



Getting fluids and air from A to B

NORMAFLEX® – Fluid Systems

This programme comprises smooth and corrugated tubes as well as partially corrugated tubes in mono or co-extruded wall thicknesses which, when used with our NORMAQUICK® quick connectors and NORMACLAMP® hose clamps, will provide a complete transfer system for fluids and air.



NORMAFLEX®
Fluid Systems

Perfection

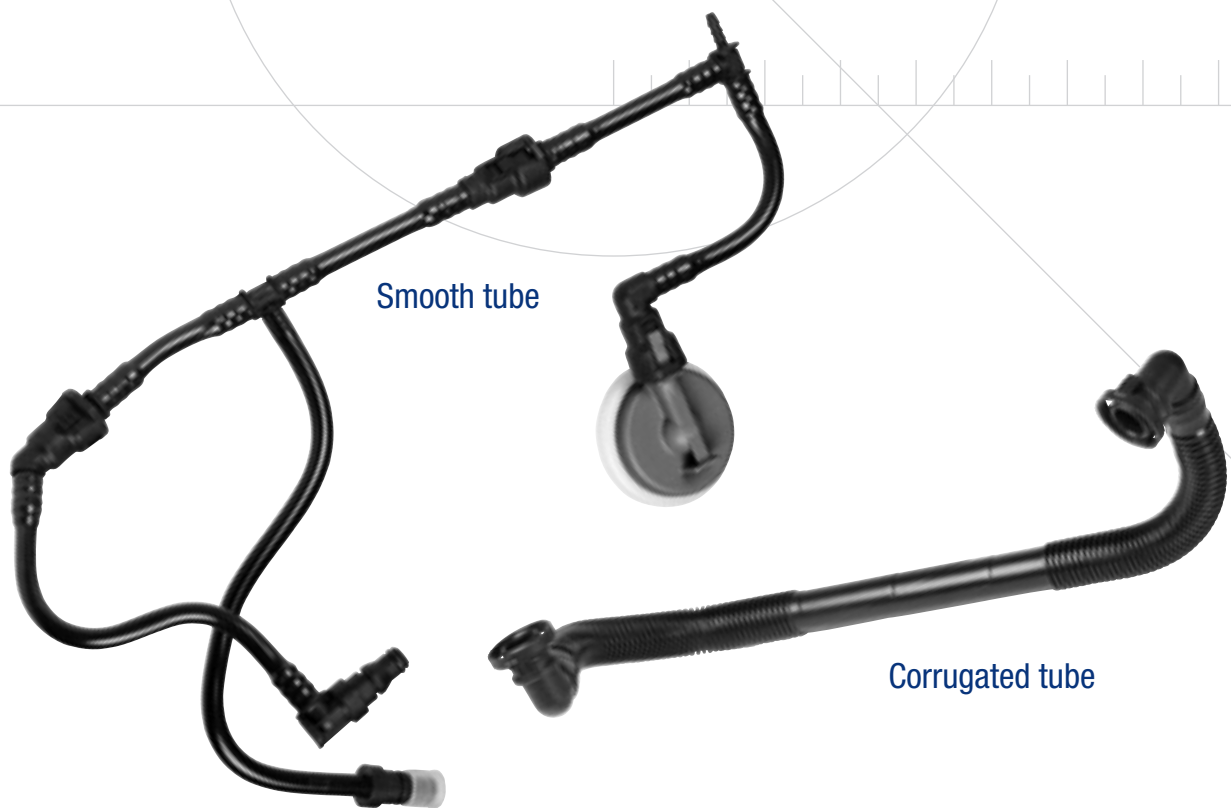
NORMAFLEX® – Fluid Systems

NORMAFLEX® Fluid Systems

NORMAFLEX® fluid systems consist of plastic tubes that are suitable for being combined with NORMAQUICK® quick connec-

tors and/or NORMACLAMP® hose clamps in order to create perfectly matching systems. Depending on the type of material used and the layer construction, NORMAFLEX® fluid systems are suitable for transporting a wide range of different media such as water, air, oil or fuel.

Short description of technical features



Materials

The components are combined in a way to match the specific requirements of each application and to provide the best possible physical and chemical properties.

NORMAFLEX® – Fluid Systems

Technical features

Example: smooth pipe 8 x 1

Test	Unit	Single-layer			Multi-layer	
		PA 6 R 50 HNZ	PA 12 soft L 25 W 40 X	PA 12 hard L 25 H	PVDF-barrier layer 2030.1	NORMAFLEX®LET 10
Tensile strength, standard value	MPa	31–35	22–24	41–45	26–31	30–34
Elongation at tear, standard value	%	100–150	150–220	150–250	200–250	350–400
Burst pressure 23 °C, standard value	MPa	9.8	6.5	11.8	7.5	8.9
Burst pressure 115 °C, standard value	MPa	1.7	1.5	2.7	2.6	4.1
Min. bending radius (without internal reinforcement)	mm	40	25	35	35	35
Min. bending radius (with internal reinforcement)	mm	20	20	25	20	20
Pull-off forces (pipe/firtree) NW 6, standard value	N	750	600	850	580	720
Area of Application		Air, Oil	Fuel, Air, Oil	Air, Oil Cooling water (modified)	Fuel	Fuel (ventilation)

Note: Conversion of tensile strength: : 1 MPa = 1 N/mm²; conversion of burst pressure: 1 MPa = 10 bar

Survey of sizes

NORMAFLEX® fluid systems are exclusively made to customers' requirements.

