

AIRLESS TIPS

Tips on tips



www.graco.be

CHOOSING THE RIGHT TIP FOR YOUR JOB IS ESSENTIAL

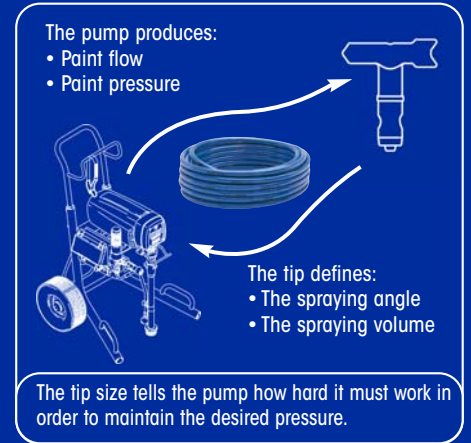
The spray tip affects a job's profit margin as much as any other piece of equipment on the site.

- Optimize your performance
- Improve your work quality
- Control your costs



HOW DO TIPS WORK?

- An airless sprayer pumps and pressurizes the paint without the use of air.
- The paint is then forced to go through the small orifice of the tip under high pressure (up to 350 bar).
- This process atomizes the paint in a controlled fan width and flow rate (same effect as placing your thumb on the end of a garden hose)



WHY SO MANY DIFFERENT TIPS AND SIZES?

You can compare it to choosing the right bit for your electric drill. There are bits designed for wood, bits for metal and bits for concrete. Each bit for each application comes in a variety of sizes. Using the wrong bit on the wrong surface does not work. With airless tips it is very similar.



CHOOSING THE RIGHT TIP

- decreases overspray
- provides more control
- results in less time to spend on the job
- less paint usage
- and higher profits



HOW TO CHOOSE THE RIGHT TIP?

Getting the most from your spray tip depends on several factors:

- THE TIP'S **FAN WIDTH**
- THE TIP'S **ORIFICE SIZE**
- YOUR SPRAYER'S **MAXIMUM OUTPUT**
- THE **TYPE OF PAINT** YOU ARE SPRAYING
- THE **TYPE OF SURFACE** YOU ARE SPRAYING
- **TIP WEAR**





THE FAN WIDTH

of a tip is defined by its spray angle when spraying at 30 cm distance from the surface. The angle is indicated with one number only:

- 5 in this case corresponds to an angle of 50°.



To obtain the fan width, multiply the number of the angle by 5:

- $5 \times 5 = 25$ cm fan width



WIDE RAC®

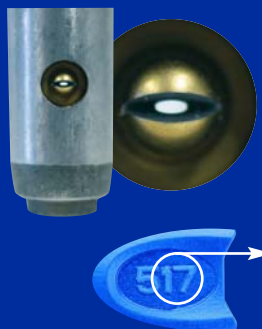
The wider the spray pattern, the faster the surface is painted. Wide spraying greatly improves productivity.

However, wide spraying is difficult to control and wide spray tips are not available in all sizes.

Graco provides a special range of RAC X™ tips, **WAXxxx**, specifically cut to provide a superb result at a wide angle, saving you time.

30 SEC. 3 passes with WA

1 MIN. 6 passes with standard tip



THE ORIFICE SIZE

defines the amount of paint that will flow through the tip.

It is indicated by the last two digits:

- 17 in this case corresponds to a hole size of 0.017 of an inch or 0.43 mm

Your actual flow rate will depend on your spraying pressure and the paint you are using: high pressure equals more flow; heavier paints equal less flow.

EVERY SPRAYER HAS A MAXIMUM OUTPUT LEVEL.

It is important never to exceed the maximum spray tip size that your machine can handle.

Example: if you require 4,4 l/min the smallest sprayer recommended is the Ultra®Max II 1095.

