



**Control your coverage.
Control your drift.
All with one tip.**

***COMBO-JET*[®] ER, SR, MR & DR
Droplet Selective Tip-Caps
deliver consistent and proven drift reduction
while providing a choice level of coverage**



**80° & 110° Tip Charts - Imperial Gallons/Acre on 20" Spacing
For Standard and PWM Sprayer Systems**



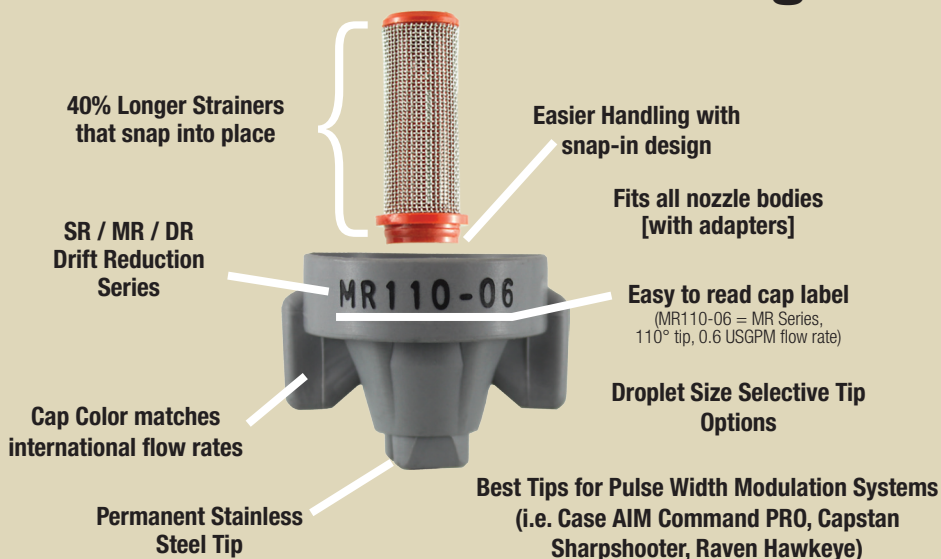
COMBO-JET® Tip-Caps and Strainers

Are you spending more time cleaning nozzles than spraying?

The **COMBO-JET®** Tip-Cap with snap-in strainer plugs less, is easier to clean, and stays clean longer.



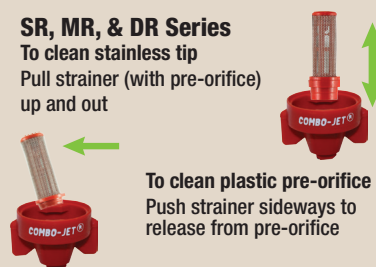
The COMBO-JET® Advantage



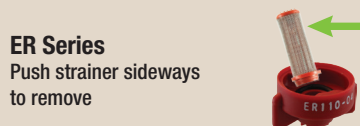
How to remove strainers for cleaning

SR, MR, & DR Series

To clean stainless tip
Pull strainer (with pre-orifice)
up and out



To clean plastic pre-orifice
Push strainer sideways to
release from pre-orifice



ER Series

Push strainer sideways
to remove



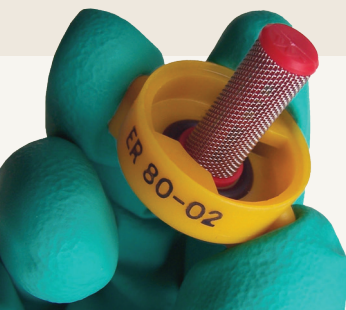
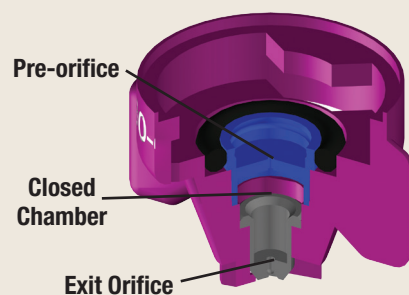
To use/replace strainer
Push strainer down to
snap in strainer

COMBO-JET® Drift Reduction - Closed Chamber Design

Unlike air-induction nozzles, **COMBO-JET®** SR, MR, and DR series of tip-caps do not rely on a steady stream of air to reduce drift. Wilger uses a unique pre-orifice and closed chamber design that reduces drift while creating more meaningful droplets.

Each of the **COMBO-JET®** drift reduction series (SR/MR/DR) provide different levels of drift reduction and coverage, so you have more flexibility in choosing a tip that fits your application. Without needing consistent airflow for controlling drift, **COMBO-JET®** tips have become the preferred tip for Pulse Width Modulation (PWM) spraying systems.

For an example of comparison between the four **COMBO-JET®** tip-cap series, see the next page, or use Tip Wizard found on the wilger.net website or Tip Wizard smartphone app.



If you are tired of picking parts out of the dirt, you will really like COMBO-JET® Tip-Caps!

Since the strainer, O-ring, and tip-cap all snap together tightly, dislodged debris cannot plug the tip while changing or cleaning.

COMBO-JET® tip-caps handle as one piece, so they are safer & easier to use.



Not sure which tips to use? Make it easy with Tip Wizard.

Tip Wizard is available on the wilger.net website as well as a FREE smartphone app.

Enter your application to receive crucial information to help you make your tip selection and spraying decisions.



Better Engineered Sprayer Components for Over 40 Years

COMBO-JET® ER, SR, MR, & DR Tip-Caps What is the difference?

Each *chemical, crop, and application* are different. For best application efficacy, each might use a different spray tip. Wilger engineered four series of tip-caps to best match any application to its ideal spray tip.

As an example of how each tip series (ER/SR/MR/DR) compare, see the below chart, referencing the -06 tip size:

Comparison Factor	ER Series	SR Series	MR Series	DR Series
	Extended Range	Small Reduction	Mid Range	Drift Control
Droplet Size ¹	Smallest (246µ VMD*)	Medium (371µ VMD*)	Large (474µ VMD*)	Largest (529µ VMD*)
% <141µ (Driftable) ² % <600µ ³	20% of volume < 141µ 94% of volume <600µ	8% of volume < 141µ 89% of volume <600µ	4% of volume < 141µ 74% of volume <600µ	2% of volume < 141µ 64% of volume <600µ
Coverage	Best	Excellent	Very good	Good
Drift Potential	Most likely to drift	Lower drift potential	Major reduction	Least likely to drift
Design	Single orifice flat fan	Dual orifice flat fan	Dual orifice flat fan	Dual orifice flat fan
Serviceability	All-in-one Tip-Cap. Strainer & Pre-orifice (SR, MR, & DR) snap into Tip-Cap.			

¹Based on an XX110-06 nozzle @ 40 psi (2.75 BAR)
²Droplets smaller than 141µ are more likely to drift. 141µ is used as a standard for determining driftable fines.
³Droplets smaller than 600µ will provide better coverage. Droplets larger than 600µ use more spray volume, potentially reducing coverage.

Protect yourself by using the correct spray tip.

Minimizing crop damage and maximizing chemical efficacy means more than just impacting the crop. Proper spraying is an important aspect of every farm's bottom line, both financially and environmentally.

Each field's spray conditions can differ greatly, so it is imperative that spray tips match those conditions.

To achieve the best application control, ER/SR/MR/DR **COMBO-JET®** tip-caps can match the ideal droplet size for any spraying conditions.

A word or two on multi-tip spraying.

Using a single spray tip to apply high volume applications produces larger droplets, that can result in poor coverage. This is especially true with faster sprayers and higher application rates.

To maintain effective application while minimize coverage loss, use multiple spray tips at the same time.

Effectively, each tip makes more meaningful droplets [for coverage], resulting in finer coverage.

When used with **COMBO-JET®** drift reduction tip-caps, you have the ultimate configuration for any application.

Aside from coverage-sensitive chemicals, multi-tip spraying is also useful for "hard to reach" applications, such as spraying both sides of a head of wheat.

For applying chemical on both sides of a head of wheat, use a dual tip adapter [left], or for hard to reach applications like pigweed (amaranth), use **COMBO-RATE®** stacking nozzle bodies [right] to maximize canopy penetration.



Did you know that size matters?

A 500 micron(µ) droplet contains the same volume as 8x 250µ diameter droplets, and halving those 8 droplets would make 64x 125µ droplets. That is why with smaller droplets, with the same flow rate, you get finer coverage.





COMBO-JET® 80° Tip-Cap Performance Specifications

FOR STANDARD SPRAYERS

Please Note:

- Flow rates based on water (80°F), applied at 20" spacing.
- For applications where a uniform pattern is required, recommended pressure ranges for Tip-Caps are shown.
- Cap color determined by flow rate, as per ISO standard.
- In order to make this chart easier to use, not all available tip-cap sizes are shown. For specifications for 005, 0067, 30, 40, 50 & 60 size Tip-Caps, visit our website.



