	**051-200**	**051-088**
38	**O-RINGS (2X)**	**056-017**	**056-017**	**055-071**	**055-071**
39	**CYLINDER SET SCREW JAM NUT**	**043-067**	**043-067**	**043-067**	**043-067**
40	**CYLINDER SET SCREW**	**043-112**	**043-112**	**043-112**	**043-112**
41	**CYLINDER PURGE PORT PLUG**	**021-053**	**021-053**	**021-053**	**021-053**
42	**CYLINDER**	**021-257**	**021-401**	**051-201**	**051-085**
46	**PUMP VALVE ASSY. KYNAR (2X)**	**021-407**	**021-407**	**051-207**	**051-207**
1	**BASE PLATE - NEMA 48**	**021-024**	**021-024**	**021-024**	**021-024**
5	**ELECTRIC MOTOR 1/3 HP THREE PHASE C-FACE**	**044-601**	**044-601**	**044-601**	**044-601**
	ELECTRIC MOTOR 1/3 HP SINGLE PHASE C-FACE	**044-602**	**044-602**	**044-602**	**044-602**
10	**GEAR REDUCER 15:1 C-FACE (BREAKDOWN ON SEPARATE SHEET)**	**021-600**	**021-600**	**021-600**	**021-600**
13	**LOCKWASHER - MOTOR (4X)**	**043-082**	**043-082**	**043-082**	**043-082**
14	**MOTOR MOUNTING BOLTS (4X)**	**043-017**	**043-017**	**043-017**	**043-017**
15	**GEAR REDUCER BOLT (4X)**	**043-017**	**043-017**	**043-017**	**043-017**
16	**LOCKWASHER - GEAR RUDUCER (4X)**	**043-082**	**043-082**	**043-082**	**043-082**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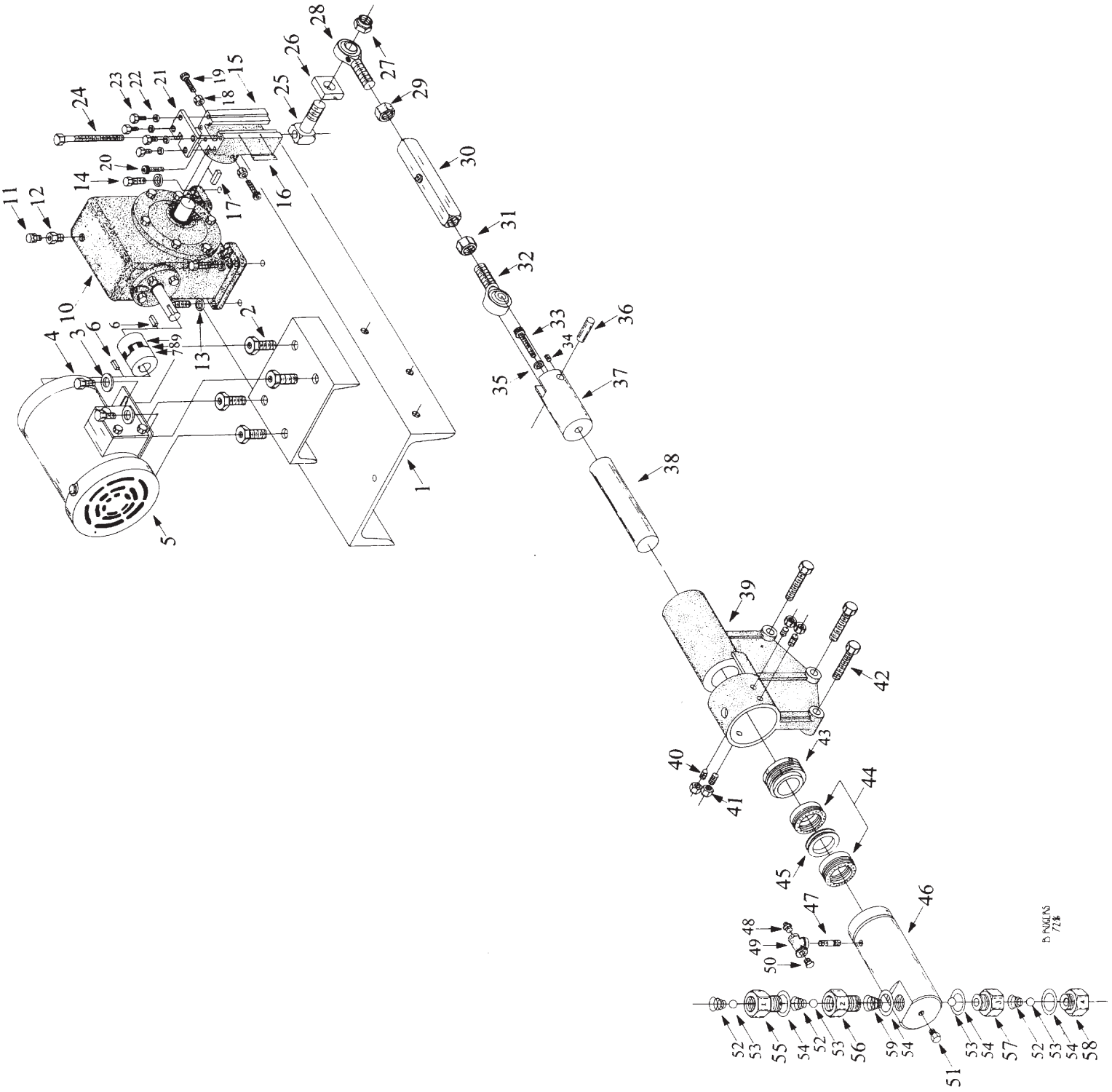
REF. #	DESCRIPTIONS FOR 69-I	P/N		REF. #	DESCRIPTIONS	P/N
	PUMP ARM COMPLETE 1 1/4"	**024-132**		**1**	**BASE PLATE (NEMA 56)**	**024-051**
	PUMP ARM COMPLETE 1 1/2"	**024-133**		**2**	**ELECTRIC MOTOR SUPPORT BOLTS (4X)**	**043-024**
	COMPLETE ECCENTRIC	**024-117**		**3**	**WASHER 7/16" (4X)**	**043-083**
15	ECCENTRIC CASTING	024-083		**4**	**MOTOR MOUNTING BOLTS (4X)**	**043-025**
16	ECCENTRIC CAPACITY SCALE	024-019		**5**	**ELECTRIC MOTOR THREE PHASE**	**044-020**
17	ECCENTRIC KEY	044-124		**5**	**ELECTRIC MOTOR SINGLE PHASE**	**044-026**
18	LOCKNUT ECCENTRIC SOCKET CAPSCREW (2X)	043-104		**6**	**KEY / INPUT SHAFT GEAR BOX**	**044-123**
19	ECCENTRIC SET SCREWS (2X)	043-085			**MOTOR COUPLER ASSY.(5/8" X 3/4")**	***044-148**
20	SOCKET HEAD CAPSCREW 1"	043-109		**7**	MOTOR COUPLER END JAW 3/4"	044-119
21	ECCENTRIC ADJUSTING SCREW PLATE	024-057		**8**	MOTOR COUPLER SPIDER INSERT	044-121
22	LOCKWASHER 1/4" (4X)	043-091		**9**	MOTOR COUPLER END JAW 5/8"	044-147
23	ECCENTRIC ADJUSTING PLATE BOLTS (4X)	043-016		**10**	KEY / INPUT SHAFT GEAR BOX	044-123
24	STROKE ADJUSTING SCREW ECCENTRIC	024-069		**11**	**69-I GEAR REDUCER COMPLETE 15:1**	**024-048**
