



**ABRAH Industries**  
Easy Repair, Fast Sealing



## Introduction

Abrah Company was founded in 2016 with a combination of former managers of water and wastewater industry and young educated engineers from the world top Universities. The target market of Abrah Co. is water and wastewater industry and therefore started its business by designing and producing new generation of repair clamps, polyethylene joints and MBBR media. Abrah Co. by consulting Water and Wastewater O&M companies, has been designing and producing these type of products with careful consideration of the typical problems during the field operation and therefore has reduced the time and energy required for the specified maintenance or installation process. Also Abrah Co. takes into account client's recommendation for design which fulfills this industry's requirement. Our state of the art design for each product needs minimum time and instruments for installation comparing to ordinary products.

Our company employs graduated students from great universities of Australia, Germany, Canada and Iran which makes Abrah Co. eligible to design, supply and manufacture water and wastewater components.

Abrah Co. plans to earn credit among the clients by producing high tech and premium quality products and attract customer satisfaction with application of new technologies to upgrade local market which can compete with foreign markets in the near future.





### Abrah Repair Clamps

Repair Clamps are mainly used for fast and easy repair of damaged pipes for water, gas and wastewater pipelines. These parts are mainly consist of a metal housing, sealant rubber and locking system. In the installation process, the sealing pressure is applied by fastening the locking bolts.

The main technical advantage of Abrah Repair Clamps comparing to the previous generation, is substituting the welding by other types of cold joints. In the previous generation repair clamps, the welding process applied a huge thermal tension in the stainless steel sheets and deformed the parts. Therefore in the installation process a huge amount of torque was needed to completely seal the damaged part. In many cases the excess applied torque lead to Bolt and Nut Fracture or Clogging, Weld Joint Failure and Pipe deformation. Abrah Repair Clamps omit the need for welding and therefore much less torque is needed to completely seal. (Approx. 50% less torque)

In addition to technical issues, the welding process is a manned process which results in higher rate of human error which results in inappropriate welded joints and higher part failure. Abrah designers have completely mechanized the production process which leads to much higher reliability and repeatability.

Also the state of the art clamping and handling method of Abrah repair clamps, has made the installation much easier than previous generation.

# ABRAH Repair Clamp

The clamps can be used to repair the following pipe types:

- ❑ Carbon Steel
- ❑ Stainless Steel
- ❑ Ductile Iron
- ❑ Polyethylene (PE)
- ❑ GRP
- ❑ Asbestos Cement (AC)
- ❑ PVC
- ❑ PE Coated Steel

### Application Areas:

- ❑ Pipe Coupling
- ❑ Repair of Broken Pipe
- ❑ Sealing Longitudinal Cracks
- ❑ Repair of Tapping Holes
- ❑ Coupling of Axial Misaligned Pipes
- ❑ Coupling of Angular Misaligned Pipes
- ❑ Sealing of Corroded Parts

### Products:

1. One-Piece Clamp
2. Two-Piece Clamp
3. Three-Piece Clamp
4. Multi-Piece Clamp

### Model Name:

ARC (No. of Pieces) – (Min Dia. Of Working Range) – (Clamp Length)

### Example:

ARC2 – 463 – 600: Two Piece Clamp with Diameter Range of 463 +20 mm and Length of 600 mm





## One Piece Clamp

Components	Materials		
Housing	AISI 304 or AISI 316	Sealant Rubber EPDM	Temp: -5 °C up to +40 °C Medium: Water, Wastewater, Air, Solids and Chemical Products
Bolts and Nuts	AISI 304 or AISI 316, Bolts coated by PTFE		
Bars	AISI 304 or AISI 316	Sealant Rubber NBR	Temp: -5 °C up to +40 °C Medium: Water, Gas, Oil, Fuel and other Hydrocarbons
Joints	Mechanical Cold Joints by Mechanized Pressing		



## Benefits of ABRAH Repair Clamps

1. Seamless Housing
2. No housing deformation and complete and easy sealing
3. Long lasting clamp
4. Fast and Easier Installation
5. Seamless Sealant Rubber
6. One time installation, no redo
7. No need to stop the water flow
8. High Quality and Reliability
9. After Sales Service and Support

