TECHNICAL DATASHEET

ANGLE-PAD RIGID COUPLING | GKA

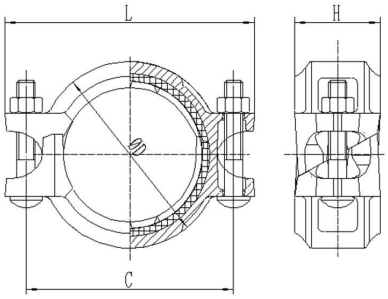
Size range: 1" - 16"

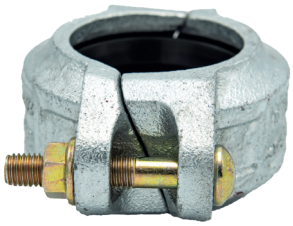
FM APPROVED

UL

CNBOP-PIB

EAC





Angle-pad couplings provide a full rigid connection of grooved pipes and / or grooved fittings.
The coupling has been designed to achieve angular and axial stiffness by firmly clamping in the groove base.
Small internal dents give an anti-torsional resistance and the angled bolt-pads guarantee rigidity under all pipe and groove conditions.

Reference		Nominal size		Pipe Ø O.D.	Rigid coupling dimensions				Bolt size	Socket wrench	Torque	Weight	Marking
Red	Galva	NPS inch	DN mm	mm	ØD mm	L mm	H mm	C mm	d1xL	mm	Nm	kg	
GKAR1	GKAG1	1	25	33,7	56,0	96,0	47	74	M10x50	15	44-54	0,55	GKA
GKAR11/4	GKAG11/4	1¼	32	42,4	64,0	106,0	47	83	M10x60	15	44-54	0,61	GKA
GKAR11/2	GKAG11/2	1½	40	48,3	69,0	113,0	47	90	M10x60	15	44-54	0,64	GKA
GKAR2	GKAG2	2	50	60,3	88,0	122,0	47	100	M10x60	15	44-54	0,78	GKA
GKAR73	GKAG73	2½	65	73,0	100,0	137,0	47	114	M10x70	15	44-54	0,88	GKA
GKAR21/2	GKAG21/2	2½	65	76,1	100,0	137,0	47	114	M10x70	15	44-54	0,88	GKA
GKAR3	GKAG3	3	80	88,9	116,0	154,0	47	130	M10x70	15	44-54	1,02	GKA
GKAR4	GKAG4	4	100	114,3	142,0	188,0	52	162	M12x75	18	90-100	1,37	GKA
GKAR5	GKAG5	5	125	139,7	170,0	219,0	52	191	M12x80	18	90-100	1,88	GKA
GKAR141	GKAG141	5	125	141,3	171,0	219,0	52	191	M12x80	18	90-100	2,15	GKA
GKAR165	GKAG165	6	150	165,1	199,0	244,0	52	217	M12x80	18	90-100	2,48	GKA
GKAR6	GKAG6	6	150	168,3	199,0	246,0	52	218	M12x80	18	90-100	2,22	GKA
GKAR8	GKAG8	8	200	219,1	262,0	322,0	66	287	M16x120	24	200-230	4,42	GKA
GKAR10	GKAG10	10	250	273,0	325,0	400,0	66	354	M20x170	30	270-300	8,00	GKA
GKAR12	GKAG12	12	300	323,9	376,0	468,0	67	412	M22x185	34	370-410	11,05	GKA
GKAR14	GKAG14	14	350	356,0	-	-	-	-	-	-	-	14,50	GKA*
GKAR16	GKAG16	16	400	406,4	460,0	550,0	75	497	M22x190	32	270-300	15,50	GKA*

* No FM-approval.

Function

Mechanical couplings are applied to make a safe, fast and reliable connection between grooved pipes and / or fittings. GKA is an angle pad type of coupling and does not allows for any pipe movements when under pressure and in service. The angle pad system results in smooth installation and lower sensitivity to pipe & groove deviations, guaranteeing optimal rigidity under all circumstances. Please read our installation instructions for carefree application.

Material specifications

Housing: ductile iron conform to ASTM A536 GR 65-45-12 (EN-GJS-450-10).

