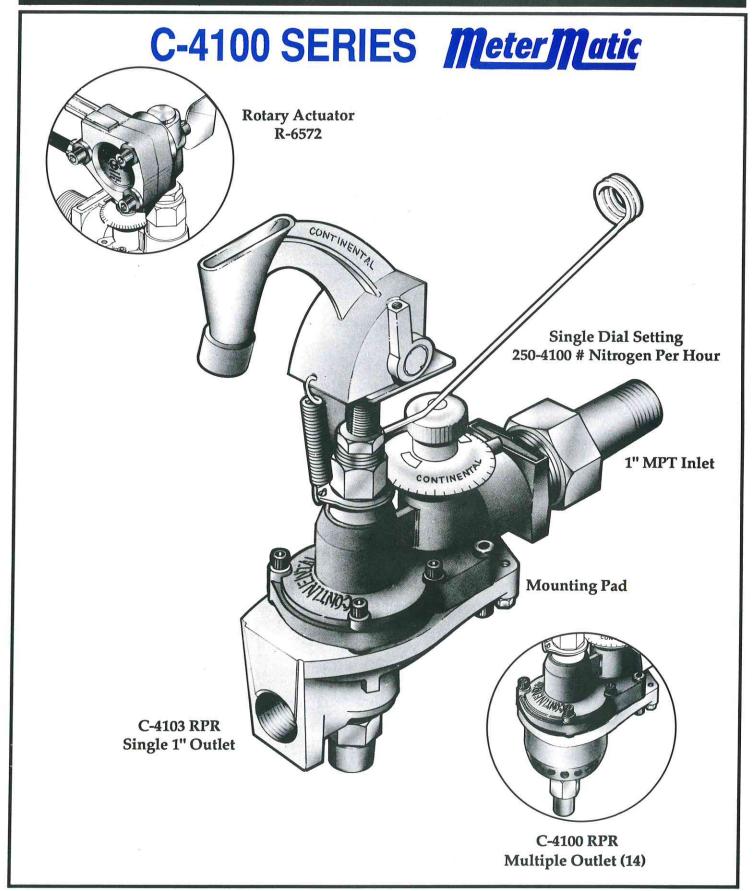
CONTINENTAL PRODUCTS CO., INC.

The Quality Line

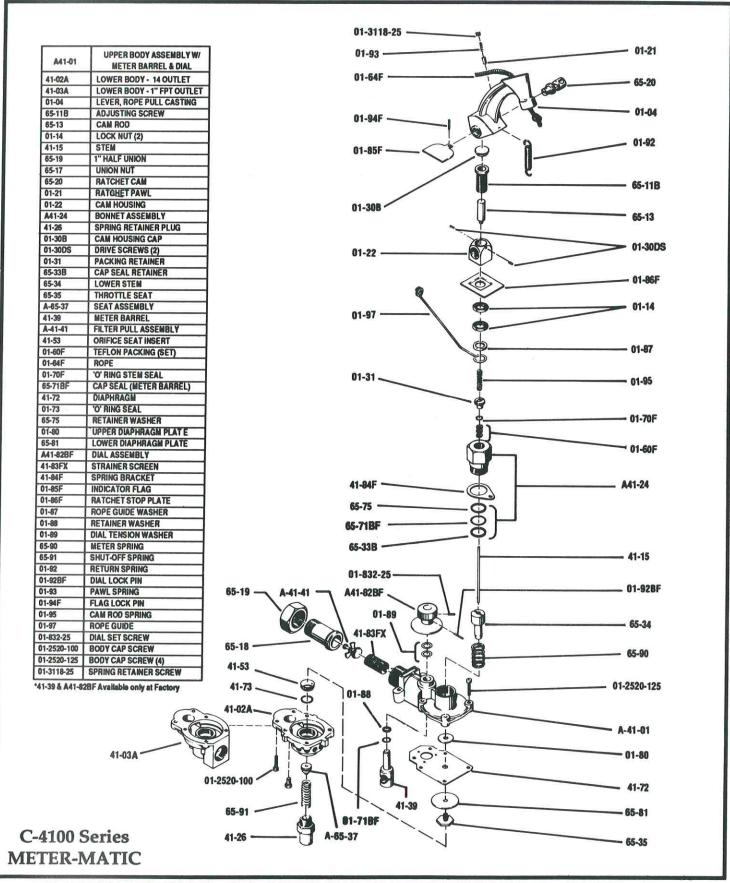




CONTINENTAL (NH3) PRODUCTS CO., INC.

