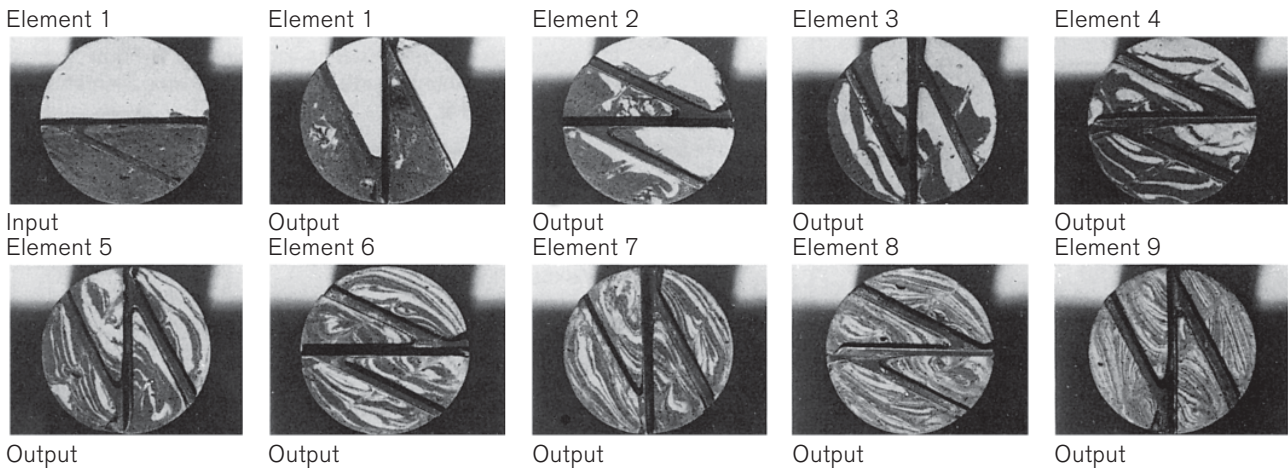


N-Form-Mixers



Static mixer with excellent cross mixing effect

The N-form mixer is a static mixer using forced flow separation and geometrically offset stream recombination to give a progressive mixing effect.



The photos show how two high-viscosity pastes with different colours attain increasing degrees of mixing as they pass through each mixer element.

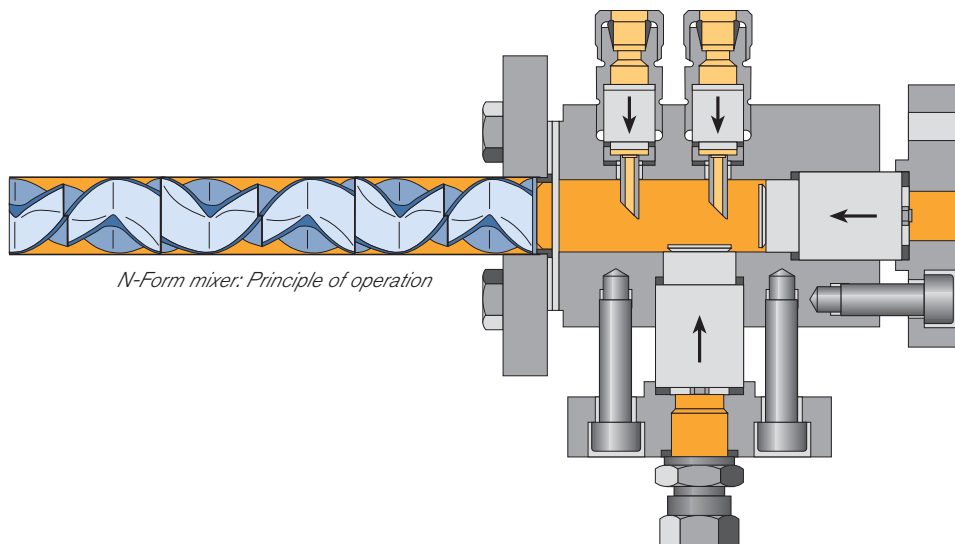
Advantages

- Excellent radial mixing
- The N-form of the mixing elements produces four separate flows which are mixed simultaneously

Combining the liquids

For optimum mixing it is important that the liquids to be mixed are combined using the correct type of fitting. A simple T-inlet is only acceptable where the flow rates of both liquids are almost the same. Where the ratio is ≥ 10 ,

such as resin/hardener in resin mixtures, an injection tube must be used to add the low-volume component, immediately before the N-form mixer, in mid-stream and in the direction of the flow.