### One Piece Clamp

Product Name	Typical Pipe	OD	Clamping Range	PN	Clamp Length				Torque Rate	Allen Head	Bolt Thread
					2 Bolts	3 Bolts	4 Bolts	5 Bolts			
ARC1-Dia.- Length	Type, Size, Grade	[mm]	[mm]	[bar]	[mm]	[mm]	[mm]	[mm]	[Nm]	[mm]	M...
ARC1-43-...			43-53	16 .0	200	300			35	19	12
ARC1-53-...			52-62	16 .0	200	300			35	19	12
ARC1-61-...			61-71	16 .0	200	300			35	19	12
ARC1-70-...	Steel(stainless St.) 2 1.2	73	70-81	16 .0	200	300			35	19	12
	Ductile Iron60	77									
	PE 75 , PVC 2 1.2	75									
	AC F58	77.6									
ARC1-80-...	Ductile Iron 65	82	80-90	16 .0	200	300	400		35	19	12
	PE 90	90									
	PVC 3	89									
	Steel(stainless St.)3	88.9									
ARC1-90-...	Cast Iron3 A,B,C,D	95.5	89-100	16 .0	200	300	400		35	19	12
	Ductile Iron80	98									
	AC B,D,F	95.5									
ARC1-99-...	Steel(stainless St.) 3 1.2	101.6	99-110	16 .0	200	300	400		35	19	12
	PE110	110									
ARC1-109-...	Steel(stainless St.)4	114.3	109-119	16 .0	200	300	400		35	19	12
	PVC4	114									
	Ductile Iron100	118									
ARC1-118-...	AC100 B,D,F	121.9	118-128	16 .0	200	300	400		35	19	12
	Cast Iron4 A,B,C,D	121.9									
	PE125	125									
ARC1-127-...			127-138	16 .0	200	300	400		35	19	12
ARC1-137-...	PE140 , PVC140	140	137-148	16 .0	200	300	400		35	19	12
	Steel(stainless St.)5	141.3									
	Ductile Iron125	144.3									
ARC1-147-...	Cast Iron5 A,B,C,D	149.9	147-157	16 .0	200	300	400		35	19	12
ARC1-156-...	PE160,PVC160	160	156-166	16 .0	200	300	400		35	19	12
ARC1-164-...	Steel(stainless St.)6	168.3	164-175	16 .0	200	300	400	500	35	19	12
	Ductile Iron150	170									
ARC1-174-...	Cast Iron A,B,C,D	177.3	174-185	16 .0	200	300	400	500	50	19	12
	AC B,C,D,E,F	177.3									
	PE 180	180									
ARC1-184-...		139 .0	184-194	16 .0	200	300	400	500	50	19	12
ARC1-193-...	PE200 ,PVC200	200	193-204	16 .0	200	300	400	500	50	19	12
ARC1-203-...	Cast Iron7 A,B,C,D	204.7	203-213	16 .0	200	300	400	500	50	19	12
ARC1-212-...	Steel(stainless St.)8	219.1	212-223	16 .0	200	300	400	500	50	19	12
	Ductile Iron 200	222									
ARC1-222-...	PE 225, PVC 225	225	222-232	16 .0	200	300	400	500	50	19	12
	Cast iron8 A,B,C,D	232.15									
	AC200 A,B,C,D	232.2									
ARC1-231-...		193 .0	231-242	16 .0	200	300	400	500	50	19	12
ARC1-241-...	PE250,PVC250	250	241-251	16 .0	200	300	400	500	50	19	12



## One Piece Clamp

Product Name	Typical Pipe	OD	Clamping Range	PN	Clamp Length				Torque Rate	Allen Head	Bolt Thread
					2 Bolts	3 Bolts	4 Bolts	5 Bolts			
ARC1-Dia.- Length	Type, Size, Grade	[mm]	[mm]	[bar]	[mm]	[mm]	[mm]	[mm]	[Nm]	[mm]	M...
ARC1-250-...	Cast Iron9 A,B,C,D	259.1	250-261	10.0	200	300	400	500	50	19	12
	AC 225 A,B,C,D	259.1									
ARC1-260-...			260-271	10.0	200	300	400	500	50	19	12
ARC1-270-...	Steel(stainless St.)10	273.1	270-280	10.0	200	300	400	500	50	19	12
	Ductile Iron250	274									
	PE280 ,PVC280	280									
ARC1-279-...	AC250 A,B,C,D	286	279-290	10.0	200	300	400	500	50	19	12
	Cast Iron 10 A,B,C,D	286									
ARC1-289-...		280.0	289-299	10.0		300	400	500	50	19	12
ARC1-298-...		315.0	298-308	10.0		300	400	500	50	19	12
ARC1-307-...	PE315,PVC315	315	307-318	10.0		300	400	500	50	19	12
ARC1-317-...	Steel(stainless St.)12	323.9	317-327	10.0		300	400	500	50	19	12
	GRP300	324.3									
	Ductile Iron300	326									
ARC1-326-...	Cast Iron 12 A,B	333.8	326-337	10.0		300	400	500	50	19	12
	AC300 A,B	333.8									
ARC1-336-...	Cast Iron 13 C,D	345.4	336-347	10.0		300	400	500	50	19	12
	AC300 C,D	345.4									