The Quality Line







C-4100 Series SETTING INSTRUCTIONS

Simplicity in setting the CONTINENTAL METER MATIC is one of its outstanding features and is based on the following known values:

- 1. Desired amount of 'N' to be applied in lbs. per acre.
- 2. Swath Width. (in feet).
- 3. Tractor Speed. (MPH)

HOW TO SET METER MATIC FOR APPLICATION RATES SHOWN ON DIAL FORMULA FOR SETTING C-2500, C-4100, AND B-9500

If appropriate charts are not available use the formula Lbs. Nitrogen X Swath Feet X MPH X .1212 = Lbs. Nitrogen in one hour.

Example:

Lbs. Nitrogen per Acre

100 30

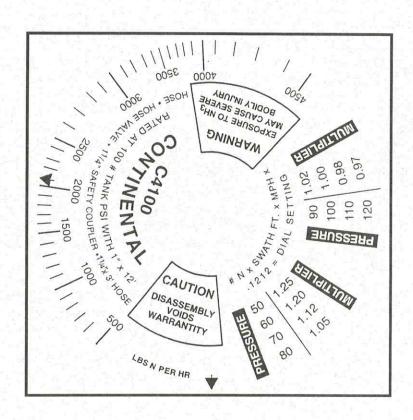
Swath width in feet Tractor speed

Lbs. Nitrogen X swath feet X MPH X .1212 = Nitrogen applied in one hour X .1212 = 1818 Lbs. Nitrogen per hour. X 5

This will be the dial setting at 100# pressure in a normal fitting arrangement. (12 feet of 1" hose X hose valve X 1-1/4" QDC X 3' of 1" hose).

This setting number is then multiplied by the tank pressure multipler on the dial (if not 100 lbs. tank pressure) in order to get the actual dial setting.

If using charts, find setting number then multipy the setting number by the tank pressure multiplier = dial setting.





CARE & MAINTENANCE: IMPORTANT

The METER MATIC is a precision metering divice and it will perform more accurately and with very little maintenance if only a few simple precautions are followed.

- 1. The unit should be protected from the elements as much as possible when not in service.
- 2. At close of applicating season, or if out of service for extended period of time, disconnect meter and clean out sediment or foreign matter from meter-barrel, manifold, and hose barbs.

CAUTION: BE CERTAIN TANK VALVE IS SECURELY CLOSED AND ALL AMMONIA HAS BEEN EVACUATED FROM METER MATIC BEFORE DISCONNECTING.

- 3. Apply several drops of light lubricating oil on meter barrel, both below the dial and through the inlet opening.
- 4. Rotate the dial several times to allow oil to penetrate seal and barrel housing.
- 5. Store inside during off-season if at all possible.

TROUBLE CHECK

A. CAUSES FOR INACCURACY

- Dial Setting Recheck setting instructions.
- 2. Liquid Withdrawal Check supply tank for adequate supply of liquid.
- 3. Excessive Frosting Frosting of lower body is normal, frosting of upper indicates possible inaccuracy.
 - (a) Frost formed on upper body including inlet union and strainer indicates restriction in the withdrawal valve or in hose and/or couplings.
 - (b) Frost formed on upper body excluding union nut indicates
 - (1) Clogged strainer screen Remove and clean out.
 - (2) Ruptured diaphragm See instructions "B" DISASSEMBLY
 - (3) Restriction of meter-barrel by-pass canal. = See "B" DISASSEMBLY