Recommended Pressure:
20-70 PSI



Recommended Pressure:
20-100 PSI



Recommended Pressure:
25-100 PSI



Recommended Pressure:
30-100 PSI



Tip Cap No.	Flow Rate IGPM	PSI	Application Rate - Imperial Gal/Acre @ 20"								VMD (Droplet Size in μ); %<141μ (Drift %); %<200μ (Drift %); %<600μ (Small Droplets)																Tip-Cap & Part No.										
			Sprayer Speed - Miles / Hour								80° ER Series				80° SR Series				80° MR Series				80° DR Series				Tip-Cap	Part #									
			5	7.5	10	12.5	15	17.5	20	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600	Strainer											
01	0.06	20	3.5	2.3	1.8	1.4	1.2	1.0	0.9	175	29%	64%	100%	292	8%	22%	97%	-	-	-	-	-	-	-	-	-	-	ER80-01	40270-01								
	0.07	30	4.3	2.9	2.1	1.7	1.4	1.2	1.1	156	41%	74%	100%	233	21%	39%	97%	218	23%	44%	97%	312	10%	21%	94%	173	30%	54%	97%	274	14%	29%	96%	SR80-01	40288-01		
	0.08	40	5.0	3.3	2.5	2.0	1.7	1.4	1.2	143	49%	81%	100%	199	29%	51%	97%	191	30%	54%	97%	248	17%	34%	98%	173	36%	61%	98%	248	17%	34%	98%	MR80-01	40290-01		
	0.09	50	5.5	3.7	2.8	2.2	1.8	1.6	1.4	134	56%	87%	100%	176	36%	61%	98%	173	36%	61%	98%	248	17%	34%	98%	173	36%	61%	98%	248	17%	34%	98%	DR80-01	40280-01		
	0.10	60	6.1	4.0	3.0	2.4	2.0	1.7	1.5	128	62%	91%	100%	159	41%	68%	98%	159	40%	68%	97%	229	19%	39%	99%	148	44%	73%	97%	214	21%	43%	100%	100 Mesh - Green	40251-00		
015	0.09	20	5.3	3.5	2.6	2.1	1.8	1.5	1.3	199	21%	50%	100%	317	8%	19%	93%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER80-015	40270-015			
	0.11	30	6.4	4.3	3.2	2.6	2.1	1.8	1.6	180	29%	59%	100%	262	16%	32%	95%	323	10%	21%	94%	418	4%	9%	87%	380	6%	12%	90%	380	6%	12%	90%	SR80-015	40288-015		
	0.13	40	7.4	5.0	3.7	3.0	2.5	2.1	1.9	167	34%	65%	100%	230	22%	41%	96%	283	14%	28%	96%	380	6%	12%	90%	380	6%	12%	90%	380	6%	12%	90%	MR80-015	40290-015		
	0.14	50	8.3	5.5	4.2	3.3	2.8	2.4	2.1	158	39%	70%	100%	207	26%	48%	97%	256	17%	34%	97%	353	7%	15%	92%	353	7%	15%	92%	353	7%	15%	92%	DR80-015	40280-015		
	0.15	60	9.1	6.1	4.5	3.6	3.0	2.6	2.3	151	42%	74%	100%	191	30%	54%	97%	236	20%	38%	98%	332	8%	17%	94%	332	8%	17%	94%	332	8%	17%	94%	100 Mesh - Green	40251-00		
02	0.12	20	7.0	4.7	3.5	2.8	2.3	2.0	1.8	184	28%	57%	100%	295	9%	21%	93%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER80-02	40270-02		
	0.14	30	8.6	5.7	4.3	3.4	2.9	2.4	2.1	170	34%	62%	100%	257	16%	31%	95%	326	8%	18%	94%	454	3%	7%	80%	454	3%	7%	80%	454	3%	7%	80%	SR80-02	40288-02		
	0.17	40	9.9	6.6	5.0	4.0	3.3	2.8	2.5	161	38%	66%	100%	233	20%	38%	96%	298	11%	24%	94%	419	4%	10%	84%	419	4%	10%	84%	419	4%	10%	84%	MR80-02	40290-02		
	0.19	50	11.1	7.4	5.5	4.4	3.7	3.2	2.8	155	42%	70%	100%	216	24%	44%	97%	277	14%	28%	95%	394	5%	12%	87%	394	5%	12%	87%	394	5%	12%	87%	DR80-02	40280-02		
	0.20	60	12.1	8.1	6.1	4.8	4.0	3.5	3.0	150	45%	72%	100%	203	27%	48%	98%	262	16%	31%	95%	375	6%	14%	88%	375	6%	14%	88%	375	6%	14%	88%	50 Mesh - Red	40250-00		
025	0.22	70	13.1	8.7	6.5	5.2	4.4	3.7	3.3	145	47%	74%	99%	193	30%	52%	98%	249	17%	34%	95%	359	7%	15%	90%	359	7%	15%	90%	359	7%	15%	90%	40250-00			
	0.15	20	8.8	5.8	4.4	3.5	2.9	2.5	2.2	232	17%	38%	100%	341	6%	15%	89%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER80-025	40270-025		
	0.18	30	10.7	7.1	5.4	4.3	3.6	3.1	2.7	209	23%	46%	100%	296	11%	24%	93%	425	5%	10%	81%	460	3%	8%	77%	460	3%	8%	77%	460	3%	8%	77%	SR80-025	40288-025		
	0.21	40	12.4	8.3	6.2	5.0	4.1	3.5	3.1	194	28%	51%	100%	268	15%	30%	94%	382	6%	14%	85%	430	4%	10%	81%	430	4%	10%	81%	430	4%	10%	81%	MR80-025	40290-025		
	0.23	50	13.8	9.2	6.9	5.5	4.6	4.0	3.5	182	31%	56%	100%	248	18%	35%	95%	353	8%	17%	87%	408	5%	12%	83%	408	5%	12%	83%	408	5%	12%	83%	DR80-025	40280-025		
03	0.26	60	15.2	10.1	7.6	6.1	5.1	4.3	3.8	174	34%	59%	100%	233	20%	39%	96%	330	9%	19%	89%	391	6%	13%	85%	391	6%	13%	85%	391	6%	13%	85%	50 Mesh - Red	40250-00		
	0.28	70	16.4	10.9	8.2	6.5	5.5	4.7	4.1	167	37%	62%	100%	221	22%	42%	97%	312	10%	21%	90%	377	7%	15%	86%	377	7%	15%	86%	377	7%	15%	86%	40250-00			
	0.18	20	10.5	7.0	5.3	4.2	3.5	3.0	2.6	249	17%	38%	99%	400	5%	9%	86%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER80-03	40270-03	
	0.22	30	12.9	8.6	6.4	5.1	4.3	3.7	3.2	228	23%	45%	99%	344	9%	17%	89%	432	5%	10%	81%	481	3%	7%	72%	481	3%	7%	72%	481	3%	7%	72%	SR80-03	40288-03		
	0.25	40	14.9	9.9	7.4	5.9	5.0	4.2	3.7	215	26%	49%	99%	309	12%	23%	91%	390	7%	14%	85%	447	4%	9%	77%	447	4%	9%	77%	447	4%	9%	77%	MR80-03	40290-03		
04	0.28	50	16.6	11.1	8.3	6.6	5.5	4.7	4.2	205	29%	53%	99%	285	15%	27%	92%	360	8%	17%	88%	422	5%	11%	80%	422	5%	11%	80%	422	5%	11%	80%	DR80-03	40280-03		
	0.31	60	18.2	12.1	9.1	7.3	6.1	5.2	4.5	197	32%	55%	99%	266	17%	31%	93%	337	9%	19%	89%	403	6%	13%	83%	403	6%	13%	83%	403	6%	13%	83%	50 Mesh - Red	40250-00		
	0.33	70	19.6	13.1	9.8	7.9	6.5	5.6	4.9	191	34%	58%	99%	251	18%	34%	93%	319	10%	21%	91%	387	7%	14%	84%	387	7%	14%	84%	387	7%	14%	84%	40250-00			
	0.24	20	14.0	9.3	7.0	5.6	4.7	4.0	3.5	251	16%	34%	99%	399	3%	11%	83%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER80-04	40270-04
	0.29	30	17.1	11.4	8.6	6.9	5.7	4.9	4.3	230	21%	40%	99%	344	7%	19%	87%	420	5%	11%	80%	543	2%	5%	62%	543	2%	5%	62%	543	2%	5%	62%	SR80-04	40288-04		
05	0.33	40	19.8	13.2	9.9	7.9	6.6	5.7	5.0	216	24%	44%	99%	310	10%	24%	89%	385	7%	15%	84%	507	3%	7%	68%	507	3%	7%	68%	507	3%	7%	68%	MR80-04	40290-04		
	0.37	50	22.1	14.8	11.1	8.9	7.4	6.3	5.5	206	26%	48%	99%	286	12%	28%	91%	360	9%	18%	86%	480	4%	8%	72%	480	4%	8%	72%	480	4%	8%	72%	DR80-04	40280-04		
	0.41	60	24.2	16.2	12.1	9.7	8.1	6.9	6.1	198	28%	51%	99%	267	14%	32%	92%	341	10%	20%	88%	460	4%	9%	75%	460	4%	9%	75%	460	4%	9%	75%	50 Mesh - Red	40250-00		
	0.44	70	26.2	17.5	13.1	10.5	8.7	7.5	6.5	192	29%	53%	99%	253	15%	34%	92%	326	11%	22%	89%	443	5%	10%	77%	443	5%	10%	77%	443	5%	10%	77%	40250-00			
	0.29	20	17.5	11.7	8.8	7.0	5.8	5.0	4.4	296	11%	24%	95%	445	3%	8%	78%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER80-05	40270-05
06	0.36	30	21.4	14.3	10.7	8.6	7.1	6.1	5.4	267	16%	31%	95%	381	7%	15%	83%	504	3%	7%	68%	574	2%	4%	56%	574	2%	4%	56%	574	2%	4%	56%	SR80-05	40288-05		
	0.42	40	24.8	16.5	12.4	9.9	8.3	7.1	6.2	248	20%	36%	95%	342	10%	20%	86%</																				