Coating:

- Hot dip galvanised.
- Red paint coating RAL 3000, EPD epoxy coating (any other colour on request).

Bolts and nuts: medium carbon steel, zinc electroplated, quenched and tempered (ISO 898).

Rubber gasket:

1. EPDM gaskets dispose of the international certifications and have undergone the aging test at 110°C / 230°F for a period of 45 days / 1080 hours and the freezing test at -40°C / -40°F for a period of 4 days / 96 hours.
2. NBR gaskets for special applications (see table).

Gasket compound grade	Temperature range (°C)	MEDIUM						
		Cold water	Hot water	Air (oil-free)	Nitrogen	Glycol/ water mixtures	Air (with oil vapor)	Hydrocarbons
NBR-TL	-29°C / +83°C				✔		✔	✔
NBR-TL	-29°C / +63°C	✔	✔	✔				
NBR-TL	-29°C / +20°C					✔		

Applications

- Wet & dry fire sprinkler pipe systems approved by FM & UL (B)
- Suitable for deluge and pre-action systems (C)
- Glycol / water mixed systems
- Compressed air systems
- Exhaust systems
- HVAC
- Heating systems
- Industrial applications
- Drain pipe systems
- Cooling systems

Working pressure

- Cold water sprinkler applications: 20,7 bar / 2068 kPa / 300 psi
- Other media & applications: we refer to CSTB ATT-21/034_V1 table page 9*
- Vacuüm-resistance (all applications & media except from gas group 1): -0,55 barg (+0,45 bara)**

*Mechanical couplings are not CE-marked. We recommend the use within SEP category of the PED
**GKA couplings have been leak-tested up to -0,85 barg (0,15 bara) according to FM standard 1920
***All tests have been carried out with standard EPDM-gaskets.

Approvals***

- Sprinkler-specific:

FM APPROVED
FM standard
1920

UL 213

CNBOP-PIB

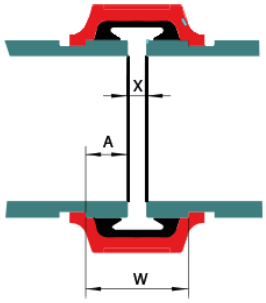
EN10311
(CPR305/2011)

- Other qualifications:

CSTB
ATT 21/034

Becetel

- Rubbercompound tested by Kiwa according to EN 681-1/WC/WD.
- Cstb: test comprise 1000 hours leak-free service at 110°C.
- Becetel: test comprise vacuum tests and glycol / water mixture pressure tests.



Reference		Nominal size		Pipe Ø O.D.	W	A mm			Max. axial displacement X mm		Max. end load N
Red	Galva	NPS inch	DN mm	mm	mm	basic	max.	min.	max.	min.	
GKAR1	GKAG1	1	25	33,7	34	15,9	16,6	15,1	1,6	0	1800
GKAR1¼	GKAG1¼	1¼	32	42,4	34	15,9	16,6	15,1	1,6	0	2920
GKAR1½	GKAG1½	1½	40	48,3	34	15,9	16,6	15,1	1,6	0	3790
GKAR2	GKAG2	2	50	60,3	35	15,9	16,6	15,1	1,6	0	5910
GKAR73	GKAG73	2½	65	73,0	35	15,9	16,6	15,1	1,6	0	8640
GKAR2½	GKAG2½	2½	65	76,1	35	15,9	16,6	15,1	1,6	0	9410
GKAR3	GKAG3	3	80	88,9	35	15,9	16,6	15,1	1,6	0	12840
GKAR4	GKAG4	4	100	114,3	36	15,9	16,6	15,1	4,1	0	21220
GKAR5	GKAG5	5	125	139,7	37	15,9	16,6	15,1	4,1	0	31700
GKAR141	GKAG141	5	125	141,3	37	15,9	16,6	15,1	4,1	0	32430
GKAR165	GKAG165	6	150	165,1	38	15,9	16,6	15,1	4,1	0	44131
GKAR6	GKAG6	6	150	168,3	38	15,9	16,6	15,1	4,1	0	46000
GKAR8	GKAG8	8	200	219,1	44	19,1	19,8	18,3	4,1	0	77970
GKAR10	GKAG10	10	250	273,0	47	19,1	19,8	18,3	4,1	0	121050
GKAR12	GKAG12	12	300	323,9	48	19,1	19,8	18,3	4,1	0	170390
GKAR14	GKAG14	14	350	356,0	-	23,8	24,2	29,0	4,1	0	198530
GKAR16	GKAG16	16	400	406,4	-	23,8	24,2	29,0	4,1	0	259300