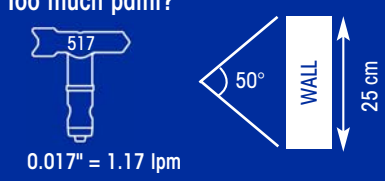
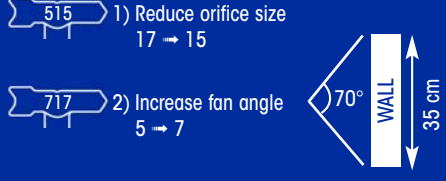
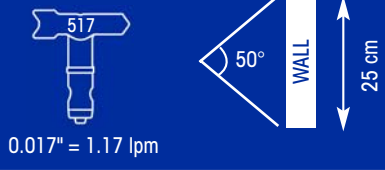
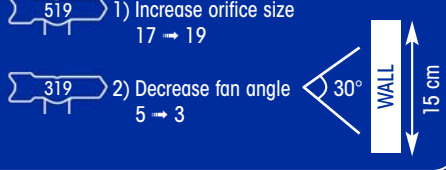
| Inches | | 0.007 | 0.009 | 0.011 | 0.013 | 0.015 | 0.017 | 0.019 | 0.021 | 0.023 | 0.025 | 0.027 | 0.029 | 0.031 | 0.033 | 0.035 | 0.037 | 0.039 | 0.041 | 0.043 | 0.045 | 0.047 |
|--------------|---------|--------------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| mm | | 0.18 | 0.23 | 0.28 | 0.3302 | 0.38 | 0.43 | 0.48 | 0.53 | 0.58 | 0.64 | 0.69 | 0.74 | 0.79 | 0.84 | 0.89 | 0.94 | 0.99 | 1.04 | 1.09 | 1.14 | 1.19 |
| l/min | | 0.2 | 0.3 | 0.5 | 0.7 | 0.9 | 1.2 | 1.5 | 1.8 | 2.2 | 2.5 | 3.0 | 3.4 | 3.9 | 4.4 | 5 | 5.6 | 6.2 | 6.8 | 7.5 | 8.2 | 9 |
| RANGE | MODEL | | | | | | | | | | | | | | | | | | | | | |
| ST MAX™ | 395 | | | | | | | | | | | | | | | | | | | | | |
| | 495 | | | | | | | | | | | | | | | | | | | | | |
| | 595 | | | | | | | | | | | | | | | | | | | | | |
| ULTRA-MAX II | 695 | | | | | | | | | | | | | | | | | | | | | |
| | 795 | | | | | | | | | | | | | | | | | | | | | |
| | 1095 | | | | | | | | | | | | | | | | | | | | | |
| MARK | V | with paint | | | | | | | | | | | | | | | | | | | | |
| | X | with plaster | | | | | | | | | | | | | | | | | | | | |
| GMAX™ | 3900 | | | | | | | | | | | | | | | | | | | | | |
| | 5900 HD | | | | | | | | | | | | | | | | | | | | | |
| | 7900 | | | | | | | | | | | | | | | | | | | | | |
| EH | 200 | | | | | | | | | | | | | | | | | | | | | |
| | 200 | | | | | | | | | | | | | | | | | | | | | |
| GH | 230 | | | | | | | | | | | | | | | | | | | | | |
| | 300 | | | | | | | | | | | | | | | | | | | | | |
| GH | 833 | | | | | | | | | | | | | | | | | | | | | |
| | 5030 | | | | | | | | | | | | | | | | | | | | | |
| | 3640 | | | | | | | | | | | | | | | | | | | | | |
| | 2560 | | | | | | | | | | | | | | | | | | | | | |
| ROOFING | 2075 | | | | | | | | | | | | | | | | | | | | | |
| | 1015 | | | | | | | | | | | | | | | | | | | | | |