25	ECCENTRIC TEE BOLT	024-070		**11**	**69-I GEAR REDUCER COMPLETE 20:1**	**024-084**
26	ECCENTRIC WASHER AND POINTER	024-020		**12**	**BREATHER VENT**	**021-112**
27	LOCKNUT ECCENTRIC 36/4" -16 (3X)	024-071		**13**	**BUSHING**	**045-130**
	CONNECTING ROD ASSY. WITH BEARINGS	***024-004**		**14**	**LOCKWASHER (4X)**	**043-082**
28	BEARING ECCENTRIC CONNECTING ROD	024-021			**GEAR REDUCER BOLT (4X)**	**043-017**
N/S	GREASE ZERK , ECCENTRIC BEARING	021-046				
29	NUT ADJUSTING- ECCENTRIC BEARING 3/4"	024-072				
30	CONNECTING ROD ASSY. LESS BEARINGS	024-003				
31	NUT ADJUSTING- CROSSHEAD BEARING 5/8"	043-070				
32	BEARING CROSSHEAD CONNECTING ROD	024-046				
33	**PISTON RETAINING SCREW**	**043-050**				
34	**PISTON RETAINING WASHER**	**024-079**				
35	**CROSSHEAD CLEVIS PIN SET SCREW**	**043-062**				
36	**CROSSHEAD CLEVIS PIN**	**024-073**				
37	**CROSSHEAD**	**024-023**				
38	**PISTON 1 1/4"**	**024-091**				
38	**PISTON 1 1/2"**	**024-062**				
39	**PUMP FRAME CASTING 1 1/4"**	**024-008**				
39	**PUMP FRAME CASTING 1 1/2"**	**024-007**				
N/S	**GREASE FITTING**	**021-051**				
40	**SET SCREW SOCKET 1 1/4"**	**043-106**				
40	**SET SCREW SOCKET 1 1/2"**	**043-112**				
41	**CYLINDER LOCKING SCREW**	**043-067**				
42	**PUMP FRAME MOUNTING BOLT (3X)**	**043-020**				
43	**GLAND NUT 1 1/4"**	**024-089**				
43	**GLAND NUT 1 1/2"**	**024-060**				
44	**PACKING NEOPRENE 1 1/4"**	**024-005**				
44	**PACKING NEOPRENE 1 1/2"**	**024-001**				
45	**LANTERN RING 1 1/4"**	**024-090**				
45	**LANTERN RING 1 1/2"**	**024-059**				
46	**CYLINDER 1 1/4"**	**024-092**				
46	**CYLINDER 1 1/2"**	**024-061**				
	CYLINDER GREASE FITTING ASSY.	***029-016**				
47	NIPPLE 1/8" CLOSE	045-001				
48	CROSSHEAD GREASE FITTING 1/8"	021-051				
49	TEE 1/8"	045-064				
50	CYLINDER GREASE RELIEF FITTING 1/8"	021-052				
51	**CYLINDER PURGE PORT PLUG**	**021-053**				
52	**VALVE SPRING**	**024-067**				
53	**VALVE BALL**	**024-065**				
54	**VALVE GASKET**	**024-068**				
55	**UPPER DISCHARGE VALVE**	**024-094**				
56	**LOWER DISCHARGE VALVE**	**024-095**				
57	**UPPER SUCTION VALVE**	**024-096**				
58	**LOWER SUCTION VALVE**	**024-097**				
59	**VALVE SPRING 1 1/4" PISTON**	**024-067**				
59	**VALVE SPRING 1 1/2" PISTON**	**024-043**				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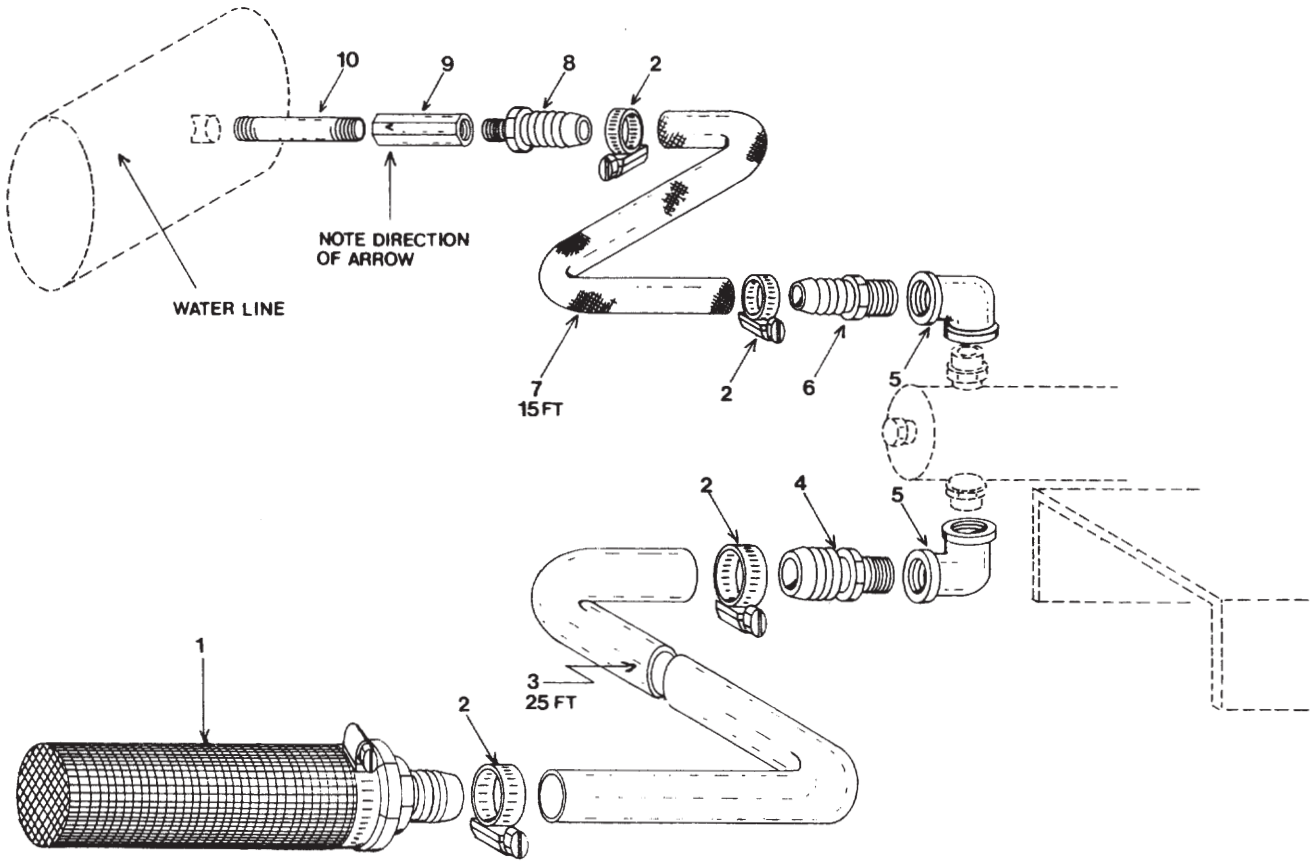
Standard Hosekit Configuration
Simplex
Injection Pumps

