

Traditional flange retires after winning merit. Our fast engaged structure has taken its place.



## High-pressure Fast Engaged Structure for Pipe Connections

The product can be applied to all kinds of connections of rubber hoses and steel pipes from various walks of life.

Innovative Design — the revolutionary forerunner of pipe fittings

- Lightweight, fast assembling, high pressure resistance
- Assembling speed is the fastest
- Pressure resistance is the highest
- Easy to resist pressure 50 kg/cm<sup>2</sup> ↑



**SENER**®



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**SENER**®

## High-pressure Fast Engaged Structure for Pipe Connections





# FLANGE

## HISTORY

In the 18th century, because of the appearance of steam engines, internal combustion engines and power pumps, the industrial structure was reshuffled. This is the so-called Industrial Revolution. Nipple-type pipeline conveying couldn't bear the flowing pressure from power pumps; thus, the revolutionary product "flange" was invented and it overcame the pressure problems. Currently, when manufacturing industries are pursuing the target "Industry 4.0", the contradiction is industrial pipeline is still using Industrial Revolution product "flange". It is well-known that pipeline allocation is related to dangerous working environments, such as wharfs, maritime engineering, tunnels, sewers and aloft work, and has to be accomplished the task safely and promptly.

Traditional flanges have irresistible defects and seriously affect work efficiency.

### The defects

#### Flanges are cumbersome

- Its diameter is too large and too heavy.
- Flanges have to be fastened with bolts, nuts and washers.

#### Assembly consumes time and manpower

- Assembly consumes equipment, machine and time.
- Assembly needs skilled technicians.
- The axial force in bolts has to equally distribute to the connection.

#### Low bearing pressure

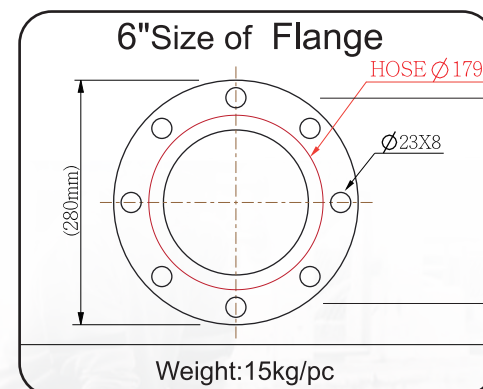
- As per the test result, 18" flange just can bear low-efficient 10 kg/cm<sup>2</sup> (JIS 10K flange is the test standard.)

#### Value is lower efficiency

- Cost-Performance ratio is low. Assembly consumes equipment, machine, time, and manpower.

#### High industrial accident ratio

- Pipeline technicians need various tools and work in abominable working environment. While connecting pipelines not only consume stamina but also leave smudges on the body technicians have to undertake the risk from the industrial accident in case they are not careful enough.



# CHAIN ENGAGED FITTING

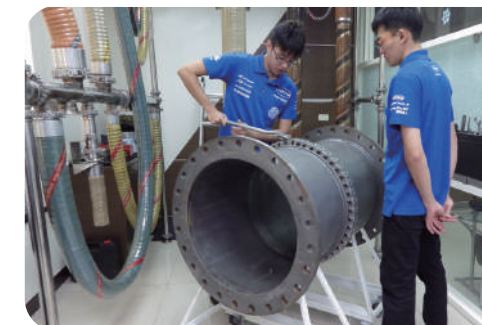
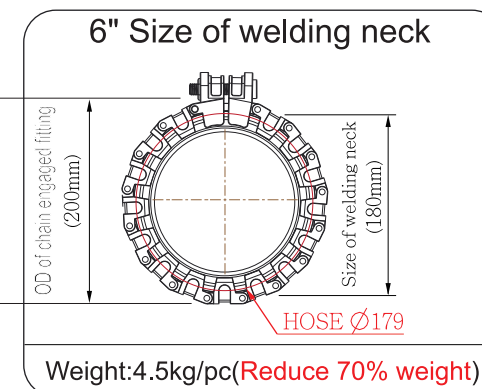
## HISTORY

