



74NF & 98NF Cylinder Adhesive Users Guide

Technical Guide

February 2009

3M™ Scotch-Weld™ 98 NF Hi-Strength and 74NF Foam Fast Cylinder Spray Adhesives industrial grade, non-flammable bulk spray adhesives packaged in convenient, portable, virtually no maintenance aerosol cylinders.

Parts

**3M™ Scotch-Weld™
Cylinder Spray Adhesive
Applicator ***
Part # 62988099305

Cylinder – 98 NF or 74 NF
62499880102 74NF Mini
62499880300 74 NF Large
62499380103 98NF Mini – Red
62499380301 98NF Large - Red
62499580108 Mini – 98NF Clear
62499580306 Large – 98NF Clear

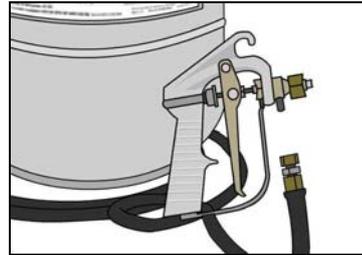
Cylinder Hose
1.8m 62988000063
3.6m 62988000121
7.6m 62988000253



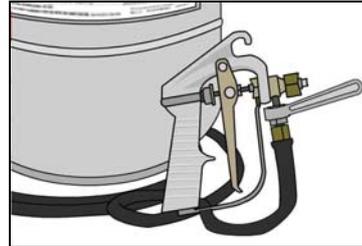
**Includes Cylinder Adhesive 9501
Spray Tip. (95° max spray width).*

Attaching Hose

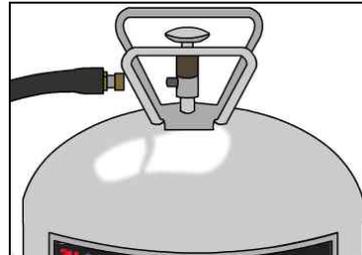
1. First attach the end of the hose with the largest nut hose to the gun.



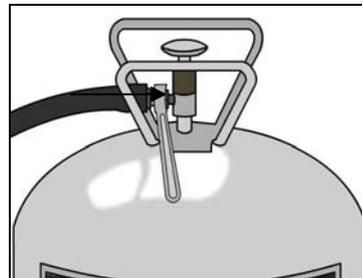
2. Tighten with a spanner until snug. Do not over-tighten.



3. Attach the small nut end of the hose to the bottle.

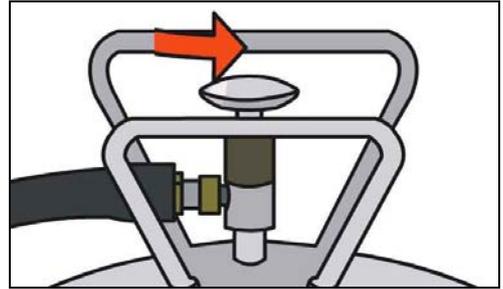


4. Tighten with a spanner until snug. Do not over-tighten.



Turning Cylinder On

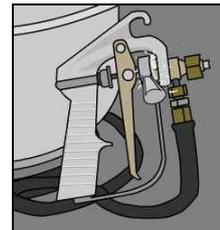
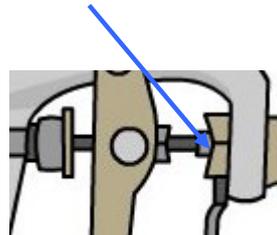
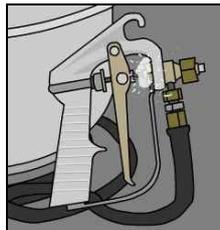
1. Turn the valve counter-clockwise slowly. You should hear the hose pressurise. Listen for any leaks.



2. Inspect the connections of the hose and the gun and bottle. Observe / listen for any leaks. If any leaks are detected at the hose connections, turn the cylinder off and tighten the connections further.