REF #	QTY.	DESCRIPTION	I-70	HVI-88	HVI-82	IOM-96
		SIMPLEX STANDARD HOSE KIT COMPLETE	**021-114**	**014-220**	**051-011**	**015-223**
1	2	Strainer Assembly Tube Screen Type	**048-001**	**048-001**	**048-009**	**048-009**
N/S	2	Hose Barb for Tube Screen	046-024	046-024	046-082	046-082
2	4	Hose Clamp	043-004	043-004	043-001	043-001
3	25'	Suction Hose EVA Clear Bulk	041-039	041-039	041-040	041-040
4	1	Hose Barb Poly Suction Side	046-023	046-023	046-081	046-081
5	2	Elbow Poly	046-100	046-100	046-101	046-101
6	1	Hose Barb	046-022	046-023	046-081	046-081
7	15'	Hose Reinforced Discharge	041-038	041-041	041-045	041-045
8	1	Hose Barb for Waterline Checkvalve	046-087	046-025	046-082	046-082
9	1	**See Sheet Following for Waterline Checkvalve**				
		Assemblies and Components for Each				

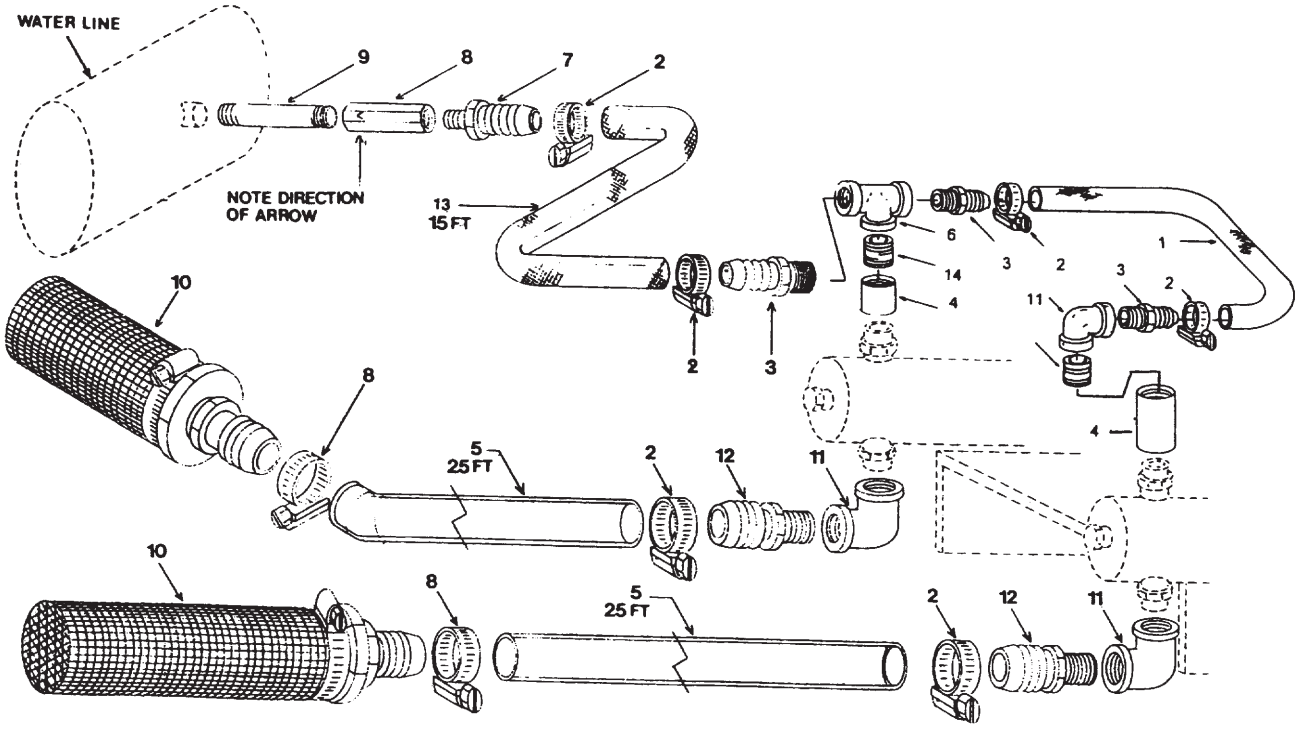
NOTE: PART NUMBERS INDENTED ARE INCLUDED IN THE ASSEMBLY ABOVE



Standard Hosekit Configuration
Duplex Injection Pumps

REF #	QTY.	DESCRIPTION	I-70	HVI-88	HVI-82	IOM-96
		DUPLEX STANDARD HOSE KIT COMPLETE	**021-117**	**014-221**	**051-012**	**015-223**
1	18"	Crossover Hose Reinforced	041-038	041-041	041-045	041-045
2	8	Hose Clamp	043-004	043-004	043-001	043-001
3	3	Hose Barb	046-022	046-023	046-081	046-081
4	2	Coupling Poly	046-119	046-119	046-120	046-120
5	25' X 2	Suction Hose EVA Clear Bulk	041-039	041-039	041-040	041-040
6	1	Tee Poly	046-110	046-111	046-111	046-111
7	1	Hose Barb for Waterline Checkvalve	046-087	046-025	046-082	046-082
8,9	1	**See Sheet Following for Waterline Checkvalve**				
		Assemblies and Components for Each				
10	2	Strainer Assembly Tube Screen Type	**048-001**	**048-001**	**048-009**	**048-009**
N/S	2	Hose Barb for Tube Screen	046-024	046-024	046-082	046-082
11	3	Elbow Poly	046-100	046-100	046-101	046-101
12	2	Hose Barb Poly Suction Side	046-023	046-023	046-081	046-081
13	15'	Discharge Tubing Reinforced	041-038	041-041	041-045	041-045
14	2	Close Nipple	046-159	046-159	046-160	046-160

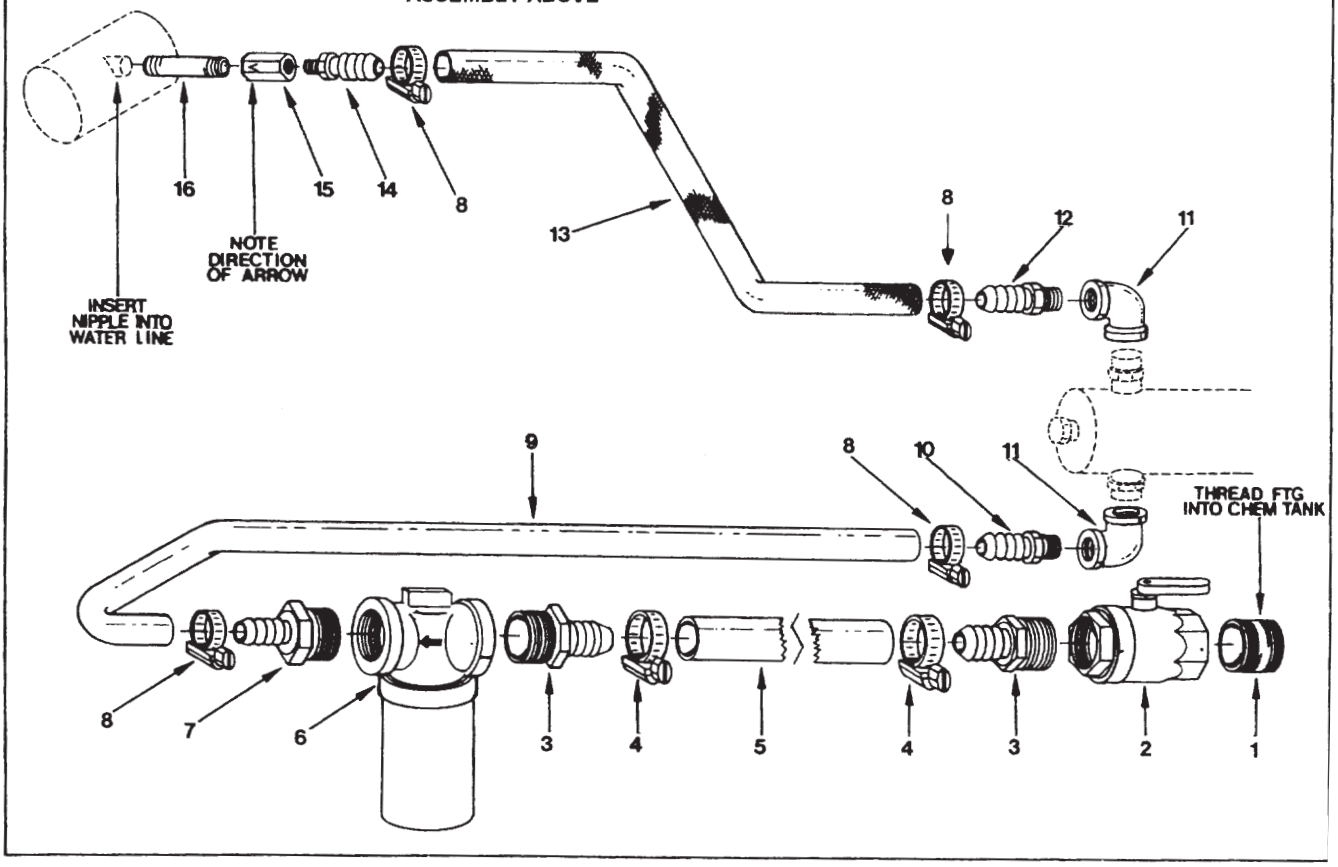
NOTE: PART NUMBERS INDENTED ARE INCLUDED IN THE ASSEMBLY ABOVE



Special Hosekit Configuration
Simplex Injection Pumps

REF #	QTY.	DESCRIPTION	I-70	HVI-88	HVI-82	IOM-96
		SIMPLEX SPECIAL HOSE KIT COMPLETE	021-172	014-222	051-024	015-221
1	1	Nipple 3/4" Close Poly	046-162	046-162	046-162	046-162
2	1	Valve 3/4" Ball Poly	049-006	049-006	049-006	049-006
3	2	Hose Barb 3/4" x 3/4" NPT	046-082	046-082	046-082	046-082
4	2	Hose Clamp 1"	043-001	043-001	043-001	043-001
5	12"	Hose 3/4 EVA Clear Bulk	041-040	041-040	041-040	041-040
6	1	**Inline Strainer 3/4" x 3/4" Complete**	**048-010**	**048-010**	**048-010**	**048-010**
N/S	1	40 Mesh Stainless Steel Strainer	048-018	048-018	048-018	048-018
N/S	1	Gasket	048-012	048-012	048-012	048-012
7	1	Hose Barb Poly	046-024	046-024	046-082	046-082
8	4	Hose Clamp	043-004	043-004	043-001	043-001
9	25'	Suction Hose EVA Clear Bulk	041-039	041-039	041-040	041-040
10	1	Hose Barb Poly Suction Side	046-023	046-023	046-081	046-081
11	2	Elbow Poly	046-100	046-100	046-101	046-101
12	1	Hose Barb Poly Discharge Side	046-022	046-023	046-081	046-081
13	15'	Discharge Hose Reinforced	041-038	041-041	041-045	041-045
14	1	Hose Barb for Waterline Checkvalve	046-087	046-025	046-082	046-082
15, 16	1	**See Sheet Following for Waterline Checkvalve**				
		Assemblies and Components for Each				

