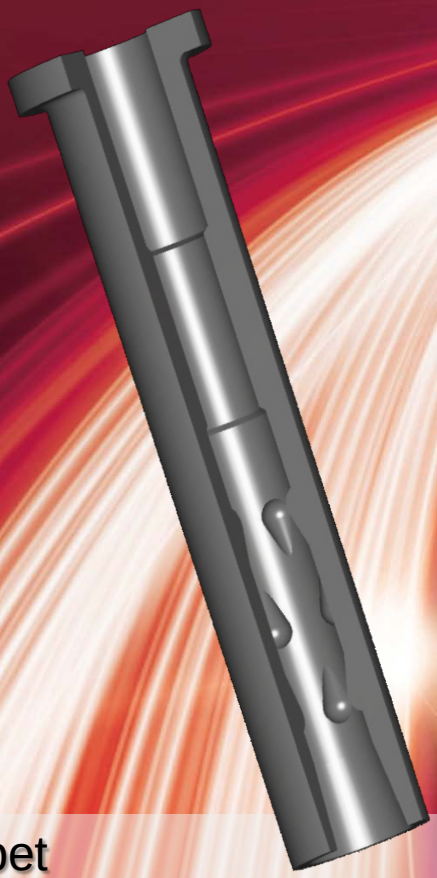
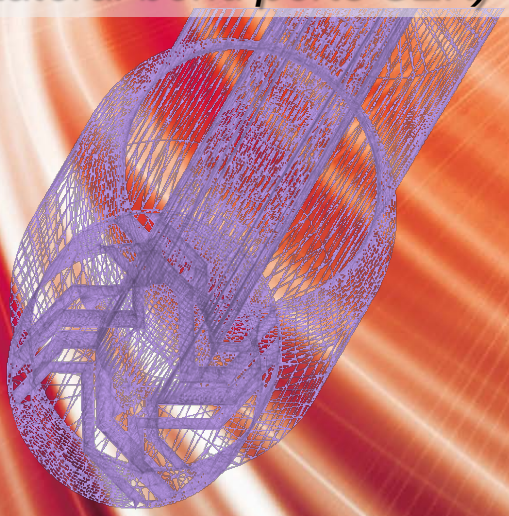
Unique SEN Designs for Bloom and Billet

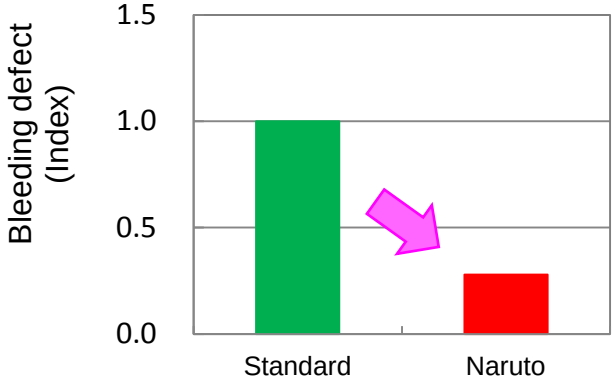


Trumpet
(Single port SEN, Mogul with reverse-taper port)

Naruto
(Lateral bend ports SEN)

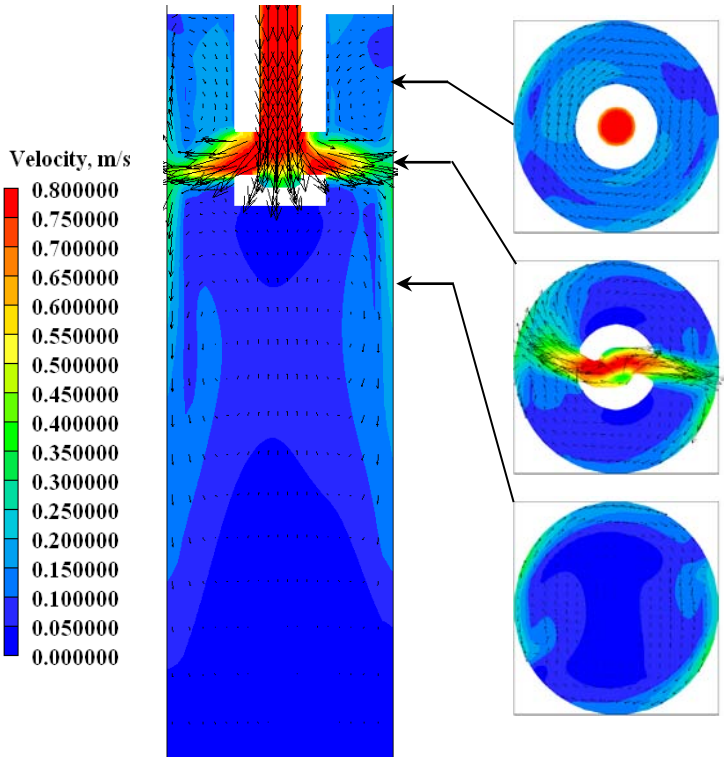


"Naruto" and "Trumpet" SEN produce ideal flow pattern in bloom and billet caster.



➢ The ratio of bleeding defects decreased to 1/3 by using "Naruto" SEN

Naruto (Shinagawa Swirling Flow) SEN



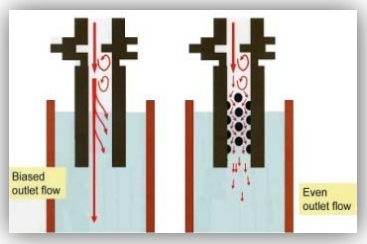
CFD calculation by PHOENICS

The feature of “Naruto” is “bend ports”.

The outlet flow from bend ports have turning movement. The whole mold can produce a stable turning flow by adopting the suitable “Naruto”.

Trumpet (Shinagawa Self Braking) SEN

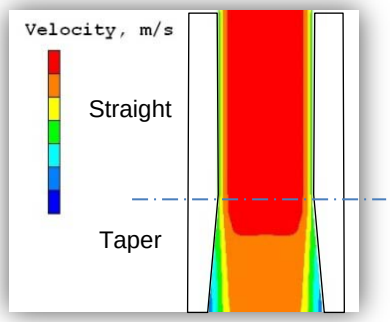
In actual casting, the direction of the outlet flow from single port does not become perpendicular. Biased and deep-penetrated flow cause uneven solidified shell growth and inhibited inclusions float.



“Trumpet “ SEN combined 2 current knowledge.

Mogul geometry solved biased flow.

Reverse-taper port decrease outlet flow speed.



“Trumpet” SEN can generate straight and shallow flow.

Standard SEN

Trumpet SEN