The 21st century is a high-tech era. Manufacturing industry is actively pursuing the target "Industry 4.0". Pipeline industry is also actively researching and developing the replacement of flanges to solve the irresistible defects of flanges. With several years' research and development and 50 years experiences on markets, chain engaged fitting was successfully developed in 2015. In the following two years, we did countless pressure tests and tensile tests on various sizes. The product was tested at 60 kg/cm<sup>2</sup> and qualified by ITRI. Eventually, it goes on the market.

Applied Field ■ Pipeline Fittings for Hydraulic Engineering ■ Steelmaking Industry ■ Food Industry  
■ Chemical Industry ■ High-tech Industry ■ Internal Combustion Engine

Function ■ Fitting for rubber hoses ■ Welding neck for steel piped and stainless steel pipes ■ Fitting for expansion joints

Application ■ Liquid ■ Powder ■ Gas Conveying



SIZE	OD of flange (mm)	OD of chain engaged fitting (mm)	Deviation of OD (mm)
6"	280	200	80
8"	330	250	80
10"	400	300	100
12"	445	368	77
14"	490	418	72
16"	560	468	92

### Performance Superiority

#### Lightweight (compare with 6" flange)

- Welding neck is a quarter of the weight of the original flange.
- After assembly, OD is smaller 80mm than the flange. It doesn't occupy working space.

#### Assembling speed is fast

- A wrench can easily complete the assembly. Heavy machines are not needed.
- Chain engaged fitting assembly can be done within 10 seconds.
- Hex bolts engaged fitting can be done within 1 minute.

#### Bearing pressure is high

- Size 2" ~ 6" ~ 18" are tested at 60 kg/cm<sup>2</sup> and qualified by ITRI. (JIS 10K flange is the test standard.)

#### Without size limit

- The size can be customized 1" ~ 24" ~ 100" ↑
- The product is suitable for all kinds of pipe fittings instead of one-on-one pipe fittings.

