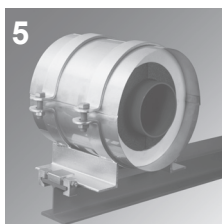
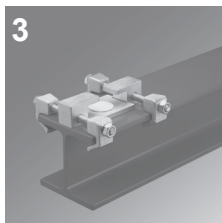
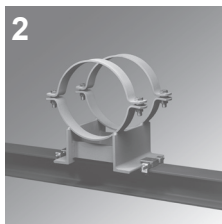
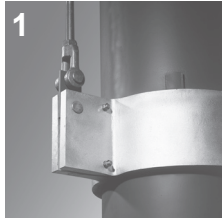




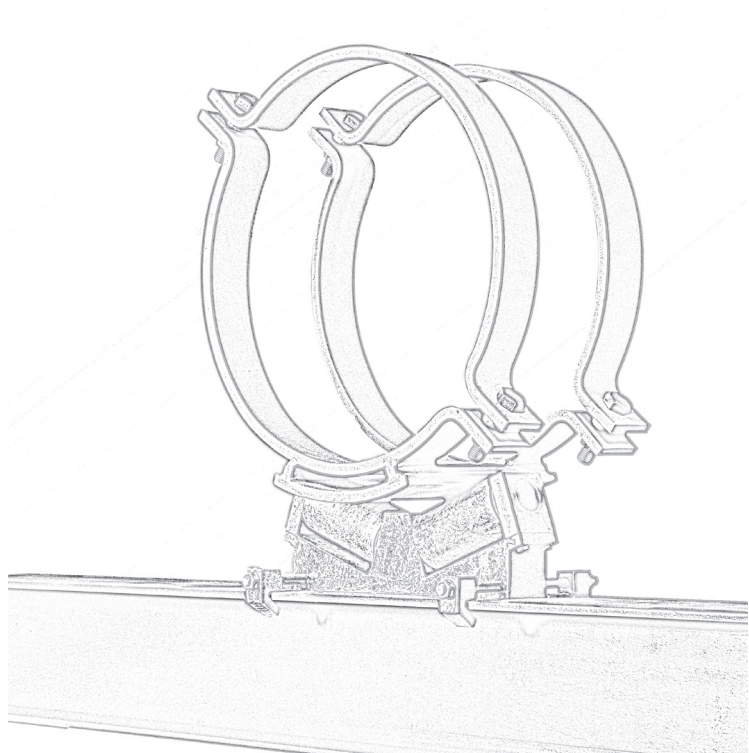
Bernecker

Rohrbefestigungstechnik GmbH



Roller bearings

Catalogue 4
english





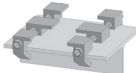

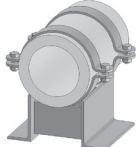
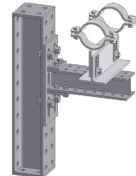
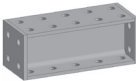
Overview	catalogue no.	
	Pipe clamps, ancillary equipment	1
	Sliding supports	2
	Clamp systems	3
	Roller bearings	4
	Pre-insulated pipe supports	5
	ModularSystems / ModularSupport	6
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	ModularSteel 80	8

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	Article name	Type	Size	Support load kN	Page
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	Roller support with guide	REF	80 - 200	15 - 100	7
	Roller support with lift-off prevention	REA	80 - 200	15 - 100	8
	Dual roller support without guide	RDU	240 - 320	25 - 50	9
	Dual roller support with guide	RDF	240 - 320	25 - 50	9
	Dual Cylinder Roller Support, with lift-off prevention	RDA	240 - 320	25 - 50	9
	Taper Roller Support	RKP / RKS	DN 100 - DN 450	4 - 15 / 8 - 35 /	10
	Dual Cylinder Roller Support	RSU	DN 125 - DN 1200	8 - 120	11
	Dual Cylinder Roller Support with lift-off prevention	RSA	DN 125 - DN 1200	8 - 120	12
	Lift-off prevention for Dual Cylinder Roller Support	AH	RSA 015 - RSA 100		13
	Dual Cylinder Roller Support with lateral movement	RSU/V	DN 200 - DN 1200	15 - 100	14
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	Clamp System for Roller Supports	PKR	M12, M16, M20		17
Delivery services / Technical information					18

Information about the Pipe Support Modular System

1. Definitions

The **running resistance** of a roller support is made up of the following components:

Elastic rolling friction
(roll resistance)

This friction is caused by the elastic deformation of the roller and the sliding bearing on it. The constant f is the lever arm of the rolling friction and can be taken from the standard tables.

