Form No. 3357-960 Rev A

TORO®

Count on it.

Operator's Manual

BBA Compliance Kit

For Multi-Pro 1250 Turf Sprayer

Model No. 41339

Register your product at www.Toro.com

Original Instructions (EN)

Introduction

The Multi-Pro® turf sprayer is a dedicated turf spray application vehicle and should only be used on grassland.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

This unit comes equipped with the following kits as standard:

- CE Kit (Part Number: 106-4840)
- Spray Gun Kit (Part Number: 106-4821)
- Rinse Kit (Part Number: 106-4842)

Sprayer Specifications

Nominal tank volume	600 l
Sprayer working width	563.9 cm

This manual identifies potential hazards and has safety messages identified by the safety alert symbol (Figure 1), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.

Figure 1

1. Safety alert symbol.

This manual uses two other words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

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8111 Lyndale Avenue South
Bloomington, MN 55420

Safety

Read also the safety and operation instructions in the vehicle Operator's Manual.

Spray Gun Safety

- Do not aim the spray gun at any person or animal. Fluids under high pressure can penetrate skin and cause severe injury, possibly resulting in amputation or death. Hot liquids and chemicals can also cause burns or injury. If any part of the body comes in contact with the spray stream, immediately consult a physician familiar with injected fluid injuries.
- Do not place your hand or any other part of your body in front of the spray nozzle.
- Do not leave the equipment under pressure when you are not present.
- Do not use the spray gun if the hose, trigger lock, nozzle, or any other part is damaged or missing.
- Do not use the spray gun if there are any leaks in any hoses, fittings, or other components.
- Do not spray near power lines.
- Do not drive while spraying with a spray gun.
- Wear rubber gloves, safety goggles, and a full body protective suit when spraying chemicals with the spray gun.

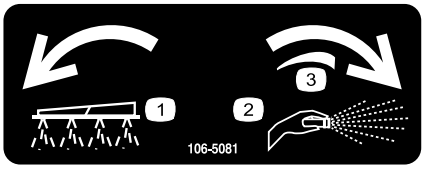
Filter Specifications

Screen Mesh Sizes are as follows:

Fill Basket	0.88 mm
Suction Filter	0.88 mm
Pressure Filter	0.29 mm

Safety and Instructional Decals

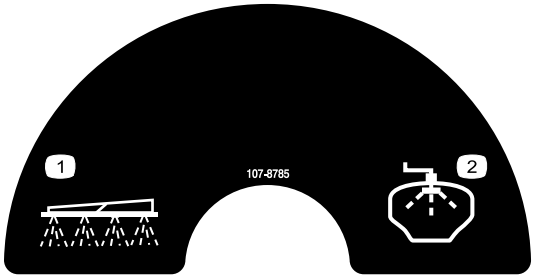
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.



106-5081

Spray Gun Kit

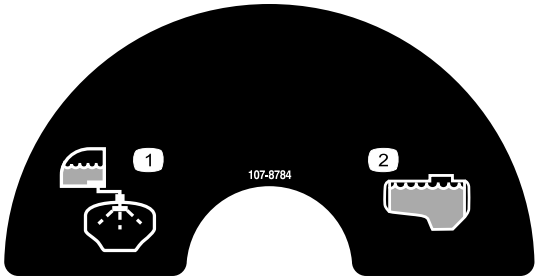
1. Boom spray
2. Hand spray
3. Continuous variable setting