Fine Finish Applications

Professional Airless Applications

Heavy Duty Applications

ADJUSTING TO THE RIGHT TIP

| PROBLEM | SOLUTION |
|--|--|
| <p>Too much paint?</p>  <p>0.017" = 1.17 lpm</p> | <p>SOLUTION</p> <p>Tip 515: 1) Reduce orifice size 17 → 15</p> <p>Tip 717: 2) Increase fan angle 5 → 7</p>  <p>35 cm</p> |
| <p>Not enough paint?</p>  <p>0.017" = 1.17 lpm</p> | <p>SOLUTION</p> <p>Tip 519: 1) Increase orifice size 17 → 19</p> <p>Tip 319: 2) Decrease fan angle 5 → 3</p>  <p>15 cm</p> |

Based on this general information, you will be able to choose the appropriate tip for your application. Experiencing with a few tips will help you gain experience and will help you decide

what is the optimum tip for your application. Ask your distributor or your GRACO representative for specific tip size recommendations.

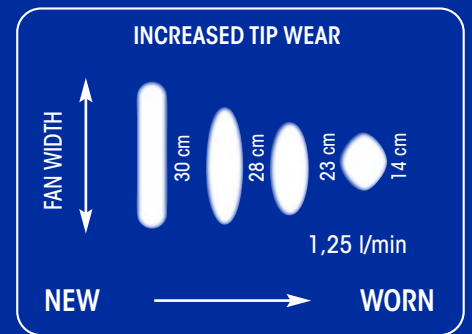
TIPS DO WEAR AND WILL NEED REPLACEMENT

THE TWO MAIN CAUSES FOR TIP WEAR ARE:

- Working pressure at the gun.
- Abrasive material

To explain what tip wear is and what this means to your business, think again of the similarities between spray tips and drill bits. Have you ever tried to drill into concrete using a worn out bit? If you have, then you know that it takes much longer to drill, takes much more effort and the drilled hole ends up being very unprofessional. It is the same with continuing to spray with a worn out tip.

WHAT HAPPENS WHEN A TIP WEARS?



- 1 Fan width decreases
- + = more passes necessary = more labour
- 2 orifice size increases = more paint comes out = more material cost

TOTAL: TWICE THE LABOUR!
+ 30% more paint for the same surface!



Note that by using a worn out tip you might surpass the maximum output of your sprayer. Using a worn out tip will end up costing you much more than the cost of replacing a tip (labour + paint).



ABOUT GRACO

Founded in 1926, Graco is a world leader in fluid handling systems and components. Graco products move, measure, control, dispense and apply a wide range of fluids and viscous materials used in vehicle lubrication, commercial and industrial settings.

The company's success is based on its unwavering commitment to technical excellence, world-class manufacturing and unparalleled customer service. Working closely with qualified distributors, Graco offers systems, products and technology that set the quality standard in a wide range of fluid handling solutions. Graco provides equipment for spray finishing, protective coating, paint circulation, lubrication, and dispensing sealants and adhesives, along with power application equipment for the contractor industry. Graco's ongoing investment in fluid management and control will continue to provide innovative solutions to a diverse global market.

GRACO LOCATIONS

CONTACT

MAILING ADDRESS

P.O. Box 1441
Minneapolis, MN 55440-1441
Tel: 612.623.6000
Fax: 612.623.6777

AMERICAS

MINNESOTA

Worldwide Headquarters
Graco Inc.
88-11th Avenue N.E.
Minneapolis, MN 55413

EUROPE

BELGIUM

European Headquarters
Graco N.V.
Industrieterrein-Oude Bunders
Slakweidestraat 31
3630 Maasmechelen,
Belgium
Tel: 32.89.770.700
Fax: 32.89.770.777

ASIA PACIFIC

JAPAN

Graco K.K.
1-27-12 Hayabuchi
Tsuzuki-ku
Yokohama City, Japan 2240025
Tel: 81.45.593.7300
Fax: 81.45.593.7301

ASIA PACIFIC

CHINA

Graco Hong Kong Ltd.
Representative Office
Room 118 1st Floor
No.2 Xin Yuan Building
No.509 Cao Bao Road
Shanghai, P.R. China 200233
Tel: 86.21.649.50088
Fax: 86.21.649.50077