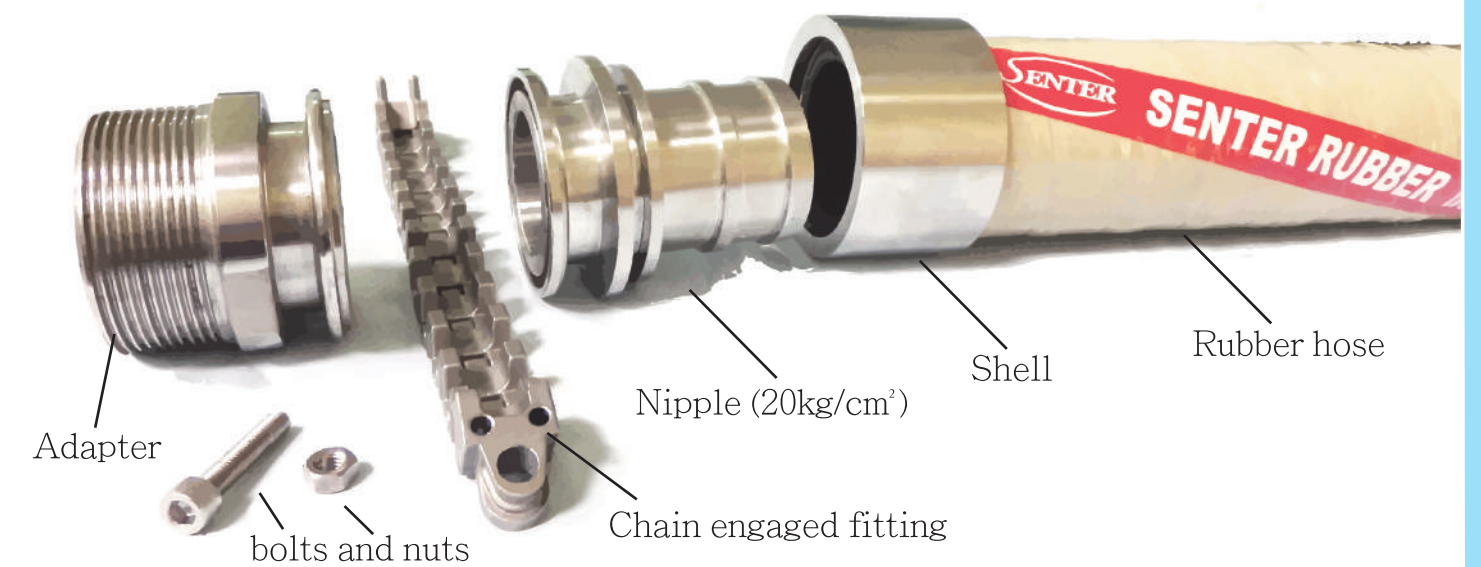
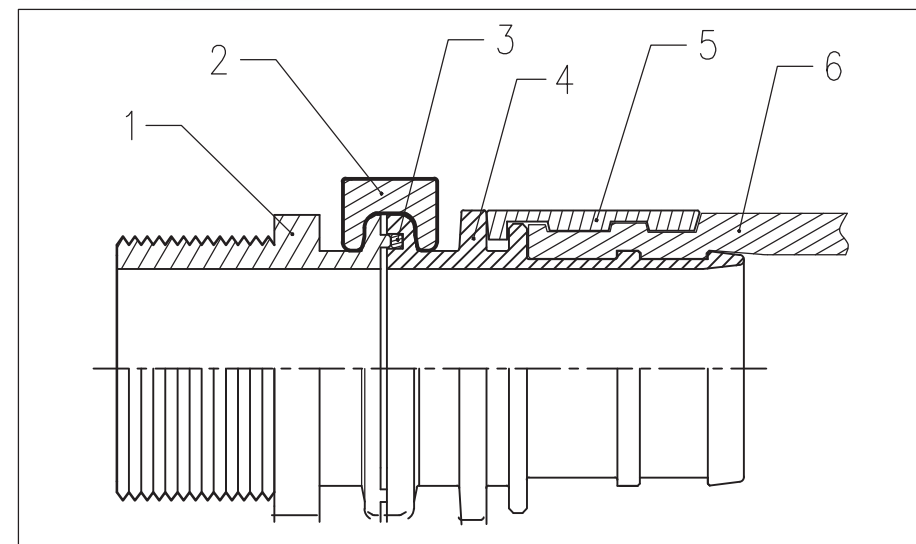
#### Reduce industrial accidents ratio lowest

- Compared with the traditional flanges, our product can save 90% working hours. It can reduce the time which expose the high-risk working environment and change the working mode. Replacing pipeline becomes relaxed, pleased and safe.

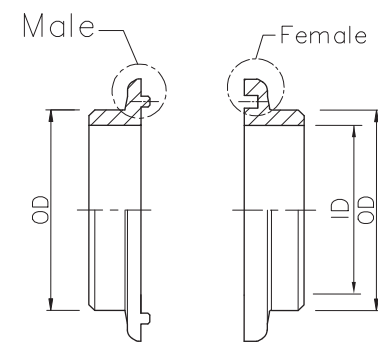


# CHAIN ENGAGED FITTING

- 1.Adapter (Male)
- 2.Chain engaged fitting
- 3.O-RING
- 4.Nipple (Female)
- 5.Shell
- 6.Rubber hose