107-8785

Rinse Kit

1. To booms
2. To rinse nozzle



107-8784

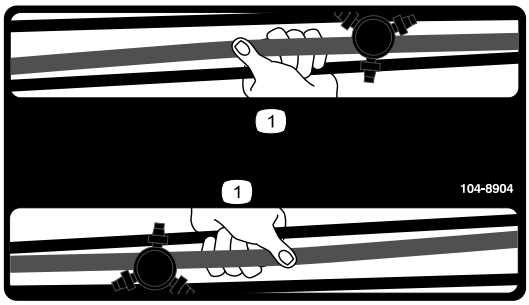
Rinse Kit

1. From clean water rinse tank
2. From main chemical tank

104-6957

CE Kit

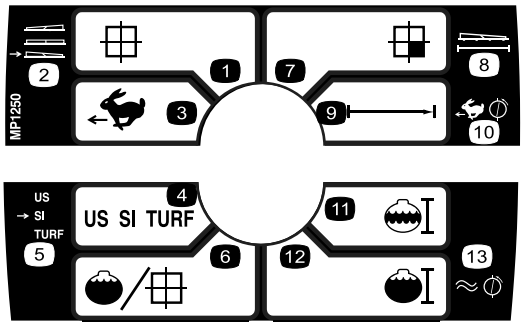
1. Horn



104-8904

CE Kit

1. Grab boom here



108-3309

CE Kit

1. Total area
2. Boom select
3. Speed
4. Units of measure
5. Select units
6. Application rate
7. Sub area
8. Width
9. Distance
10. Speed calibration
11. Sub volume
12. Total volume
13. Flowmeter calibration

Operation

Spray Gun Operation

Fluid under pressure can penetrate skin and cause injury.

- **Keep your body and hands away from nozzles that eject high pressure fluid.**
- **Do not aim the sprayer at any person or animal.**
- **Make sure all fluid hoses and lines are in good condition and all connections and fittings are tight before applying pressure to the system.**
- **Use cardboard or paper to find leaks.**
- **Safely relieve all pressure in the system before performing any work on it.**
- **Get immediate medical help if fluid is injected into skin.**
- **Hot liquids and chemicals can cause burns or other harm.**

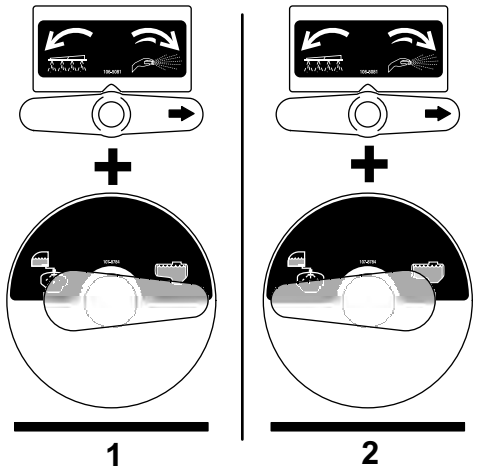


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Figure 2

Spray Gun Valve Orientations

1. Spray gun control valve to hand spray mode, rinse tank valve to main tank supply; Use this orientation to spray chemical using the spray gun.
2. Spray gun control valve to hand spray mode, rinse tank valve to rinse tank supply; Use this orientation to spray clean water using the spray gun.

Switching from Boom Spray Mode to Hand Spray Mode

1. Stop the machine and set the parking brake.

Driving while using the spray gun can cause loss of control, resulting in injury or death. Do not operate the spray gun while driving.

2. Ensure that the trigger lock on the spray gun is locked.
3. Turn the red knob on the face of the control valve to the Hand Spray position.
4. Turn the booms off.
5. On Multi-Pro 1250 Sprayers, use the application rate switch to adjust the application rate to the highest setting.
6. Turn the pump on.
7. Increase the engine speed until the pressure gauge reads 150 psi and set it at that speed.

Important: Do not use a pressure setting higher than 150 psi with the spray gun.

Note: Use the pressure gauge to the right of the control valve while turning the red knob to achieve the desired amount of pressure at the spray gun.

Spraying with the Spray Gun

1. Unwrap the hose from the hose hooks.

Important: Do not pull the hose with the spray gun. Always hold the hose and pull on it directly. Pulling on the hose with the gun may break the fitting on the gun.

2. Release the trigger lock.
3. Direct the spray gun nozzle at the area to be sprayed and pull the trigger.
4. Release the trigger and set the trigger lock when finished.