3. Check for leaks in the gun. If any leaks are observed, turn the small inlet adjustment nut $\frac{1}{4}$ turn.



Spraying the Adhesive

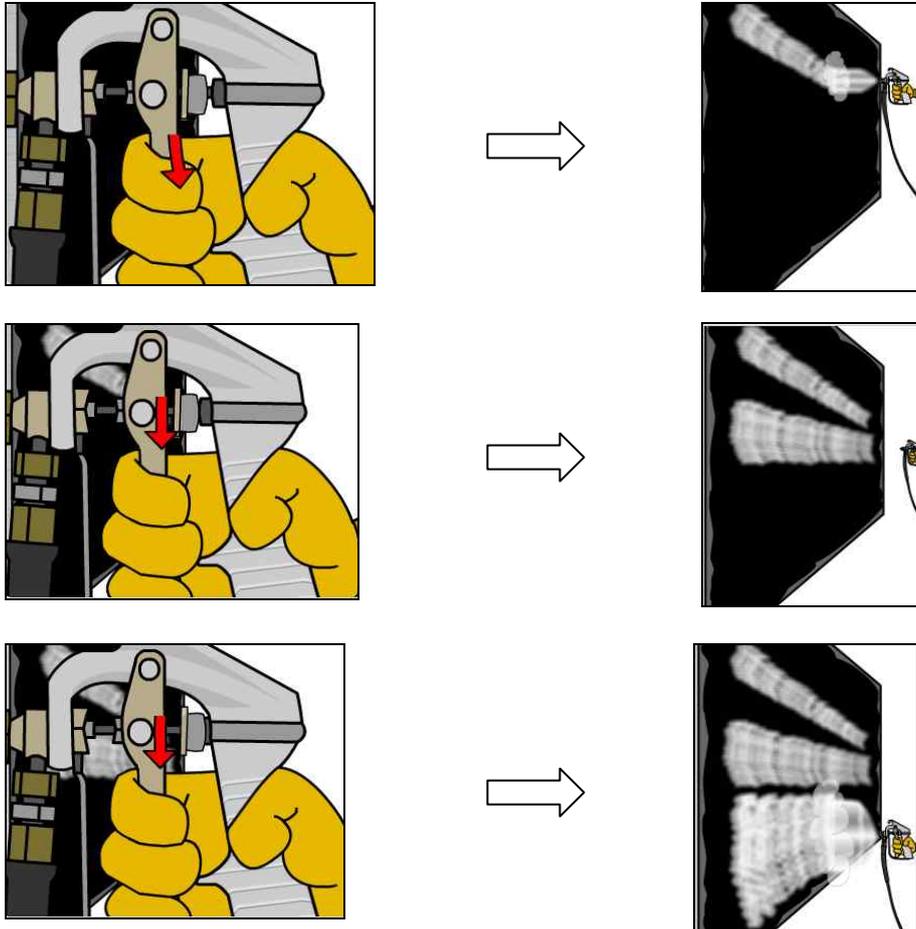
Cylinder temperature.

For most consistent spray patterns, the cylinder should be between 15 – 30 °C. If the cylinder is to be used in a cold environment, the cylinder should be slowly warmed up to between 22 °C by leaving in an air-conditioned or other room temperature environment overnight, or by placing the cylinder in a 30 °C waterbath for 30 minutes.

WARNING - This is a pressurised cylinder.
DO NOT WARM UP BY PLACING IN A HOT WATER BATH OR HEAT ABOVE 30 °C

Adjusting Spray Width

Turning the locking nut on the applicator gun increases the width of the spray pattern. Turn the locking nut until the desired spray width is achieved at approximately 20 cm away from the surface.

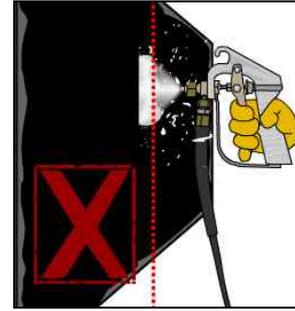
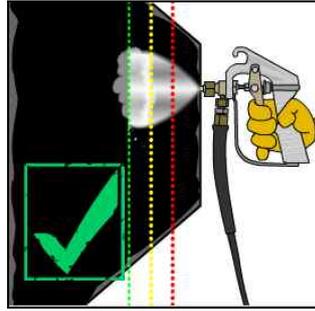
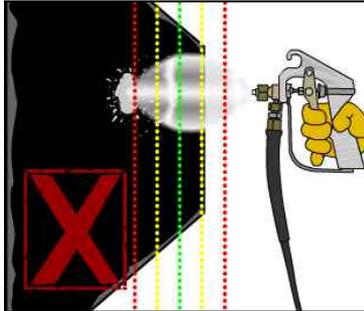


Spray Distance

The spray pattern of the gun forms an oval shape. If the gun is too far from the surface, the spray will collapse back to a point giving a “cobwebbing” effect.