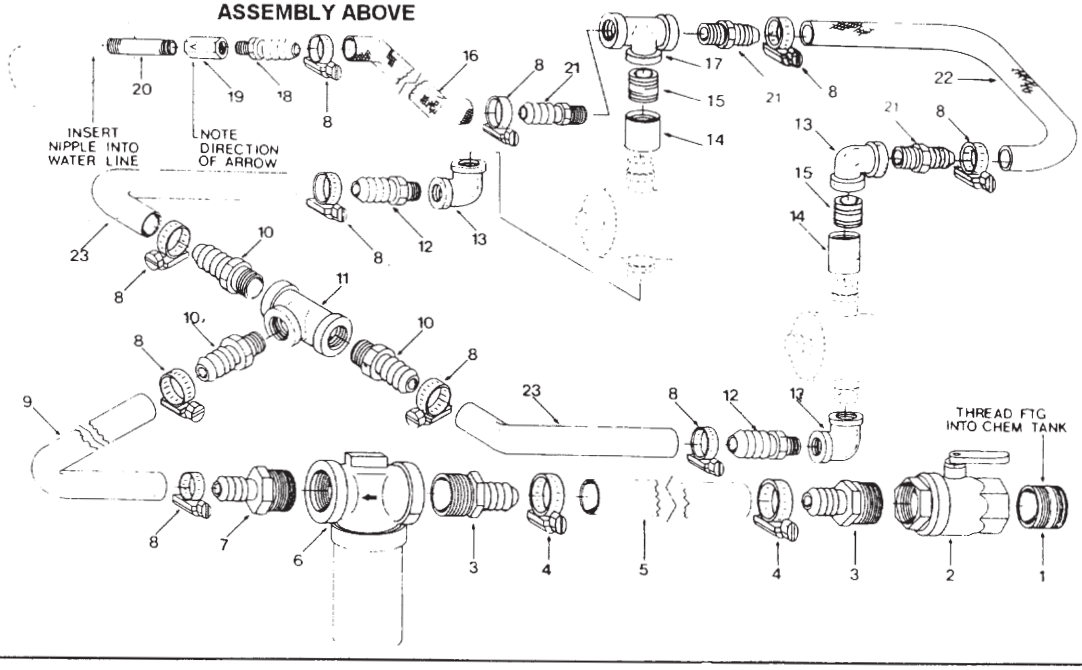
NOTE: PART NUMBERS INDENTED ARE INCLUDED IN THE ASSEMBLY ABOVE



Special Hosekit Configuration
Duplex Injection Pumps

REF #	QTY.	DESCRIPTION	I-70	HVI-88	HVI-82	IOM-96
		DUPLEX SPECIAL HOSE KIT COMPLETE	**021-168**	**014-223**	**051-025**	**015-223**
1	1	Nipple 3/4" Close Poly	046-162	046-162	046-162	046-162
2	1	Valve 3/4" Ball Poly	049-006	049-006	049-006	049-006
3	2	Hose Barb 3/4" x 3/4" NPT	046-082	046-082	046-082	046-082
4	2	Hose Clamp 1"	043-001	043-001	043-001	043-001
5	12"	Hose 3/4 EVA Clear Bulk	041-040	041-040	041-040	041-040
6	1	**Inline Strainer 3/4" x 3/4" Complete**	**048-010**	**048-010**	**048-010**	**048-010**
N/S	1	40 Mesh Stainless Steel Strainer	048-018	048-018	048-018	048-018
N/S	1	Gasket	048-012	048-012	048-012	048-012
7	1	Hose Barb Poly	046-024	046-024	046-082	046-082
8	10	Hose Clamp	043-004	043-004	043-001	043-001
9	25'	Suction Hose EVA Clear Bulk	041-039	041-039	041-040	041-040
10	3	Hose Barb Poly Suction Side	046-025	046-025	046-082	046-082
11	1	Tee Poly	046-111	046-111	046-112	046-112
12	2	Hose Barb Poly Suction Side	046-023	046-023	046-081	046-081
13	3	Elbow Poly	046-100	046-100	046-101	046-101
14	2	Coupling Poly	046-119	046-119	046-120	046-120
15	2	Close Nipple Poly	046-159	046-159	046-160	046-160
16	15'	Discharge Hose Reinforced	041-038	041-041	041-045	041-045
17	1	Tee Poly	046-110	046-110	046-111	046-111
18	1	Hose Barb for Waterline Checkvalve	046-087	046-025	046-082	046-082
19, 20	1	**See Sheet Following for Waterline Checkvalve**				
		Assemblies and Components for Each				
21	3	Hose Barb	046-022	046-023	046-081	046-081
22	18"	Crossover Hose Reinforced	041-038	041-041	041-045	041-045
23	12' x 2	Suction Hose EVA Clear Bulk	041-039	041-039	041-040	041-040

NOTE: PART NUMBERS INDENTED ARE INCLUDED IN THE ASSEMBLY ABOVE

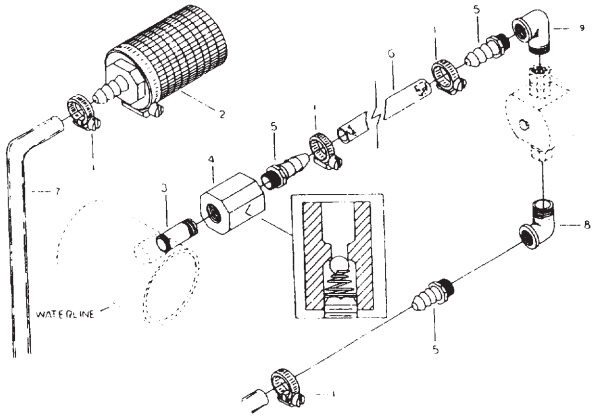


Standard Hosekit Configuration
Simplex and Duplex
69-I Injection Pumps

REF	QTY.	DESCRIPTION	69-I
		SIMPLEX STANDARD HOSE KIT COMPLETE	**024-120**
1	4	Hose Clamp	043-001
2	1	Strainer Assembly Tube Screen Type	**048-009**
N/S	1	Hose Barb for Tube Screen	046-082
3,4	1	**See Sheet Attached for Waterline**	
		Checkvalve Assemblies and Components	

REF	QTY	DESCRIPTION	69-I
5	3	Hose Barb	046-082
6	15'	Discharge Tubing Reinforced	041-045
7	25'	Suction Tubing	041-040
8	1	Street Elbow Poly	046-107
9	1	Elbow Poly	046-102
N/S	1	Nipple 3/4 X 3.5 S/S Slotted **(NOT INCLUDED**	049-042
		IN HOSE KIT)	

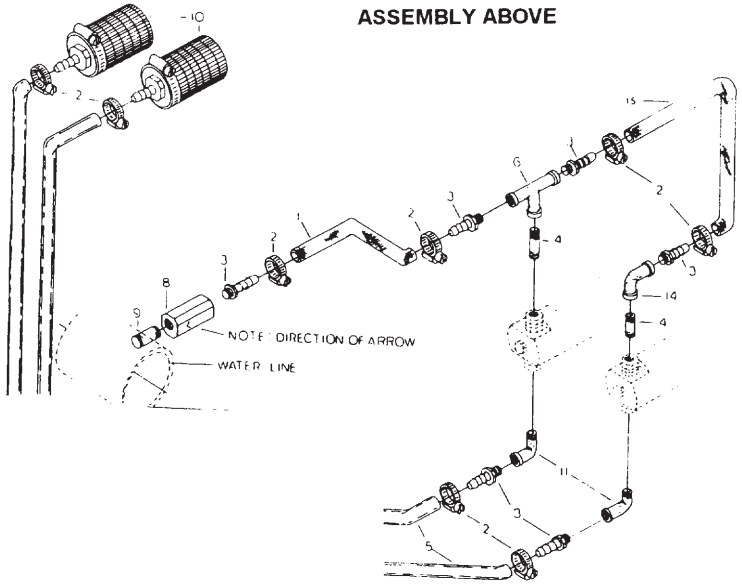
NOTE: PART NUMBERS INDENTED ARE INCLUDED IN THE ASSEMBLY ABOVE



REF	QTY.	DESCRIPTION	69-I
		DUPLEX STANDARD HOSE KIT COMPLETE	**024-122**
1	15'	Discharge Tubing Reinforced	041-045
2	8	Hose Clamp	043-001
3	6	Hose Barb	046-082
4	2	Nipple 3/4 X 3.5 S/S Slotted **(NOT INCLUDED**	049-042
		IN HOSE KIT)	
5	25'X2	Suction Tubing	041-040
6	1	Tee Poly	046-112