### Remarks:

- Any type of size and range could be produced based on customer order.
- Clamp length depends on damage type, pipe material, pressure and considering cost items and the minimum length is equal to pipe diameter.
- The minimum length of clamp for poly ethylene pipes should be 50% more than pipe diameter.
- The maximum longitudinal gap between two pipes is 10mm.
- The maximum offset is 3mm.
- The maximum angular misalignment is 2 degree.
- The clamping range is chosen by pipe outer diameter.
- Different pipe diameters are not possible.
- The repair clamp must be centered over the damaged area.
- Test pressure = 1.5\*PN
- The maximum working pressure for gas is 5 bar.

## Product Description

### 2 Pieces Clamp

Components	Materials	Sealant Rubber EPDM	Temp: -5 °C up to +40 °C Medium: Water, Wastewater, Air, Solids and Chemical Products
Housing	AISI 304 or AISI 316		
Bolts and Nuts	AISI 304 or AISI 316,Bolts coated by PTFE		
Bars	AISI 304 or AISI 316	Sealant Rubber NBR	Temp: -5 °C up to +40 °C Medium: Water, Gas, Oil, Fuel and other Hydrocarbons
Joints	Mechanical Cold Joints by Mechanized Pressing		



ABRAH Repair Clamp



2 Pieces Clamp

Product Name	Typical Pipe	OD	Clamping Range	PN	Clamp Length					Torque Rate	Allen Head	Bolt Thread
					2 Bolts	3 Bolts	4 Bolts	5 Bolts	6 Bolts			
ARC2- Dia. - Length	Type, Size, Grade	[mm]	[mm]	[bar]	[mm]	[mm]	[mm]	[mm]	[mm]	[Nm]	[mm]	M...
ARC2-104-...	Similar to 1 piece clamp ARC1 typical pipes		104-122	16 .0	200	300	400	500	600	35	19	12
ARC2-122-...			122-140	16 .0	200	300	400	500	600	35	19	12
ARC2-140-...			140-160	16 .0	200	300	400	500	600	35	19	12
ARC2-159-...			159-179	16 .0	200	300	400	500	600	35	19	12
ARC2-178-...			178-199	16 .0	200	300	400	500	600	35	19	12
ARC2-198-...			198-219	16 .0	200	300	400	500	600	35	19	12
ARC2-218-...			218-238	10 .0	200	300	400	500	600	35	19	12
ARC2-237-...			237-256	10 .0	200	300	400	500	600	35	19	12
ARC2-255-...			255-276	10 .0	200	300	400	500	600	35	19	12
ARC2-275-...			275-296	10 .0	200	300	400	500	600	35	19	12
ARC2-295-...			295-314	10 .0	200	300	400	500	600	35	19	12
ARC2-313-...			313-332	10 .0	200	300	400	500	600	35	19	12
ARC2-331-...			331-350	10 .0	200	300	400	500	600	35	19	12
ARC2-349-...	PE 355	355	349-370	6 .0		300	400	500	600	50	19	12
	Steel(stainless St.)14	355.6										
ARC2-369-...	GRP350	376.1	369-388	6 .0		300	400	500	600	50	19	12
	Ductile Iron 350	378										
	Cast Iron 14 A,B	386.6										
ARC2-387-...	Cast Iron 14 C,D	399.3	387-408	6 .0			400	500	600	50	19	12
	PE 400	400										
	Steel(stainless St.)16	406.4										
ARC2-407-...	AC375 A,B	413	407-426	6 .0			400	500	600	50	19	12
	Cast Iron 15 A,B	413										
	AC 375 C	426.2										
	Cast Iron 15 C,D	426.2										
ARC2-425-...	GRP 400	427.1	425-446	6 .0			400	500	600	50	19	12
	Ductile Iron 400	429										
	Cast Iron 16 A,B	439.4										
ARC2-445-...	PE 450	450	445-464	6 .0			400	500	600	50	19	12
	Cast Iron 16 C,D	453.1										
	Steel(stainless St.)18	457										
ARC2-463-...	GRP 450	475.3	463-484	6 .0			400	500	600	50	19	12
	Ductile Iron 450	480										
ARC2-483-...	AC450 A,B	492.2	483-502	6 .0			400	500	600	50	19	12
	Cast Iron 18 A,B	492.2										
	PE 500	500										
ARC2-501-...	Cast Iron 18 C,D	507	501-522	6 .0			400	500	600	50	19	12
	AC450 C	507										
	Steel(stainless St.)20	508										
ARC2-521-...	GRP 500	530.1	521-542	6 .0			400	500	600	50	19	12
	Ductile Iron 500	532										