THE ACTUAL GAP BETWEEN PIPES MAY CHANGE ACCORDING TO THE ACTUAL CUT AND ROLL GROOVE

***All tests have been carried out with standard EPDM-gaskets.

MINIMUM PIPE WALL THICKNESS - CARBON STEEL PIPES

Allowable minimum pipe wall thickness combinations with PROFIT - couplings GKA and rolled grooves.

Nominal pipe size		Minimum thickness T* (Not FM approved) MWP = 20,7 Barg	Minimum thickness T** MWP = 20,7 Barg	Minimum thickness T*** Only combined with FM-approved pipes	
NPS	DN	mm	mm	Thickness (mm)	MWP (Barg)
1	25	2,3	2,77	-	-
1¼	32	2,6	2,77	-	-
1½	40	2,6	2,77	2,1	20,7
2	50	2,9	2,77	2,1	20,7
2½	65	2,9	3,05	-	-
3	80	3,2	3,05	2,4	20,7
4	100	3,6	3,05	2,5	20,7
5	125	4	3,40	-	-
6	150	4,5	3,40	-	-
8	200	6,3	4,00	-	-
10	250	6,3	5,00	-	-
12	300	7,1	6,70	-	-

T* Pipe dimensions according ISO 4200/E.
T** For FM-application when couplings are combined with pipes with wall thickness equal or bigger than the minimum thickness according to FM Property Loss Prevention datasheet 2-0.
T*** For FM-application only when combination of coupling and pipe are FM-listed.
MWP = maximum working pressure.

For installations within Europe (EC) please note that the minimum pipe thickness in fire sprinkler piping should be according to standard EN 12845.

GENERAL INFO

- Installers should be trained or experienced to install and understand the product.
- Read and understand all technical datasheets and installation instructions before attempting to install, remove or adjust any Profit piping products.
- Depressurise and drain the sprinkler installation system before attempting to install, remove or adjust any Profit piping products.
- Never work on piping-systems that are pressurised and / or filled with water.
- Use the necessary Personal Protection Equipment (PPE) to avoid personal injury (helmet, safety shoes and goggles, Profit gloves).

- Profit reserves the right to change specifications, designs and / or standard equipment without notice and without incurring in any obligations.
- Profit red coated products are intended for piping with indoor application (EN 12944-2 corrosivity category C1 & C2). For outdoor installations near the sea (corrosivity category C3) we advise the use of our hot dip galvanised couplings and fittings. For application in corrosivity category C4 (higher salinity climate) or higher, please contact info@pipinglogistics.eu.
- Pressure ratings listed for fire sprinkler applications are CWP (cold working pressure) or MWP (maximum working pressure) at a maximum service temperature of 66°C. This rating may occasionally differ from maximum working pressure listed and/or approved by UL and / or FM, as testing conditions and test pipes can differ. For more information, please contact info@pipinglogistics.eu.
- Maximum working pressure listed is the total of internal and external pressures based on standard weight (ANSI) steel pipe and standard roll or cut groove in accordance with Profit specifications. For more information, please contact info@pipinglogistics.eu.
- For one time field test only, the maximum joint working pressure may be increased by 150% the figure shown.
- Independent technical datasheet for bolts and nuts and rubber gaskets.

Failure to follow these instructions could result in death or serious injury and property damage.

We advise to always store our products in closed and dry environments, the products do not need any specific maintenance once installed on an aboveground sprinkler installation.

REVISION TABLE

Date	△	Notes
14/03/2024	A	Page 3 - The Maximum end load of the GKAR141/GKAG141 has been corrected.
10/04/2024	B	Page 2 - 'approved by FM & UL' has been added.
03/05/2024	C	Page 2 - 'Suitable for deluge and pre-action systems' has been added.
26/06/2024	D	Page 3 - Addition of the CE certificate.