B. LEAKS

- 1. If leak develops at diaphragm between upper and lower bodies it can usually be stopped by tightening cap screws (01-2520-100 & (01-2520-125). If this fails, replace diaphragm. See "B" DISASSEMBLY
- Leak thru discharge hoses when Quick Shut-off is closed.
 - Note: The Quick Shut-Off is designed to function as a safety release in the event the tank valve left open and pressure allowed to build up in the METER MATIC. Tank valve should always be closed when meter not in use.
 - (a) Foreign matter lodged or imbedded in seat (A-01-36).
 - (b) Damaged or worn out seat (A-01-36).
 - (c) Check stem shut-off adjustment.
 - (1) To correct (a), (b), or (c) above See instructions "A" DISASSEMBLY and instruction "B" ASSEMBLY.
- 3. Leak thru and around Cam Housing Assembly (01-22). Check and adjust stem packing. See instructions "C" DISASSEMBLY.
- 4. Leak under dial. See instructions 2 & 3 CARE & MAINTENANCE.
 - (a) Replace cap seal. See instructions "D" DISASSEMBLY.



The Quality Line



DISASSEMBLY

For field repair and maintenance of the METER MATIC the following instructions and procedure is suggested:

CAUTION: BE SURE THAT TANK VALVE IS SECURELY CLOSED AND ALL AMMONIA HAS BEEN EVACUATED FROM METER MATIC BEFORE ATTEMPTING DISASSEMBLY.

A. REPLACE QUICK-SHUT-OFF SEAT

1. Remove plug (41-26) and spring (65-91X)

2. Remove seat assembly (A-65-37) and replace with new part.

B. REPLACE DIAPHRAGM

- 1. Remove six cap screws (01-2520-100; 01-2520-125) and the lower body can then be removed.
- 2. Remove Quick Shut-off Assembly by removing bonnet (A-41-24).
- 3. Holding screw driver in slot of stem (65-34) back-off throttle seat (41-35).
- 4. Upper diaphragm plate (01-80) and diaphragm (41-72) can then be removed.
- 5. Replace old diaphragm with new one and proceed with re-assembly.

C. ADJUST OR REPLACE QUICK SHUT-OFF STEM PACKING

- 1. Loosen lower lock nut (01-14) and remove cam assembly. Turn counter clockwise.
- 2. Remove Quick Shut-off seat. Instruction "A" DISASSEMBLY
- To tighten packing Depress stem until screw driver engages slot in packing follower (01-31). Turn clockwise to tighten. Do not over-tighten.
- 4. To remove packing Turn follower in counter-clockwise direction.
- 5. Replace packing if necessary and re-asemble.
- 6. Adjust stem See instruction "B" ASSEMBLE

D. REPLACE CAP SEAL

- Apply penetrating oil or solvent to meter-barrel, both below the dial and thru screen opening. Allow sufficient time to penetrate to seal, barrel, and body housing.
- 2. Loosen set screw in dial knob. (01-832-25)
- Drive out lock pin. (01-92BF) Support knob to prevent bending stem.
- Remove burrs from barrel stem caused by lock pin and set screw. Failure to do so will damage new seal.
- Press meter barrel out of housing. DO NOT DRIVE OUT. If meter barrel is badly corroded, return upper body assembly to factory for overhaul.
- Remove old cap seal and throughly clean both barrel and housing. It may be necessary to remove corrosion with steel wool.
- 7. Insert new cap seal (65-71BF) into recess in body. Be careful not to twist seal when installing.
- 8. Insert meter barrel back into body and install dial assembly. Be sure that dial and orifice in meter barrel is in the same relation as when removed.



The Quality Line



ASSEMBLY

Before proceeding with assembly, all parts should be thoroughly cleaned and free of scale, grit, etc. All parts with the exception of diaphram should be lightly oiled before re-assembly.

A. QUICK SHUT-OFF

1. Insert lower stem (65-34) into bonnet (41-24)

NOTE: Care should be exercised in this operation in order not to damage seal (65-71BF).

2. Install spring (65-90) over stem (65-34) and place into body. Be sure that spring fits evenly into recess in body casting.