2 Pieces Clamp

Product Name	Typical Pipe	OD	Clamping Range	PN	Clamp Length					Torque Rate	Allen Head	Bolt Thread
					2 Bolts	3 Bolts	4 Bolts	5 Bolts	6 Bolts			
ARC2- Dia. - Length	Type, Size, Grade	[mm]	[mm]	[bar]	[mm]	[mm]	[mm]	[mm]	[mm]	[Nm]	[mm]	M...
ARC2-541-...	Cast Iron 20 A,B	545.1	541-560	6 .0			400	500	600	50	19	12
	Steel(stainless St.)22	559										
	PE 560	560										
	Cast Iron 20 C,D	560.3										
ARC2-559-...	AC 525 A,B	571.5	559-580	6 .0			400	500	600	50	19	12
	Cast Iron 21 A,B	571.5										
ARC2-579-...	Cast Iron 21 C,D	587.2	579-598	6 .0			400	500	600	50	19	12
	AC 525 C	587.2										
ARC2-597-...	Steel(stainless St.)24	610	597-616	6 .0			400	500	600	50	19	12
	GRP 26 S600	616.8										
ARC2-615-...	PE 630	630	615-636	6 .0			400	500	600	50	19	12
	GRP 600	633.1										
	Ductile Iron 600	635										
ARC2-635-...	AC 600 A,B	650.2	635-654	6 .0			400	500	600	50	19	12
	Cast Iron 24 A,B	650.2										
ARC2-653-...	Steel(stainless St.)26	660	653-674	6 .0			400	500	600	50	19	12
	AC 600 C	667										
	Cast Iron 24 C,D	667										
ARC2-673-...			673-694	6 .0			400	500	600	50	19	12

2 Pieces Clamp



## User Manual

### Remarks:

- Any type of size and range could be produced based on customer order.
- Clamp length depends on damage type, pipe material, pressure and considering cost items and the minimum length is equal to pipe diameter.
- The minimum length of clamp for poly ethylene pipes should be 50% more than pipe diameter.
- The maximum longitudinal gap between two pipes is 10mm.
- The maximum offset is 3mm.
- The maximum angular misalignment is 2 degree.
- The clamping range is chosen by pipe outer diameter.
- Different pipe diameters are not possible.
- The repair clamp must be centered over the damaged area.
- Test pressure = 1.5\*PN
- The maximum working pressure for gas is 5 bar.

### 3 Pieces Clamp:

Components	Materials		
Housing	AISI 304 or AISI 316	Sealant Rubber EPDM	Temp: -5 °C up to +40 °C Medium: Water, Wastewater, Air, Solids and Chemical Products
Bolts and Nuts	AISI 304 or AISI 316, Bolts coated by PTFE		
Bars	AISI 304 or AISI 316	Sealant Rubber NBR	Temp: -5 °C up to +40 °C Medium: Water, Gas, Oil, Fuel and other Hydrocarbons
Joints	Mechanical Cold Joints by Mechanized Pressing		

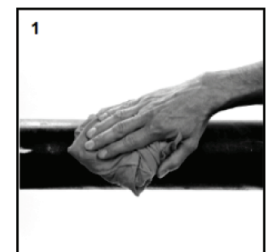
Designed to repair the pipes with OD of more than 700 mm. Please contact Abrah Co. for size and ranges.