Sliding friction (sliding resistance)

This friction is a function of the load (F) and the friction factor (μ respectively μ_0 .)

The **co-efficient of friction** (μ_{ges} or K) is calculated from the **rolling friction** and the **sliding friction** and allowing for the transmission ratio ('stepping up or stepping down').

$$\mu_{ges} = 2 * f / d_{Rolle} + \mu * d_{Achse} / d_{Rolle}$$

The **running resistance** (F_w) of a roller support can be calculated with "Coulomb's Law of Friction" as a function of the **bearing force** (F_A) and the co-efficient of friction

$$F_w = F_A * \mu_{ges}$$

2. Technical Data

Material:

Roller:
S235JR / S355JO
(hot-dip galvanized)

Body:
S235JR
(hot-dip galvanized)

Pin:
1.4571 polished

Bearing bushes:
composite bearing made
of sintered bronze / PTFE

We use sliding bushes which are high strength and have excellent emergency running characteristics as well as a favorable co-efficient of friction.
(μ respectively μ_0 .)

3. Characteristic values of the Roller Support Modular System

Coefficient of friction
 $\mu_{ges} = 0,025 - 0,04$

Support loads
8 - 200 kN

Support diameter
DN 200 - DN 1200

4. References

Our wealth of experience and know-how makes us a competent partner for all your projects.

Installations where our roller supports have been installed include:

Power Plants
Chemical Plants
District heating
Tunnel construction
Waste incineration

Our extensive range of roller pipe supports has been further developed, expanded and updated. The main features of the current products can be summarised as follows:

The components are standardised and simplified and are therefore economical to produce.

The roller and pipe supports in our MODULAR SYSTEM are designed to complement one another perfectly.

Our roller supports can now be attached to beams with our beam clamp systems - no drilling or welding is necessary.

Taper roller supports and roller supports with lateral movement can also be fitted safely with our clamp systems.

We have calculated the loads and verified them in tests.

The use of stainless steel roller pins and maintenance-free bushes guarantees low roll resistance.

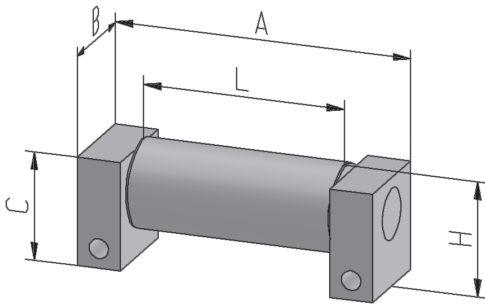
The robust design provides safe working loads of up to 200 kN. Dual cylinder roller supports can take lateral forces of up to **35 %** of the support load.

Our roller supports are hot-dip galvanized to provide optimal protection against corrosion.

We have been supplying pipe fixings to all sectors of industry for over 30 years.

Sophisticated production techniques, a modern fleet of machinery, a highly skilled workforce and a well-established quality management system have all contributed to achieving our high current levels of quality.

- Our MODULAR SYSTEM offers users of pipe fixings a range of substantial benefits of both a technical and commercial nature.
- We can also supply special pipe support equipment for applications requiring special solutions, either as modifications to existing products by using different materials, as non-standard sizes or as custom fabrications.
- Our user-friendly product literature provides easy reference tables that give all the details needed about loads, weights and dimensions.
- Our comprehensive stocks of components and finished parts enable us to maintain high levels of service and supply.