80° Tip-Cap Specifications Standard Spray Systems

COMBO-JET® 80° High Flow Tip-Cap Performance Specifications

FOR STANDARD SPRAYERS

Please Note:

1. Flow rates based on water (80°F), applied at 20" spacing.
2. For applications where a uniform pattern is required, recommended pressure ranges for Tip-Caps are shown.
3. Cap color determined by flow rate, as per ISO standard.
4. In order to make this chart easier to use, not all available tip-cap sizes are shown. For specifications for 005, 0067, 30, 40, 50 & 60 size Tip-Caps, visit our website.



Recommended Pressure:
20-70 PSI



Recommended Pressure:
20-100 PSI



Recommended Pressure:
25-100 PSI



Recommended Pressure:
30-100 PSI



Tip Cap No.	Flow Rate IGPM	PSI	Application Rate - Imperial Gal/Acre @ 20"								VMD (Droplet Size in µ; %<141µ (Drift %); %<200µ (Drift %); %<600µ (Small Droplets))																Tip-Cap & Part No.	
			Sprayer Speed - Miles / Hour								80° ER Series				80° SR Series				80° MR Series				80° DR Series				Tip-Cap	Part #
			5	7.5	10	12.5	15	17.5	20	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600	Strainer not req'd		
08	0.47	20	28.0	18.7	14.0	11.2	9.3	8.0	7.0	367	12%	23%	86%	548	6%	9%	46%	-	-	-	-	-	-	-	-	-	ER80-08	40270-08
	0.58	30	34.3	22.9	17.1	13.7	11.4	9.8	8.6	317	17%	29%	90%	490	8%	12%	59%	540	6%	11%	63%	619	3%	5%	52%	SR80-08	40288-08	
	0.67	40	39.6	26.4	19.8	15.8	13.2	11.3	9.9	286	21%	34%	93%	449	9%	15%	66%	500	8%	14%	69%	585	4%	7%	58%	MR80-08	40290-08	
	0.75	50	44.3	29.5	22.1	17.7	14.8	12.6	11.1	264	23%	37%	94%	417	10%	16%	71%	470	9%	16%	73%	559	5%	8%	62%	DR80-08	40280-08	
	0.82	60	48.5	32.3	24.2	19.4	16.2	13.9	12.1	247	26%	40%	95%	390	11%	18%	74%	448	10%	18%	76%	539	5%	9%	65%			
0.88	70	52.4	34.9	26.2	21.0	17.5	15.0	13.1	233	28%	43%	95%	368	12%	19%	76%	430	11%	20%	78%	523	6%	10%	67%				
10	0.59	20	35.0	23.3	17.5	14.0	11.7	10.0	8.8	458	9%	16%	78%	568	5%	7%	42%	-	-	-	-	-	-	-	-	-	ER80-10	40270-10
	0.72	30	42.9	28.6	21.4	17.1	14.3	12.2	10.7	405	12%	21%	82%	512	7%	11%	55%	546	5%	9%	62%	611	4%	6%	52%	SR80-10	40288-10	
	0.83	40	49.5	33.0	24.8	19.8	16.5	14.1	12.4	371	14%	24%	84%	472	8%	13%	63%	513	6%	11%	67%	582	5%	8%	57%	MR80-10	40290-10	
	0.93	50	55.3	36.9	27.7	22.1	18.4	15.8	13.8	346	16%	27%	86%	441	9%	15%	67%	489	7%	13%	70%	561	6%	9%	60%	DR80-10	40280-10	
	1.02	60	60.6	40.4	30.3	24.2	20.2	17.3	15.2	328	18%	29%	87%	415	10%	16%	71%	470	8%	15%	72%	544	6%	10%	63%			
1.10	70	65.5	43.7	32.7	26.2	21.8	18.7	16.4	313	19%	31%	88%	394	10%	17%	74%	454	8%	16%	74%	530	7%	11%	65%				
125	0.74	20	43.8	29.2	21.9	17.5	14.6	12.5	10.9	458	9%	17%	76%	558	5%	8%	45%	-	-	-	-	-	-	-	-	-	ER80-125	40270-125
	0.90	30	53.6	35.7	26.8	21.4	17.9	15.3	13.4	413	11%	21%	81%	509	7%	11%	55%	585	5%	9%	56%	624	4%	6%	50%	SR80-125	40288-125	
	1.04	40	61.9	41.3	30.9	24.8	20.6	17.7	15.5	383	13%	23%	83%	474	8%	13%	61%	556	6%	11%	60%	595	5%	8%	54%	MR80-125	40290-125	
	1.16	50	69.2	46.1	34.6	27.7	23.1	19.8	17.3	362	14%	25%	85%	447	9%	15%	65%	535	7%	13%	63%	574	5%	9%	57%	DR80-125	40280-125	
	1.28	60	75.8	50.5	37.9	30.3	25.3	21.7	18.9	345	15%	27%	87%	425	10%	16%	68%	519	8%	14%	66%	557	6%	10%	59%			
1.38	70	81.9	54.6	40.9	32.7	27.3	23.4	20.5	331	16%	28%	88%	407	11%	17%	70%	505	8%	15%	67%	543	6%	11%	61%				
15	0.88	20	52.5	35.0	26.3	21.0	17.5	15.0	13.1	464	7%	14%	76%	602	5%	7%	38%	-	-	-	-	-	-	-	-	-	ER80-15	40270-15
	1.08	30	64.3	42.9	32.2	25.7	21.4	18.4	16.1	412	10%	19%	79%	554	6%	9%	47%	513	7%	13%	66%	637	3%	4%	48%	SR80-15	40288-15	
	1.25	40	74.3	49.5	37.1	29.7	24.8	21.2	18.6	379	12%	22%	81%	519	6%	10%	53%	480	8%	15%	70%	605	3%	6%	53%	MR80-15	40290-15	
	1.40	50	83.0	55.3	41.5	33.2	27.7	23.7	20.8	355	14%	25%	82%	492	7%	11%	58%	456	9%	17%	73%	581	4%	7%	57%	DR80-15	40280-15	
	1.53	60	90.9	60.6	45.5	36.4	30.3	26.0	22.7	337	15%	27%	83%	471	7%	12%	61%	438	10%	18%	75%	562	4%	8%	59%			
1.65	70	98.2	65.5	49.1	39.3	32.7	28.1	24.6	322	17%	29%	84%	452	8%	13%	63%	422	11%	19%	77%	547	4%	8%	62%				
20	1.18	20	70.0	46.7	35.0	28.0	23.3	20.0	17.5	511	6%	12%	67%	602	5%	6%	38%	-	-	-	-	-	-	-	-	-	ER80-20	40270-20
	1.44	30	85.7	57.2	42.9	34.3	28.6	24.5	21.4	460	9%	16%	73%	551	5%	8%	48%	564	5%	8%	58%	628	3%	5%	50%	SR80-20	40288-20	
	1.67	40	99.0	66.0	49.5	39.6	33.0	28.3	24.8	427	11%	19%	76%	515	6%	10%	54%	523	6%	11%	64%	587	4%	7%	56%	MR80-20	40290-20	
	1.86	50	110.7	73.8	55.3	44.3	36.9	31.6	27.7	403	12%	21%	79%	487	7%	11%	58%	494	7%	13%	68%	556	4%	8%	61%	DR80-20	40280-20	
	2.04	60	121	80.8	60.6	48.5	40.4	34.6	30.3	385	13%	22%	81%	464	7%	12%	62%	472	8%	14%	71%	533	5%	9%	64%			
2.20	70	131	87.3	65.5	52.4	43.7	37.4	32.7	370	14%	24%	82%	444	7%	13%	64%	453	8%	16%	73%	514	5%	10%	66%				
25	1.47	20	87.5	58.3	43.8	35.0	29.2	25.0	21.9	515	7%	12%	68%	556	4%	7%	46%	-	-	-	-	-	-	-	-	-	ER80-25	40270-25
	1.80	30	107.2	71.4	53.6	42.9	35.7	30.6	26.8	462	10%	16%	72%	511	5%	9%	54%	604	4%	6%	55%	657	3%	4%	46%	SR80-25	40288-25	
	2.08	40	124	82.5	61.9	49.5	41.3	35.4	30.9	427	11%	19%	75%	479	6%	10%	59%	566	4%	8%	60%	617	3%	6%	52%	MR80-25	40290-25	
	2.33	50	138	92.2	69.2	55.3	46.1	39.5	34.6	402	12%	21%	77%	454	7%	11%	62%	539	5%	9%	63%	587	3%	7%	57%	DR80-25	40280-25	
	2.55	60	152	101	75.8	60.6	50.5	43.3	37.9	383	13%	23%	79%	434	7%	12%	65%	518	5%	10%	66%	563	4%	8%	60%			
2.76	70	164	109	82	65.5	54.6	46.8	40.9	367	14%	25%	80%	417	8%	13%	67%	500	6%	11%	68%	544	4%	8%	62%				

