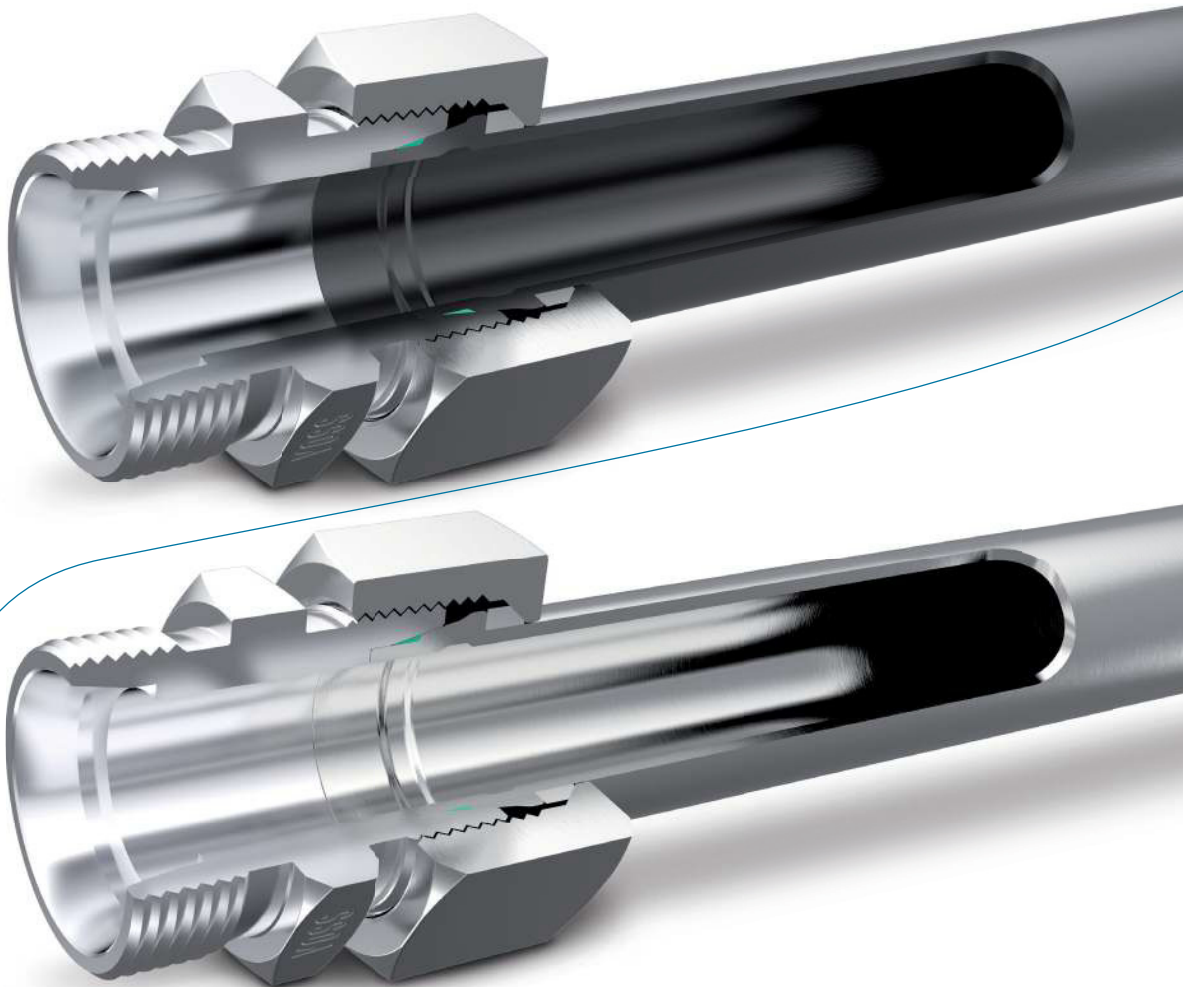


VOSSForm^{SQR} / VOSSForm^{SQR}VA tube couplings

- Safety
- Quality
- Reliability



Product information VOSSForm^{SQR} tube couplings

The main requirements placed on hydraulic tube connections can be summed up by three terms:

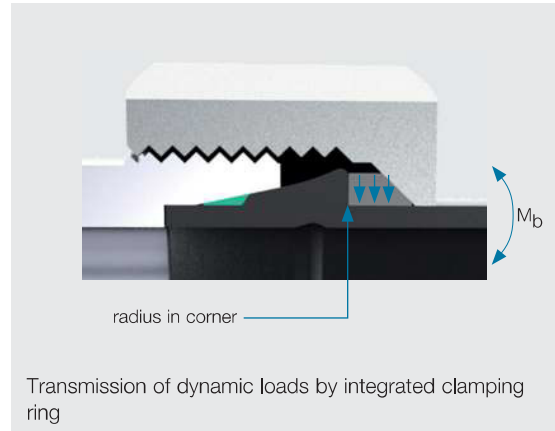
- Safety, as the most important aspect.
- Quality, without which permanent leak-tightness is not possible.
- Reliability, only an economical coupling achieves market success.