The advantages at a glance

- Ready-to-fit systems = fast, simple assembly
- Light construction units = weight reduction compared with conventional rubber/metal systems
- Different materials
- Available as mono or co-extruded tube
- Adaptable geometries
- Lines depending upon need; smooth, corrugated or partially corrugated

NORMAFLEX® – Fluid Systems

Variants

Presently we offer fluid systems to be used in the following areas of application:



NORMAFLEX® SAS

to be used in
Secondary Air Tube Systems



NORMAFLEX® CVS

to be used in
Crankcase Ventilation Tube Systems
either with or without heating



NORMAFLEX® HCS

to be used in
Hydraulic Clutch Tube Systems

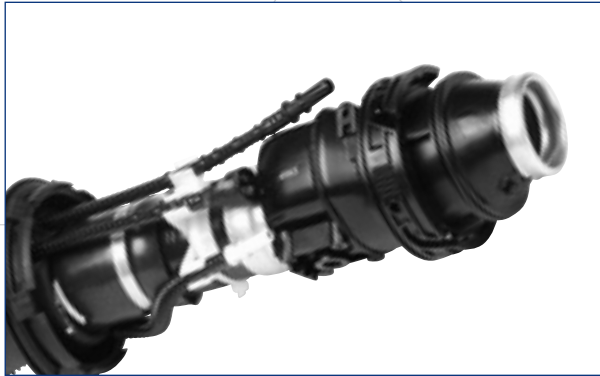


NORMAFLEX® CWS

to be used in
Cooling Water Tube Systems



NORMAFLEX® – Fluid Systems



NORMAFLEX® FTS

to be used in
Fuel Transport Tube Systems



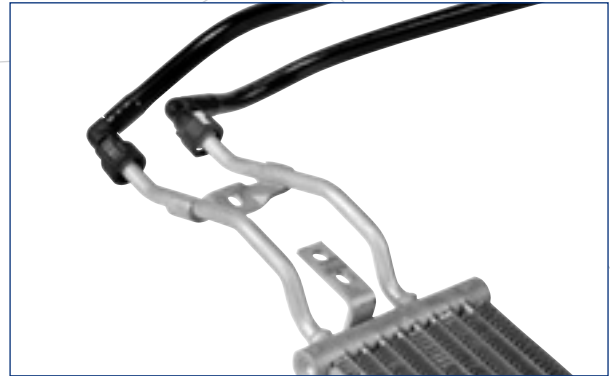
NORMAFLEX® TVS

to be used in
Tank Ventilation Tube Systems



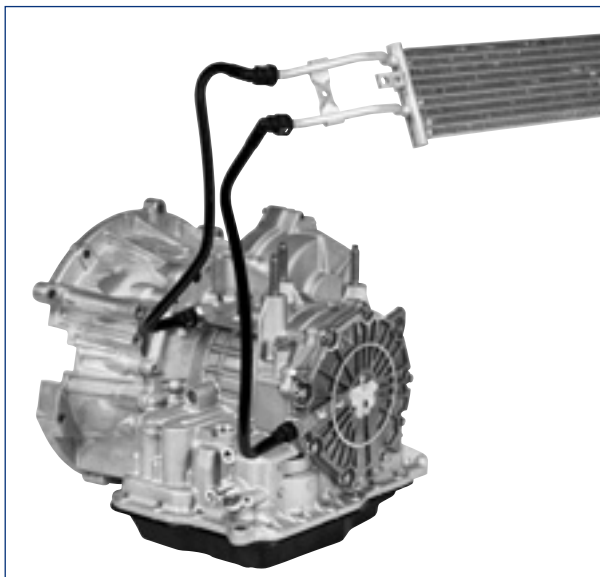
NORMAFLEX® OTS

to be used in
Oil Transport Tube Systems



NORMAFLEX® TOC

to be used in
Transmission Oil Cooler Tube Systems



NORMAFLEX® – Fluid Systems

NORMAFLEX® LET Low Emission Tube

The NORMAFLEX® LET Low Emission Tubes have been developed with the aim to produce a system component achieving significantly reduced permeation rates. As a result of our endeavours we can now offer perfectly matching tank line systems (tube – spigot – quick connector) that enable us to pave the way for the future of efficient low-emission applications.



The advantages at a glance

NORMAFLEX® LET “low emission” tubes are made without fluorthermoplastic resin

- Outstanding mechanical, physical and chemical properties
- Significant reduction in permeation
- High temperature resistance
- High compressive strength