ASIA PACIFIC

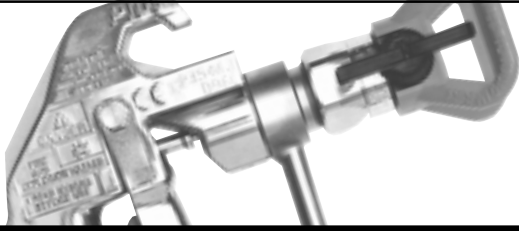
KOREA

Graco Korea Inc.
Choheung Bank Building
4th Floor #1599
Gwanyang-Dong, Dongan-Ku,
Anyang-Si, Gyunggi-Do,
Korea 431-060
Tel: 82(Korea).31.476.9400
Fax: 82(Korea).31.476.9801

All written and visual data contained in this document are based on the latest product information available at the time of publication.
Graco reserves the right to make changes at any time without notice.

Graco is certified ISO 9001.

Europe
+32 89 770 700
FAX +32 89 770 777
WWW.GRACO.BE



Airless Tip Selection Guide

Choosing the right tip is extremely important for maximum productivity, because the tip determines the fluid flow and the size of the spray pattern – the fan size. Using the right tip results in maximum control and minimum overspray, which means faster work and less paint usage, which ultimately means finishing the job quickly without wasting paint!

To choose the right spray tip, you need to consider several factors, such as the material thickness, the sprayer's maximum flow rate and the best fan size for the job. Knowing when a tip is worn and why to replace it are also important.

So the next time you're selecting spray tips, consider these questions:

How thick is the material?

It's easy to determine which tip size to use when you know the type of material you'll be spraying. Lower viscosity (thinner) materials, such as stain or lacquer, require a spray tip with a smaller orifice or hole size. Heavier materials, like latex, require a tip with a larger orifice. Extremely heavy materials like elastomerics and blockfiller might require spray tips larger than .035.

What is the sprayer's maximum flow rate?

For optimum performance, the sprayer must have a maximum flow rate higher than the flow rate of the tip, so be sure the flow rate of the tip is less than the maximum flow rate of your sprayer. Why use a tip with a lower flow rate? Because as the tip wears, the orifice becomes larger, and the flow rate increases.

What is the best fan size for the job?

Fan size – the width of the spray pattern – determines the area covered with each pass.

For a given tip orifice, a wider fan delivers a thinner coat, less defined spray pattern, more overspray, and faster coverage on broad, open surfaces. A narrower fan delivers a thicker coat, more defined spray pattern, less overspray, and better control when spraying small or confined surfaces.

To maximize productivity and lower labor costs, choose a tip with the right fan size. In general, a larger fan size increases production with less control, and a smaller fan size decreases production with more control.

RECOMMENDED TIP SIZES FOR COMMON COATINGS

| Material | Tip Size (in./mm) |
|----------------------------------|-----------------------------|
| Stain or Lacquer | .011 to .013/0.28 to 0.33 |
| Oil Base Paint | .013 to .015/0.33 to 0.38 |
| Latex Paint | .015 to .019/0.33 to 0.48 |
| Heavy Latex & Smooth Elastomeric | .021 to .025/0.53 to 0.63 |
| Elastomeric & Blockfiller | .025 to .035+/0.53 to 0.89+ |

MAKE SURE TIP AND SPRAYER ARE RATED FOR EACH OTHER

Suppose your sprayer has a flow rate of 0.38 gpm (1.4 lpm), and you want to spray latex paint with a 0.017 in. (0.43 mm) tip. The 0.017 tip has a flow rate of 0.31 gpm (1.17 lpm).

The Verdict? You can use the 0.017 tip because it has a lower flow rate than the maximum flow rate of your sprayer.

ORIFICE SIZE ALONE DETERMINES FLOW RATE OF TIP

Tips 286415 and 286515 have a 0.24 gpm (0.9 lpm) flow rate with different fan sizes. Tip 286415 sprays an 8 in. (203 mm) fan with a thicker coat (more mil build), and tip 286515 sprays a 10 in. (254 mm) fan with less mil build.