3. Assemble new diaphragm (41-72) between upper (01-80) and lower (65-81) plates and hand-tighten to stem (65-34) by inserting throttle set (41-35). See instruction "B" - REPLACE DIAPHRAGM.

4. Back-off adjusting screw and ratchet assembly and hold stem (65-34) with screw driver in slot. Tighten seat (41-35) securely with wrench.

5. Re-insert bonnet assembly and tighten securely into casting body.

6. Install lower body by reversing operation "B" - 2 IN DISASSEMBLY. Care should be exercised so that diaphragm fits smoothly and is free of wrinkles. The six cap screws are then tightened equally in rotation.

7. Assemble shut-off seat (A65-36), the spring (65-91X). and plug (41-26).

B. ADJUST QUICK SHUT-OFF

1. Loosen lower lock nut (01-14) and raise or lower cam housing adjusting screw (65-11B) until cam rod (65-13) and stem (41-15) contact each other. Turn adjusting screw counter clockwise one half turn. Lock down with lower lock nut. The cam, stems, and seat linkage are now in correct adjustment.

Loosen upper lock nut and turn cam housing and rope pull casting to desired position. Lock down tight.

The Quality Line



NOTICE

- 1. THE R9590 AND R6572 HYDRAULIC ACTUATORS DO NOT USE A "POSITIVE SEAL". THEY WILL ALLOW PRESSURE TO BLEED BACK TO THE RETURN LINE.
- 2. CONTINENTAL NH3 RECOMMENDS THAT THESE HYDRAULIC ACTUATORS HAVE A SEPARATE AND ISOLATED SPOOL VALVE CONTROL.
- 3. IF THESE ACTUATORS MUST BE CONNECTED TO THE SAME SPOOL VALVE AS THE TOOL BAR CYLINDER (S), THEN A PILOT OPERATED BACK CHECK CONNECTED TO THE TOOL BAR CYLINDER (S) MAY PREVENT "BLEED BACK".
- 4. THESE ACTUATORS REQUIRE 1/4" HYDRAULIC HOSES AND FITTINGS.

WARNING

- 1. OVERTIGHTENING ORIFICED ADAPTERS MAY CAUSE CASTING TO CRACK. ALWAYS USE BACK-UP WRENCH ON ADAPTER WHEN CONNECTING HYDRAULIC LINES.
- 2. IN THE EVENT OF TRACTOR POWER FAILURE WHERE IT BECOMES NECESSARY TO SHUT OFF HYDRAULIC ACTUATOR, SEVER OR DISCONNECT BOTH HYDRAULIC LINES AT THE ACTUATOR BODY AND MANUALLY TURN FLAG ACTUATOR TO OFF POSITION.
- 3. TO AVOID CROSS THREADING OR GALLING, USE LEAD BASE ANTI-SEIZE THREAD SEALANT (AVAILABLE AT CONTINENTAL NH3).

EXAMPLE:

1.05

100 X

FORMULA FOR CHART #N X SWATH FT. X MPH X .1212 = # NITROGEN PER HOUR AT 100# TANK PRESSURE

X 5 X .1212 = 1818# NITROGEN PER HOUR AT 100# TANK PRESSURE

0.92

MULTIPLIER FOR DIFFERENT TANK PRESSURES

PRESSURE	MULTIPLIER		PRESSURE	MULTIPLIER
50	1.25		100	1.00
60	1.20	LBS. N X 1.22 = LBS. NH3	110	0.97
70	1.15		120	0.95
80	1.10	LBS. NH3 X .82 = LBS. NITROGEN	130	0.93
90	1.05		140	0.92

FORMULA FOR CHART #N X SWATH FT. X MPH X .1212 = # NITROGEN PER HOUR AT 100# TANK PRESSURE

C-2500 C-4100 RED & BLUE RED, BLUE & WHITE LBS. NITROGEN PER ACRE (INCH) 360 SWATH 30 FT. SPEED 0 100 LBS. TANK PRESSURE - USE DIAL MULTIPLIER FOR PRESSURES ABOVE AND BELOW 100 LBS. MPH 40 50 60 75 80 100 120 140 150 160 180 200 220 240 250 260 280 140 150 160 200 220 240 250 260 3.0 873 1091 1309 1527 1636 1745 1963 2182 2400 2618 2727 2836 3054 3.5 4.0 2618 2909 4.5 2945 3272 5.0 4000 4363 4545