# 3 Pieces Clamp

## راهنمای نصب User Manual

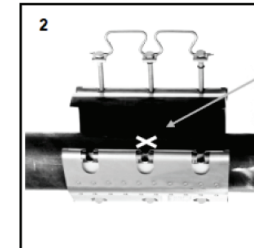
آماده سازی و نصب کلمپ دو فکی

Preparation and Fitting  
Instruction of Two-Piece  
Clamp



سطح لوله را تمیز کنید. اطمینان حاصل شود که هیچ آلودگی، غیر پیوستگی رنگ و یا پوشش نا مناسب روی حلقه تحت آب بندی نباشد. قطر بیرونی لوله با محدوده کاری چک شود.

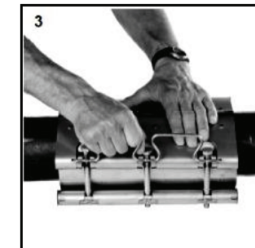
Clean the pipe surface. Ensure that no dirt, non-adhering paint or bad coatings are under the sealing ring. Compare the outer pipe diameter with the chucking capacity.



کلمپ را ببندید و ۹۰ درجه بچرخانید. قسمت لاستیکی باید به حالت

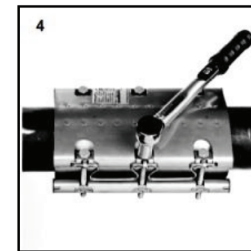
تخت روی لوله قرار بگیرد. توجه: هیچگاه پیچ ها را بطور کامل باز نکنید.

Open the clamp, centre above the damaged position and wrap 90° around the pipe shifted to the lock parts. The seal must lie flat on the pipe. Attention: Never remove the screws completely!



پیچها را به طرف دیگر قلاب کنید. بطور یکسان و مداوم پیچها را ببندید.

Hang in the stopper. Alternately and uniformly tighten the Bolts



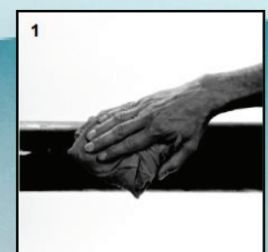
پیچها را تا گشتاور مورد نظر محکم کنید. (برای گشتاور مورد نظر به جدول مراجعه کنید) توجه: هیچگاه پیچها را بیش از حد گشتاور تعیین شده محکم نکنید.

Tighten the locking bolts with a torque wrench to the specified torque (see name plate)

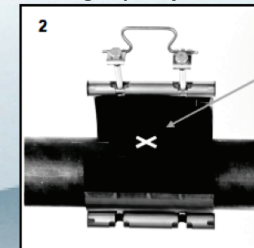
Attention: Never tighten the locking bolt beyond the specified torque.

آماده سازی و نصب کلمپ یک فکی

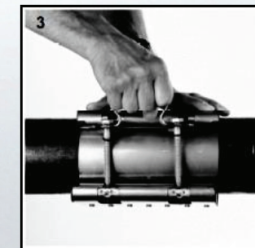
Preparation and Fitting  
Instruction of One-Piece  
Clamp



adhering paint or bad coatings are under the sealing ring. Compare the outer pipe diameter with the chucking capacity

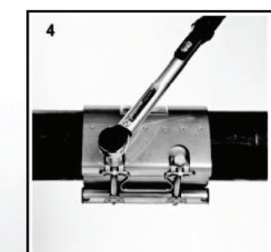


remove the screws completely.



سطح لوله را تمیز کنید. اطمینان حاصل شود که هیچ آلودگی، غیر پیوستگی رنگ و یا پوشش نا مناسب روی حلقه تحت آب بندی نباشد. قطر بیرونی لوله با محدوده کاری چک شود.

Hang in the stopper. Alternately and uniformly tighten the bolts.



بالای محل آسیب دیده قرار دهید. کلمپ را ببندید و ۱۲۰ درجه بچرخانید. قسمت لاستیکی باید به حالت تخت روی لوله قرار بگیرد. (توجه: هیچگاه پیچ ها را بطور کامل باز نکنید.)

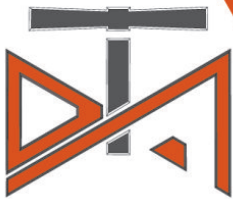
Tighten the locking bolts with a torque wrench to the specified torque (see name plate). Attention: Never tighten the locking bolt beyond the specified torque.