REF	QTY	DESCRIPTION	69-I
8,9	1	**See Sheet Attached for Waterline**	
		Checkvalve Assemblies and Components	
10	2	Strainer Assembly Tube Screen Type	**048-009**
N/S	2	Hose Barb for Tube Screen	046-082
11	2	Street Elbow Poly	046-107
14	1	Elbow Poly	046-102
15	18"	Discharge Tubing Reinforced	041-045

NOTE: PART NUMBERS INDENTED ARE INCLUDED IN THE ASSEMBLY ABOVE

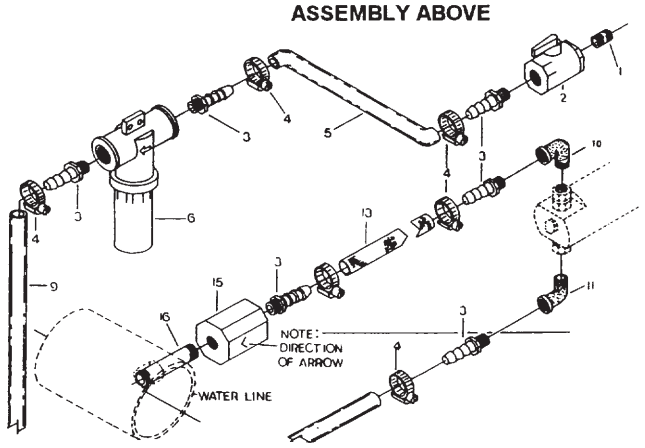


Special Hosekit Configuration
Simplex and Duplex
69-I Injection Pumps

REF	QTY.	DESCRIPTION	P/N
		SIMPLEX SPECIAL HOSE KIT COMPLETE	**024-138**
1	1	Nipple Close Poly	046-162
2	1	Ball Valve 3/4" Poly	049-006
3	6	Hose Barb Poly	046-082
4	6	Hose Clamp	043-001
5	12"	Suction Tubing	041-040
6	1	**Inline Strainer 3/4" X 3/4" Complete**	**048-010**
N/S	1	40 Mesh Stainless Steel Screen	048-018
N/S	1	Gasket	048-012

REF	QTY	DESCRIPTION	P/N
9	25'	Suction Tubing	041-040
10	1	Elbow Poly	046-102
11	1	Street Elbow Poly	046-107
13	15'	Discharge Tubing Reinforced	041-045
15	1	**See Sheet Attached for Waterline**	
		Checkvalve Assemblies and Components	
N/S	1	Nipple 3/4 X 3.5 S/S Slotted **(NOT INCLUDED**	049-042
		IN HOSE KIT)	

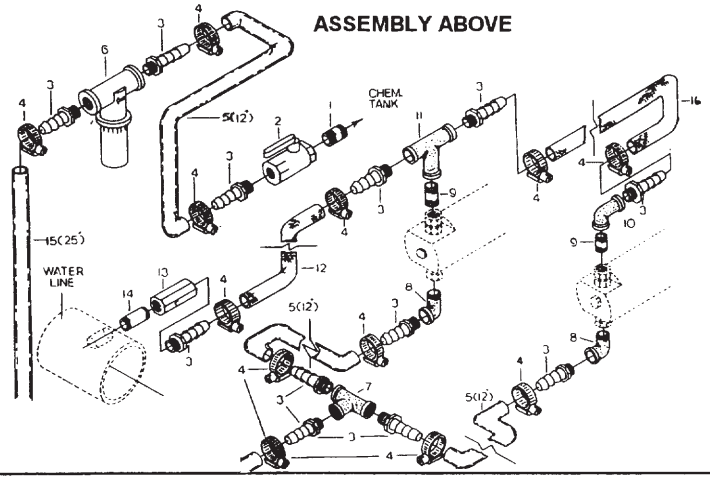
NOTE: PART NUMBERS INDENTED ARE INCLUDED IN THE ASSEMBLY ABOVE



REF	QTY.	DESCRIPTION	P/N
		DUPLEX SPECIAL HOSE KIT COMPLETE	**024-136**
1	1	Nipple Close Poly	046-162
2	1	Ball Valve 3/4" Poly	049-006
3	12	Hose Barb Poly	046-082
4	12	Hose Clamp	043-001
5	12"X3	Suction Tubing	041-040
6	1	**Inline Strainer 3/4" X 3/4" Complete**	**048-010**
N/S	1	40 Mesh Stainless Steel Screen	048-018
N/S	1	Gasket	048-012
7	1	Tee Poly	046-112

REF	QTY	DESCRIPTION	P/N
8	2	Street Elbow Poly	046-107
9	2	Nipple 3/4 X 3.5 S/S Slotted **(NOT INCLUDED**	049-042
		IN HOSE KIT)	
10	1	Elbow Poly	046-102
11	1	Tee Poly	046-112
12	15'	Discharge Tubing Reinforced	041-045
13	1	**See Sheet Attached for Waterline**	
		Checkvalve Assemblies and Components	
15	25	Suction Tubing	041-040
16	18"	Discharge Tubing Reinforced	041-045

NOTE: PART NUMBERS INDENTED ARE INCLUDED IN THE ASSEMBLY ABOVE



Waterline Checkvalves and Components

QTY	DESCRIPTION	I-70	HVI-88	HVI-82	IOM-96	69-I
1	**Waterline Checkvalve Assembly 1/4" without Nipple**	**049-029**				
1	Checkvalve Ball	021-029				
1	Checkvalve Spring Heavy Duty	021-289				
2	Valve Spring Retaining Ring	021-025				
1	Nipple 1/4" Stainless Steel	045-003				
1	**Waterline Checkvalve Assembly 1/2" NPT with Nipple**		**049-052**			
	Soft Seat Design (Soft Seat Required in Some Areas)					
1	Checkvalve Ball		055-066			
1	Checkvalve Spring Heavy Duty		049-049			
1	Checkvalve Viton Soft Seat		049-048			
1	Keeper Seat 316 Stainless Steel		049-056			
1	Nipple 1/2" Stainless Steel		**049-051**			
1	Retaining Ring		055-067			
1	**Waterline Checkvalve Assembly 1/2" NPT**		**049-095**			
	with Nipple Hard Seat Design (IOM-330 Also)					
1	Checkvalve Ball		055-066			
1	Checkvalve Spring Heavy Duty		049-049			
1	Nipple 1/2" Stainless Steel		**049-051**			
1	Retaining Ring		055-067			
1	**Waterline Checkvalve Assembly 3/4" with Nipple**			**049-043**	**049-043**	
	Soft Seat Design (Soft Seat Required in Some Areas)					
1	**Waterline Checkvalve Assembly 3/4" without**			**049-041**	**049-041**	
	Nipple Soft Seat Design					
1	Waterline Checkvalve Body Only with Seat			049-018	049-018	
1	Checkvalve Viton Soft Seat			049-054	049-054	
1	Keeper Seat 316 Stainless Steel			049-057	049-057	
1	Checkvalve Ball			024-065	024-065	
1	Checkvalve Spring Heavy Duty			049-055	049-055	
1	Nipple 3/4" Stainless Steel Slotted			049-042	049-042	
1	**Waterline Checkvalve Assembly 3/4" with Nipple**			**049-077**	**049-077**	
	HARD Seat Design					
1	**Waterline Checkvalve Assembly 3/4" without**			**049-078**	**049-078**	
	Nipple HARD Seat Design					
1	Waterline Checkvalve Body Only with Hard Seat			049-074	049-074	
1	Checkvalve Ball			024-065	024-065	
1	Checkvalve Spring Heavy Duty			049-055	049-055	
1	Nipple 3/4" Stainless Steel Slotted			042-042	042-042	