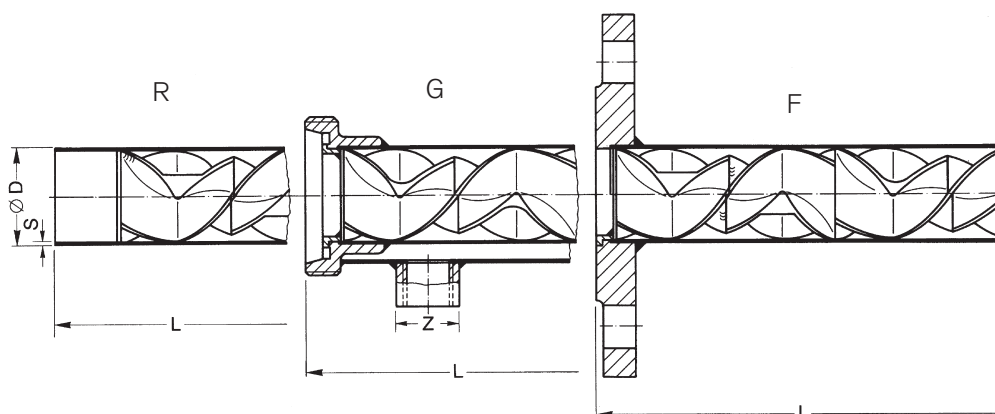
Applications

- **Plastics**
 Mixing hardeners, accelerators and colorants into resins.
 Mixing propellant and colour stock into polyol.
 Dispersing TiO₂ suspensions and acetic acid in caprolactam.
 Mixing waterglass, catalysts and water.
- **Paper and textiles**
 Continuous colour shading and dilution.
 Diluting retention media.
 Mixing glue.
 Production of paraffin emulsion.
 Continuous shading of printer's ink.
- **Food and drinks**
 Addition of fat to low-fat soft cheeses and quark.
 Colouring glucose-sugar mixtures.
 Dispersing water in crude vegetable oil.
 Mixing hop extract and sugar solution into beer.
 Mixing sugar syrup, fruit concentrates and water.
- **Cosmetics and detergents**
 Mixing surfactants, preservatives, perfume and salt solutions with water.
 Neutralizing sulphonic and fatty acids with sodium hydroxide solution.
 Diluting alkyl ether sulphate concentrates.

N-form mixers (standard specification)

Anschluss DN	Number elements	Length L (mm)			Mixing tube D x S (mm)	Heating/cooling Connection Z (mm)	Pressure loss coefficient	
		F Flange PN 16	G Thread DIN 11851	R Welding- ends			Kn	Kn'
15	6	140	148	150	18x1	R3/8"	158	7,85
	11	240	248	250			290	14,4
	16	340	348	350			422	20,9
	21	440	448	450			554	27,5
25	6	220	234	240	28x1	R3/8"	15,2	1,25
	11	385	399	405			27,8	2,30
	16	550	564	570			40,5	3,34
	21	715	729	735			53,1	4,39
40	6	310	324	340	40x1	R1/2"	2,14	0,28
	11	550	564	580			3,93	0,52
	16	790	804	820			5,71	0,76
	21	1030	1044	1060			7,50	0,99
65	6	520	536	550	70x2	R1/2"	0,18	0,04
	11	925	941	955			0,34	0,07
	16	1330	1346	1360			0,49	0,11
	21	1735	1751	1765			0,64	0,14

Standard material: 1.4571 for N-form mixers, 1.4581 for N-elements of high-grade cast stainless steel



Required mixer size

Low-viscosity liquids can be completely mixed with only a few N-elements, thanks to the simultaneous effects of flow separation and turbulence; longer mixers are ideal for medium to high-viscosity fluids with laminar flow characteristics.

Aqueous liquids	6 elements
Viscous liquids	11 – 16 elements
Liquids with viscosity differences up to about 1:1000	16 – 21 elements
Liquids with higher viscosity differences	21 or more elements

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PROCESS EQUIPMENT

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