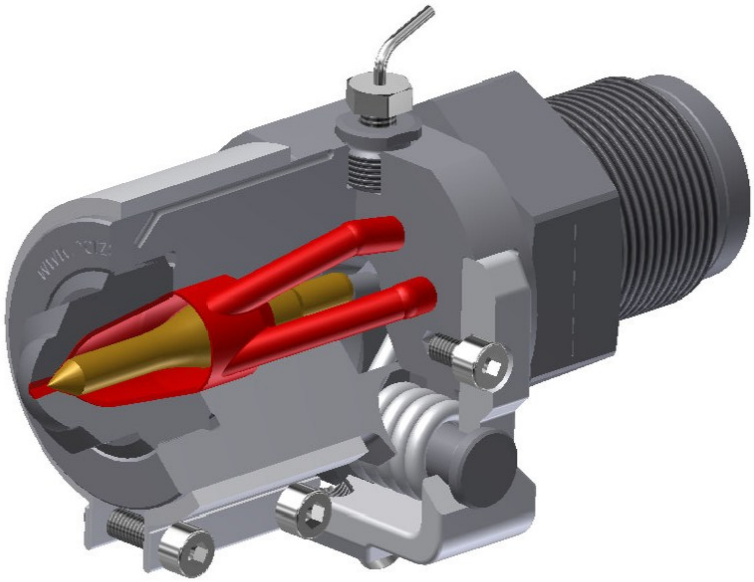
Machine needle shut-off nozzle type TSN spring operated

Max. operating data for nozzle TSN

- Injection rate based on Polystyrene (PS):
  TSN00 50 cm^3/s
  TSN0 500 cm^3/s
  TSN1 800 cm^3/s
- Injection pressure: 2500bar at 350°C



Applications:
thermoplastics (not applicable for PVC, PPS)

Shut-off mechanism:
operated with torsion spring

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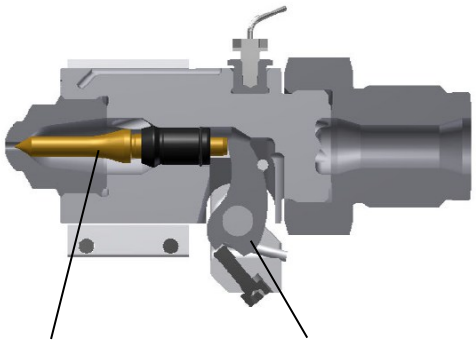


Technical Description

The spring actuated machine needle shut-off nozzles type TSN are used in the processing of thermoplastics, principally with low viscosity materials such as: PA, PE, POM, PP.

Finds application in:
Packaging, automobile and leisure industries, medical and electronic equipment.

Operation:
A shut-off needle is positioned axially inside the nozzle. This is held in the closed position (default position) by spring force. The nozzle opens with injection pressure. Once the melt pressure which is exerted on the needle surface area rises above **200 bar**, it overcomes the spring force and opens the nozzle. Once the pressure drops to below **100 bar**, the spring force closes the nozzle at the orifice / mold interface.

Nozzle sizes:
Two nozzles sizes are available. The machine injection rate (cm^3/s) determines which nozzle size should be used. See **Dimension Sheet** for specifications.

Advantages:
- Melt flow separation at nozzle orifice
- Operating pressure: 2500bar at 350°C
- Easy to install
- Maintenance on shut-off unit without nozzle disassembly
- Economic solution
- Compact design

Arguments for this nozzle

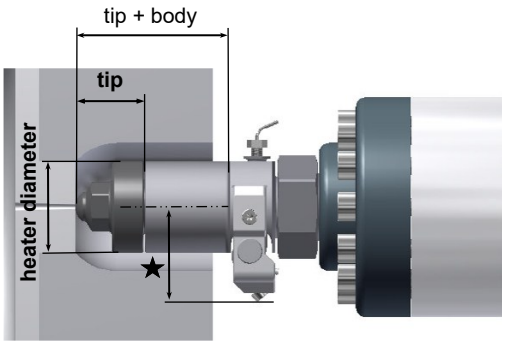
Prevents:
- Filamentation (stringing)
- Air pockets during screw retraction
- Material leakage when dosing with a retracted injection unit
- Material leakage while vertically injecting

Productivity factors:
- Clean melt stream shut-off at nozzle orifice
- Shorter cycle times
- Increased process reliability and repeatability
- Usability with increased back pressure - improved homogenization (up to 200 bar)
- Quick, simple installation
- Retro-fit to any injection moulding machine type

What speaks for Herzog

- Nozzle design and manufcature is the core business
- Over 40 years experience
- Global market presence
- Designed for today‘s requirements
- Development of special applications and customer specific solutions
- Fast delivery and maintenance service

Risk of collision when diving into the mold



★ The star in the illustration represents an exposed area of the nozzle.
This area requires space in the machine plate and should be checked according to the selected nozzle size.

In certain circumstances a longer tip can avoid collisions.