*Droplet categories: The above chart is based on the ASABE Standard 572.1. Refer to chemical label to verify which ASABE S572.1 categories should be followed.

Droplet Categories as per ASABE S572.1 Classification (2009-current)

- Extremely Fine <60
- Very Fine 60-105µ
- Fine 106-235µ
- Medium 236-340µ
- Coarse 341-403µ
- Very Coarse 404-502µ
- Extremely Coarse 503-665µ
- Ultra Coarse >665µ

Combo-Jet® Adapters

Square Lug Compatibility

Combo-Jet® tip-caps use a radiallock O-ring seal to secure the cap to the nozzle body. Adapters are available to mount a radiallock cap on a non-radiallock nozzle body.



New for 2017
Lock Nut Adapter
(#40204-00)

ASABE Droplet Categories

Color Classifications

The colors associated with the VMD is based on an ASABE standard for droplet size categorization. See categories and colors above. Refer to wilger.net for older ASABE standard S572.

Recommended Pressure

Pressure Range for Tips

For applications which require a uniform pattern, the recommended pressure range is provided. Specified pressure in chart is boom pressure.

Pre-orifice Length & Color

Differences in tip pre-orifices

Pre-orifice color and length vary for some tips. SR-series pre-orifices will vary in color from the color of the cap. MR & DR pre-orifices will be the same color as the cap. Pre-orifices for high volume tips use a longer pre-orifice.



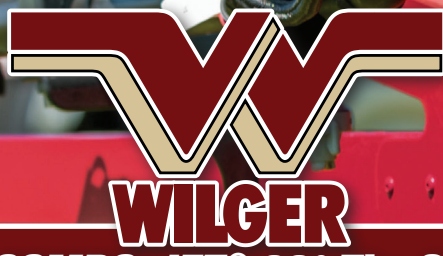
Have you tried the TIP WIZARD?

An easy to use spray tip calculator that helps find the best spray tip for your application.

It is as easy as entering your application, and seeing the results.

Tip Wizard is available on the wilger.net website, FREE smartphone app, and Wilger USB.

TIP WIZARD



COMBO-JET® 80° Tip-Cap Performance Specifications for PWM Systems

FOR PWM SPRAYERS

Please Note:

- Flow rates based on water (80°F), applied at 20" spacing.
- For applications where a uniform pattern is required, recommended pressure ranges for Tip-Caps are shown.
- Cap color determined by flow rate, as per ISO standard.
- In order to make this chart easier to use, not all available tip-cap sizes are shown. For specifications for 005, 0067, 15, 20, 25, 30, 40, 50 & 60 size Tip-Caps, visit our website.
- PWM Solenoids may have inherent flow limitations.