NOTE: PART NUMBERS INDENTED ARE INCLUDED IN THE ASSEMBLY ABOVE

Waterline Checkvalves and Components

QTY	DESCRIPTION	I-70	HVI-88	HVI-82
1	**MAX-94 Injection Line Checkvalve 25 PSI Cracking Pressure**	**049-085**	**049-085**	**049-085**
	All 316 Stainless Steel Body and Bushing.			
	(Bushing 3/4" Male NPT X 1/2" Female NPT Hose Connection)			
1	Spring 304 Stainless Steel 25 PSI	049-068	049-068	049-068
1	Cap 316 Stainless Steel	049-063	049-063	049-063
1	Plunger 316 Stainless Steel	049-064	049-064	049-064
1	Viton Disc	049-071	049-071	049-071
1	Bushing 316 Stainless Steel, 1/2" FNPT Hose Connection	049-073	049-073	049-073
1	**Bleeder Valve Assy for MAX-94 Injection Line Checkvalve**	**011-033**	**011-033**	**011-033**
1	Bleeder Valve Only	049-005	049-005	049-005
1	Tee Poly 1/2" NPT	046-111	046-111	046-111
1	Bushing Poly	046-009	046-009	046-009
1	Close Nipple Poly	046-160	046-160	046-160
12"	Poly Tubing	046-204	046-204	046-204

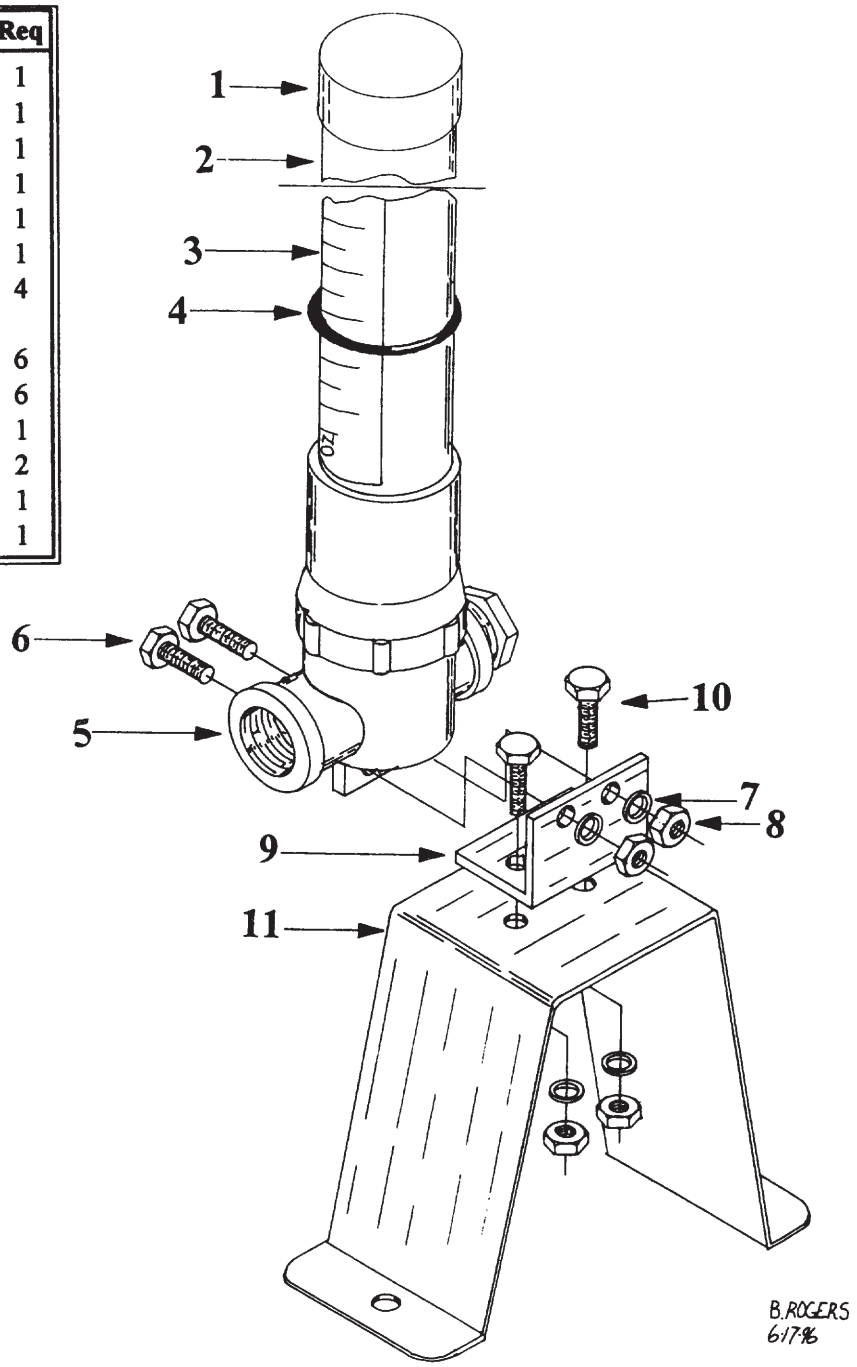
NOTE: PART NUMBERS INDENTED ARE INCLUDED IN THE ASSEMBLY ABOVE

CAL-O-METER

Calibration Tube

CAL-O-METER - Parts

Item	Part #	Description	Req
1	**011-036**	Plastic Cap	1
2	**011-019**	30" Tube & Decal for 65 Gal.	1
	011-068	48" Tube & Decal For 110 Gal.	1
3	**048-014**	Decal	1
4	**011-018**	O'ring	1
5	**048-026**	Calibration Black T-Base	1
6	**043-028**	Capscrew 5/16-18 x 1 xCS	4
		043-028 also for coverguard base	
7	**043-081**	5/16 Lockwasher	6
8	**043-067**	5/16 Locking Screw Jam Nut	6
9	**011-016**	T-Base Bracket	1
10	**043-021**	Capscrew 5/16-18 x 1/2 shcs	2
11	**011-021**	Cover Guard	1
N/S	**048-012**	EPDM Gasket	1



CAL-O-METER Assembly

Part #	For 65 Gallon Tank
011-013	Complete Assembly ***Parts 1 thru 11***
011-014	Sub Assy. ***Parts 1 thru 9***
011-015	Sub Assy. ***Parts 1, 2, 3, & 5***
011-019	Tube, Decal, & Base Only

Part #	For 110 Gallon Tank
011-065	Complete Assembly ***Parts 1 thru 11***
011-066	Sub Assy. ***Parts 1 thru 9***
011-067	Sub Assy. ***Parts 1, 2, 3, & 5***
011-068	Tube, Decal, & Base Only

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HYDRAULIC DRIVE UNIT – MODEL I-70

NOTE: All Calculations are based on flow control valve at No. 10 setting delivering 2 GPH hydraulic Drive Motor

ECCENTRIC CAPACITY SCALE SETTING	1	2	3	4	5	6	7	8	9	10

GALLONS PER HOUR

POWER SUPPLY	I-70 MODEL	PISTON SIZE										
HYD	75115	3/4	2.19	4.37	6.56	8.75	10.93	13.12	15.31	17.49	19.68	21.87
HYD	62115	5/8	1.52	3.03	4.56	6.08	7.60	9.11	10.64	12.16	13.67	15.20
HYD	50115	1/2	.97	1.94	2.91	3.88	4.86	5.84	6.81	7.78	8.75	9.72
HYD	37115	3/8	.55	1.09	1.65	2.19	2.74	3.78	3.83	4.37	4.93	5.47
HYD	25115	1/4	.25	.49	.72	.97	1.22	1.46	1.71	1.94	2.19	2.43

V-BELT R.P.M. CORRECTION CHART

All readings with meter settings on 10 Output – GPH Simplex Pumps
Duplex will be double amount shown

RPM'S ON INPUT SHAFT

MODEL	PISTON SIZE	FACTOR FOR 1 RPM-GPH	1725	1700	1650	1600	1550	1500	1450	1400	1350	1300	1250	1200	1150	1100	1050	1000
75115	3/4	.0103188	17.8	17.5	17.0	16.5	16.0	15.5	15.0	14.5	14.0	13.4	13.0	12.4	11.9	11.4	10.8	10.3
62115	5/8	.007171	12.4	12.2	11.8	11.5	11.1	10.8	10.4	10.0	9.7	9.3	9.0	8.6	8.3	7.9	7.5	7.2
50115	1/2	.0045855	7.9	7.8	7.6	7.3	7.1	6.9	6.7	6.4	6.2	6.0	5.7	5.5	5.3	5.0	4.8	4.6
37115	3/8	.0025797	4.5	4.4	4.3	4.1	4.0	3.9	3.7	3.6	3.5	3.4	3.2	3.1	3.0	2.8	2.7	2.6
25115	1/4	.0011478	1.98	1.95	1.89	1.84	1.78	1.72	1.66	1.61	1.55	1.49	1.43	1.38	1.32	1.26	1.21	1.15

NOTE: All calculations based on 1,725 rpm on input shaft. These charts are designed as a guide only and Inject-O-Meter assumes no liability for their accuracy or the use thereof.