Do not try to increase the area covered with each pass by backing the gun away from the surface. From farther away, less paint will reach the surface and go to waste as overspray.

The Solution? Use a tip with a larger fan and orifice. Remember, if you use a tip with a larger fan but not a larger orifice, the mil build will be less, and you'll have to move the gun more slowly.

Airless Applicators

Tip Selection Guide

Can You Afford the High Cost of Using a Worn Tip?

Choosing the right spray tip is essential for a quality finish no matter what material is being sprayed, but tips wear with normal use. It's impossible to say how long a tip will last, because there is a huge difference in abrasiveness from one coating to another. For example, latex paints are usually more abrasive than lacquers or alkyd enamels. There's even a wide variation in the abrasiveness of latex paints from one manufacturer to another. And because paint is sprayed at different pressures, some tips will wear faster than others. Abrasive material sprayed at too high a pressure or through too small a tip causes faster tip wear, which wastes time and paint.

How Do You Determine if a Tip is Worn?

When a spray tip wears, the orifice gets bigger and rounder, which makes the fan pattern smaller. When the fan has lost 25% of its original size, it is time to replace the tip. When a tip with a 12 in. (305 mm) fan wears down to a 9 in. (230 mm) fan, it outputs 30% more paint on 25% less area. Continuing to spray with a worn tip means painting takes longer, more paint gets used, and the finish may be uneven and have runs.

Five Ways to Extend Tip Life:

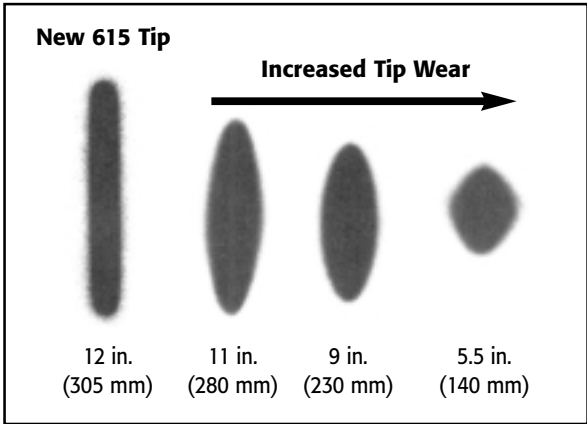
1. Spray at the lowest atomization pressure.
2. Strain the material before you spray it.
3. Use the correct size filters.
4. Clean the filters after every use.
5. Clean the tip with a soft-bristled brush.

EXPENSIVE DECISION

A contractor spraying with a worn tip uses, on average, 20% more paint and 20% more labor.

Consider this:
Assuming paint is \$10 per gal. (\$2.64 per L), consumption is 5 gal. (19 L) per hour, and labor is \$18 per hour, the total cost is \$68 per hour.

But if the contractor sprays with a worn tip? Labor efficiency would decrease by 20% while paint consumption would increase to 6 gallons (22.7 L) per hour, which would increase the hourly cost to \$81.60. The total cost increase would be \$108.80 per 8-hour shift!



A TIP ON TIPS

A rule of thumb: use smaller orifice sizes to spray lower viscosity materials such as stains and lacquers. Use larger orifice sizes for heavier viscosity coatings such as latex or oil-base paints.

1

Airless Applicators

Tip Selection Guide

Tip Charts

Color Coded RAC™ Tips

Graco identifies Reverse-A-Clean® tips with color codes:

- Standard RAC 5 SwitchTips are black.
- Fine Finish RAC (FF5) SwitchTips are green.
- LineLazer RAC (LL5) SwitchTips are yellow.
- Graco Heavy-Duty (GHD) RAC tips are gray.