4091 4254 4581 5.5 1600 2000 3200 | 3600 | 4000 | 4800 | 5000 | 5199 1745 2182 6.0 4363 4800 6.5 1182 1418 1773 1891 7.0 7.5 1745 2182 8.0

LBS. NITROGEN PER ACRE

(INCH) 396 SWATH 33 FT.

SPEED 0 100 LBS. TANK PRESSURE - USE DIAL MULTIPLIER FOR PRESSURES ABOVE AND BELOW 100 LBS. MPH 40 50 60 75 80 100 120 140 150 160 180 200 220 240 250 260 280

3.0	480	600	720	900	960	1200	1440	1680	1800	1920	2160	2400	2640	2880	3000	3120	3360
3.5	560	700	840	1050	1120	1400	1680	1960	2100	2240	2520	2800	3080	3360	3500	3640	3920
4.0	640	800	960	1200	1280	1600	1920	2240	2400	2560	2880	3200	3520	3840	4000	4160	4480
4.5	720	900	1080	1350	1440	1800	2160	2520	2700	2880	3240	3600	3960	4320	4500	4680	5039
5.0	800	1000	1200	1500	1600	2000	2400	2800	3000	3200	3600	4000	4400	4800	5000	5199	5599
5.5	880	1100	1320	1650	1760	2200	2640	3080	3300	3520	3960	4400	4840	5279	5499	5719	6159
6.0	960	1200	1440	1800	1920	2400	2880	3360	3600	3840	4320	4800	5279	5759	5999	6239	, 1-
6.5	1040	1300	1560	1950	2080	2600	3120	3640	3900	4160	4680	5199	5719	6239	6499		
7.0	1120	1400	1680	2100	2240	2800	3360	3920	4200	4480	5039	5599	6159	TV.	in and		
7.5	1200	1500	1800	2250	2400	3000	3600	4200	4500	4800	5399	5999	i.e.	=16 🔻			
8.0	1280	1600	1920	2400	2560	3200	3840	4480	4800	5119	5759	6399		3. E - 1	11		

ALL METERS ARE CALIBRATED WITH CONTINENTAL FITTINGS AT 100# TANK PRESSURE WITH 12 FT. 1" HOSE-HOSE LINE VALVE & 1" QDC, SUBTRACT 10% FROM CHARTS IF USING 1-1/4" QDC

MULTIPLIER FOR DIFFERENT TANK PRESSURES

PRESSURE	MULTIPLIER		PRESSURE	MULTIPLIER
50	1.25		100	1.00
60	1.20	LBS. N X 1.22 = LBS. NH3	110	0.97
70	1.15		120	0.95
80	1.10	LBS. NH3 X .82 = LBS. NITROGEN	130	0.93
90	1.05		140	0.92

FORMULA FOR CHART #N X SWATH FT. X MPH X .1212 = # NITROGEN PER HOUR AT 100# TANK PRESSURE

PRESSURE	MULTIPLIER		PRESSURE	MULTIPLIER
50	1.25		100	1.00
60,	1.20	LBS. N X 1.22 = LBS. NH3	110	0.97
70	1.15		120	0.95
80	1.10	LBS. NH3 X .82 = LBS. NITROGEN	130	0.93
90	1.05		140	0.92

FORMULA FOR CHART #N X SWATH FT. X MPH X .1212 = # NITROGEN PER HOUR AT 100# TANK PRESSURE

C-2500 RED C-4100 RED & BLUE B-9500 RED, BLUE & WHITE

LBS. NITROGEN PER ACRE

(INCH) 480 SWATH 40 FT.