PUMP CAPACITY CHART

I-70 SERIES
15:1 GEAR REDUCER

Setting below for ***Simplex Pump*** – ***Duplex Pump*** will be double the amount shown

GALLONS PER HOUR

POWER SUPPLY	MODEL I-70	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-C-E	75115	3/4	1.78	3.56	5.34	7.12	8.90	10.68	12.46	14.24	16.02	17.80	GAL/HR
D	75115	3/4	1.50	3.00	4.50	6.00	7.50	9.00	10.50	12.00	13.50	15.00	GAL/HR
A-B-C-E	62115	5/8	1.24	2.47	3.71	4.95	6.19	7.42	8.86	9.90	11.13	12.37	GAL/HR
A-B-C-E	50115	1/2	.79	1.58	2.37	3.16	3.96	4.75	5.54	6.33	7.12	7.91	GAL/HR
A-B-C-E	37115	3.8	.45	.89	1.34	1.78	2.23	2.67	3.12	3.56	4.01	4.45	GAL/HR
A-B-C-E	25115	1/4	.20	.40	.59	.79	.99	1.19	1.39	1.58	1.78	1.98	GAL/HR

LITERS PER HOUR

POWER SUPPLY	MODEL I-70	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-C-E	75115	3/4	6.74	13.47	20.21	26.95	33.69	40.42	47.16	53.90	60.64	67.67	LTR/HR
D	75115	3/4	5.68	11.36	17.03	22.71	28.39	34.07	39.47	45.42	51.10	56.78	LTR/HR
A-B-C-E	62115	5/8	4.69	9.35	14.04	18.74	23.43	28.08	32.78	37.47	42.13	46.82	LTR/HR
A-B-C-E	50115	1/2	2.99	5.98	8.97	11.96	14.99	17.98	20.97	23.96	26.95	29.94	LTR/HR
A-B-C-E	37115	3.8	1.70	3.37	5.07	6.74	8.44	10.11	11.81	13.47	15.18	16.84	LTR/HR
A-B-C-E	25115	1/4	.76	1.51	2.23	2.99	3.75	4.50	5.26	5.98	6.74	7.49	LTR/HR

NOTE: All calculations are based on 1,725 RPM on input shaft. These charts are designed as a guide only and Inject-O-Meter assumes no liability for their accuracy or the use thereof.

***POWER SUPPLY

A. 60 Hertz Electric, B. V-Belt, C. 12 Volt D.C. D. 50 Hertz Electric, E. Gasoline

HVI-88 SERIES
PUMP CAPACITY CHART

15:1 GEAR REDUCER

Setting below for ***Simplex Pump*** – ***Duplex Pump*** will be double the amount shown

POWER SUPPLY	MODEL HVI-88	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-C-E	87115	7/8	.3.0	6.0	9.0	12.0	15.0	18.0	21.0	24.0	27.0	30.0	GAL/HR
D	87115	7/8	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	GAL/HR

POWER SUPPLY	MODEL HVI-88	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-C-E	87115	7/8	11.35	22.71	34.06	45.42	56.77	68.13	79.48	90.84	102.2	113.55	LTR/HR
D	87115	7/8	9.46	18.92	28.38	37.84	47.3	56.76	66.22	75.68	85.14	94.6	LTR/HR

HYDRAULIC DRIVE UNIT

NOTE: All calculations are based on flow control valve at No. 10 setting delivering 2 GPH, hydraulic drive motor

ECCENTRIC CAPACITY SCALE SETTING	1	2	3	4	5	6	7	8	9	10

GALLONS/LITERS PER HOUR

GALLONS	3.68	7.36	11.04	14.72	18.40	22.08	25.76	29.43	33.11	36.8
LITERS	13.92	27.86	41.79	55.71	69.64	83.57	97.50	111.39	125.32	139.28

V-BELT RPM CORRECTION CHART

All readings with meter setting on 10 output – GPH ***Simplex Pumps*** – ***Duplex Pump*** will be double amount shown

RPM'S ON INPUT SHAFT

MODEL	PISTON SIZE	FACTOR FOR 1 RPM-GPH	1725	1700	1650	1600	1550	1500	1450	1400	1350	1300	1250	1200	1150	1100	1050	1000
87115	7/8	.017392	30.0	29.5	28.7	27.8	27.0	26.1	25.2	24.4	23.5	22.6	21.7	20.9	20.0	19.1	18.3	17.4

NOTE: All calculations are based on 1,725 RPM on input shaft. These charts are designed as a guide only and Inject-O-Meter assumes no liability for their accuracy or the use thereof.

***POWER SUPPLY

A. 60 Hertz Electric, B. V-Belt, C. 12 Volt D.C. D. 50 Hertz Electric, E. Gasoline

HVI-82 SERIES
PUMP CAPACITY CHART

15:1 GEAR REDUCER

Setting below for ***Simplex Pump – Duplex Pump*** will be double the amount shown

POWER SUPPLY	MODEL HVI-82	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-C-E	125115	1.25	5.7	11.4	17.1	22.8	28.5	34.2	39.9	45.6	51.3	57.0	GAL/HR
D	125115	1.25	4.75	9.5	14.3	19.0	23.8	28.5	33.3	38.0	42.7	47.5	GAL/HR

POWER SUPPLY	MODEL HVI-82	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-C-E	125115	1.25	21.5	43.2	64.7	86.3	107.9	129.5	151.0	172.6	194.2	215.6	LTR/HR
D	125115	1.25	17.9	35.9	53.7	71.6	89.5	107.4	125.3	143.2	161.0	179.7	LTR/HR

HYDRAULIC DRIVE UNIT

NOTE: All calculations are based on flow control valve at No. 10 setting delivering 2 GPH, hydraulic drive motor

ECCENTRIC CAPACITY SCALE SETTING	1	2	3	4	5	6	7	8	9	10

GALLONS/LITERS PER HOUR

GALLONS	2.19	4.37	6.56	8.75	10.93	13.12	15.31	17.49	19.68	21.87
LITERS	1.52	3.03	4.56	6.08	7.60	9.11	10.64	12.16	13.67	15.20

V-BELT RPM CORRECTION CHART

All readings with meter setting on 10 output – GPH ***Simplex Pumps – Duplex Pump*** will be double amount shown

RPM'S ON INPUT SHAFT

MODEL	PISTON SIZE	FACTOR FOR 1 RPM-GPH	1725	1700	1650	1600	1550	1500	1450	1400	1350	1300	1250	1200	1150	1100	1050	1000
125115	1.25	0.033044	57.0	56.2	54.5	52.9	51.2	49.6	47.9	46.3	44.6	42.9	41.3	39.6	38.0	36.4	34.7	33.0

NOTE: All calculations are based on 1,725 RPM on input shaft. These charts are designed as a guide only and Inject-O-Meter assumes no liability for their accuracy or the use thereof.

***POWER SUPPLY

A. 60 Hertz Electric, B. V-Belt, C. 12 Volt D.C. D. 50 Hertz Electric, E. Gasoline

IOM-96 SERIES
PUMP CAPACITY CHART

15:1 GEAR REDUCER

Setting below for ***Simplex Pump*** – ***Duplex Pump*** will be double the amount shown

POWER SUPPLY	MODEL IOM-96	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-C-E	1438115	1.438	10	20	30	40	50	60	70	80	90	100	GAL/HR
D	1438115	1.438	8.3	16.6	24.9	33.2	41.5	49.8	58.1	66.4	74.7	83	GAL/HR

POWER SUPPLY	MODEL IOM-96	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-C-E	1438115	1.438	37.85	75.7	113.56	151.41	189.27	227.12	264.98	302.83	340.69	378.54	LTR/HR
D	1438115	1.438	31.42	62.84	94.26	125.68	157.09	188.51	219.93	251.35	282.77	314.19	LTR/HR

V-BELT RPM CORRECTION CHART

All readings with meter setting on 10 output – GPH ***Simplex Pumps*** – ***Duplex Pump*** will be double amount shown

RPM'S ON INPUT SHAFT

RPM'S ON INPUT SHAFT	1725	1700	1650	1600	1550	1500	1450	1400	1350	1300	1250	1200	1150	1100	1050	1000
GAL/HR	100	98.6	95.7	92.8	89.9	87	84.1	81.2	78.3	75.4	72.5	69.6	66.7	63.8	60.9	58

NOTE: All calculations are based on 1,725 RPM on input shaft. These charts are designed as a guide only and Inject-O-Meter assumes no liability for their accuracy or the use thereof.