Making Sense of the Numbers

Graco uses a unique numbering system for all airless spray tips. The first three characters designate the type of tip. For example, a 286417 is a RAC 5 SwitchTip™. The chart below shows other types.

| | |
|---------------------------------|-------------------------------------|
| 286 RAC 5 SwitchTip | 221 RAC IV SwitchTip |
| FF5 Fine Finish RAC 5 SwitchTip | 269 Contractor Flat Tip |
| LL5 LineLazer™ RAC 5 SwitchTip | 163 Fine Finish and Silver Flat Tip |
| GHD Heavy-Duty RAC SwitchTip | |

Double the fourth digit for the approximate fan width in inches when the gun is held 12 in. (305 mm) from the surface. Example: 286417 has a fan width of approximately 8 in. (203 mm).

Divide the last two digits by 1000 for the tip orifice size in inches. Example: 286417 has an orifice size of 0.017 in. (0.43 mm). Also, look at the RAC 5 chart below to determine the flow rate of a .017 tip.

As indicated in the chart, this tip has a flow rate of 0.31, or approximately 1/3 gpm (which is about 1.2 lpm).

RAC 5 SwitchTips (286XXX)

| | | Orifice Size - Inches | | | | | | | | | | | | | | | | | | | | | |
|-----------------|-----------------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| | | .007 | .009 | .011 | .013 | .015 | .017 | .019 | .021 | .023 | .025 | .027 | .029 | .031 | .033 | .035 | .039 | .043 | .045 | .051 | .055 | .063 | .065 |
| Fan Width | 2-4 (51-102) | | 109 | 111 | 113 | 115 | | 119 | 121 | | | | | | | | | | | | | | |
| | 4-6 (102-152) | 207 | 209 | 211 | 213 | 215 | 217 | 219 | 221 | 223 | 225 | | | | | 235 | | | | | | | |
| | 6-8 (152-203) | 307 | 309 | 311 | 313 | 315 | 317 | 319 | 321 | 323 | 325 | 327 | | 331 | | | | | | | | | |
| | 8-10 (203-254) | | 409 | 411 | 413 | 415 | 417 | 419 | 421 | 423 | 425 | 427 | 429 | | 433 | 435 | 439 | 443 | | 451 | 455 | | |
| | 10-12 (254-305) | | 509 | 511 | 513 | 515 | 517 | 519 | 521 | 523 | 525 | 527 | 529 | 531 | 533 | 535 | | 543 | | 551 | 555 | 563 | |
| | 12-14 (305-356) | | 609 | 611 | 613 | 615 | 617 | 619 | 621 | 623 | 625 | 627 | 629 | 631 | 633 | 635 | | 645 | | 655 | | 665 | |
| | 14-16 (356-406) | | | | | | | | 721 | 723 | 725 | | 729 | | 735 | | | | | | | | |
| | 16-18 (406-457) | | | | | 815 | 817 | 819 | 821 | | | 827 | | 831 | 833 | 835 | | | | | | | |
| | 18-20 (457-508) | | | | | | 917 | | | | | | | | | 935 | | | | | | | |
| Flow rate (gpm) | | .05 | .09 | .12 | .18 | .24 | .31 | .38 | .47 | .57 | .67 | .77 | .90 | 1.03 | 1.17 | 1.31 | 1.63 | 1.98 | 2.17 | 2.79 | 3.25 | 4.26 | 4.53 |
| Flow rate (lpm) | | .20 | .33 | .49 | .69 | .91 | 1.17 | 1.47 | 1.79 | 2.15 | 2.54 | 2.96 | 3.42 | 3.90 | 4.42 | 4.98 | 6.18 | 7.51 | 8.23 | 10.57 | 12.29 | 16.13 | 17.17 |

(water @ 2000 psi, 13.8 MPa, 138 bar)

Example: for a tip with a 0.011 in. (0.28 mm) orifice and a 6 in. (152 mm) pattern, order 286311. Fan width of a spray pattern is measured at 12 in. (305 mm) from the surface.