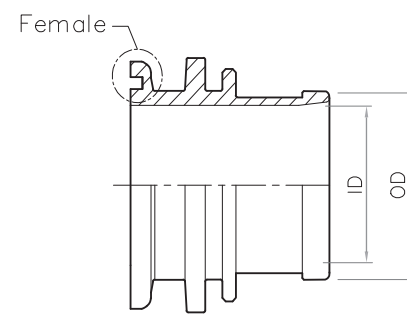


## Welding Neck



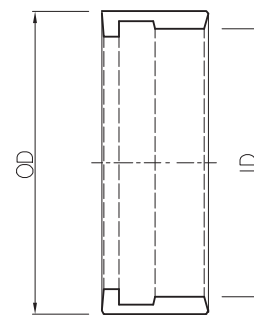
SIZE (Inch)	ID (mm)	OD (mm)
2"	41	49
3"	63	73
4"	90	102
6"	139	150
8"	187	200
10"	234	250
12"	280	300
14"	332	355
16"	382	400

## Nipple (10kg/cm<sup>2</sup>)



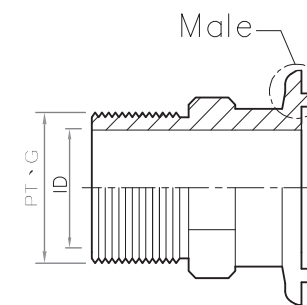
SIZE (Inch)	ID (mm)	OD (mm)
2"	44	52
3"	68	77
4"	90	101
6"	139	153
8"	187	203
10"	234	254
12"	280	300
14"	332	356
16"	382	406

## Shell



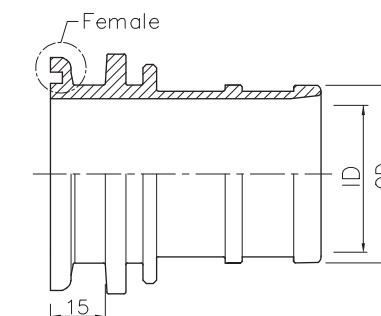
SIZE (Inch)	ID (mm)	OD (mm)
2"	69	78
3"	98	108
4"	124	138
6"	179	193
8"	239	253
10"	294	310
12"	345	361
14"	400	416
16"	457	472

## Adapter (Male)



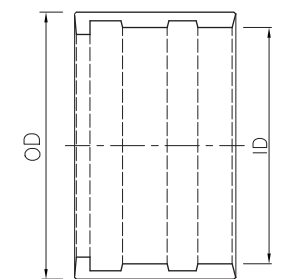
SIZE (Inch)	ID (mm)	PT, G
3/4"	15	3/4"
1"	21	1"
1-1/4"	27	1-1/4"
1-1/2"	32	1-1/2"
2"	44	2"
3"	68	3"
4"	90	4"

## Nipple (20kg/cm<sup>2</sup>)



SIZE (Inch)	ID (mm)	OD (mm)
1"	21	26
2"	44	52
3"	68	77
4"	90	103
6"	139	153
8"	187	203
10"	234	254
12"	280	300
14"	332	356
16"	382	406

