

# ZSTE Injector

## Bearing Mounting, Positive Displacement Injector, Oil

### General

ZSTE Injectors deliver a fixed pre-measured quantity of lubricant at the outlet connection during each discharge cycle. ZSTE Injectors are available in seven discharge rates and are supplied in two body sizes. System distribution connections utilizing Bijur Delimon standard junction headers (see *Datasheet #151: Specialty Fluid Fittings*), 4mm (5/32") secondary tubing, compression fittings can be used with these units.

### Application

ZSTE Injectors can only be used in cyclic operation oil systems and feed in one direction only. ZSTE Injectors are designed for mounting directly at bearing in conjunction with junction headers.

### System Requirements

The lubricating pump in a PDI oil system must build up line pressure to 200 psi (14 bar) minimum to actuate injector discharge. Recommended operating pressure is 300 psi (21 bar). A pressure relief device must be used in the system to permit pressure to drop quickly to approximately 5-10 psi (0.3-0.7 bar) between lubrication cycles to allow injectors to fully reset, ready for next lubrication cycle.

### Technical Data

Oil Viscosity	100-6500 SSU (20-1500 cSt) at operating temperature
Mounting	Direct at bearing inlet
Discharge	Preset (non-adjustable) in seven various rates
Maximum Operating Pressure	500 psi (34 bar)
Minimum Operating Pressure	200 psi (14 bar)
Maximum Relieving Pressure	10 psi (0.7 bar)
Maximum Operating Temperature	175°F (80°C)
Seals	Nitrile (Buna N)
Leaktight Junction Connection	4.5 Newton-Meter (40 pound inch maximum)

### Typical Tubing Connections

There is no accommodation for any direct tubing connections to ZSTE Injectors. The injector inlet connection (1/8"-27 NPT male thread) is mounted in the matching junction header tee mounting outlet. Various outlet configurations are available (see *Datasheet #151: Specialty Fluid Fittings*).

The outlet or discharge end is an external thread 1/8" NPT for assembly to bearing inlet.



For larger tubing diameter connections, consult Bijur Delimon.

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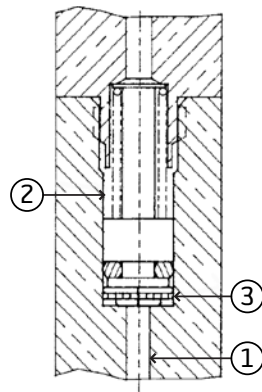
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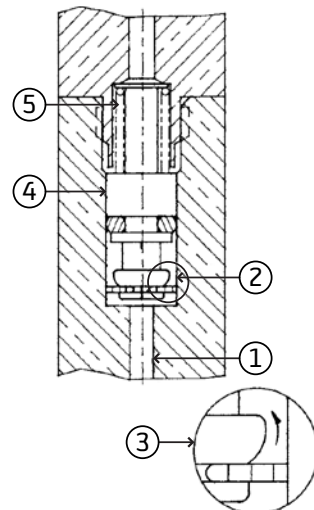
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## Operation

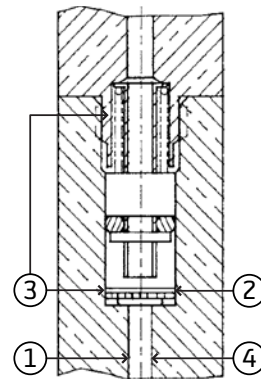
### Rest Position



### Discharge Cycle



### Return Cycle



*Illustrations and specifications are not binding in detail.*

*Designs are subject to modification and improvement without notice.*

### Rest Position

1. System pressure: 10 psi (0.7 bar) or less.
2. Oil from previous cycle fills spring chamber.
3. Disc seal covers inlet.

### Discharge Cycle

1. System pressure builds up and forces oil into inlet.
2. Disc seal moves to seal hollow transfer tube base.
3. Disc "collapses," oil is forced into inlet chamber around disc seal.
4. Piston assembly moves toward outlet, forcing oil in discharge chamber to be displaced "positively" to the lubrication point.
5. Piston assembly continues to move and compress return spring until reaching shoulder of delivery chamber.

### Return Cycle

1. Pump stops after discharge cycle is complete.
2. System pressure is relieved to 5-10 psi (0.3-0.7 bar).
3. Disc seal is forced down to seal inlet port as return spring carries piston back to its initial position. During this process, oil flows from refill chamber through transfer tube to discharge chamber.
4. PDI is ready for next cycle.

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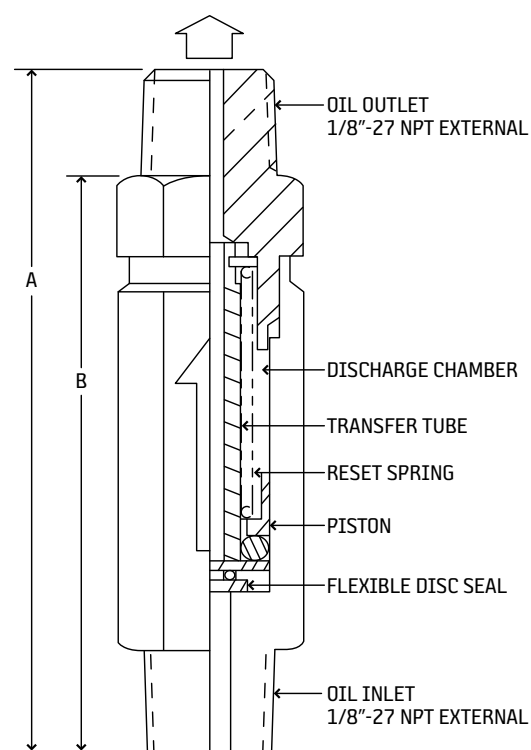
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## How to Order

Model	Discharge	Part #
ZSTE-01	0.01cc	18303-01
ZSTE-025	0.025cc	18303-025
ZSTE-06	0.06cc	18303-06
ZSTE-10	0.10cc	18303-10
ZSTE-20	0.20cc	18303-20
ZSTE-30	0.30cc	18303-30
ZSTE-40	0.40cc	18303-40

When ordering, specify by model, discharge and part number, e.g. ZSTE-10 Injector, 0.10cc Discharge, Part #18303-10.

## Dimensional Schematics



Model	A	B	Hex Width (across flats)
ZSTE-01	44mm (1.74")	36mm (1.43")	12.7mm (0.50")
ZSTE-025	44mm (1.74")	36mm (1.43")	12.7mm (0.50")
ZSTE-06	44mm (1.74")	36mm (1.43")	12.7mm (0.50")
ZSTE-10	44mm (1.74")	36mm (1.43")	12.7mm (0.50")
ZSTE-20	53mm (2.09")	45mm (1.78")	12.7mm (0.50")
ZSTE-30	53mm (2.09")	45mm (1.78")	12.7mm (0.50")
ZSTE-40	53mm (2.09")	45mm (1.78")	12.7mm (0.50")

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