! Data in mm !	TSN 00	TSN 0		TSN 1	
★	24	45		55	
tip length	14	13	28	18	38
tip + body	42	40	55	60	80
nozzle outside diameter for heater	30	35		50	

Data sheet for enquiries and orders

Contact information

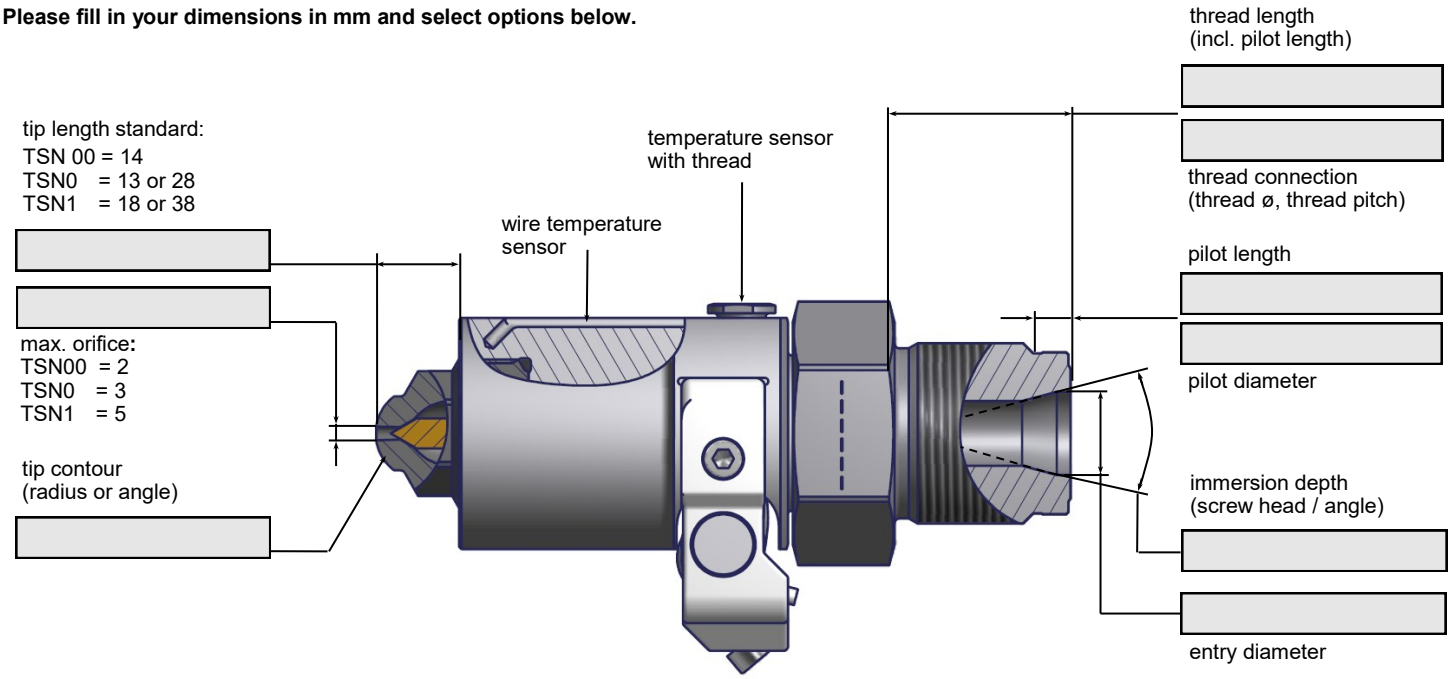
Company:	Contact person:
Street:	Tel.:
City / Zip:	Fax:
Country:	E-Mail:

Process information

Screw Ø:	Processed material:

Operating data and standard dimensions	**TSN 00**	**TSN 0**	**TSN 1**
max. injection rate cm^3 / s, based on Polystyrene (PS)	50	500	800
expected screw diameter in mm	to 20	to 40	to 80
max. contact force in kN	max. 30	max. 70	max. 120
approximate back pressure (opening pressure) in bar	200	200	200
max. injection pressure at temperature	2500 bar at 350°C	2500 bar at 350°C	2500 bar at 350°C
standard tip length in mm (other dimensions on request)	14	13 or 28	18 or 38
max. orifice in mm (larger drillings on request)	2	3	5
body length in mm: without **thread length and tip length**	48	72	94

Please fill in your dimensions in mm and select options below.



Nozzle size:

☐ TSN 00 (50 cm^3/s) ☐ TSN0 (500 cm^3/s) ☐ TSN1 (800 cm^3/s)

Heater band 230V cable 3m, dimensions below **:**

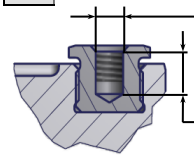
☐ TSN00 ø30x25 / TSN0 ø35x25 or ø35x40* / TSN1 ø50x40 or ø50x60* (* heater band length with longer tip)

Temperature sensor:
Three options are available: Nozzle can be delivered with a threaded sensor, a wire style sensor or an adapter will be made to suit your sensor thread.

☐ M6 cable length 4m ☐ Wire ø2.3 *100, cable length 4m ☐ Without sensor (enter connection geometry below)

Sensor type:

☐ Type K (NiCrNi) ☐ Type J (FeCuNi)



thread: pitch and depth
(e.g. M6*1– 4,6)

hole: ø x depth
(e.g. 4.9 / 8)

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