Recommended Pressure: 25-70 PSI



Recommended Pressure: 30-100 PSI



Recommended Pressure: 30-100 PSI



Recommended Pressure: 35-100 PSI



Tip Cap No.	Flow Rate IGPM	PSI	Sprayer Speed Range - MPH (Rounded)					VMD (Droplet Size in µ; % <141µ (Drift %); % <200µ (Drift %); % <600µ (Small Droplets))																Tip-Cap & Part No.	
			Application Rate - Imperial Gal/Acre @ 20"					80° ER Series				80° SR Series				80° MR Series				80° DR Series				Tip-Cap	Part #
			5	7.5	10	12.5	15	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600	Strainer	
01	0.06	20	1-3	1-2	0-2	0-1	0-1	176	28%	64%	100%	293	8%	22%	97%	-	-	-	-	-	-	-	-	ER80-01	40270-01
	0.07	30	1-4	1-3	1-2	0-2	0-1	156	41%	74%	100%	234	20%	39%	97%	219	23%	43%	97%	312	10%	21%	94%	SR80-01	40288-01
	0.08	40	1-5	1-3	1-2	0-2	0-2	144	49%	81%	100%	199	29%	51%	97%	192	30%	53%	97%	275	14%	29%	96%	MR80-01	40290-01
	0.09	50	1-6	1-4	1-3	1-2	0-2	135	56%	86%	100%	176	36%	60%	98%	173	36%	61%	97%	249	17%	34%	98%	DR80-01	40280-01
	0.10	60	2-6	1-4	1-3	1-2	1-2	128	61%	91%	100%	159	41%	68%	98%	159	40%	67%	97%	230	19%	39%	99%	100 Mesh - Green	
015	0.09	20	1-5	1-3	1-3	1-2	0-2	200	21%	50%	100%	318	8%	19%	93%	-	-	-	-	-	-	-	-	ER80-015	40270-015
	0.11	30	2-6	1-4	1-3	1-3	1-2	180	29%	59%	100%	264	16%	31%	95%	324	10%	21%	94%	419	4%	9%	87%	SR80-015	40288-015
	0.12	40	2-7	1-5	1-4	1-3	1-2	167	34%	65%	100%	231	22%	40%	96%	285	14%	28%	96%	381	6%	12%	90%	MR80-015	40290-015
	0.14	50	2-8	1-6	1-4	1-3	1-3	158	39%	70%	100%	208	26%	48%	97%	257	17%	33%	97%	354	7%	15%	92%	DR80-015	40280-015
	0.15	60	2-9	2-6	1-5	1-4	1-3	151	42%	73%	100%	191	30%	53%	97%	237	19%	38%	98%	333	8%	17%	94%	100 Mesh - Green	
02	0.12	20	2-7	1-5	1-3	1-3	1-2	185	28%	56%	100%	296	9%	21%	93%	-	-	-	-	-	-	-	-	ER80-02	40270-02
	0.14	30	2-9	1-6	1-4	1-3	1-3	171	34%	62%	100%	258	15%	31%	95%	328	8%	18%	94%	456	3%	7%	80%	SR80-02	40288-02
	0.17	40	2-10	2-7	1-5	1-4	1-3	162	38%	66%	100%	235	20%	38%	96%	299	11%	23%	94%	421	4%	10%	84%	MR80-02	40290-02
	0.18	50	3-11	2-7	1-5	1-4	1-4	155	42%	69%	100%	217	24%	43%	97%	279	13%	27%	95%	396	5%	12%	86%	DR80-02	40280-02
	0.20	60	3-12	2-8	2-6	1-5	1-4	150	44%	72%	100%	204	27%	48%	98%	263	15%	31%	95%	376	6%	13%	88%	50 Mesh - Red	
025	0.15	20	2-9	1-6	1-4	1-3	1-3	234	17%	37%	100%	344	6%	14%	89%	-	-	-	-	-	-	-	-	ER80-025	40270-025
	0.18	30	3-11	2-7	1-5	1-4	1-4	210	23%	45%	100%	299	11%	23%	92%	429	4%	10%	80%	463	3%	7%	77%	SR80-025	40288-025
	0.21	40	3-12	2-8	2-6	1-5	1-4	195	28%	51%	100%	270	15%	29%	94%	386	6%	14%	84%	432	4%	10%	80%	MR80-025	40290-025
	0.23	50	3-14	2-9	2-7	1-5	1-5	184	31%	55%	100%	250	18%	34%	95%	356	8%	17%	87%	410	5%	12%	83%	DR80-025	40280-025
	0.25	60	4-15	2-10	2-7	1-6	1-5	175	34%	59%	100%	235	20%	38%	96%	333	9%	19%	88%	393	6%	13%	84%	50 Mesh - Red	
03	0.17	20	3-10	2-7	1-5	1-4	1-3	251	17%	38%	99%	406	4%	9%	86%	-	-	-	-	-	-	-	-	ER80-03	40270-03
	0.21	30	3-13	2-8	2-6	1-5	1-4	230	22%	44%	99%	349	9%	17%	89%	437	4%	10%	80%	485	3%	7%	71%	SR80-03	40288-03
	0.25	40	4-15	2-10	2-7	1-6	1-5	217	26%	49%	99%	314	12%	22%	91%	395	6%	13%	85%	451	4%	9%	76%	MR80-03	40290-03
	0.27	50	4-16	3-11	2-8	2-7	1-5	207	29%	52%	99%	289	14%	27%	92%	364	8%	16%	87%	426	5%	11%	80%	DR80-03	40280-03
	0.30	60	4-18	3-12	2-9	2-7	1-6	199	31%	55%	99%	270	16%	30%	93%	341	9%	18%	89%	406	6%	13%	82%	50 Mesh - Red	
04	0.23	20	3-14	2-9	2-7	1-5	1-5	254	16%	33%	99%	409	3%	10%	83%	-	-	-	-	-	-	-	-	ER80-04	40270-04
	0.28	30	4-17	3-11	2-8	2-7	1-6	233	20%	39%	99%	352	6%	18%	86%	428	5%	11%	79%	551	2%	4%	60%	SR80-04	40288-04
	0.32	40	5-19	3-13	2-10	2-8	2-6	219	23%	44%	99%	317	9%	23%	89%	393	7%	14%	83%	515	3%	6%	67%	MR80-04	40290-04
	0.36	50	5-21	4-14	3-11	2-9	2-7	209	25%	47%	99%	292	11%	27%	90%	367	8%	17%	86%	488	3%	8%	71%	DR80-04	40280-04
	0.40	60	6-23	4-16	3-12	2-9	2-8	201	27%	50%	99%	274	13%	30%	91%	348	10%	19%	87%	467	4%	9%	74%	50 Mesh - Red	
05	0.28	20	4-17	3-11	2-8	2-7	1-6	303	10%	22%	95%	462	2%	6%	77%	-	-	-	-	-	-	-	-	ER80-05	40270-05
	0.34	30	5-20	3-14	3-10	2-8	2-7	274	15%	29%	95%	396	6%	13%	82%	517	3%	6%	65%	587	1%	3%	53%	SR80-05	40288-05
	0.40	40	6-24	4-16	3-12	2-9	2-8	255	19%	34%	95%	355	9%	18%	85%	478	4%	8%	71%	551	2%	5%	60%	MR80-05	40290-05
	0.44	50	7-26	4-18	3-13	3-11	2-9	241	21%	38%	95%	326	11%	22%	87%	450	5%	10%	75%	524	3%	6%	65%	DR80-05	40280-05
	0.49	60	7-29	5-19	4-14	3-12	2-10	230	23%	41%	95%	305	13%	25%	88%	428	5%	12%	78%	503	3%	7%	68%	50 Mesh - Red	
06	0.52	70	8-31	5-21	4-16	3-12	3-10	221	25%	44%	95%	287	14%	28%	89%	410	6%	13%	80%	486	4%	8%	71%	40250-00	
	0.33	20	5-20	3-13	2-10	2-8	2-7	331	11%	18%	92%	483	2%	6%	72%	-	-	-	-	-	-	-	-	ER80-06	40270-06
	0.40	30	6-24	4-16	3-12	2-10	2-8	305	15%	24%	91%	435	4%	10%	79%	544	2%	5%	61%	613	1%	3%	48%	SR80-06	40288-06
	0.47	40	7-28	5-18	3-14	3-11	2-9	287	18%	27%	91%	404	6%	13%	82%	509	3%	7%	67%	579	2%	5%	54%	MR80-06	40290-06
	0.52	50	8-31	5-21	4-15	3-12	3-10	275	21%	30%	91%	382	7%	15%	85%	483	4%	8%	71%	555	2%	6%	58%	DR80-06	40280-06
0.57	60	8-34	6-23	4-17	3-14	3-11	265	23%	33%	90%	364	8%	17%	87%	463	4%	9%	74%	535	3%	7%	61%	50 Mesh - Red		
0.62	70	9-37	6-24	5-18	4-15	3-12	256	24%	35%	90%	350	9%	19%	88%	447	5%	10%	76%	519	3%	8%	64%	40250-00		

Droplet Categories as per ASABE S572.1 Classification (2009-current)

- Extremely Fine <60
- Very Fine 60-105µ
- Fine 106-235µ
- Medium 236-340µ
- Coarse 341-403µ
- Very Coarse 404-502µ
- Extremely Coarse 503-665µ
- Ultra Coarse >665µ

VMD

Volume Median Diameter
Size of the median droplet in microns (µ) for a sprayed volume. Half of the volume is made up of droplets smaller than the VMD; half is made up of droplets larger.

% <141µ

% Driftable Fines
Percentage of volume which is likely to drift. 141µ is now replacing 200µ as the new standard for driftable fines.

% <200µ

% Driftable Fines
Percentage of volume which is likely to drift. 200µ is shown for reference. 141µ is used as the new standard for driftable fines.

% <600µ

% Useful Droplets
Percentage of volume which is made up of 'useful' droplets. As the distribution of useful droplets lowers, coverage is reduced.

Strainer Mesh & Tips

Recommended Strainer mesh
Mesh of strainer determined by the size of a tip. For larger tips (08+), strainers are not required. For PWM systems, typically 80 mesh inline strainers are used as well.

80° Tip-Cap Specifications

Pulse Width Modulation Spray Systems

COMBO-JET® 80° Tip-Cap Performance Specifications for PWM Systems

FOR PWM SPRAYERS

Please Note:

1. Flow rates based on water (80°F), applied at 20" spacing.
2. For applications where a uniform pattern is required, recommended pressure ranges for Tip-Caps are shown.
3. Cap color determined by flow rate, as per ISO standard.
4. In order to make this chart easier to use, not all available tip-cap sizes are shown. For specifications for 005, 0067, 15, 20, 25, 30, 40, 50 & 60 size Tip-Caps, visit our website.
5. PWM Solenoids may have inherent flow limitations.



Tip Cap No.	Flow Rate IGPM	PSI	Sprayer Speed Range - MPH (Rounded)							VMD (Droplet Size in µ; %<141µ (Drift %); %<200µ (Drift %); %<600µ (Small Droplets))																Tip-Cap & Part No.	
			@ Application Rate - Imperial Gal/Acre @ 20"							80° ER Series				80° SR Series				80° MR Series				80° DR Series				Strainer	
			5	7.5	10	12.5	15	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600	Tip-Cap	Part #		
08	0.51	30	8-30	5-20	4-15	3-12	3-10	345	14%	26%	88%	524	6%	10%	52%	575	5%	8%	58%	649	2%	3%	46%	ER80-08	40270-08		
	0.59	40	9-35	6-23	4-18	4-14	3-12	311	18%	30%	91%	482	8%	13%	60%	532	7%	11%	65%	613	3%	5%	53%	SR80-08	40288-08		
	0.66	50	10-39	7-26	5-20	4-16	3-13	287	20%	34%	92%	450	9%	15%	66%	501	8%	14%	69%	586	4%	7%	57%	MR800-08	40290-08		
	0.73	60	11-43	7-29	5-22	4-17	4-14	269	23%	37%	94%	424	10%	16%	70%	477	9%	16%	72%	565	4%	8%	61%	DR80-08	40280-08		
	0.78	70	12-47	8-31	6-23	5-19	4-16	254	25%	39%	94%	402	11%	17%	73%	458	10%	17%	75%	548	5%	9%	63%				
10	0.61	30	9-36	6-24	5-18	4-14	3-12	450	9%	16%	78%	560	5%	8%	44%	589	4%	6%	56%	648	3%	4%	46%	ER80-10	40270-10		
	0.70	40	10-42	7-28	5-21	4-17	3-14	412	11%	20%	81%	520	6%	10%	54%	553	5%	8%	61%	618	4%	6%	51%	SR80-10	40288-10		
	0.78	50	12-47	8-31	6-23	5-19	4-16	385	13%	23%	83%	489	7%	12%	60%	527	6%	10%	65%	595	5%	7%	55%	MR80-10	40290-10		
	0.86	60	13-51	8-34	6-25	5-20	4-17	364	15%	25%	85%	464	8%	13%	64%	507	6%	12%	68%	577	5%	8%	58%	DR80-10	40280-10		
	0.93	70	14-55	9-37	7-28	6-22	5-18	348	16%	27%	86%	442	9%	15%	67%	490	7%	13%	70%	562	6%	9%	60%				
125	0.70	30	10-42	7-28	5-21	4-17	3-14	470	9%	16%	75%	569	5%	8%	43%	638	3%	5%	47%	678	3%	4%	42%	ER80-125	40270-125		
	0.81	40	12-48	8-32	6-24	5-19	4-16	436	10%	19%	78%	535	6%	10%	50%	607	4%	7%	52%	647	3%	5%	47%	SR80-125	40288-125		
	0.91	50	13-54	9-36	7-27	5-22	4-18	412	11%	21%	81%	508	7%	11%	55%	584	5%	9%	56%	623	4%	6%	50%	MR80-125	40290-125		
	0.99	60	15-59	10-39	7-29	6-24	5-20	393	12%	22%	83%	486	8%	12%	59%	566	6%	10%	59%	605	4%	7%	53%	DR80-125	40280-125		
	1.07	70	16-64	11-42	8-32	6-25	5-21	377	13%	24%	84%	467	8%	14%	62%	551	6%	11%	61%	589	5%	8%	55%				
15	0.78	30	12-46	8-31	6-23	5-18	4-15	499	5%	11%	74%	633	4%	6%	30%	596	4%	7%	55%	718	1%	1%	34%	ER80-15	40270-15		
	0.90	40	13-53	9-36	7-27	5-21	4-18	459	7%	14%	76%	599	5%	7%	38%	558	5%	10%	61%	682	2%	2%	41%	SR80-15	40288-15		
	1.00	50	15-60	10-40	7-30	6-24	5-20	430	9%	17%	78%	572	5%	8%	44%	530	6%	11%	64%	655	2%	3%	45%	MR80-15	40290-15		
	1.10	60	16-65	11-44	8-33	7-26	5-22	408	10%	19%	79%	550	6%	9%	48%	509	7%	13%	67%	634	3%	4%	49%	DR80-15	40280-15		
	1.19	70	18-71	12-47	9-35	7-28	6-24	390	12%	21%	80%	531	6%	10%	51%	491	8%	14%	69%	616	3%	5%	51%				

