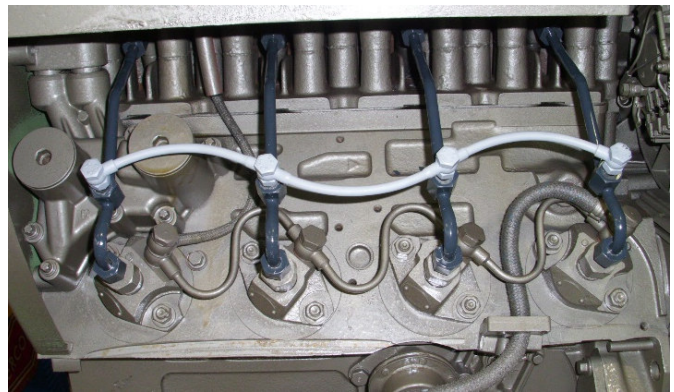


## Pipe Production



### **Fuel Injection Pipes / Pipes for hydraulic actuators**

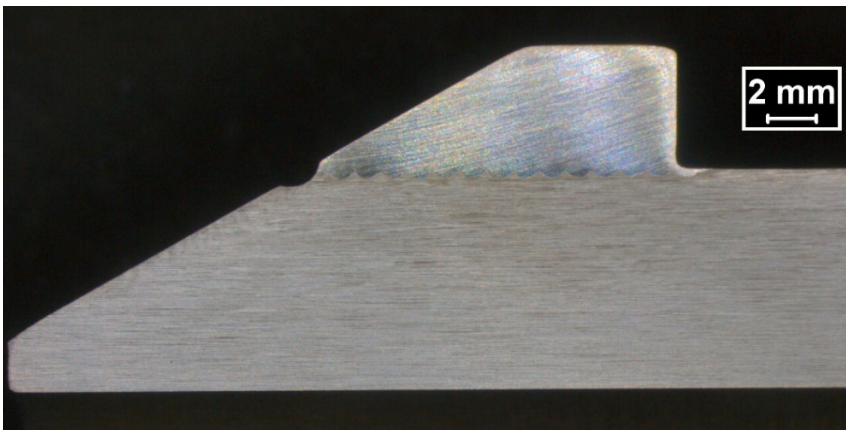
#### **Single walled, Double walled and Star-Tube**

- material und geometry upon customer request
- pressure range up to 2000 bar
- pipe diameter 6 – 120 mm
- end to end leakage control - cone, sleeve nut and pipe
- laser welded cones, rolled threads
- tension free, high accuracy
- heat tracing or jackets possible
- integration and delivery of leakage detection systems
- certification by any classification society upon request
- in-house production of attachment parts
- short delivery times

## Special pipes

- Single- and double walled pipes
- Pipes for classic engines and vehicles
- Planning and production of your individual pipe geometry

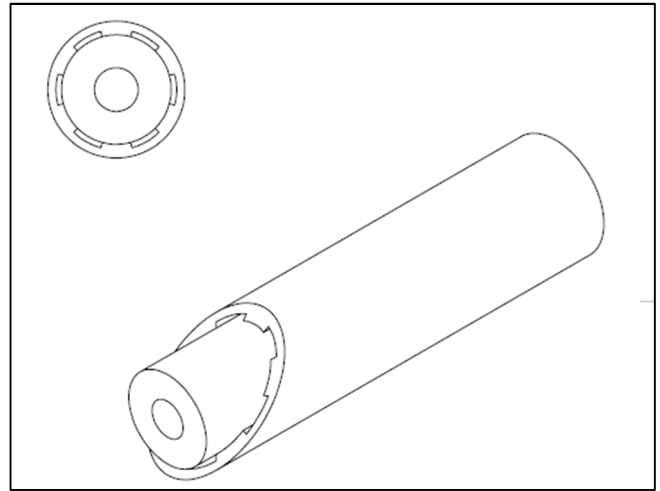
## Cones by Laser additive manufacturing



The advantages of laser-generated cones are:

- no inner tensions or cutting of grain alignment because cone and pipe are “one cast”
- no risk of leakage as by cutting rings
- no risk of cracks as by rammed cones

## „Star Tube“-Design



These patented pipes are technical far ahead from state of the art.

This system is the most technical reliable and cost-efficient solution.

This system combines:

- low vibrations by interlocking, no relative movement
- therefore almost wear-free
- reduced weight
- cost-efficient

Conventional, double walled 2-stroke pipes of well-known makers like Wärtsilä or MAN could be exchanged 1:1 by Star-Tube-pipes.

## Double walled, why?

Leakage of fuel might cause heavy environmental damage or might destroy your engine. For marine applications double-walled fuel pipes are mandatory by classification societies.

The protection tube is your backup to prevent uncontrolled leakage in case of a broken fuel pipe or damaged cone.

Leaking fuel will be discharged safely and the detection system will inform you automatically about a damage.

## Leakage detection systems



Once double walled pipes installed, a detection system for fuel leakages complete your safety set up.

Leaking fuel will be discharged safely and the detection system will inform you automatically about a damage.