Switching from Hand Spray Mode to Boom Spray Mode

1. Turn the red nob on the face of the control valve to the Boom Spray position.
2. Direct the spray gun nozzle at an area where it is safe to spray, release the trigger lock, and

pull the trigger until all remaining fluid is out of the hose, then set the trigger lock.

3. Wrap the hose around the hooks on the tank and place the spray gun in the gun bracket.
4. Return the engine to idle speed and stop the pump.

Rinsing the Machine Using the Spray Gun

1. Set the parking brake and stop the pump.
2. Remove the rinse tank cap and fill the tank with approximately 20 gallons (75 l) with clean water.
3. Turn the spray gun valve from boom output to spray gun output and turn the rinse tank valve to rinse tank to draw clean water through the spray gun as shown in Figure 2.
4. Set the engine speed at no more than 1/2 throttle. Use the accelerator lock to set the engine speed. Refer to the *Operator's Manual* for more information.

   Important: Do not exceed 1/2 engine speed to avoid damaging the pump.
5. Turn the spray pump On.
6. Using the spray gun, rinse any residual chemicals, dirt or debris from the exterior of the machine. Refill the rinse tank with clean water as necessary.
7. Stop the spraying, turn the pump Off, stop the machine and set the parking brake.

Rinse Kit Operation

The operator can use the Rinse Kit to remove residual chemicals from a sprayer tank and affected hoses while the machine is in transit.

The use of the Rinse Kit will result in a **rinsate**; a diluted solution of residual chemicals. In many cases it is appropriate to apply the rinsate onto the treated areas. However, before doing so, check with the manufacturers of the chemical to ensure the application of a diluted solution to the treated areas will not adversely affect the performance of the product.

Important: The Rinse Kit is NOT intended to dislodge clumped masses of wetable powder or "water-soluble" chemicals that occur when chemicals are not properly introduced into the main tank.

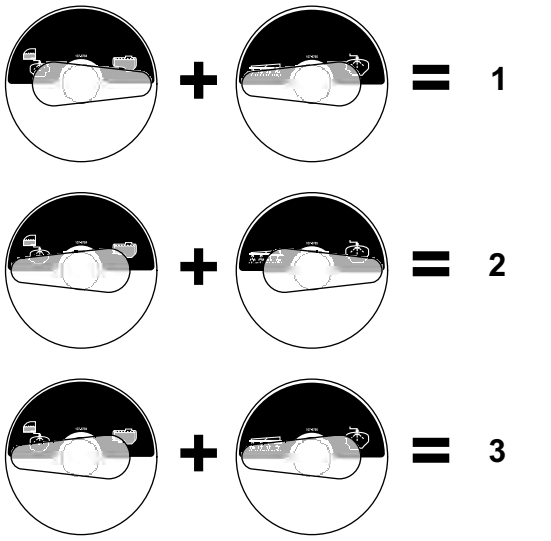

Figure 3

Rinse Valve Orientations

1. Rinse tank valve to main tank supply, rinse nozzle valve to boom spray; Use this orientation to for spraying chemicals.
2. Rinse tank valve to rinse tank supply, rinse nozzle valve to rinse nozzle spray; Use this orientation to for rinsing the main tank with clean water.
3. Rinse tank valve to rinse tank supply, rinse nozzle valve to boom spray; Use this orientation to for rinsing the booms, or spray gun with clean water.

Preparing the Machine

Position the sprayer on a level surface, set the parking brake, stop the pump, stop the engine, and remove the ignition key.

Remove the rinse tank cap and fill the tank with approximately 20 gallons (75 l) with clean water.

Important: The 20 gallon (75 l) rinse tank is only intended to be filled with clean water. The introduction of any other substance to the rinse tank can cause a safety hazard and/or damage the machine.

The Rinse Cycle

1. Set the parking brake and stop the pump.
2. Turn the rinse nozzle valve from boom output to rinse nozzle output.
3. Turn the rinse tank valve from main tank input to rinse tank input.
4. Set the engine speed at no more than 1/2 throttle. Use the accelerator lock to set the engine speed. Refer to the Operator's Manual for more information.