*Droplet categories: The above chart is based on the ASABE Standard 572.1. Refer to chemical label to verify which ASABE S572.1 categories should be followed.

Droplet Categories as per ASABE S572.1 Classification (2009-current)

- Extremely Fine <60
- Very Fine 60-105µ
- Fine 106-235µ
- Medium 236-340µ
- Coarse 341-403µ
- Very Coarse 404-502µ
- Extremely Coarse 503-665µ
- Ultra Coarse >665µ

Recommended Pressure

Pressure Range for Tips
For PWM systems, the pressure loss through system components is accounted for in these charts. Specified pressure in chart is boom pressure. Additional solenoid wear may occur for pressures above 60PSI.

ASABE Droplet Categories

Color Classifications
The colors associated with the VMD is based on an ASABE standard for droplet size categorization. See categories and colors above. Refer to wilger.net for older ASABE standard S572.

Duty Cycles

Effective run time of PWM
Since PWM systems hold pressure constant, they adjust rates by the length of time the solenoids stay open (the duty cycle). Duty cycle is calculated by dividing your current speed into the max speed for that tip. Ideal operating duty cycles are 40-100%.

Pre-orifice Length & Color

Differences in tip pre-orifices
Pre-orifice color and length vary for some tips. SR-series pre-orifices will vary in color from the color of the cap. MR & DR pre-orifices will be the same color as the cap. Pre-orifices for high volume tips use a longer pre-orifice.

Using Tip Wizard

Same search, different results
PWM systems use plumbing components that cause more in pressure loss when compared to standard spray systems. Tip Wizard accounts for those pressure drops, and also provides crucial duty cycle information as well.

Multi-tip spraying with Pulse Width Modulation Technology

Pulse Width Modulation (PWM) provides the ability to hold tip pressure constant; therefore, holding the droplet size constant as well. This holds true with multi-tip spraying as well.



As a standard, PWM systems use one solenoid per nozzle body. For best utilization of PWM technology, a dual tip adapter [left] is used.

Spraying with two separate outlets [right] is possible, but the outlet not controlled by a solenoid will be controlled by the auto-rate controller.

To use Tip Wizard to help select a multi-tip setup, simply split the total flow rate into two (or more) parts and ensure the tips selected can operate within the same duty cycle range and pressures.



Example Rate: 10 Imp Gal/Acre; **Speed:** 15 MPH; **Nozzle Spacing:** 20"; **Target Droplet Size:** 400 microns (Systemic Herbicide)

If the total application is 10 IGPA, the effective rates per tip must add up to 10 IGPA. For simplicity, split the flow in equal parts; for example, two tips applying 5 IGPA. While consulting the tip charts, a suitable choice might be the MR80-04 at 40 PSI with an effective volume of 5 IGPA per tip. The droplet size is right around 400µ, and travel speed at max speed (19.3MPH) is roughly at a 78% duty cycle.

110° Tip-Cap Specifications Standard Spray Systems

COMBO-JET® 110° High Flow Tip-Cap Performance Specifications

FOR STANDARD SPRAYERS

Please Note:

1. Flow rates based on water (80°F), applied at 20" spacing.
2. For applications where a uniform pattern is required, recommended pressure ranges for Tip-Caps are shown.
3. Cap color determined by flow rate, as per ISO standard.
4. In order to make this chart easier to use, not all available tip-cap sizes are shown. For specifications for 005, 0067, 30, 40, 50 & 60 size Tip-Caps, visit our website.