Fine Finish RAC 5 SwitchTips (FF5XXX)

| | | Orifice Size - Inches | | |
|-----------------|-----------------|-----------------------|------|------|
| | | .010 | .012 | .014 |
| Fan Width | 4-6 (102-152) | 210 | 212 | 214 |
| | 6-8 (152-203) | 310 | 312 | |
| | 8-10 (203-254) | 410 | 412 | 414 |
| | 10-12 (254-305) | 510 | 512 | 514 |
| | 12-14 (305-356) | | 612 | 614 |
| Flow rate (gpm) | | .11 | .15 | .21 |
| Flow rate (lpm) | | .41 | .59 | .80 |

(water @ 2000 psi, 13.8 MPa, 138 bar)

Example: for a tip with a 0.010 in. (0.25 mm) orifice and a 10 in. (254 mm) pattern, order FF5510. Fan width of a spray pattern is measured at 12 in. (305 mm) from the surface.

LineLazer RAC 5 SwitchTips (LL5XXX)

| | | Orifice Size - Inches | | | | | | | | | |
|-----------------|-----------------|-----------------------|------|------|------|------|------|------|------|-------|------|
| | | .013 | .015 | .017 | .019 | .021 | .023 | .025 | .027 | .055 | |
| Line Width | 2 (51) | 213 | 215 | 217 | 219 | | | | | | |
| | 4 (102) | | 315 | 317 | 319 | 321 | 323 | | 327 | 355 | |
| | 6 (152) | | | 417 | 419 | 421 | | | | | |
| | 12 (305) | | | | | 621 | 623 | 625 | 627 | | |
| | Flow rate (gpm) | | .18 | .24 | .31 | .38 | .47 | .57 | .67 | .79 | 3.25 |
| Flow rate (lpm) | | .69 | .91 | 1.17 | 1.47 | 1.79 | 2.15 | 2.54 | 2.96 | 12.29 | |

(water @ 2000 psi, 13.8 MPa, 138 bar)

Example: for a tip with a 0.015 in. (0.38 mm) orifice and a 4 in. (102 mm) pattern, order LL5315. Fan width of a spray pattern is measured at 6 in. (152 mm) from the surface with traffic paint at 2000 psi (13.8 MPa, 138 bar).

Airless Applicators

Tip Selection Guide

Silver Flat Tips (163XXX)

| | | Orifice Size - Inches | | | | | | | | | | | | | | | | | |
|------------------------|-----------------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| | | .007 | .009 | .011 | .013 | .015 | .017 | .019 | .021 | .023 | .025 | .027 | .029 | .031 | .033 | .035 | .039 | .041 | |
| Fan Width | 2-4 (51-102) | 107 | 109 | 111 | 113 | 115 | 117 | 119 | 121 | | | | | | | | | | |
| | 4-6 (102-152) | 207 | 209 | 211 | 213 | 215 | 217 | 219 | 221 | 223 | 225 | 227 | 229 | 231 | | 235 | 239 | | |
| | 6-8 (152-203) | 307 | 309 | 311 | 313 | 315 | 317 | 319 | 321 | 323 | 325 | 327 | 329 | 331 | | 335 | 339 | 341 | |
| | 8-10 (203-254) | 407 | 409 | 411 | 413 | 415 | 417 | 419 | 421 | 423 | 425 | 427 | 429 | 431 | 433 | 435 | 439 | 441 | |
| | 10-12 (254-305) | | 509 | 511 | 513 | 515 | 517 | 519 | 521 | 523 | 525 | 527 | 529 | 531 | 533 | 535 | 539 | 541 | |
| | 12-14 (305-356) | | 609 | 611 | 613 | 615 | 617 | 619 | 621 | 623 | 625 | 627 | 629 | 631 | 633 | 635 | 639 | 641 | |
| | 14-16 (356-406) | | | 711 | 713 | 715 | 717 | 719 | 721 | 723 | 725 | 727 | 729 | 731 | 733 | 735 | | | |
| | 16-18 (406-457) | | | | 813 | 815 | 817 | 819 | 821 | 823 | 825 | 827 | 829 | 831 | 833 | 835 | 839 | 841 | |
| 18-20 (457-508) | | | | | 915 | 917 | 919 | 921 | 923 | 925 | 927 | 929 | 931 | 933 | 935 | 939 | | | |
| Flow rate (gpm) | | .05 | .09 | .12 | .18 | .24 | .31 | .38 | .47 | .57 | .67 | .79 | .90 | 1.03 | 1.17 | 1.31 | 1.63 | 1.8 | |
| Flow rate (lpm) | | .20 | .33 | .49 | .69 | .94 | 1.17 | 1.47 | 1.79 | 2.15 | 2.54 | 2.69 | 3.42 | 3.90 | 4.42 | 4.98 | 6.18 | 6.83 | |