Roller Supports, Type REU without guide

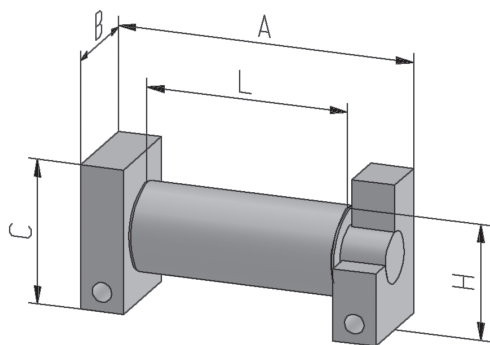
Material:	Roller: S235 ; pin: 1.4571 ; sheeks: S235JR
	Bearing bush: composite bearing made of sintered bronze / PTFE for dry running in difficult conditions
Finish:	Steel parts hot-dip galvanized

[illegible]

Ordering example: REU-100/50-F

- Steel parts hot-dip galvanized
- Support load 50 kN
- Roller length: 100 mm
- Roller support Type REU, without guide

Notes: Mounting of the roller bearings on steel constructions with profile clamps type PKR, see page 17



Roller Supports, Type REF with guide

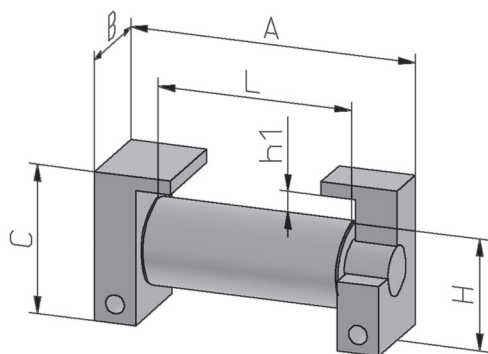
Material:	Roller: S235 ; pin: 1.4571 ; sheeks: S235JR
	Bearing bush: composite bearing made of sintered bronze / PTFE for dry running in difficult conditions
Finish:	Steel parts hot-dip galvanized

[illegible]

Ordering example: REF-100/50-F

- Steel parts hot-dip galvanized
- Support load 50 kN
- Roller length: 100 mm
- Roller support Type REF, with guide

Notes: Mounting of the roller bearings on steel constructions with profile clamps type PKR, see page 17



Roller Supports, Type REA with lift-off prevention

Restraint against lift-off = 20% of F_z

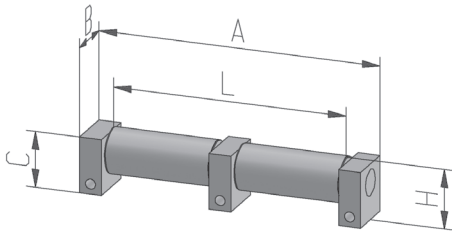
Material:	Roller: S235 ; pin: 1.4571 ; sheeks: S235JR
	Bearing bush: composite bearing made of sintered bronze / PTFE for dry running in difficult conditions
Finish:	Steel parts hot-dip galvanized

[illegible]

Ordering example: REA-100/50-F

- Steel parts hot-dip galvanized
- Support load 50 kN
- Roller length: 100 mm
- Roller support Type REA, with lift-off prevention

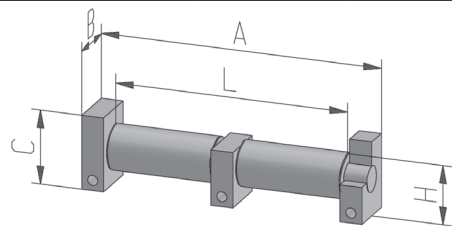
Notes: Mounting of the roller bearings on steel constructions with profile clamps type PKR, see page 17



Roller Supports, Type RDU without guide

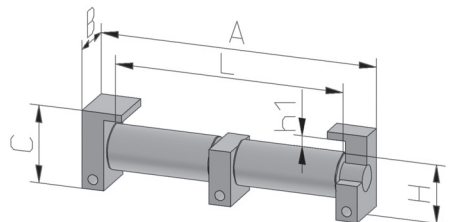
Material:	Roller: S235 ; pin: 1.4571 ; sheeks: S235JR
	Bearing bush: composite bearing made of sintered bronze / PTFE for dry running in difficult conditions
Finish:	Steel parts hot-dip galvanized