سطح لوله را تمیز کنید. اطمینان حاصل شود که هیچ آلودگی، غیر پیوستگی رنگ و یا پوشش نا مناسب روی حلقه تحت آب بندی نباشد. قطر بیرونی لوله با محدوده کاری چک شود.

Clean the pipe surface. Ensure that no dirt, non-



Product Label




MADE IN IRAN

ABRAH Repair Clamp

See Assembly Instructions

Use Torque Wrench

  
2305300

2 Pieces Clamp	OD Range	Perimeter Range	length	Typical Pipe
ARC2	305-325 mm	958-1021 mm	300 mm	St.300-DI300-PE315

Gasket: EPDM

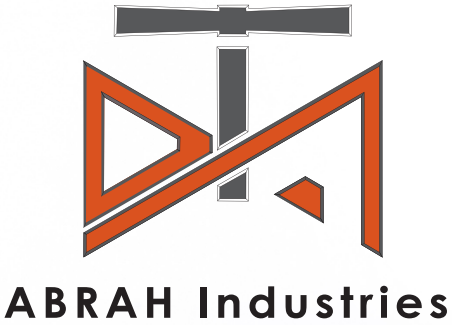
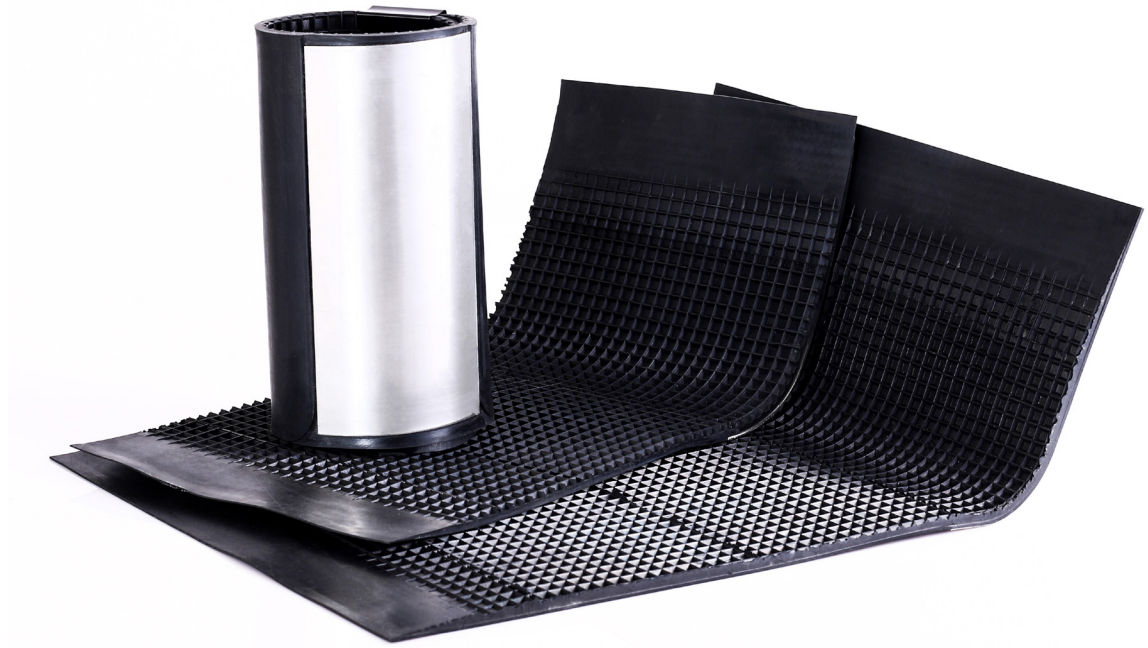
PN: 10 bar

AISI 304

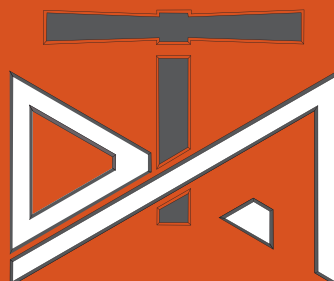
Torque = 60 N.m

EPDM Gasket

ABRAH design team has optimized the geometry of the sealing gasket to maximize the sealing possibility and minimize the fastening torque. The key to achieve this is the state-of-the-art optimization of rubber deformation in the contact point with pipe.







**ABRAH Industries**



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