(water @ 2000 psi, 13.8 MPa, 138 bar)

| | | Orifice Size - Inches | | | | | | | | | | | | | | | | | | | |
|------------------------|-----------------|-----------------------|------|------|------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|
| | | .043 | .045 | .047 | .049 | .051 | .053 | .055 | .057 | .059 | .061 | .063 | .065 | .067 | .069 | .071 | .073 | .075 | .077 | .079 | .081 |
| Fan Width | 6-8 (152-203) | | | | | 351 | | | 357 | 359 | | | | | | | | | | | |
| | 8-10 (203-254) | 443 | 445 | | 449 | 451 | | 455 | 457 | 459 | 461 | 463 | 465 | 467 | 469 | 471 | 473 | 475 | 477 | 479 | 481 |
| | 10-12 (254-305) | 543 | 545 | 547 | | 551 | 553 | 555 | 557 | 559 | 561 | 563 | 565 | 567 | 569 | 571 | 573 | | | | |
| | 12-14 (305-356) | 643 | 645 | 647 | | 651 | | 655 | 657 | 659 | 661 | 663 | 665 | 667 | 669 | 671 | | | | | |
| | 14-16 (356-406) | | | | 749 | | | | 757 | 759 | | 763 | | 767 | | | | | | | |
| | 16-18 (406-457) | | 845 | 847 | 849 | | | | | | | 861 | 863 | 865 | 867 | | | | | | |
| 18-20 (457-508) | | | | | | | | | | | | | | | | | | | | | |
| Flow rate (gpm) | | 1.98 | 2.17 | 2.37 | 2.58 | 2.79 | 4.26 | 3.25 | 3.49 | 3.74 | 4.0 | 4.26 | 4.53 | 4.82 | 5.11 | 5.41 | 5.72 | 6.04 | 6.36 | 6.70 | 7.04 |
| Flow rate (lpm) | | 7.51 | 8.23 | 8.98 | 9.76 | 10.57 | 6.13 | 12.29 | 13.2 | 14.14 | 15.12 | 16.13 | 17.17 | 18.24 | 19.34 | 20.48 | 21.65 | 22.85 | 24.0 | 25.36 | 26.66 |

(water @ 2000 psi, 13.8 MPa, 138 bar)

Example: for a tip with a .043 in. (1.09 mm) orifice and a 12 in. (305 mm) pattern, order 163643. Fan width of a spray pattern is measured at 12 in. (305 mm) from the surface.

REPLACE TIPS OFTEN FOR MAXIMUM PERFORMANCE

Watch for runs or sags in the spray pattern as signs of a worn tip. Don't increase pressure to combat these problems. You'll only waste paint and increase wear on the pump. Simply replace the worn tip.

Worn-out tips also wear components in your equipment much faster.

By spraying materials with correctly sized Graco tips and replacing tips when necessary, you'll maximize productivity, save paint and earn more profits.

HELPFUL HINT

1. Spraying at the lowest possible pressure greatly extends the service life of major pump components – and spray tips too!
2. Even though Graco Airless Spray Guns are built for long life, you can extend the life of your gun even more with a daily maintenance routine. At the end of each day, clean and oil your gun with a lightweight spray oil such as WD-40®.