Recommended Pressure:
20-70 PSI



Recommended Pressure:
25-100 PSI



Recommended Pressure:
25-100 PSI



Recommended Pressure:
30-100 PSI



Tip Cap No.	Flow Rate IGPM	PSI	Application Rate - Imperial Gal/Acre @ 20"								VMD (Droplet Size in µ; %<141µ (Drift %); %<200µ (Small Droplets))																Tip-Cap & Part No.				
			@ Sprayer Speed - MPH (rounded)								110° ER Series				110° SR Series				110° MR Series				110° DR Series				Tip-Cap	Part #			
			8	12	16	20	24	28	32	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600	Strainer					
08	0.47	20	28.0	18.7	14.0	11.2	9.3	8.0	7.0	327	14%	26%	91%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER110-08	40281-08		
	0.58	30	34.3	22.9	17.1	13.7	11.4	9.8	8.6	290	17%	32%	93%	453	6%	12%	67%	531	4%	8%	53%	614	3%	5%	40%	569	4%	6%	47%	SR110-08	40287-08
	0.67	40	39.6	26.4	19.8	15.8	13.2	11.3	9.9	264	20%	36%	95%	408	7%	15%	74%	483	5%	10%	61%	534	4%	7%	51%	506	4%	8%	55%	MR110-08	40291-08
	0.75	50	44.3	29.5	22.1	17.7	14.8	12.6	11.1	244	22%	39%	95%	374	9%	17%	79%	446	6%	12%	67%	506	4%	7%	51%	482	5%	9%	57%	DR110-08	40286-08
	0.82	60	48.5	32.3	24.2	19.4	16.2	13.9	12.1	228	23%	42%	96%	346	10%	18%	82%	416	7%	13%	70%	482	5%	9%	57%	569	4%	6%	47%	SR110-08	40287-08
	0.88	70	52.4	34.9	26.2	21.0	17.5	15.0	13.1	214	25%	44%	97%	322	11%	19%	84%	391	7%	14%	73%	482	5%	9%	57%	569	4%	6%	47%	MR110-08	40291-08
10	0.59	20	35.0	23.3	17.5	14.0	11.7	10.0	8.8	362	10%	24%	88%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER110-10	40281-10	
	0.72	30	42.9	28.6	21.4	17.1	14.3	12.2	10.7	325	14%	29%	90%	470	6%	11%	62%	523	4%	8%	53%	672	3%	4%	32%	635	3%	5%	37%	SR110-10	40287-10
	0.83	40	49.5	33.0	24.8	19.8	16.5	14.1	12.4	298	17%	33%	92%	424	7%	14%	70%	478	5%	9%	59%	606	4%	6%	40%	672	3%	4%	32%	MR110-10	40291-10
	0.93	50	55.3	36.9	27.7	22.1	18.4	15.8	13.8	277	19%	35%	93%	388	8%	16%	75%	442	6%	10%	64%	606	4%	6%	40%	672	3%	4%	32%	DR110-10	40286-10
	1.02	60	60.6	40.4	30.3	24.2	20.2	17.3	15.2	260	21%	38%	94%	358	9%	17%	79%	413	6%	12%	67%	583	4%	7%	43%	606	4%	6%	40%	SR110-10	40287-10
	1.10	70	65.5	43.7	32.7	26.2	21.8	18.7	16.4	246	22%	40%	94%	333	10%	18%	81%	388	7%	12%	70%	563	5%	7%	45%	606	4%	6%	40%	MR110-10	40291-10
12.5	0.74	20	43.8	29.2	21.9	17.5	14.6	12.5	10.9	421	9%	16%	70%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER110-125	40281-125
	0.90	30	53.6	35.7	26.8	21.4	17.9	15.3	13.4	383	10%	18%	76%	471	5%	10%	62%	618	4%	6%	39%	647	3%	6%	35%	672	3%	4%	32%	SR110-125	40287-125
	1.04	40	61.9	41.3	30.9	24.8	20.6	17.7	15.5	357	11%	20%	80%	423	6%	13%	70%	571	4%	7%	47%	616	4%	7%	39%	672	3%	4%	32%	MR110-125	40291-125
	1.16	50	69.2	46.1	34.6	27.7	23.1	19.8	17.3	336	12%	21%	83%	386	7%	15%	74%	535	5%	8%	52%	592	4%	7%	42%	672	3%	4%	32%	DR110-125	40286-125
	1.28	60	75.8	50.5	37.9	30.3	25.3	21.7	18.9	319	13%	21%	85%	355	7%	16%	78%	506	5%	9%	55%	572	5%	8%	44%	672	3%	4%	32%	SR110-125	40287-125
	1.38	70	81.9	54.6	40.9	32.7	27.3	23.4	20.5	305	14%	22%	86%	329	8%	18%	80%	481	6%	10%	58%	555	5%	8%	46%	672	3%	4%	32%	MR110-125	40291-125
15	0.88	20	52.5	35.0	26.3	21.0	17.5	15.0	13.1	438	8%	15%	64%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER110-15	40281-15
	1.08	30	64.3	42.9	32.2	25.7	21.4	18.4	16.1	398	10%	18%	72%	538	5%	8%	51%	608	4%	7%	40%	659	3%	5%	40%	672	3%	4%	32%	SR110-15	40287-15
	1.25	40	74.3	49.5	37.1	29.7	24.8	21.2	18.6	370	12%	19%	76%	496	6%	10%	58%	574	4%	8%	45%	624	4%	6%	46%	672	3%	4%	32%	MR110-15	40291-15
	1.40	50	83.0	55.3	41.5	33.2	27.7	23.7	20.8	348	13%	21%	79%	463	6%	11%	64%	548	5%	8%	49%	597	4%	7%	50%	672	3%	4%	32%	DR110-15	40286-15
	1.53	60	90.9	60.6	45.5	36.4	30.3	26.0	22.7	330	14%	22%	81%	436	7%	12%	67%	527	5%	9%	52%	575	4%	8%	53%	672	3%	4%	32%	SR110-15	40287-15
	1.65	70	98.2	65.5	49.1	39.3	32.7	28.1	24.6	315	15%	23%	82%	413	7%	13%	70%	508	5%	9%	54%	556	4%	8%	55%	672	3%	4%	32%	MR110-15	40291-15
20	1.18	20	70.0	46.7	35.0	28.0	23.3	20.0	17.5	497	7%	11%	56%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER110-20	40281-20
	1.44	30	85.7	57.2	42.9	34.3	28.6	24.5	21.4	453	8%	13%	64%	518	6%	10%	55%	593	4%	7%	42%	659	3%	5%	40%	672	3%	4%	32%	SR110-20	40287-20
	1.67	40	99.0	66.0	49.5	39.6	33.0	28.3	24.8	422	9%	15%	68%	479	6%	12%	62%	557	5%	8%	48%	616	4%	7%	43%	672	3%	4%	32%	MR110-20	40291-20
	1.86	50	110.7	73.8	55.3	44.3	36.9	31.6	27.7	399	9%	16%	72%	449	7%	13%	67%	529	6%	9%	52%	575	4%	8%	53%	672	3%	4%	32%	DR110-20	40286-20
	2.04	60	121.2	80.8	60.6	48.5	40.4	34.6	30.3	379	10%	17%	74%	424	8%	14%	70%	506	6%	10%	55%	575	4%	8%	53%	672	3%	4%	32%	SR110-20	40287-20
	2.20	70	131.0	87.3	65.5	52.4	43.7	37.4	32.7	362	10%	18%	76%	403	8%	15%	73%	487	6%	11%	57%	575	4%	8%	53%	672	3%	4%	32%	MR110-20	40291-20
25	1.47	20	87.5	58.3	43.8	35.0	29.2	25.0	21.9	495	6%	10%	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ER110-25	40281-25
	1.80	30	107.2	71.4	53.6	42.9	35.7	30.6	26.8	453	7%	12%	65%	503	6%	10%	56%	503	6%	10%	56%	616	4%	7%	43%	672	3%	4%	32%	SR110-25	40287-25
	2.08	40	123.8	82.5	61.9	49.5	41.3	35.4	30.9	422	7%	13%	71%	468	6%	11%	62%	503	6%	10%	56%	616	4%	7%	43%	672	3%	4%	32%	MR110-25	40291-25
	2.33	50	138.4	92.2	69.2	55.3	46.1	39.5	34.6	399	8%	14%	74%	441	7%	13%	66%	503	6%	10%	56%	616	4%	7%	43%	672	3%	4%	32%	DR110-25	40286-25
	2.55	60	151.6	101.0	75.8	60.6	50.5	43.3	37.9	380	8%	15%	77%	419	8%	14%	69%	503	6%	10%	56%	616	4%	7%	43%	672	3%	4%	32%	SR110-25	40287-25
	2.76	70	163.7	109.1	81.9	65.5	54.6	46.8	40.9	364	8%	15%	79%	400	8%	14%	71%	503	6%	10%	56%	616	4%	7%	43%	672	3%	4%	32%	MR110-25	40291-25

*Droplet categories: The above chart is based on the ASABE Standard S572.1. Refer to chemical label to verify which ASABE S572.1 categories should be followed.

Droplet Categories as per **ASABE S572.1** Classification (2009-current)

- Extremely Fine
<60
- Very Fine
60-105µ
- Fine
106-235µ
- Medium
236-340µ
- Coarse
341-403µ
- Very Coarse
404-502µ
- Extremely Coarse
503-665µ
- Ultra Coarse
>665µ

Combo-Jet® Adapters

Square Lug Compatibility

Combo-Jet® tip-caps use a radiallock O-ring seal to secure the cap to the nozzle body. Adapters are available to mount a radiallock cap on a non-radiallock nozzle body.



New for 2017
Lock Nut Adapter
(#40204-00)

ASABE Droplet Categories

Color Classifications

The colors associated with the VMD is based on an ASABE standard for droplet size categorization. See categories and colors above. Refer to wilger.net for older ASABE standard S572.

Recommended Pressure

Pressure Range for Tips

For applications which require a uniform pattern, the recommended pressure range is provided. Specified pressure in chart is boom pressure.

Pre-orifice Length & Color

Differences in tip pre-orifices

Pre-orifice color and length vary for some tips. SR-series pre-orifices will vary in color from the color of the cap. MR & DR pre-orifices will be the same color as the cap. Pre-orifices for high volume tips use a longer pre-orifice.



Have you tried the TIP WIZARD?

An easy to use spray tip calculator that helps find the best spray tip for your application. It is as easy as entering your application, and seeing the results. Tip Wizard is available on the wilger.net website, FREE smartphone app, and Wilger USB.

TIP WIZARD

110° Tip-Cap Specifications

Pulse Width Modulation Spray Systems

COMBO-JET® 110° Tip-Cap Performance Specifications for PWM Systems

FOR PWM SPRAYERS

Please Note:

1. Flow rates based on water (80°F), applied at 20" spacing.
2. For applications where a uniform pattern is required, recommended pressure ranges for Tip-Caps are shown.
3. Cap color determined by flow rate, as per ISO standard.
4. In order to make this chart easier to use, not all available tip-cap sizes are shown. For specifications for 005, 0067, 15, 20, 25, 30, 40, 50 & 60 size Tip-Caps, visit our website.
5. PWM Solenoids may have inherent flow limitations.



