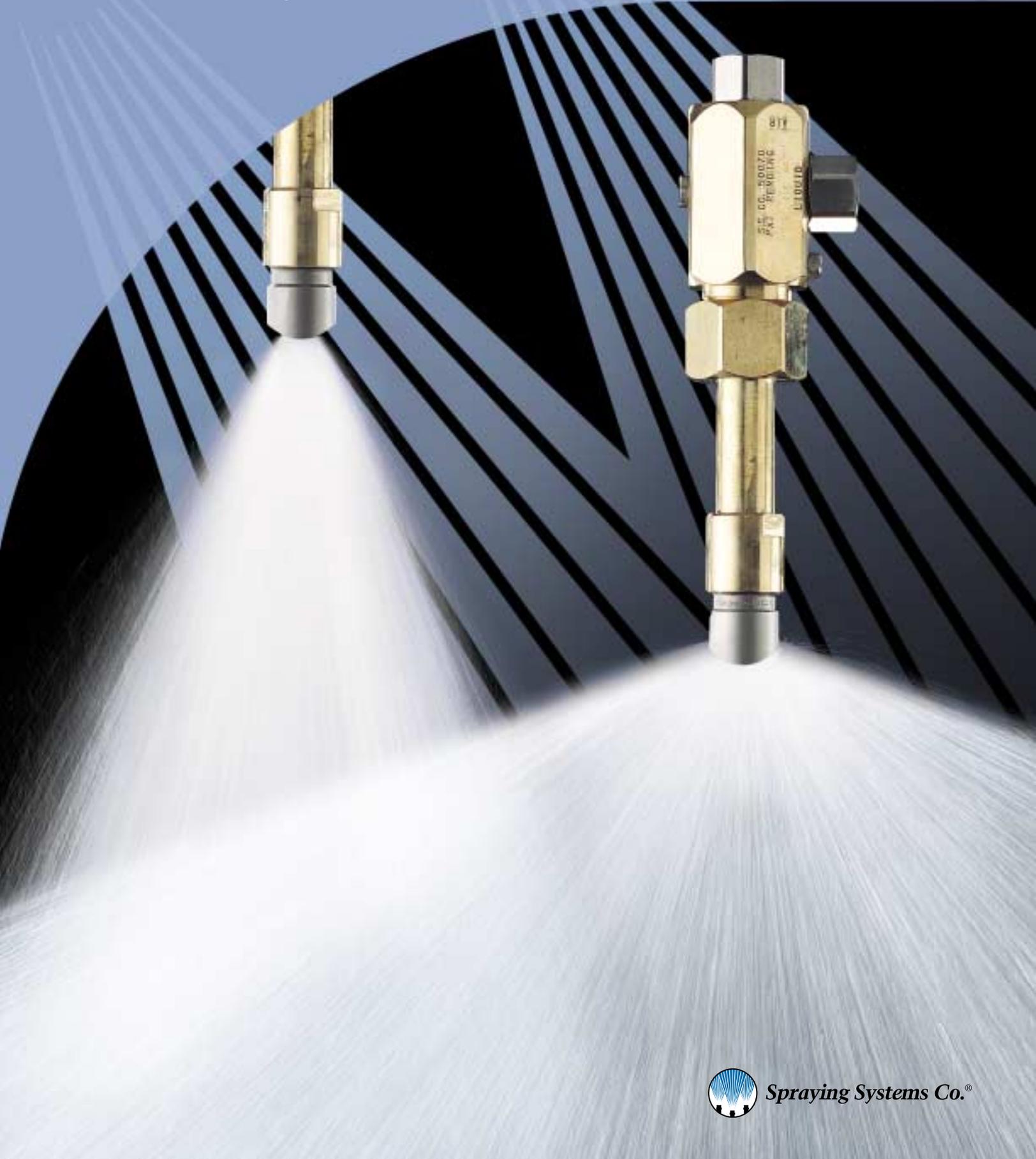




Expand Your Operations and Reduce Your Costs  
With the Next Generation CasterJet® Nozzle



*Spraying Systems Co.*®



## CasterJet® Nozzle—Continuous Casting Cooling Spray Nozzles. Now Even More Productive.

Spraying Systems Co.'s CasterJet nozzles are a major advancement in secondary cooling in the caster. Our highly effective design principal for mixing air and water has yielded a nozzle that provides superior cooling results for steel surfaces.

