

AIRLESS TIPS

Tips on tips



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CHOOSING THE RIGHT TIP FOR YOUR JOB IS ESSENTIAL

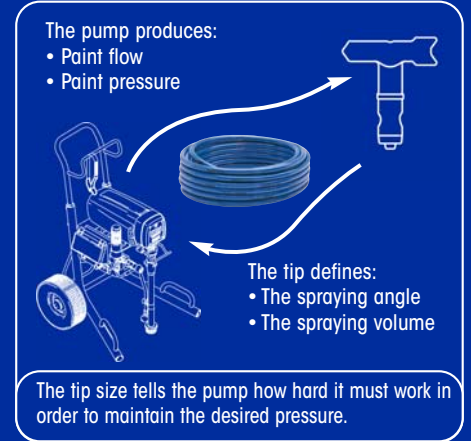
The spray tip affects a job's profit margin as much as any other piece of equipment on the site.

- 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®

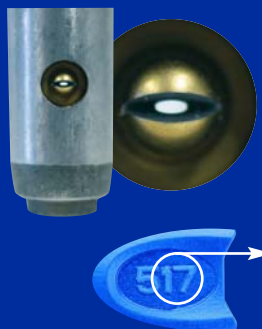
The wider the spray pattern, the faster the surface is painted. Wide spraying greatly improves productivity.

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

THE TYPE OF PAINT as well as THE SURFACE

you are spraying define the kind of tip you should use.
The table below indicates recommended tips and sizes for different applications and materials.



FINE FINISH TIPS



	Typical applications	Materials	Recommended tip sizes	Corresponding guards
RAC X™ FFAxxx	Cabinetry, wood working, metal and fine finish surfaces	Dyes Ink Stains Lacquers Oils	008 - 010 010 - 012 012 - 014 012 - 014 012 - 014	
Flat Silver 163xxx		Enamels Urethanes Auto finishes	012 - 014 012 - 014 008 - 014	
Flat Black 163xxx				

PROFESSIONAL AIRLESS TIPS



	Typical applications	Materials	Recommended tip sizes	Corresponding guards
RAC X™ PAAxxx	Residential, commercial or industrial job sites.	Latex Acrylics Multi colours	015 - 019 015 - 019 023 - 025	
Contractor flat 269xxx	Both interior and exterior.	Emulsions Block fillers Silicon	017 - 021 023 - 025 021 - 025	
Flat Silver 163xxx				

HEAVY DUTY TIPS



	Typical applications	Materials	Recommended tip sizes	Corresponding guards
RAC X™ HDAxxx WAxxxx	High production, large surfaces. Residential, commercial or industrial job sites.	Block fillers Intumescent Spachtel Elastomerics Mastics Epoxies Fibred Asphalt Silicat/Mineral Contact cement	027 - 031 029 - 035 029 - 041 027 - 033 041 - 047 043 - 061 047 - 053 031 - 071 027 - 033 -	
Flat Silver 163xxx	Both interior and exterior paint as well as airless plaster applications.			

AIRLESS STRIPING TIPS



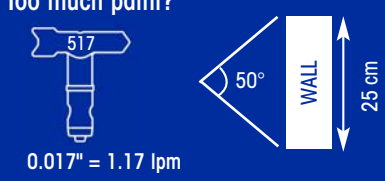
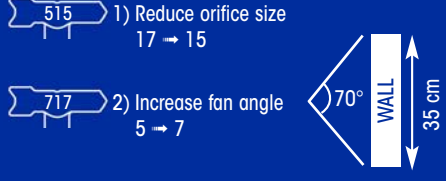
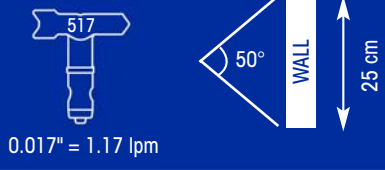
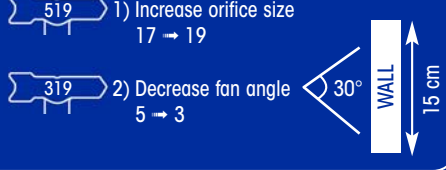
	Typical applications	Materials	Recommended tip sizes	Corresponding guards
RAC® 5 LineLazer LL5xxx	Parking lots, roads, warehouse floors, crossings and athletic fields.	Airless striping paints	013 - 055	
	Ideal to reduce overspray. Sharp line edges. Even paint distribution across the line.	Top quality exterior paints	015 - 021	

FOR ALL TIP SIZES AVAILABLE IN ALL TIP RANGES, PLEASE CONTACT YOUR GRACO DISTRIBUTOR

Tip	Stains	Lacquers	Enamels	Urethanes	Acrylics	Emulsions	Latex	Block Fillers	Intumescent	Texture & high viscosity material for spray applications												NEW 1st digit x 5 = fan width*	WORN time to change!				
FFA-XXX				PAA-XXX				HDA-XXX																			
108	110	112		115																					5 cm	3 cm	
208	210	212	214	215	217	219	221		225	227			231													10 cm	7 cm
308	310	312	314	315	317	319	321		325	327			331													15 cm	10 cm
	410	412	414	415	417	419	421	323	425	427	329	431	433	435		439	441	443	445	451	455				20 cm	15 cm	
	510	512	514	515	517	519	521	423	525	527	429	531	533	535	537	539	541	543	545	551	555	561	665		25 cm	20 cm	
		612	614	615	617	619	621	523	625	627	529	631	633	635	637	639	641	643	645	651	655	661		671	30 cm	25 cm	
							721	623			629			735												35 cm	30 cm
						819	821	723		827	729	831	833	835												40 cm	35 cm
WA-XXXX							1221	1223	1225	1227	1229	1231	1233	1235	1237	1239										60 cm	55 cm

*at 30 cm spraying distance

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>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> 

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

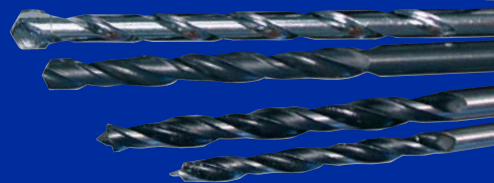
what is the optimum tip for your application. Ask your distributor or your GRACO representative for specific tip size recommendations.

TIPS DO WEAR AND WILL NEED REPLACEMENT

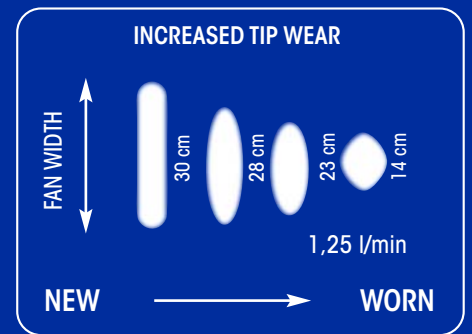
THE TWO MAIN CAUSES FOR TIP WEAR ARE:

- 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.

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