

Static Mixers

Static mixers are continuous radial mixing devices, characterized by an effective degree of plug flow, depending on the specific design and application. They range in size from a few millimeters in diameter to units with equivalent diameters exceeding 3 meter and volumes exceeding 100 m³. Static mixers make a high degree of homogeneity in a very short length of pipe.





<u>General Usage</u>	<u>Typical Applications in Industries</u>
High degree of homogeneity in a very short length of pipe.	<ul style="list-style-type: none"> ❖ Blending catalyst, dye or additive into viscous fluid, Homogenization of polymer dope, Polystyrene polymerization and devolatilization, fast reaction and blending application including widely differing viscosity, densities and fluid with unusual properties, such as polymer in <u>chemical industry</u>. ❖ In <u>food, pharmaceutical and cosmetic industries</u> for those processing applications that require quick take-apart construction for frequent cleaning ❖ Mixing food products such as margarine and tomato pastes, viscous liquids like syrups and light fluids like juices in <u>food industry</u>. ❖ Blending grades of oil or gasoline in <u>oil and gas industry</u>. ❖ Mineral recovery by solvent extraction, slurry dilution, oxidation and bleaching, chemical addition and bleaching in <u>mineral processing</u>. ❖ Pulp bleaching, stock dilution and consistency control, PH control in <u>pulp and paper industry</u>. ❖ Dilution of solids, coloring and tinting, adhesive dispensing and heating in <u>paint and resin industry</u>.

<u>Advantages</u>	<u>Kara Sanat Static Mixers Advantages:</u>
<ul style="list-style-type: none"> ❖ No moving parts ❖ No sealing problems ❖ Useful when limited space or access ❖ Applicable for both laminar and turbulent flow regime ❖ Simple, compact and energy efficient ❖ Low capital cost, no maintenance and long service life ❖ Safe and reliable operation with Predictable homogenization 	<ul style="list-style-type: none"> ❖ Custom design ❖ Wide range of mixers blade, so almost all mixing types are included ❖ Ability to produce the mixer with different types of materials proportional to corrosive/erosive medium or environment


<u>Applicable Materials</u>
<ul style="list-style-type: none"> ❖ Stainless Steel ❖ Carbon Steel ❖ PTFE ❖ Hastelloy

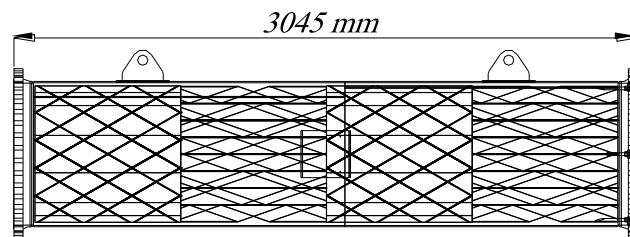
<u>Design Standards</u>	<u>Codes/</u>	<u>Quality Assurance</u>
<ul style="list-style-type: none"> ❖ ASME Sec. VIII ❖ ASME B.31.1 		

Kara Sanat Static Mixers Types:

<p><u>KMS Type:</u> Twisted ribbon or bowtie type with alternating left and right hand twists Applicable in both laminar and turbulent flow Liquid- liquid or gas in liquid dispersion when regime is turbulent</p>	
<p><u>SMX Type:</u> Guide vanes are intersecting bars at 45° to the pipe axis Applicable in both laminar and turbulent flow In laminar flow when mixing/ blending, high-low viscosity and dispersion</p>	
<p><u>SMV Type:</u> Corrugated plates running at 30 or 45° to the pipe axis Applicable in turbulent flow In liquid- liquid dispersion, gas in liquid or liquid in gas</p>	
<p><u>LPD & LLLPD Type:</u> A series of semielliptical plates discriminately positioned in a tubular housing Applicable in low and high turbulent flow LLLPD in low pressure drop</p>	

Specifications of one Type

Item	SMV Type Static Mixer		
Project	5000 MTPD Marjan Methanol Plant		
Purchaser	Namvaran Consulting Engineers Managers		
Owner	Marjan Petrochemical Company		
Fluid 1 (Natural Gas) flow rate @ 2 barg	Kg/hr	11917	
Fluid 2 (Purge Gas) flow rate @ 3.6 barg	Kg/hr	43363	
Inlet Size	in	28	
COV	-	0.02	



Previous Projects

Equipment photos / Operation photos / Applications photos