Secondary cooling with CasterJet nozzles means:

- **Improved surface quality** through uniform distribution and reduced water buildup under rollers
- **Reduced water costs** with more effective heat transfers which requires less water and reduced sensitivity to water quality
- **Increased operating versatility** as variable water flows can accommodate a wide range of steel dimensions and alloys
- **Reduced maintenance costs** due to fewer nozzles needed per installation, self-aligning spray tips and our new detachable expansion tubes

Because we're never satisfied, we've found new ways to make CasterJet nozzles even more valuable to your operations. With the next generation CasterJet nozzle, new patents pending, steel manufacturers gain two major advantages:

- **A potential 25% reduction in air consumption** on a continuous caster while maintaining the same performance
- **Expanded operating range** for running additional grades of steel at high levels of quality

## Lower Air Consumption. Higher Returns.

CasterJet nozzles produce superior cooling by delivering direct, finely atomized liquid to the steel surface with minimal loss of spray. This provides high heat transfer rates for fast heat removal. The atomization process is based on a unique impingement principal involving three factors:

- A high velocity stream of water forced into an expansion chamber
- A target bolt, against which the water stream is shattered
- An air stream rushing past the target bolt to further break up the water stream

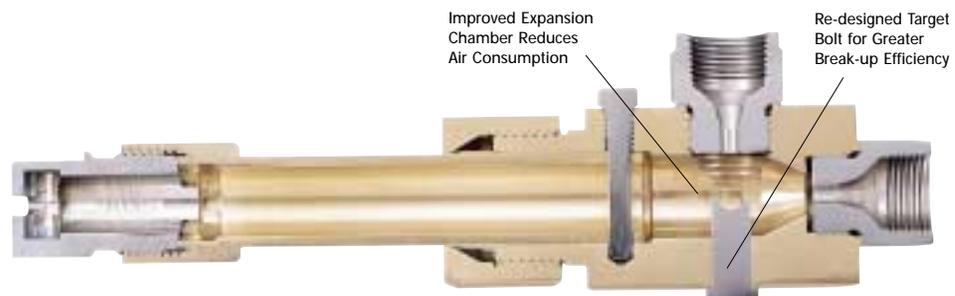
Through continuous research, SSCO determined that a re-design of the expansion chamber in which air and water mix would produce more efficient mixing. The result? CasterJet nozzles now provide a higher degree of performance with a 25% reduction in air consumption.

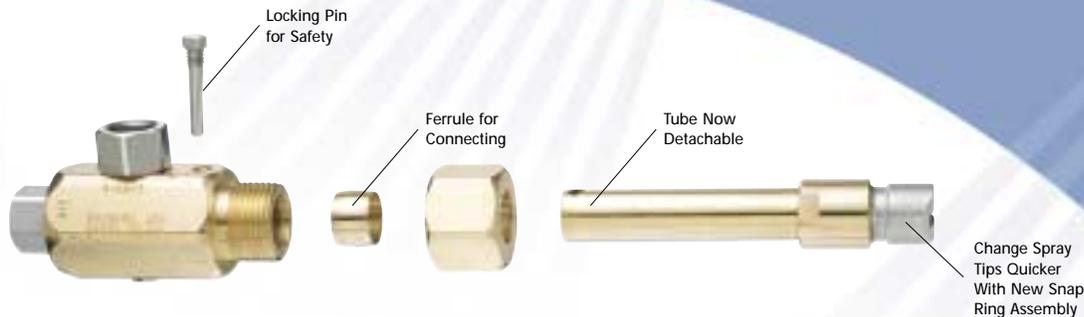
New caster lines may require fewer compressors and, on existing lines, some compressors can be turned off. The bottom line for your bottom line is lower energy costs and longer compressor life.

We've also re-designed the target bolt. The end of the bolt is now slotted for greater break-up efficiency. Additionally, the bolt is press fit into the new CasterJet nozzle body.

## Increase Your Operating Range

CasterJet nozzles allow large turndown ratios, resulting in a wide range of liquid flow rates. The next generation CasterJet nozzle, because of more efficient air/water





mixing, gives you even greater flexibility. We've increased the turndown ratio from 8:1 to 25:1. You can reduce the flow by operating water pressures down to as low as 5 psi, yet experience the same stable spray at lower operating conditions that you'll receive at higher flows.

Because of these wider operating ranges, and consistent drop size distribution across the spray pattern, you have more flexibility in the speed at which you run your lines. Of course, that means you have the ability to run additional grades of steel at high levels of quality.

### Detachable Tube for Added Flexibility and Easier Maintenance

Our new CasterJet® nozzles no longer include silver-soldered extension tubes. All tubes now feature broached connections for detachability with a ferrule for connecting and a locating pin for safety.

This detachable feature gives you greater flexibility in the tube lengths you include on your line. This, in addition to improved turndown ratios, can mean greater operating parameters. Detachability also means easier maintenance when breakouts occur. You no longer have to replace the entire nozzle assembly—just the tube and tip. This benefit allows a greater flexibility in tube stocking options.

The spray tip, with a new snap ring assembly, is even easier to remove for fast and simple changes. The spray tips continue to be self-aligning and the entire nozzle assembly has smooth, clean passages. Nozzle wear in CasterJet nozzles is low due

to generally low operating pressures.