The VOSSForm^{SQR} tube coupling system fulfils these requirements with its innovative design, based on VOSS's proven design principles.

In the VOSSForm100 forming machine a contour is shaped at the end of a commercially obtainable hydraulic tube. When a soft seal and the special SQR function nut are added, the result is a simple, high-quality connection.

Maximum load-bearing capacity and safety

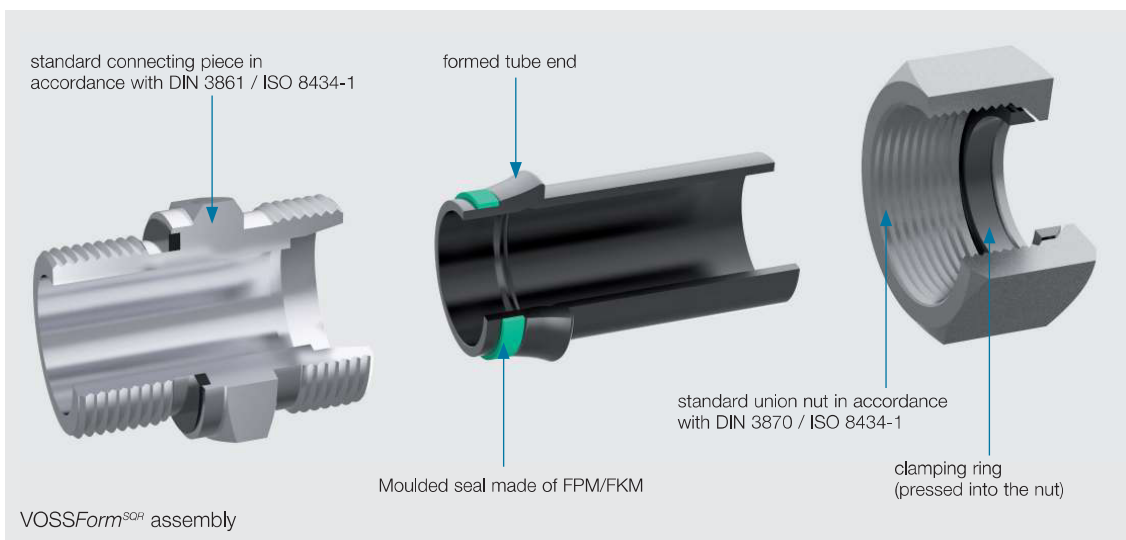
The critical area is the transition from the formed contour to the tube. Here, the forming process can cause the material to become brittle. With the VOSSForm^{SQR} system, this weak point is effectively relieved. Firstly, the radius at the transition minimizes the notch effect, and secondly, the SQR nut with integrated clamping ring clamps the tube radially around the circumference, absorbing the dynamic loads outside of the critical area, thus increasing the pressure load-bearing capacity and breakage resistance.



Transmission of dynamic loads by integrated clamping ring

Safe assembly thanks to sure stop

Safe assemblies mean secure connections. With the VOSSForm^{SQR} system, the face of the tube end is pressed against the bottom of a standard DIN/ISO connecting piece during assembly. When the nut is tightened, a noticeable increase in the required torque indicates that assembly is concluded. Slack connections and over-tightening can be virtually eliminated. In addition, the assembly length is reduced and with this, the assembly time. The contour formed on the end of the tube is inserted deeply into the 24° taper to ensure secure seating.



Tube forming with process safety

Forming tubes with the VOSSForm 100 forming machine is as simple as can be. The tube end is simply pushed in as far as the stop plate and the forming process is monitored, allowing for no mistakes. The inner mandrel on the forming head prevents constriction of the tube in the formed area. The inner tube diameter remains completely unchanged, preventing pressure losses due to inward protrusions.

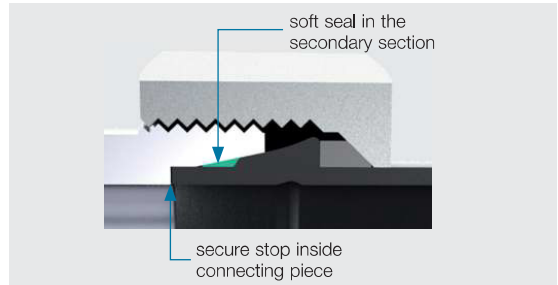
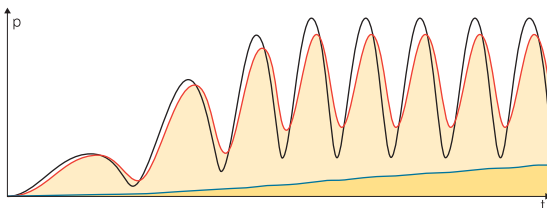
Cycle times between 7 and 15 seconds decrease assembly times, especially in series production.