Bring the gun closer to the surface, such that the nozzle is 15 – 20 cm away from the surface or, ensure that the widest part of the spray pattern is making contact with the surface. A consistent lace should be deposited on the surface

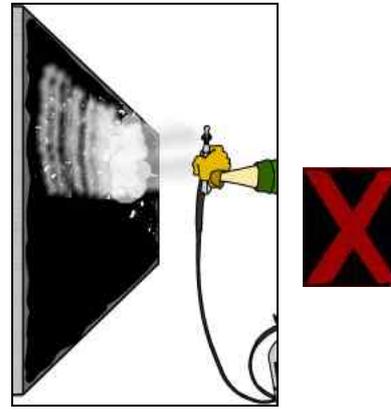
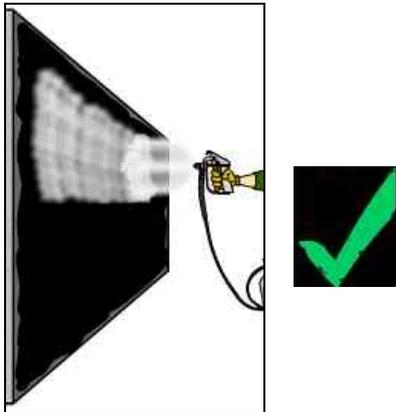
If the gun is too close, the adhesive may be deposited too thickly, and adhesive splash and overspray may result.



Spray Angle

For best results, maintain a 90 ° angle, between the surface and the gun. This is achieved by moving the gun parallel to the spray surface and keeping the wrist in a fixed position, moving at a constant speed

Poor spray coverage results from bending the wrist, as the distance from the surface and the gun will vary as the wrist is turned – see section on spray distance.



Application Speed

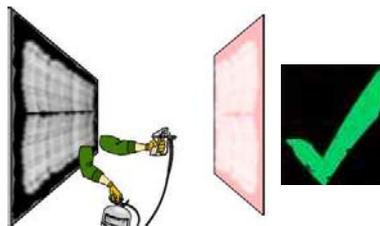
For best results, maintain a 90 ° angle, between the surface and the gun. This is achieved by moving the gun parallel to the spray surface and keeping the wrist in a fixed position, moving at a constant speed.

- Moving too slowly will result in excessive adhesive coverage, with dripping and possible puddling.
- Moving too fast can result in inadequate surface coverage.



Coverage

Both surfaces must be sprayed with either 78NF or 98NF for permanent bonding of parts.



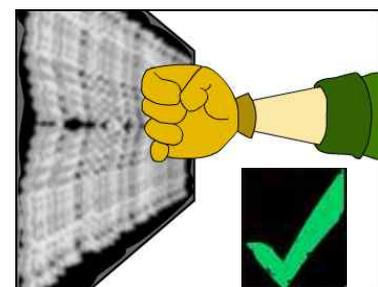
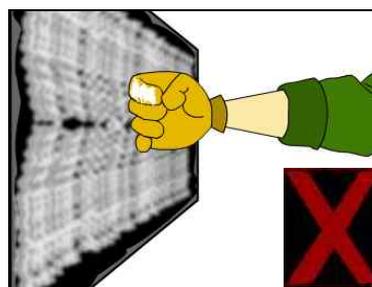
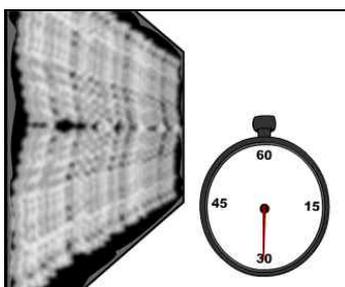
Approximately 125 - 300 m² coverage per large cylinder or 35- 85 m² coverage per mini cylinder is typical, depending on the porosity and texture of the surface. Since the adhesive must be applied to both surfaces, this is approximately 63 – 150 m² of bond for a large cylinder, or 17 – 42 m² per mini cylinder.

Minimum “Open Time” – Knuckle Test

With standard coverage, the minimum open time is 30 seconds at room temperature. More or less time may be applicable depending on the ambient temperature, and the temperature of the substrates.

The adhesive can be tested with a knuckle test. With a glove, gently touch the adhesive surface. If adhesive comes off on the glove, then the adhesive needs to be left open longer.

If the adhesive does not transfer to the glove, then bonds can be made. Maximum open time is 30 minutes.



Bonding surfaces

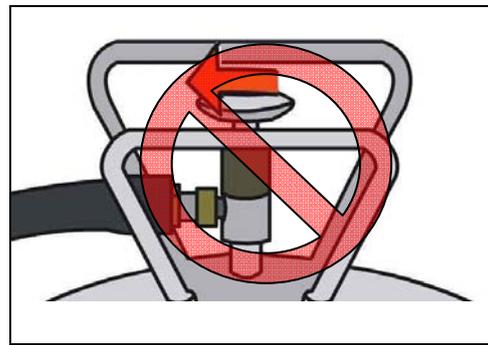
Align surfaces correctly, then bring together. Rub down with firm pressure to enable the adhesive on both surfaces to “Knit” together.