   Important: Do not exceed 1/2 engine speed to avoid damaging the pump.

   Note: A high pump speed will increase pressure in the rinse nozzle and cause nozzle to produce a mist instead a stream of drops. This will result in poor cleaning of the tank. It is recommended to experiment to find the pump speed, i.e. pressure through the nozzle that works best for your specific application.

   Important: Engine speed may need to be reduced to accommodate certain chemicals. Please refer to you chemical instructions.
5. Turn the spray pump On.
6. Pump approximately 1/3 of the water from rinse tank.
7. Turn the spray pump Off and release the accelerator lock.
8. Turn the rinse nozzle valve from rinse nozzle output to boom output.
9. Turn the rinse tank valve from rinse tank input to main tank input.
10. Release the parking brake; drive the machine to a designated location (as required by Federal, State and Local regulations) and spray the rinsate through the booms until the main tank is empty.

    Note: If the spraying the rinsate is not possible for any reason, drain the main tank contents into a suitable container and dispose of the diluted solution as required by federal, state or local regulations.
11. Stop the spraying, turn the pump Off, stop the machine and set the parking brake.
12. Repeat the rinse cycle two more times.

The rinse cycle can be repeated again as necessary.

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 5 operating hours	• Inspect hoses for damage.
Before each use or daily	• Inspect the hoses for leaks.
Every 100 hours	• Inspect hoses and O-rings for damage

Inspect Rinse System of Leaks and Damage

After the first 5 hours of operation, inspect all hoses and connections for any leaks or signs of damage. Inspect the hose clamps and retaining forks. Verify that all connections are secure. Replace any damaged parts. Repeat this inspection before each use of the Rinse system.

After 100 operating hours, inspect all hose and O–rings. Replace any damaged parts.

Contact your Authorized Toro Dealer to obtain replacement parts.

Compliance Testing

Use the following procedures to perform in-line measurements of flow and pressure of the adapted system.

Pressure Test Setup

1. Locate the metal tee fitting on the valve assembly (Figure 4). Locate the pipe plug on the fitting opposite of the reducer fitting with the pressure gauge line.

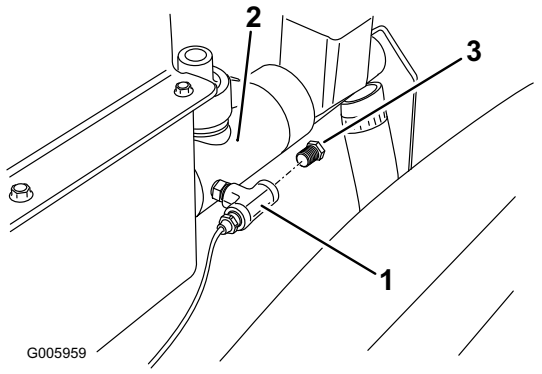

Figure 4

1. Valve assembly
2. Metal tee
3. Pipe plug

2. Remove the pipe plug and retain.
3. Use the open port to install the pressure testing equipment.
4. Refer to the machine's *Operator's Manual* for instructions on running the spray system and the follow the test equipment instructions to test the spray system pressure.
5. When finished testing, remove any test equipment.
6. Locate the pipe plug removed previously. Wrap Teflon tap around the exposed threads of the plug and install it to the open port on the metal tee fitting.

Flow Test Setup

1. Locate the filter supply hose coming from the bottom of the pressure filter assembly. Follow this hose to the middle connection of the tee fitting laying on the fender of the right, rear wheel.
2. Remove the retaining fork connecting this filter flush hose to the tee fitting and disconnect the hose. Retain the fork.

3. Locate the two retaining forks, two straight hose barb fittings, and bulkhead fitting in loose parts from the *Compliance Kit Setup Instructions* (Figure 5).

