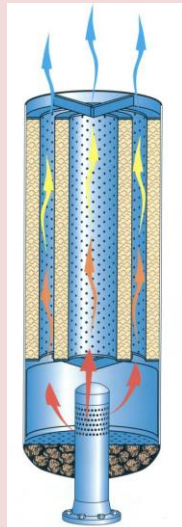


## Silencers

Silencer is a device used to reduce unwanted noise created by gas or steam flow in a pipeline. The noise produced is a combination of shock noise suddenly generated by the rapid reduction in pressure across the relief device and the noise created by the turbulent flow of gas.



### General Usage

They can reduce unwanted noise created by gas or steam flow in a pipeline discharging directly into the atmosphere (vent silencers) or discharging to another equipment or piping (inline silencers)

### Typical Applications in Industries

- ❖ High pressure vent or blow down applications
- ❖ Safety or relief valves discharge
- ❖ Compressor vents
- ❖ Boiler blow down lines
- ❖ Gas plant vents
- ❖ Product dump vents
- ❖ Turbine or compressor bypass
- ❖ Downstream of safety and control valves
- ❖ Noise control at pipes
- ❖ Hot Gases - and gasses other than air
- ❖ Heavy particulate flows
- ❖ Ejectors noise reduction
- ❖ Blow down of pipelines for cleaning purposes
- ❖ Depressurizing lines for maintenance

## Advantages

- ❖ Simple installation
- ❖ Economical
- ❖ Low maintenance cost
- ❖ Simple and compact
- ❖ No moving parts
- ❖ working with all types of gases
- ❖ Long lifetime
- ❖ Safe and reliable operation
- ❖ Manufactured from various materials

## Applicable Materials

- ❖ Carbon Steel
- ❖ Stainless Steel

## Design Codes/Standards

- ❖ ASME Sec. VIII, div. 1
- ❖ ASME B.31.1
- ❖ ASME B.31.3

## Quality Assurance

- ❖ High improved surface quality and mechanical characteristics
- ❖ Proper choice of the silencer design and raw materials and continues through ongoing production checks, guarantee a consistent high quality product
- ❖ Due to our comprehensive and thorough quality assurance program, we are able to offer reliable and durable silencers

## KARAJET Silencers

### Advantages:

- ❖ Custom design
- ❖ Superior acoustic performance
- ❖ Lighter, less space & support structure
- ❖ Noise reduction of high flow rates with high pressure and temperature
- ❖ No limit of operating pressure, temperature and flow rate
- ❖ Performance test at shop
- ❖ If required, for eliminating nozzle loads on nozzles, nozzles can be sliding nozzles or expansion joint can be used
- ❖ Unique design options, combined with the latest manufacturing techniques, ensure optimum performance and long life even under demanding conditions
- ❖ Economical
- ❖ Low maintenance cost
- ❖ All welded construction & Long life time

## KARAJET Silencer

### Types:

#### Vent Silencer

KARAJET silencers include diffusive-absorptive mechanism to reduce the noise and are useful in both inline and vent applications.

Vent silencer is a device used to reduce unwanted noise created by gas or steam flow in a pipeline discharging directly into the atmosphere. These silencers are ideally used downstream of the valve, orifice, or other noise generating system, installed directly on the valve, etc or at the stack outlet. Silencers can be furnished for either vertical or horizontal installation.



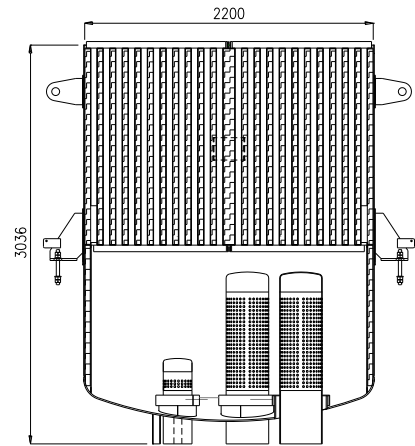
#### Inline Silencer

Inline silencer is a device used to reduce unwanted noise created by gas or steam flow in a pipeline discharging to another equipment or piping. Silencers can be furnished for either vertical or horizontal installation.