Recommended pressure varies with each size of tip



Recommended pressure varies with each size of tip



Recommended pressure varies with each size of tip



Recommended pressure varies with each size of tip



Tip Cap No.	Flow Rate IGPM	PSI	Sprayer Speed Range - MPH (Rounded)						VMD (Droplet Size in µ; %<141µ (Drift %); %<200µ (Drift %); %<600µ (Small Droplets))												Tip-Cap & Part No.					
			@ Application Rate - Imperial Gal/Acre @ 20"						110° ER Series				110° SR Series				110° MR Series				110° DR Series				Strainer not req'd	Part #
			5.0	7.5	10.0	12.5	15.0	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600	VMD	<141	<200	<600			
08	0.51	30	8-30	5-20	5-20	4-15	3-12	312	15%	28%	92%	489	4%	11%	59%	570	3%	7%	45%	651	3%	4%	35%	ER110-08	40281-08	
	0.59	40	9-35	6-23	6-23	4-18	4-14	286	18%	32%	93%	445	6%	13%	68%	522	4%	9%	54%	606	3%	5%	42%	SR110-08	40287-08	
	0.66	50	10-39	7-26	7-26	5-20	4-16	266	20%	36%	95%	410	7%	15%	74%	486	5%	10%	61%	571	4%	6%	47%	MR110-08	40291-08	
	0.73	60	11-43	7-29	7-29	5-22	4-17	249	21%	38%	95%	382	8%	16%	78%	455	6%	11%	65%	543	4%	7%	50%	DR110-08	40286-08	
	0.78	70	12-47	8-31	8-31	6-23	5-19	235	23%	41%	96%	359	9%	17%	80%	430	6%	12%	69%	519	4%	8%	53%			
10	0.61	30	9-36	6-24	6-24	5-18	4-14	357	11%	25%	88%	527	4%	9%	50%	579	3%	6%	43%	716	2%	3%	26%	ER110-10	40281-10	
	0.70	40	10-42	7-28	7-28	5-21	4-17	330	13%	28%	90%	480	6%	11%	60%	533	4%	7%	51%	679	2%	4%	31%	SR110-10	40287-10	
	0.78	50	12-47	8-31	8-31	6-23	5-19	310	16%	31%	91%	444	7%	13%	67%	497	5%	8%	57%	651	3%	5%	35%	MR110-10	40291-10	
	0.86	60	13-51	8-34	8-34	6-25	5-20	293	17%	33%	92%	414	8%	14%	72%	468	5%	10%	61%	628	3%	5%	38%	DR110-10	40286-10	
	0.93	70	14-55	9-37	9-37	7-28	6-22	278	19%	35%	93%	389	8%	15%	75%	444	6%	10%	64%	608	4%	6%	40%			
125	0.70	30	10-42	7-28	7-28	5-21	4-17	430	8%	16%	68%	554	3%	5%	44%	699	3%	3%	24%	670	2%	5%	31%	ER110-125	40281-125	
	0.81	40	12-48	8-32	8-32	6-24	5-19	403	9%	17%	73%	506	4%	8%	55%	652	3%	4%	33%	635	3%	6%	36%	SR110-125	40287-125	
	0.91	50	13-54	9-36	9-36	7-27	5-22	383	10%	18%	77%	469	5%	10%	62%	616	4%	6%	40%	617	3%	7%	39%	MR110-125	40291-125	
	0.99	60	15-59	10-39	10-39	7-29	6-24	366	11%	19%	79%	439	6%	12%	67%	587	4%	7%	44%	605	4%	7%	40%	DR110-125	40286-125	
	1.07	70	16-64	11-42	11-42	8-32	6-25	351	12%	20%	81%	413	6%	13%	71%	562	5%	7%	48%	596	4%	7%	41%			
15	0.78	30	12-46	8-31	8-31	6-23	5-18	463	7%	14%	58%	636	3%	4%	27%	686	4%	5%	27%	740	3%	2%	23%	ER110-15	40281-15	
	0.90	40	13-53	9-36	9-36	7-27	5-21	434	9%	16%	65%	594	4%	6%	38%	652	4%	6%	33%	705	3%	3%	31%	SR110-15	40287-15	
	1.00	50	15-60	10-40	10-40	7-30	6-24	413	10%	17%	69%	561	4%	7%	46%	626	4%	6%	38%	678	3%	4%	36%	MR110-15	40291-15	
	1.10	60	16-65	11-44	11-44	8-33	7-26	395	11%	18%	72%	534	5%	8%	52%	604	4%	7%	41%	655	3%	5%	40%	DR110-15	40286-15	
	1.19	70	18-71	12-47	12-47	9-35	7-28	380	11%	19%	74%	511	5%	9%	56%	586	4%	7%	44%	637	4%	5%	43%			

*Droplet categories: The above chart is based on the ASABE Standard 572.1. Refer to chemical label to verify which ASABE S572.1 categories should be followed.

Droplet Categories as per ASABE S572.1 Classification (2009-current)

- Extremely Fine <60
- Very Fine 60-105µ
- Fine 106-235µ
- Medium 236-340µ
- Coarse 341-403µ
- Very Coarse 404-502µ
- Extremely Coarse 503-665µ
- Ultra Coarse >665µ

Recommended Pressure

Pressure Range for Tips
For PWM systems, the pressure loss through system components is accounted for in these charts. Specified pressure in chart is boom pressure. Additional solenoid wear may occur for pressures above 60PSI.

ASABE Droplet Categories

Color Classifications
The colors associated with the VMD is based on an ASABE standard for droplet size categorization. See categories and colors above. Refer to wilger.net for older ASABE standard S572.

Duty Cycles

Effective run time of PWM
Since PWM systems hold pressure constant, they adjust rates by the length of time the solenoids stay open (the duty cycle). Duty cycle is calculated by dividing your current speed into the max speed for that tip. Ideal operating duty cycles are 40-100%.

Pre-orifice Length & Color

Differences in tip pre-orifices
Pre-orifice color and length vary for some tips. SR-series pre-orifices will vary in color from the color of the cap. MR & DR pre-orifices will be the same color as the cap. Pre-orifices for high volume tips use a longer pre-orifice.

Using Tip Wizard

Same search, different results
PWM systems use plumbing components that cause more in pressure loss when compared to standard spray systems. Tip Wizard accounts for those pressure drops, and also provides crucial duty cycle information as well.

Multi-tip spraying with Pulse Width Modulation Technology

Pulse Width Modulation (PWM) provides the ability to hold tip pressure constant; therefore, holding the droplet size constant as well. This holds true with multi-tip spraying as well.



As a standard, PWM systems use one solenoid per nozzle body. For best utilization of PWM technology, a dual tip adapter [left] is used.

Spraying with two separate outlets [right] is possible, but the outlet not controlled by a solenoid will be controlled by the auto-rate controller.

To use Tip Wizard to help select a multi-tip setup, simply split the total flow rate into two (or more) parts and ensure the tips selected can operate within the same duty cycle range and pressures.



Example Rate: 10 Imp Gal/Acre; **Speed:** 15 MPH; **Nozzle Spacing:** 20"; **Target Droplet Size:** 400 microns (Systemic Herbicide)

If the total application is 10 IGPA, the effective rates per tip must add up to 10 IGPA. For simplicity, split the flow in equal parts; for example, two tips applying 5 IGPA. While consulting the tip charts, a suitable choice might be the MR110-04 at 40 PSI with an effective volume of 5 IGPA per tip. The droplet size is right around 400µ, and travel speed at max speed (19.3MPH) is roughly at a 78% duty cycle.



Spray Tips

Drift vs. Efficacy

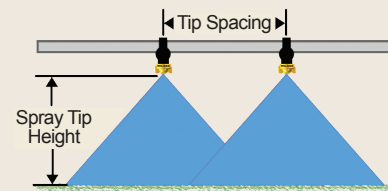
Generally speaking, smaller droplets deposit on the target more effectively than larger droplets, but larger droplets will drift less. So, when balancing drift control and efficacy, ensure to consider chemical labels and guidelines to designate the required droplet size/category. Find the below chart as an illustration showing the general differences in how different droplet sizes are required for different applications.

Droplet Size VMD Range	ASABE S-572.1 Classification Category	Color Code	Contact Insecticide & Fungicide	Systemic Insecticide & Fungicide	Contact Foliar Herbicide	Systemic Foliar Herbicide	Soil-Applied Herbicide	Incorporated Soil-Applied Herbicide	Fertilizer
Under 60	Extremely Fine (XF)	Purple							
60-105	Very Fine (VF)	Red							
106-235	Fine (F)	Orange							
236-340	Medium (M)	Yellow							
341-403	Coarse (C)	Blue							
404-502	Very Coarse (VC)	Green							
503-665	Extremely Coarse (XC)	White							
Over 665	Ultra Coarse (UC)	Black							

The above table provides general guidelines regarding chemical efficacy vs. droplet size. It is always recommended that you carefully read and follow the chemical manufacturers application label and instructions.

Minimum Spray Tip Height

Tip Spacing	Minimum Spray Tip Height		
	ER, SR, MR & DR 80° Tips	ER Series 110° Tips	SR, MR & DR Series 110° Tips
10"	10"	9"	13"
20"	17"	15"	19"
30"	26"	20"	24"



For additional information on droplet sizes and considerations, visit the *Knowledge Center* section of the www.wilger.net website, or contact Wilger.

COMBO-JET® Fertilizer Streamer Tips



COMBO-JET® Nozzle Bodies



COMBO-RATE® Stacking Nozzle Bodies



O-ring Seal (ORS) Manifolds & Components



Wilger Boom End Flush Valves



FLOW VIEW™ Ball Flow Indicators



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