SPEED 0 100 LBS. TANK PRESSURE - USE DIAL MULTIPLIER FOR PRESSURES ABOVE AND BELOW 100 LBS. MPH 40 50 60 75 80 100 120 140 150 160 180 200 220 240 250 260 280

3	3.0	582	727	873	1091	1164	1454	1745	2036	2182	2327	2618	2909	3200	3491	3636	3781	4072
3	3.5	679	848	1018	1273	1357	1697	2036	2376	2545	2715	3054	3394	3733	4072	4242	4412	4751
4		776	970	1164	1454	1551	1939	2327	2715	2909	3103	3491	3878	4266	4654	4848	5042	5430
4	5	873	1091	1309	1636	1745	2182	2618	3054	3272	3491	3927	4363	4800	5236	5454	5672	6108
0,	5.0	970	1212	1454	1818	1939	2424	2909	3394	3636	3878	4363	4848	5333	5818	6060	6302	
5	5.5	1067	1333	1600	2000	2133	2666	3200	3733	4000	4266	4800	5333	5866	6399	·	34	-
6		1164	1454	1745	2182	2327	2909	3491	4072	4363	4654	5236	5818	6399				, /-
6	.5	1260	1576	1891	2363	2521	3151	3761	4412	4727	5042	5672	6302	- 1	-		-416	_
7	0.0	1357	1697	2036	2545	2715	3394	4072	4751	5090	5430	6108		- 2				
7	.5	1454	1818	2182	2727	2909	3636	4363	5090	5454	5818	450		12 8 2 H.	= 1		Tag (
8	.0	1551	1939	2327	2909	3103	3878	4654	5430	5818	6205			17.5		1 5	2/21	7.7

LBS. NITROGEN PER ACRE

(INCH) 510 SWATH 42.5 FT.

SPEED 0 100 LBS. TANK PRESSURE - USE DIAL MULTIPLIER FOR PRESSURES ABOVE AND BELOW 100 LBS. MPH 40 50 60 75 80 100 120 140 150 160 180 200 220 240 250 260 280

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3.0	618	773	927	1159	1236	1545	1854	2163	2318	2472	2782	3091	3400	3709	3863	4018	4327
3.5	721	901	1082	1352	1442	1803	2163	2524	2704	2885	3245	3606	3966	4327	4507	4687	5048
4.0	824	1030	1236	1545	1648	2060	2472	2885	3091	3297	3709	4121	4533	4945	5151	5357	5769
4.5	927	1159	1391	1738	1854	2318	2782	3245	3477	3709	4172	4636	5099	5563	5795	6027	6490
5.0	1030	1288	1545	1932	2060	2576	3091	3606	3863	4121	4636	5151	5666	6181	6439		
5.5	1133	1417	1700	2125	2266	2833	3400	3966	4250	4533	5099	5666	6233		Tag .		
6.0	1236	1545	1854	2318	2472	3091	3709	4327	4636	4945	5563	6181	-	-	5.6	Hiye, Y	
6.5	1339	1674	2009	2511	2679	3348	4018	4687	5022	5357	6027						-
7.0	1442	1803	2163	2704	2885	3606	4327	5048	5409	5769	6490	- <u>T</u> in 6	-4	F		Page	
7.5	1545	1932	2318	2897	3091	3863	4636	5409	5795	6181			-		4 (%)		201
8.0	1648	2060	2472	3091	3297	4121	4945	5769	6181	6593			1				

ALL METERS ARE CALIBRATED WITH CONTINENTAL FITTINGS AT 100# TANK PRESSURE WITH 12 FT. 1" HOSE-HOSE LINE VALVE & 1" QDC, SUBTRACT 10% FROM CHARTS IF USING 1-1/4" QDC

MULTIPLIER FOR DIFFERENT TANK PRESSURES

PRESSURE	MULTIPLIER		PRESSURE	MULTIPLIER
50	1.25		100	1.00
60	1.20	LBS. N X 1.22 = LBS. NH3	110	0.97
70	1.15		120	0.95
80	1.10	LBS. NH3 X .82 = LBS. NITROGEN	130	0.93
90	1.05		140	0.92