## Specifications of one Type

Item	Steam Vent Silencer					
Project	Kashan Combined Cycle Power Plant					
Purchaser	MAPNA Group					
Noise Source	Valve					
Each Valve Upstream Pressure	bara	106	109	102	100	4
Each Valve Upstream Temperature	°C	316	316	528	528	380
Total Flow Rate	kg/hr	255852				
Discharge Pressure	bara	1				



Project Name: Kashan Steam Portion of Combined Cycle Power Plant (2 Sets)

## Previous Projects

No	Purchaser	Owner	Year
1	Mapna Boiler	Kangan Ptro Refining Co. (KPRC)	2016
2	Namvaran Consulting Engineers Managers (NCE)	Marjan Petrochemical	2016
3	EIED (Energy Industries Engineering and Design)	Ilam Petrochemical	2016
4	Bushehr Petrochemical Co	Bushehr Petrochemical Co	2016
5	Bushehr Petrochemical Co	Bushehr Petrochemical Co	2016
6	EIED (Energy Industries Engineering and Design)	Bushehr Petrochemical Co	2016
7	Oil Design & Construction Co (ODCC)	Tabriz Oil Refinery	2015
8	Mapna Boiler	Behbahan CCPP	2015
9	Namvaran Consulting Engineers Managers (NCE)	Marjan Petrochemical	2015
10	Mapna Boiler	Sirjan CCPP	2015
11	Hampa Engineering Corporation	Palayesh Parsian Sepehr (PPS)	2015
12	Faradast Energy Falat Co	Persian Gulf Star Oil Co. (PGSOC)	2015
13	Mapna Boiler	Kahnooj Power Plant	2015
14	Mapna Boiler	Chador Malu Combined Cycle Power Plant	2015
15	Namvaran Consulting Engineers Managers (NCE)	Petrochemical Industries Development Management (PIDMCO)	2013
16	Pardis Petrochemical	Pardis Petrochemical	2012
17	Jam Petrochemical	Jam Petrochemical	2011
18	Namavaran Delvar Engineering and Construction (NDEC)	Pardis Petrochemical	2011
19	Petrochemical Industries Development Management (PIDMCO)	Shiraz Petrochemical	2011
20	Petro Pars Iran	National Iranian Oil Company (NIOC)	2011
21	Nardis Co.	Iran NLG	2010
22	EIED (Energy Industries Engineering and Design)	Tabriz Oil Refinery	2010
23	Oil Design & Construction Co (ODCC)	Shazand Arak Refinery	2009
24	Oil Design & Construction Co (ODCC)	Shazand Arak Refinery	2009
25	Petrochemical Industries Design and Engineering Company (PIDEC)	Abadan Oil Refinery	2009
26	Nuclear Reactors Fuel Co	Nuclear Reactors Fuel Co	2008
27	Petrochemical Industries Design and Engineering Company (PIDEC)	Bandar Abbas Oil Refinery	2008
28	Oil Design & Construction Co (ODCC)	Bandar Abbas Oil Refinery	2008
29	Petrochemical Industries Design and Engineering Company (PIDEC)	Abadan Oil Refinery	2008
30	Petrochemical Industries Design and Engineering Company (PIDEC)	Bandar Abbas Oil Refinery	2008
31	Imam Khomeini Shazand Arak Refinery	Imam Khomeini Shazand Arak Refinery	2008
32	Petrochemical Industries Design and Engineering Company (PIDEC)	Shiraz Petrochemical Co.	2007
33	Petrochemical Industries Design and Engineering Company (PIDEC)	Abadan Oil Refinery	2004
34	Shiraz Petrochemical Co.	Urea & Ammonia Unit 1	1999