Shut Down

Turn the gun off by spinning the lock nut on the gun.



Do not turn the pressure off at the cylinder. Leave the gun & hose pressurised to ensure that adhesive does not thicken in the hose, by turning off at the applicator gun **ONLY**.

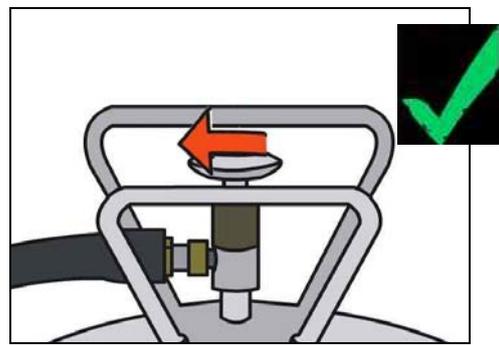


Shut down for Transporting

Check that the gun is turned off.

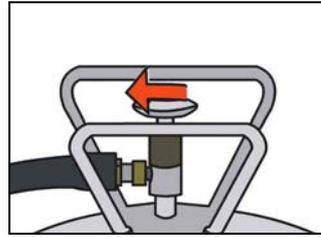


Turn the cylinder off by turning the valve clockwise. **After transport, re-pressurise the system.** A 3 second test spray is recommended immediately after re-pressurizing.

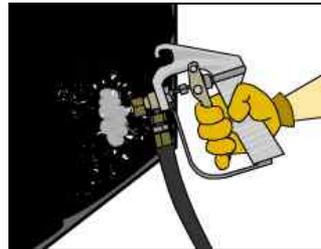


Changing Cylinders

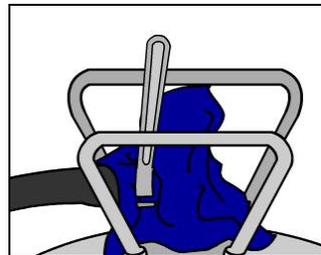
1. Check that the cylinder is turned off



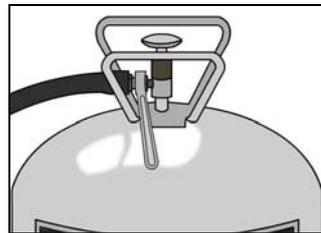
2. Release pressure in the hose by activating the trigger unit no further adhesive comes out. Hold the trigger open with some masking tape once adhesive ceases to come out of the tip.



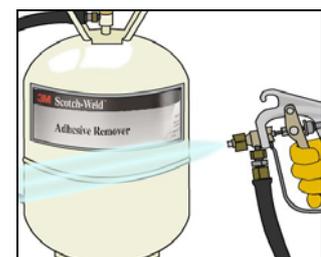
3. Place disposable cloth over the valve and loosen the nut with a shifting spanner.



4. Attach the hose to the new bottle **IMMEDIATELY – do not allow adhesive to dry out in the hose.**



5. If the hose and applicator are to remain unpressurised, then they should be flushed with adhesive remover to prevent adhesive drying up in the hose. Attach the hose & applicator to a cylinder of 3M™ Scotch-Weld™ Adhesive Remover, flush for 3 seconds.



Disposal

When all adhesive in the cylinder has been used, the cylinder can be recycled as scrap metal. Refer to local recycling regulations.

Maintenance

- Periodically check that the hose connections are tight and free from leaks – as rotating of the gun can allow the fitting to work loose. If more rotational freedom is required from the hose, then a 3M™ Scotch-Weld™ Cylinder Swivel Fitting, Part No. 62988079489 should be attached.
- Store the system pressurised – do not turn off the cylinder valve. If stored for long periods of time at a time without use, a 3 second test spray at least every 4 weeks is recommended.
- Clean the applicator tip after use with 3M™ Adhesive Cleaner and Solvent 700 Cleaner.

Transport

- Assembled and pressurised systems should be temporarily turned off at the cylinder valve during transport.
- **After transport, re-pressurise the system by opening the valve on the cylinder.** A 3 second, test spray is recommended after re-pressurising the system.

Trouble Shooting

Appearance of solvent but no adhesive coming out

Agitate the cylinder. Continue to spray for up to 1 minute. If adhesive does not start to spray out, shut-down the system and return the cylinder to 3M

Leaks after pressurizing system.

Leaks can occur at the connection of the hose to the cylinder and the hose to the applicator. If leaks are observed, turn off the cylinder at the valve and tighten the nut at the hose attachments. Re-pressurise the system and look/listen for any leaks. If leaks continue after tightening, order a new hose.

