Sprayhead | Basics

BUNN

Choosing the Proper Sprayhead for Precise Flavor Extraction

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FACTORS OF SPRAYHEAD CONSIDERATION

FLOW RATE INTO THE FUNNEL

Typically the sprayhead is a regulator that sets the flow rate of water into the funnel and the expanse of spray pattern over the funnel bed. This will dictate total water delivery time and how long the grounds or tea leaves will be in contact with water. The sprayhead design should be properly paired with the equipment to accommodate maximum flow rates of the machine. Daily cleaning of the sprayhead helps assist in maintaining proper flow.

HOLE CHARACTERISTICS AND SPRAY PATTERN

The quantity and placement of the holes will influence the spray pattern and angle of disbursement. This, then, determines location of water contact in the funnel and the number of contact points. It is essential the sprayhead deliver water evenly to the funnel bed. However, the spray pattern cannot be spread so far that it misses the grounds or tea leaves by directing water down the side of the funnel.

TURBULENCE

Turbulence is the mixing action in the funnel caused by water passing over, around and through the particles in the funnel. Its effectiveness is influenced by flow rate, spray pattern and spray angle. Evenly distributed turbulence action is key to uniform extraction and a smooth, rich taste.

CONSTRUCTION

A one-piece sprayhead may be convenient due to fewer parts, but a multiple piece sprayhead can be disassembled for thorough cleaning. Some sprayheads have a domed face to help with the angle of water dispersion. Others have a larger diameter to cover a large funnel diameter.

LIME TOLERANCE

Water used in the brewing process should have a controlled mineral profile; otherwise, final taste in the cup and machine performance will be adversely affected by scale build up and corrosion.

Larger sprayhead holes are generally considered the design of choice when lime tolerance is a factor because it takes more time to accumulate a build up on the water passage. The smaller the water passage, the quicker it can “lime up” – or become restricted by build up. Material also plays a role, as some plastics are more resistant to lime build-up than metal.

BUNN® BREWER SPRAYHEAD

COMPATIBILITY KEY

- ● Standard
- ✔ Possible Compatibility
  Any sprayhead change requires machine recalibration and recipe validation to ensure flavor profile is acceptable.

One Piece

01082.0000
6 - 078

01082.0002
6 - 098

01082.0003
7 - 078

01082.0004
5 - 070

01082.0
5 - 057

Peak Extraction

40670.1020
21 Hole
7/16" threads

40670.1222
17 Hole
7/16" threads

4067
21 Hol
3/4" t

Classification	Sprayhead	# of Holes	Material	Axiom	CWTF	SH & GPR Dual / Singl
one piece	01082.0000	6 - 078	SST	✔	●	✔
	01082.0002	6 - 098	SST	✔	✔	●
	01082.0003	7 - 078	SST	✔	✔	✔
	01082.0004	5 - 070	SST	✔	✔	✔
	01082.0005	5 - 057	SST	✔	✔	✔
	01082.0011	6 - 059	SST	✔	✔	✔
special	24527.0000	6	black plastic			
peak extraction	35308.1004	21	SST			
	35308.1005	17	SST			
	35308.1008	21 wide	SST			
lime tolerant	40670.0005	7 wide	blue plastic	●	✔	✔
	40670.0007	7 narrow	white plastic	✔	✔	✔
	40670.0008	7 wide	green plastic	✔	✔	✔
	40670.0009	7 wide	terra cotta plastic	✔	✔	✔
	40670.0012	7 narrow	black plastic	✔	✔	✔
silicone	41160.1000	17	silicone			
	41160.1001	21	silicone			
	41160.1002	21 wide	silicone			

Model	Axiom
These lime tolerant sprayheads are recommended for the following equipment if conversion is desired from the standard one or three piece versions. Not recommended for Titan® or SmartWAVE® Models.	**40670.0005, 40670.0007** (gou

COMPATIBILITY

005
7

01082.0011
6 - 059

Lime Tolerant

40670.0005
7 Hole - Wide

40670.0007
7 Hole - Narrow

40670.0008
7 Hole - Wide

40670.0009
7 Hole - Wide

40670.0012
7 Hole - Narrow

0.1021
e - Wide
threads

Special

24527.0000
6 Hole

Silicone

41160.1000
17 Hole

41160.1001
21 Hole

41160.1002
21 Hole - Wide

e	GPR DBC & TF Dual / Single	Titan	ICB / ICB Twin	ITB / ITCB	SmartWAVE	TB3 / TB3Q	IC3
	✔				●	●	
	✔				✔	✔	
	✔				✔	✔	
	✔				✔	✔	
	✔				✔	✔	
	✔				✔	✔	
							●
	●		✔	✔			
	✔		●	●			
		●					✔
	✔		✔	✔		✔	
	✔		✔	✔		✔	
	✔		✔	✔		✔	
	✔		✔	✔		✔	
	✔		✔	✔		✔	
	✔		✔		✔		
	✔		✔		✔		
					✔		✔