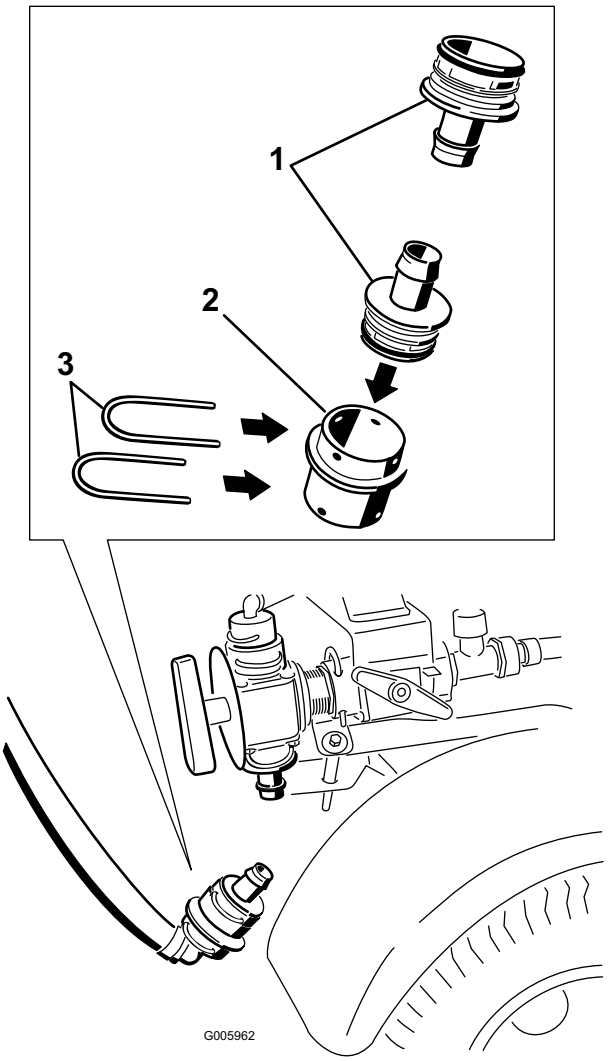

Figure 5

1. Straight hose barb fitting
2. Bulk head
3. Retaining fork, large

4. Install a straight fitting to the open port on the tee fitting and secure it with the retaining fork previously removed.
5. Install the 90 degree fitting on the flush filter hose to the bulkhead fitting from loose parts. Secure it with a retaining fork from loose parts.
6. Install the remaining straight fitting to the open end side of the bulkhead fitting. Secure it with the remaining retaining fork from loose parts.
7. Refer to the machine's *Operator's Manual* for instructions on running the spray system and the follow the test equipment instructions to test the spray system flow.
8. When finished testing, remove any test equipment and remove the loose parts installed. Retain all loose parts for future testing.
9. Return the 90 degree fitting to the middle port in the tee fitting laying on the fender of the right, rear wheel. Secure it with the existing retaining fork.

Calibration Test

Read and understand the procedure in its entirety before performing the calibration.

Perform the calibration test yearly to track and calibrate the sprayer accurately. The plastic beaker supplied with the machine is used to perform this test.

Customer Name: _____

Model No. _____ **Serial No.** _____

1. Verify the unit is washed off and rinsed out.
2. Record the Nozzle Identification, Application Rate, and Application Speed:

Nozzle set 1–# _____	App. Rate* _____	(l/_____)	km/h_____	l/min**_____
Nozzle set 2–# _____	App. Rate* _____	(l/_____)	km/h_____	l/min**_____
Nozzle set 3–# _____	App. Rate* _____	(l/_____)	km/h_____	l/min**_____

* as determined by superintendent and constant for all steps.
** from Nozzle Chart.

3. l/ha Accuracy Test:
   - Measure off 39.3 m straight meter test track.
   - Fill the unit 1/2 full with water.
   - Check and adjust the boom bypass valves @ spray pressure _____ Bar.
   - Check all nozzles per set @ 2.76 bar for 15 seconds.