Spray pattern - forking, spitting or dripping

Cylinder adhesive too cold - Ensure the temperature of the adhesive is 15-30 °C. If the temperature is low, then warm the adhesive by placing in a warm water bath. Resume spraying when adhesive cylinder is 22 °C. Turn off the gun by turning the locking nut.

WARNING - This is a pressurised cylinder.
DO NOT WARM UP BY PLACING IN A HOT WATER BATH.

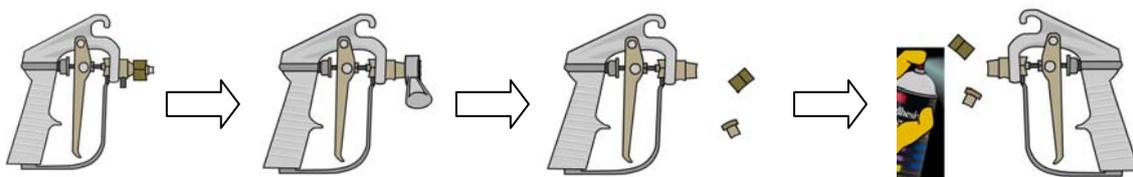
Cylinder Empty- Attach a new cylinder to the system.

Adhesive residue dried on applicator tip - Observe the applicator tip for evidence of dried adhesive. Remove any adhesive residue by either:

- Allowing to dry and simply “peeling” the dried adhesive from the nozzle, or
- With the aid of some marking tape, press down the tape on the dried adhesive residue and strip the adhesive off the tip, or
- Clean the tip with 3M™ Adhesive Cleaner and Solvent 700 or 3M™ Citrus Cleaner.



Once residues have been removed, resume operation of the gun. If forking or spitting persists remove the applicator tip and clean in solvent.



The system sprays poorly or won't spray at all:

If at any time during the sequence the problem is resolved, stop, clean the needed parts, put the system back together, and you are finished. At all times, protective goggles, gloves and clothing should be worn as per the product MSDS when disassembling parts.

| Action | Diagnosis of fault if action results in correct spraying |
|---|--|
| 1. Make sure the cylinder is not empty by agitation. If empty, connect hose to a new cylinder. | User error |
| 2. Make sure the cylinder valve is open. | User error |
| <p>3. Close the applicator trigger stop by adjusting nut and clean the nozzle tip. Observe any obstructions on the outlet of the tip, and remove. Dried adhesive can be removed by "Stretch releasing". Clean the nozzle with 3M 700 Cleaner or 3M Citrus based cleaner. Reassemble the tip – does it spray now?</p> | Applicator Tip Exterior Blockage |
| <p>4. Take off the nozzle tip assembly and try spraying. If adhesive sprays out, the tip must be blocked</p>  <p>Clean the tip with 3M™ Adhesive Cleaner and Solvent 700 or 3M™ Citrus Cleaner, then reassemble tip.</p> | Applicator Tip Interior Blockage |
| <p>5. Shut off the cylinder valve, CAREFULLY and SLOWLY – loosen the applicator gun/hose connection and look for adhesive to squirt out. If adhesive starts to leak out, allow it to slowly continue to do so until it stops. (This will be a little messy, but you will need to bleed off the pressurised adhesive to clean the applicator gun). The applicator gun has a clog at the valve, stem or inlet area and needs to be cleaned.</p> | Interior Applicator blockage - clog at the valve, stem or inlet area |

| | |
|--|--------------------------|
| <p>6. If nothing leaks out after fully loosening the applicator gun in Step 5, CAREFULLY remove applicator gun, realising that the hose may be clogged but could be full of adhesive and pressure depending on where the obstruction is. (Secure the open end of the hose into a bucket in case the clog releases and the system flushes). CAREFULLY and SLOWLY loosen the hose connection at the cylinder valve. Look for adhesive to squirt out. If adhesive starts to leak out, allow it to slowly continue to do so until it stops. (This will be a little messy, but you will need to bleed off the pressurised adhesive in the hose). Clean or replace the hose.</p> | <p>Hose blockage</p> |
| <p>7. With everything now isolated from the cylinder, place a bucket in front of the cylinder valve and slowly open it to see if any adhesive comes out. If it does, put the cleaned system parts back together. If it does not, there is something wrong with the cylinder or cylinder valve and it should be returned.</p> | <p>Cylinder Blockage</p> |

If you require further assistance in correct use of 3M™ Scotch-Weld™ Cylinder Spray Adhesives contact 3M Australia on 136 136, and ask to speak to a 3M IATD Sales Representative.