### Continued Productivity in Distribution

The next generation CasterJet nozzles continue to provide uniform flat spray distribution for even cooling and reduced stress. You continue to experience few cracks and less scrap. As always, the range of nozzle tips is extensive, including the 135° flat pattern for maximum slab coverage. Alternative distributions are easily provided by a change in the computer-profiled nozzle orifice.

As mentioned, the large turndown ratio allows you to fine-tune the distribution of liquid by changing water or air pressure.

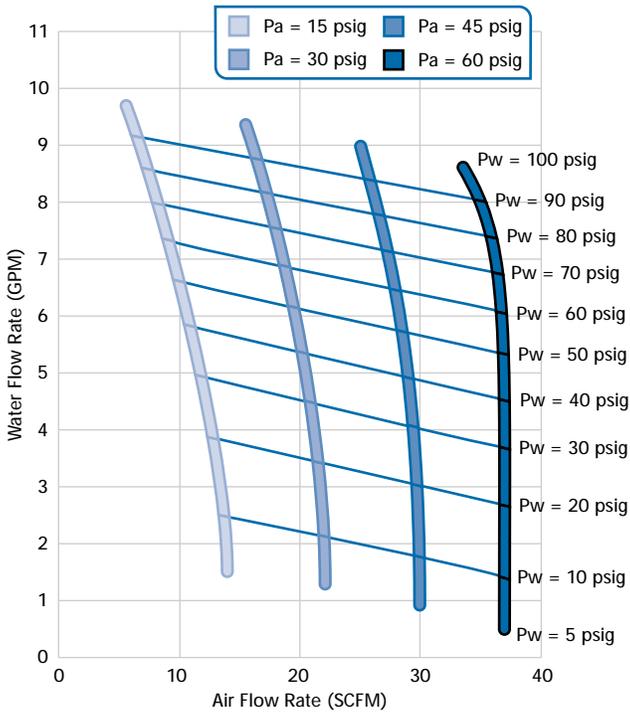
### Better Cooling for a Better Bottom Line

The next generation CasterJet nozzle allows even greater dynamic response to changing conditions. Now, more than ever, CasterJet cooling nozzles provide you with a single cooling system configuration that can serve many needs and deliver higher returns.

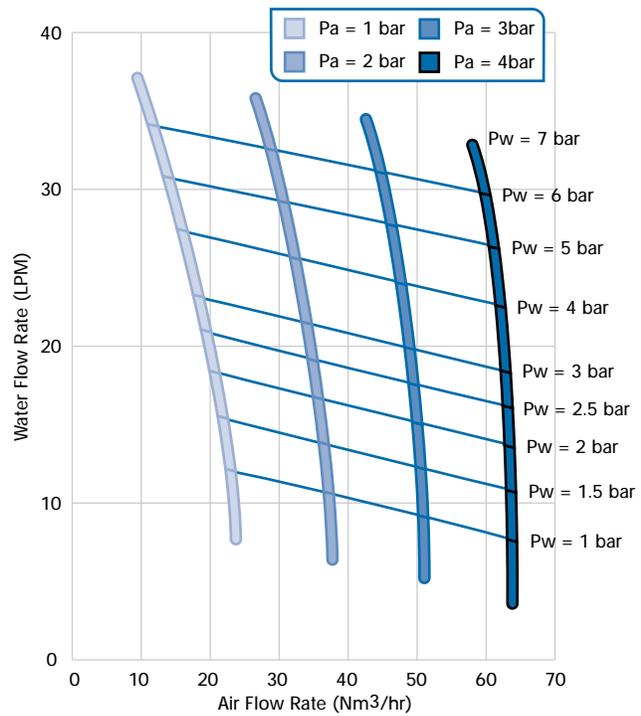
Make the move to the next generation. Contact your Spraying Systems Co. sales engineer today or visit [www.spray.com](http://www.spray.com).

# Water Flow Rate Versus Air Flow Rate at Constant Air Pressure

## 1/2NCJ-9-SS



## 1/2NCJ-9-SS Metric



## Performance

Nozzle Setup 50070-	Water Flow 100 psi (gpm)	Air Flow 45 psi (scfm)
_-NCJ-2-_-SS	2.0	5.2
_-NCJ-2.5-_-SS	2.5	5.7
_-NCJ-3-_-SS	3.0	6.1
_-NCJ-3.5-_-SS	3.5	8.5
_-NCJ-3.7-_-SS	3.7	9.0
_-NCJ-4-_-SS	4.0	10.0
_-NCJ-5-_-SS	5.0	10.2
_-NCJ-6.5-_-SS	6.5	15.5

Nozzle Setup 50085-	Water Flow 100 psi (gpm)	Air Flow 45 psi (scfm)
_-NCJ-8-_-SS	8.0	18.5
_-NCJ-9-_-SS	9.0	25.0
_-NCJ-10-_-SS	10.0	22.5
_-NCJ-12-_-SS	12.0	22.5



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