***POWER SUPPLY

A. 60 Hertz Electric, B. V-Belt, C. 12 Volt D.C. D. 50 Hertz Electric, E. Gasoline

I-70 POLYPROPYLENE, HVI-82 POLYPROPYLENE, AND KYNAR PUMP CAPACITY CHART

15:1 GEAR REDUCER

Setting below for ***Simplex Pump – Duplex Pump*** will be double the amount shown

I-70 POLYPROPYLENE AND KYNAR

POWER SUPPLY	MODEL I-70	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-E	75115	3/4	2.0	4.0	6.0	8.0	10.	12.0	14.0	16.0	18.0	20.	GAL/HR
C	75120	3/4	2.1	4.2	6.3	8.4	10.5	12.5	14.6	16.7	18.8	20.9	GAL/HR
D	75115	3/4	1.7	3.3	5.0	6.7	8.4	10.0	11.7	13.4	15.0	16.7	GAL/HR

POWER SUPPLY	MODEL I-70	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-E	75115	3/4	7.6	15.1	22.7	30.3	37.8	45.4	53.0	60.6	68.1	75.7	LTR/HR
C	75120	3/4	7.9	15.8	23.7	31.6	39.6	47.5	55.4	63.3	71.2	79.1	LTR/HR
D	75115	3/4	6.3	12.6	19.0	25.3	31.6	37.9	44.2	50.6	56.9	63.2	LTR/HR

HVI-82 POLYPROPYLENE AND KYNAR

POWER SUPPLY	MODEL HVI-82	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-E	125115	1 1/4	5.7	11.4	17.1	22.8	28.5	34.2	39.9	45.6	51.3	57.0	GAL/HR
C	125120	1 1/4	5.9	11.8	17.7	23.6	23.6	35.4	41.3	47.2	53.1	59.4	GAL/HR
D	125115	1 1/4	4.8	9.5	14.3	19.0	23.8	28.6	38.1	38.1	42.8	47.6	GAL/HR

POWER SUPPLY	MODEL HVI-82	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-B-E	125115	1 1/4	21.6	43.1	64.7	86.3	107.8	129.4	151.0	172.6	194.1	215.7	LTR/HR
C	125120	1 1/4	22.5	45.0	45.0	89.9	112.4	134.9	157.4	179.8	202.3	224.8	LTR/HR
D	125115	1 1/4	18.0	36.0	36.0	72.1	90.1	108.1	126.1	144.2	162.2	180.2	LTR/HR

NOTE: The above data is based on pumping water at an ambient temperature of 70°F against a constant 100 PSI. The data on the capacity chart should be used as a guide only and Inject-O-Meter assumes no liability for its accuracy or use thereof. For the most accurate pump output, a calibration procedure such as the one contained herein should be used.

***POWER SUPPLY

A. 60 Hertz Electric, B. V-Belt, C. 12 Volt D.C., 1800 RPM's, 53 amps, D. 50 Hertz Electric, E. Gasoline

69-I MODEL
PUMP CAPACITY CHART

1725 PRM INPUT - 20:1 GEAR REDUCER (86 STROKES PER MINUTE)

Setting below for ***Simplex Pump*** – ***Duplex Pump*** will be double the amount shown

POWER SUPPLY	MODEL 69-I	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-C-D	1503S-115	1 1/2	12.3	24.6	36.9	49.2	61.5	73.8	86.1	98.4	110.7	123.0	GAL/HR
B	1503S-115 (50Hz)	1 1/2	10.3	20.6	30.9	41.2	51.5	61.8	72.1	82.4	92.7	103.0	GAL/HR

******TO CONVERT GALLONS TO LITERS, MULTIPLY GALLONS PER HOUR X 3.785******

NOTE: All calculations are based on 1725 RPM input (except 50 Hertz Electric)

50 Hz ELECTRIC – LITERS PER HOUR OUTPUT

POWER SUPPLY	MODEL 69-I	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
B	1503S-115 (metric)	1 1/2	39.0	78.0	117.0	155.9	194.9	233.9	272.9	311.9	350.9	389.9	LTR/HR

This chart is designed as a guide ***ONLY***, and Inject-O-Meter assumes no liability for the accuracy of its contents or the use thereof.

***POWER SUPPLY
A. 60 Hertz Electric, B. 50 Hertz Electric, C. V-Belt, D. Gasoline

69-I MODEL

SPECIAL
PUMP CAPACITY CHART

1725 PRM INPUT - 15:1 GEAR REDUCER (86 STROKES PER MINUTE)
Setting below for ***Simplex Pump – Duplex Pump*** will be double the amount shown

POWER SUPPLY	MODEL 69-I	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
A-C-D	1253S-86	1 1/4	11.3	22.3	34.1	45.5	56.9	68.2	79.6	91.0	102.4	113.7	GAL/HR
B	1253S-86 (50 Hz)	1 1/4	9.6	19.3	28.9	38.6	48.2	57.8	67.5	77.1	86.7	96.4	GAL/HR
A-C-D	1503S-86	1 1/2	16.4	32.8	49.2	65.6	82.0	98.4	114.8	131.2	147.6	164.0	GAL/HR
B	1503S-86 (50Hz)	1 1/2	13.77	27.5	41.3	55.1	68.9	82.6	96.4	110.2	123.9	137.7	GAL/HR

******TO CONVERT GALLONS TO LITERS, MULTIPLY GALLONS PER HOUR X 3.785******

NOTE: All calculations are based on 1725 RPM input (except 50 Hertz Electric)

50 Hz ELECTRIC – LITERS PER HOUR OUTPUT

POWER SUPPLY	MODEL 69-I	PISTON SIZE	1	2	3	4	5	6	7	8	9	10	
B	1253S-86 (metric)	1 1/4	36.3	73.1	109.4	146.1	182.4	218.8	255.5	291.8	328.2	364.9	LTR/HR
B	1503s-86 (metric)	1 1/2	52.1	104.1	156.3	208.5	260.8	312.6	364.9	417.1	469.0	521.2	LTR/HR

This chart is designed as a guide ***ONLY***, and Inject-O-Meter assumes no liability for the accuracy of its contents or the use thereof.

***POWER SUPPLY
A. 60 Hertz Electric, B. 50 Hertz Electric, C. V-Belt, D. Gasoline

TO FIGURE INJECTION RATE

KIND OF FERTILIZER SOLUTIONS

28% Urea – Ammonium Nitrate weighs 10.65 lb/gal. and has 3.0 lb. N/gal.
32% Urea – Ammonium Nitrate weighs 11.06 lb/gal. and has 3.54 lb. N/gal.

CALCULATION STEPS:

STEP 1: **Decide on amount of nitrogen fertilizer you want to apply per acre.**

Example: 30 lbs. Of N/AC Your Field_____

STEP 2: **Decide on the kind of nitrogen fertilizer you want to apply.**

Example: Sol. 32% N. Your Field_____

STEP 3: **Determine the number of gallons of fertilizer solution needed per acre.**
For 32% N – Divide lbs. Of N/AC by 3.54 ***For 28% N – Divide lbs. N/AC by 3.0***

Example: 8.47 GAL/AC Your Field_____

STEP 4: **Determine the number of acres irrigated per revolution of center pivot.**

Example: 130 AC Your Field_____

STEP 5: **Multiply gal/acre of fertilizer solution times acres irrigated per revolution (Step 3 times Step 4)**

Example: 1118 GAL/REV Your Field_____

STEP 6: **Determine the mount of time for the center pivot sprinkler to make one revolution.** (See center pivot Manufacturer's Operator's Manual and Recommendations for your soil and crop.)

Example: 84 Hours Your Field_____

STEP 7: **Calculate the rate of flow of fertilizer solution into the irrigation system. Divide Gallons of fertilizer solution needed per revolution (Step 5) by total time in Hours per revolution (Step 6).**

Example: 13.11 GAL/HR Your Field_____

STEP 8: **See Operators Manual for the setting on the pump.**

***The above chart and example are designed as a guide only and Inject-O-Meter assumes no liability for its accuracy or the use thereof.**

1 – Ounce = 29.57 Milliliters
1 – Gallon = 3785 Milliliters

1 – Pine = 473 Milliliters
1 – Quart = 32 Ounces, 2 Pints

1 – Quart = Milliliters
1 – Gallon = 4 Quarts, 8 Pints, 128 Ounces