## Shell

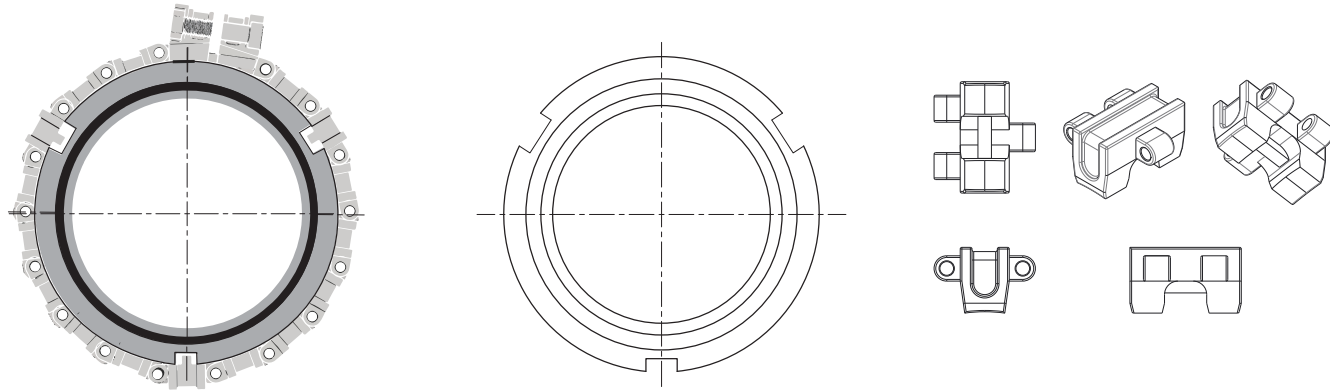


SIZE (Inch)	ID (mm)	OD (mm)
1"	40	49
2"	69	78
3"	98	108
4"	124	138
6"	179	193
8"	239	253
10"	294	310
12"	345	361
14"	400	416
16"	457	472

## CHAIN ENGAGED FITTING

# COMPANY GLORY

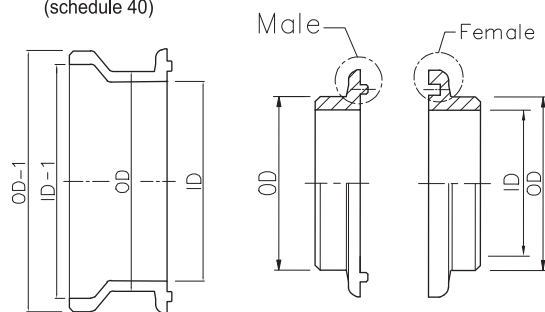
## Chain Engaged Fitting - Revolving and Pulling Preventive Design



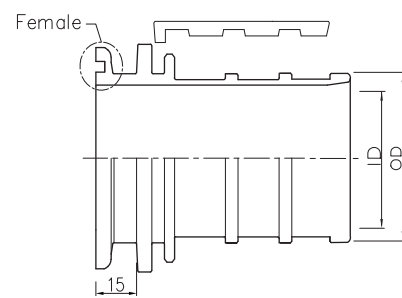
- As per the working environment, the fitting can be equipped with reinforcement parts to strengthen the structure and force and prevent revolving.

## Welding Neck Reducer

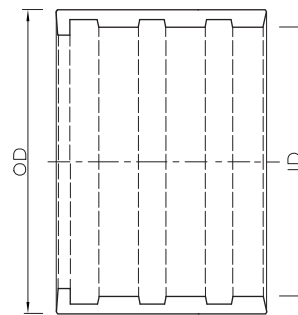
Steel pipe : 1.ANSI  
2.JIS  
(schedule 40)



**Nipple (30kg/cm<sup>2</sup>)**



# Shell

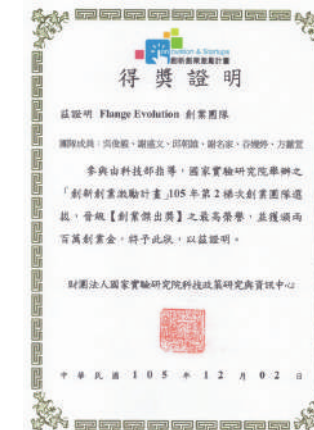


SIZE (Inch)	ID-1 (mm)	OD-1 (mm)	ID (mm)	OD (mm)
6"	154.1	168.3	139	150
8"	202.6	219	187	203
10"	254.5	273.1	234	254
12"	304.9	323.9	285	305
14"	---	---	332	356
16"	---	---	382	406
18"	---	---	433	457
20"	---	---	480	508
24"	---	---	581	609

SIZE (Inch)	ID (mm)	OD (mm)
6"	139	153
8"	187	203
10"	234	254
12"	280	300
14"	332	356
16"	382	406
18"	433	457
20"	480	506
24"	581	609

SIZE (Inch)	ID (mm)	OD (mm)
6"	179	193
8"	239	253
10"	294	310
12"	345	361
14"	400	416
16"	457	472
18"	500	516
20"	554	572
24"	659	676

# Certificate



# Patent



# Team Senter-Merida