Nozzle	Set 1	Set 2	Set 3
l/min 1			
l/min 2			
l/min 3			
l/min 4			
l/min 5			
l/min 6			
l/min 7			
l/min 8			
l/min 9			
l/min 10			
l/min 11			
< average			
> average			

Note: Replace all nozzles that are outside of the < > range.

Notes:

Collect output for 15 seconds - Multiply output by 4 to equal liters per minute (l/min) - Record in grid.

Enter l/min in grid left to right where #1 is the far left nozzle.

Nozzle service limit:
Average Set 1 _____ Set 2 _____ Set 3 _____
With an output less than (<):
l/min avg x 0.95 =
(insert answer into chart)

With an output more than (>):
l/min avg x 1.05 = (insert answer into chart)

- Fine tune distance setting (Refer to vehicle *Opearator's Manual.*)
- Set the Application Rate (as determined by superintendent and constant for all steps) for a nozzle set.
- Choose gear range for spraying (all spraying **must** be done in this range).
- Record time to spray the test track at full throttle _____ Seconds.

- While stationary, set the sprayer to spray at full throttle.
- Catch the output from the nozzle farthest from the pump for the recorded time
  - ml caught _____
  - 1/2 caught ml should be within 5 percent of set application rate (l/ha).

4. If recorded ml are within 5 percent of set application rate (l/ha) - the sprayer is accurate. The procedure is complete. If recorded ml are not within 5 percent of set application rate (l/ha) continue with the procedure.
5. Fine tune flow meter (Refer to vehicle *Opearator's Manual*.)
6. Catch the output form the nozzle farthest from pump for recorded time using the settings
   - ml caught _____
   - 1/2 caught ml should be within 5 percent of set application rate (l/ha).
7. If recorded ml are still not within 5 percent of set application rate.

   A complete and thorough spray system overhaul is recommended. Contact a local authorized Toro distributor.

Additional Notes:

_____
_____
_____
_____
_____
_____
_____
_____

Customer Reviewed Sprayer Calibration Results

Signature: _____ **Date:** _____

Troubleshooting

Problem	Possible Cause	Corrective Action
No suction of clean water.	1. Rinse hose installed incorrectly	1. Verify hose assembly is installed with the flow valve in the correct direction. Reverse if necessary.
	2. Rinse valve in wrong position	2. Move valve handle to the rinse tank.
Unclean tank after rinse.	1. Improper introduction of chemicals into the main tank during filling and mixing	1. Ensure the prop agitation while mixing the chemicals. In extreme cases, use a mixing station.
	2. Engine throttle set too high during operation	2. Slow down engine
	3. Engine throttle set too low during operation	3. Speed up engine