	CWTF	SH & GPR Dual / Single	ICB / ICB Twin / ITCB HV	ITCB / ITB	TB3 / TB3Q
rmet funnel)	40670.0007	40670.0012	40670.0009	40670.0007	40670.0007

FACTORS OF SPRAYHEAD CONSIDERATION (CONTINUED)

CLEANING

Any buildup on the sprayhead may restrict water flow and impact brewing. For consistently great tea and coffee, it is important to clean the sprayhead regularly. Remove and thoroughly rinse the sprayhead. Use the sprayhead cleaning tool (#38227.0000) to make sure all holes are open and clear of any mineral deposits. Upon visual inspection, it may appear that light passes through air holes, but a thin film of residue can pass light and still impede water flow.

FUNNEL AND FUNNEL TIP

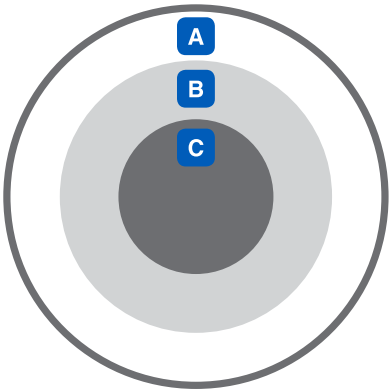
The funnel type will dictate the bed diameter and depth of coffee grounds or tea leaves, which then dictates the necessary width of the spray pattern. The funnel outlet also plays a role in sprayhead selection because it regulates the flow rate out of the funnel. Especially when brewing coffee, the flow rate out of the funnel needs to keep up with the flow rate into the funnel which is regulated by the sprayhead.

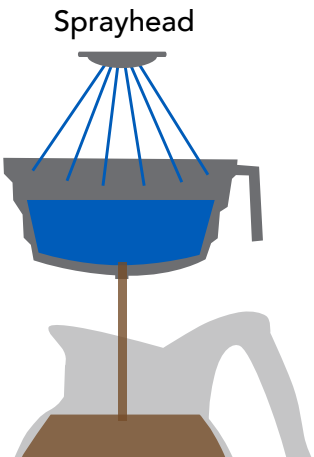
UNIFORMITY OF EXTRACTION

Extraction is the amount of coffee or tea dissolved during the brewing process. Ideally, the entire grounds bed will have a consistent level of extraction throughout a cross section, without having some areas over-extracted and other areas under-extracted. The sprayhead is critical in achieving this, as it determines where and how the water contacts the grounds bed.

SPRAY PATTERN COVERAGE

Sprayheads are critical to determining how and where water comes in contact with the grounds





** Proper grounds saturation will provide a balanced extraction from A, B and C zones.*

SPRAYHEAD BASICS

The small but mighty sprayhead is the unheralded work horse of any coffee and tea equipment. The average beverage drinker probably is unaware of the importance of this component and its function in a quality cup.

The sprayhead controls the flow rate going into the funnel and uses its hole design and pattern to regulate how water contacts the product in the funnel. This interaction can either enhance or detract from final flavor.

While this brochure explores various sprayhead design factors, several other elements of commercial beverage preparation should also be considered to achieve the desired flavor profile:

- **Water quality**
- **Water temperature**
- **Product grind and throw weight**
- **Brewer recipe programming**

BUNN TECHNOLOGY GIVES YOU CONTROL

BUNN offers a line of precision brewing and serving systems that are designed to produce optimum flavor. Look for equipment featuring Digital Brewer Control® that gives the operator these programmable features to control sprayhead action and create a variety of recipes. The machine matters!

Pre-infusion: Control over the wetting process
The sprayhead dispenses hot water and then turns off, allowing the wetting phase to complete. Pre-infusion ensures that material in the funnel will be ready for the extraction phase when the sprayhead turns back on.

Pulse Brew: Control over the extraction phase
The sprayhead dispenses hot water then goes through a cycle of turning off and back on. Pulse brew enables you to adjust the flavor of your coffee or tea by extending brew times.

Variable Bypass: Control over brew strength
Bypassing a percentage of the water around the grounds allows you to create unique flavors.

Extraction Systems: Control over water distribution
From traditional BUNN sprayhead designs to the BUNN 21-hole sprayhead, you can choose the spray pattern that yields the ideal flavor for your taste profile.

Peak Extraction: The unique Peak Extraction™ sprayhead features grooves that protect and isolate the directional stream holes and capture minerals.

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BUNN®