FORMULA FOR CHART #N X SWATH FT. X MPH X .1212 = # NITROGEN PER HOUR AT 100# TANK PRESSURE

PRESSURE	MULTIPLIER		PRESSURE	MULTIPLIER
50	1.25		100	1.00
60	1.20	LBS. N X $1.22 = LBS.$ NH3	110	0.97
70	1.15		120	0.95
80	1.10	LBS. NH3 X .82 = LBS. NITROGEN	130	0.93
90	1.05		140	0.92

FORMULA FOR CHART #N X SWATH FT. X MPH X .1212 = # NITROGEN PER HOUR AT 100# TANK PRESSURE

C-2500 RED C-4100 RED & BLUE B-9500 RED, BLUE & WHITE LBS. NITROGEN PER ACRE (INCH) 540 SWATH 45 FT. SPEED @ 100 LBS. TANK PRESSURE - USE DIAL MULTIPLIER FOR PRESSURES ABOVE AND BELOW 100 LBS. 80 100 120 MPH 140 150 160 180 200 220 240 250 260 280 3.0 982 1227 1309 1636 1963 2291 2454 2618 2945 3600 3927 4254 4581 3.5 2672 2863 3054 3436 3818 4200 4581 4772 4963 5345 4.0 5672 6108 4.5 1963 2454 2045 2182 5.0 3272 3818 4091 4363 4909 5454 5.5 1500 1800 2250 3600 4200 4500 4800 5399 6.0 6.5 2836 3545 4254 4963 7.0 4581 5345 7 5 2045 2454 8.0 2182 2618 3272 3491 4363 5236

LBS. NITROGEN PER ACRE

(INCH) 600 SWATH 50 FT

SPEED 0 100 LBS. TANK PRESSURE - USE DIAL MULTIPLIER FOR PRESSURES ABOVE AND BELOW 100 LBS. MPH 40 50 60 75 80 100 120 140 150 160 180 200 220 240 250 260 280

3.0	727	909	1091	1364	1454	1818	2182	2545	2727	2909	3272	3636	4000	4363	4545	4727	5090
3.5	848	1061	1273	1591	1697	2121	2545	2969	3182	3394	3818	4242	4666	5090	5303	5515	5939
4.0	970	1212	1454	1818	1939	2424	2909	3394	3636	3878	4363	4848	5333	5818	6060	6302	
4.5	1091	1364	1636	2045	2182	2727	3272	3818	4091	4363	4909	5454	5999		1		-
5.0	1212	1515	1818	2273	2424	3030	3636	4242	4545	4848	5454	6060			. 4	. ,	_
5.5	1333	1667	2000	2500	2666	3333	4000	4666	5000	5333	5999				-		14
6.0	1454	1818	2182	2727	2909	3636	4363	5090	5454	5818		_	-		-	-	
6.5	1576	1970	2363	2954	3151	3939	4727	5515	5909	6302	_		_			_	-
7.0	1697	2121	2545	3182	3394	4242	5090	5939	6363			-					
7.5	1818	2273	2727	3409	3636	4545	5454	6363	_	Ē				_	_	-	
8.0	1939	2424	2909	3636	3878	4848	5818	7 =	-	_				_	-		7

ALL METERS ARE CALIBRATED WITH CONTINENTAL FITTINGS AT 100# TANK PRESSURE WITH 12 FT. 1" HOSE-HOSE LINE VALVE & 1" QDC, SUBTRACT 10% FROM CHARTS IF USING 1-1/4" QDC

MULTIPLIER FOR DIFFERENT TANK PRESSURES

PRESSURE	MULTIPLIER		PRESSURE	MULTIPLIER
50	1.25		100	1.00
60	1.20	LBS. N X 1.22 = LBS. NH3	110	0.97
70	1.15		120	0.95
80	1.10	LBS. NH3 X .82 = LBS. NITROGEN	130	0.93
90	1.05		140	0.92

FORMULA FOR CHART #N X SWATH FT. X MPH X .1212 = # NITROGEN PER HOUR AT 100# TANK PRESSURE