Soft seals ensure leak-tightness

Soft seals offer considerable advantages over purely metallic seals. Any settling that occurs due to mechanical loads is compensated, effectively preventing connection sweating. A connection that remains completely leak-tight even under the most stringent inspection is more economical, protects the environment and demonstrates the quality of the connection, and thus of the entire product.

The concept of locating the soft seal in the secondary section – as with the ES-4 cutting ring – minimizes both static and dynamic loads on the seal. The metallic primary choking of fluid flow by the face of the tube dampens alternating pressure loading effects. When static pressure loads are applied, there is a long time delay before the pressure acts on the seal. This arrangement ensures long-term stability of the elastomer.

VOSS soft seal located in the secondary section of the connection



Economical benefits

Avoidance of leaks, minimized assembly time and elimination of maintenance effort and expense make this a sound economical solution. Low material costs and simple parts handling, too, make VOSSForm^{SOFR} tube couplings ideal for series production.

Complete product range

Successful use of connection systems requires a wide range of products. The VOSSForm^{SOFR} system is based on standardized components, meaning that the entire range of VOSS DIN/ISO products can be used with the VOSSForm^{SOFR} system.

VOSSForm^{SOFRVA}

The VOSSForm^{SOFRVA} forming system is provided for stainless steel applications. All components in this system are made of stainless steel.

The same product characteristics and advantages found in VOSSForm^{SOFR} for normal steel applications also apply here.

- Graph of dynamic pressure in the tube
- Conventional connection system with soft seal in primary section
- VOSS system with soft seal in secondary section



High performance paired with simple connection assembly and installation makes VOSSForm^{SOFR} a universal connection for series production.

VOSSForm 100 tube forming machine

The VOSSForm 100 forming machine guarantees time-saving, reliable production of the VOSSForm^{SOP} contours. The monitored process, in conjunction with optimum tube guidance, makes it virtually impossible to produce defective forms due to incorrect operation.

Simple tool changes contribute considerably to reducing processing times. The clamping jaws and forming head can be replaced without tools. The distinctive marking of both tools prevents assembly faults due to incorrect combinations of tools and tube dimensions.

The forming process

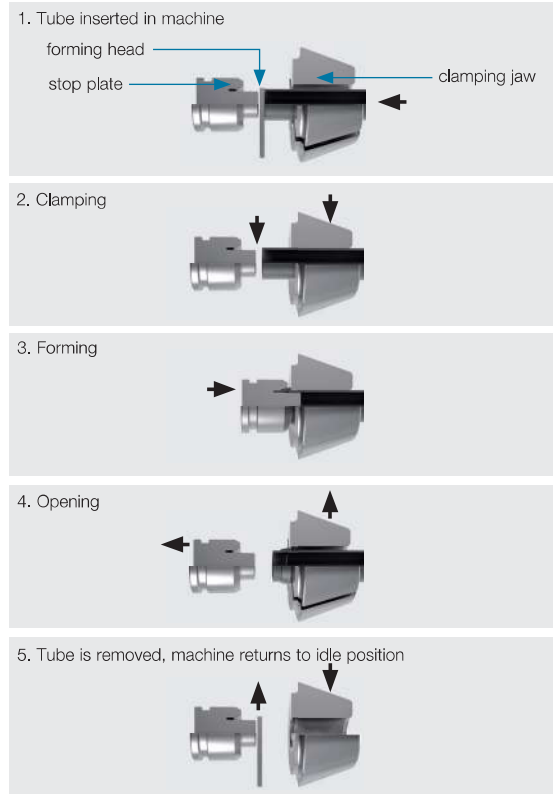
Forming is started by pushing the tube against the stop plate in the forming machine. The process is triggered by pressing the Start button (1.).

The clamping jaws close and clamp the tube in place. The stop plate is swung out of the forming area (2.).

The forming head moves forward and shapes the tube by plastic deformation to produce the VOSSForm^{SOP} contour (3.).

The forming head is retracted and the clamping jaws open again (4.).

Removal of the tube is monitored. This allows the machine to automatically return to the idle position, and the next tube forming sequence can be started without manual reset (5.).



Forming machine details



Optimum ergonomics and user-friendliness



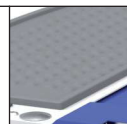
Single-handed locking by snap catch on the tool magazine



Attachment for crane transportation



Rubber table-top mat



Sastors with PU tyres for easy transportation