Schematics

		bar	DURCH-FLUSS-MENENGE EINER DÜSE IN l/min	l/ha 50 cm										l/ha 50 cm									
				4 km/h	5 km/h	6 km/h	7 km/h	8 km/h	10 km/h	12 km/h		bar	DURCH-FLUSS-MENENGE EINER DÜSE IN l/min	4 km/h	5 km/h	6 km/h	7 km/h	8 km/h	10 km/h	12 km/h
XR8001 XR11001 (100)		1.0	0.23	69.0	55.2	46.0	39.4	34.5	27.6	23.0	XR8005 XR11005 (50)	1.0	1.14	342	274	228	195	171	137	114
		1.5	0.28	84.0	67.2	56.0	48.0	42.0	33.6	28.0		1.5	1.39	417	334	278	238	209	167	139
		2.0	0.32	96.0	76.8	64.0	54.9	48.0	38.4	32.0		2.0	1.61	483	386	322	276	242	193	161
		2.5	0.36	108	86.4	72.0	61.7	54.0	43.2	36.0		2.5	1.80	540	432	360	309	270	216	180
		3.0	0.39	117	93.6	78.0	66.9	58.5	46.8	39.0		3.0	1.97	591	473	394	338	296	236	197
		4.0	0.45	135	108	90.0	77.1	67.5	54.0	45.0		4.0	2.27	681	545	454	389	341	272	227
XR80015 XR110015 (100)		1.0	0.34	102	81.6	68.0	58.3	51.0	40.8	34.0	XR8006 XR11006 (50)	1.0	1.37	411	329	274	235	206	164	137
		1.5	0.42	126	101	84.0	72.0	63.0	50.4	42.0		1.5	1.68	504	403	336	288	252	202	168
		2.0	0.48	144	115	96.0	82.3	72.0	57.6	48.0		2.0	1.94	582	466	388	333	291	233	194
		2.5	0.54	162	130	108	92.6	81.0	64.8	54.0		2.5	2.16	648	518	432	370	324	259	216
		3.0	0.59	177	142	118	101	88.5	70.8	59.0		3.0	2.37	711	569	474	406	356	284	237
		4.0	0.68	204	163	136	117	102	81.6	68.0		4.0	2.74	822	658	548	470	411	329	274
XR8002 XR11002 (50)		1.0	0.46	138	110	92.0	78.9	69.0	55.2	46.0	XR8008 XR11008 (50)	1.0	1.82	546	437	364	312	273	218	182
		1.5	0.56	168	134	112	96.0	84.0	67.2	56.0		1.5	2.23	669	535	446	382	335	268	223
		2.0	0.65	195	156	130	111	97.5	78.0	65.0		2.0	2.58	774	619	516	442	387	310	258
		2.5	0.72	216	173	144	123	108	86.4	72.0		2.5	2.88	864	691	576	494	432	346	288
		3.0	0.79	237	190	158	135	119	94.8	79.0		3.0	3.16	948	758	632	542	474	379	316
		4.0	0.91	273	218	182	156	137	109	91.0		4.0	3.65	1095	876	730	626	548	438	365
XR110025 (50)		1.0	0.57	171	137	114	97.7	85.5	68.4	57.0	XR8010 † XR11010 †	1.0	2.28	684	547	456	391	342	274	228
		1.5	0.70	210	168	140	120	105	84.0	70.0		1.5	2.79	837	670	558	478	419	335	279
		2.0	0.81	243	194	162	139	122	97.2	81.0		2.0	3.23	969	775	646	554	485	388	323
		2.5	0.90	270	216	180	154	135	108	90.0		2.5	3.61	1083	866	722	619	542	433	361
		3.0	0.99	297	238	198	170	149	119	99.0		3.0	3.95	1185	948	790	677	593	474	395
		4.0	1.14	342	274	228	195	171	137	114		4.0	4.56	1368	1094	912	782	684	547	456
XR8003 XR11003 (50)		1.0	0.68	204	163	136	117	102	81.6	68.0	XR8015 † XR11015 †	1.0	3.42	1026	821	684	586	513	410	342
		1.5	0.83	249	199	166	142	125	99.6	83.0		1.5	4.19	1257	1006	838	718	629	503	419
		2.0	0.96	288	230	192	165	144	115	96.0		2.0	4.83	1449	1159	966	828	725	580	483
		2.5	1.08	324	259	216	185	162	130	108		2.5	5.40	1620	1296	1080	926	810	648	540
		3.0	1.18	354	283	236	202	177	142	118		3.0	5.92	1776	1421	1184	1015	888	710	592
		4.0	1.36	408	326	272	233	204	163	136		4.0	6.84	2052	1642	1368	1173	1026	821	684
XR8004 XR11004 (50)		1.0	0.91	273	218	182	156	137	109	91.0										
		1.5	1.12	336	269	224	192	168	134	112										
		2.0	1.29	387	310	258	221	194	155	129										
		2.5	1.44	432	346	288	247	216	173	144										
		3.0	1.58	474	379	316	271	237	190	158										
		4.0	1.82	546	437	364	312	273	218	182										

Hinweis: Die Ausbringmengen immer einer Gegenprüfung unterziehen.
Nützliche Gleichungen und Informationen sind auf Seite 153-157 zu finden.
† Nur in Volledelstahlausführung lieferbar.

112-7906

G005872

Nozzle Decal (Rev. A)

Count on it.