Article no.	support load F_z [kN]	L [mm]	A [mm]	H [mm]	B [mm]	C [mm]		beam clamps Typ	weight [kg]
RDU-240/25-F	25	240	305	80	70	75		M12	8,4
RDU-320/25-F	25	320	385	80	70	75		M12	10,0
RDU-240/50-F	50	240	305	100	100	95		M16	16,7
RDU-320/50-F	50	320	385	100	100	95		M16	20,0



Roller Supports, Type RDF with guide

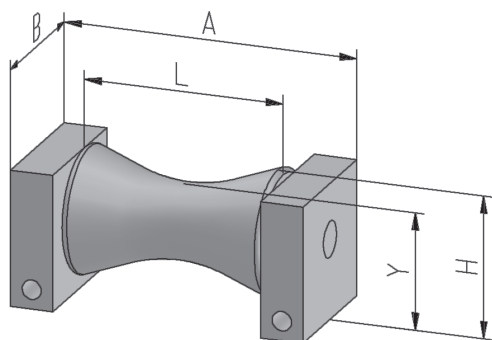
Article no.	support load F_z [kN]	L [mm]	A [mm]	H [mm]	B [mm]	C [mm]		beam clamps Typ	weight [kg]
RDF-240/25-F	25	240	305	80	70	100		M12	9,2
RDF-320/25-F	25	320	385	80	70	100		M12	10,8
RDF-240/50-F	50	240	305	100	100	125		M16	17,2
RDF-320/50-F	50	320	385	100	100	125		M16	21,4



Roller Supports, Type RDA with lift-off prevention

Restraint against lift-off = 20% of F_z

Article no.	support load F_z [kN]	L [mm]	A [mm]	H [mm]	h_1 [mm]	B [mm]	C [mm]	beam clamps Typ	weight [kg]
RDA-240/25-F	25	240	305	80	17	70	107	M12	9,5
RDA-320/25-F	25	320	385	80	17	70	107	M12	11,1
RDA-240/50-F	50	240	305	100	17	100	132	M16	17,6
RDA-320/50-F	50	320	385	100	17	100	132	M16	21,8



Roller Supports, Type RKP with polyamide taper roll

Material: Roller: Polyamide ; pin: 1.4571 ; sheeks: S235JR								
Finish: Steel parts hot-dip galvanized								
Article no.	support load F_z [kN]	suitable for pipe diameter	L [mm]	A [mm]	H [mm]	Y [mm]	beam clamps Typ	weight [kg]
RKP-004-F	4,0	115 - 273	120	186	90	70	M12	3,0
RKP-008-F	8,0	220 - 324	140	206	100	75	M12	5,0
RKP-015-F	15,0	273 - 458	200	266	135	100	M12	8,0

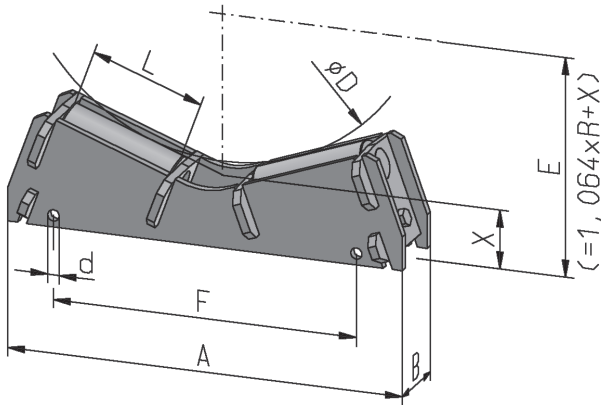
Roller Supports, Type RKS with steel taper roll

Material: Roller: S235 ; pin: 1.4571 ; sheeks: S235JR								
Bearing bush: composite bearing made of sintered bronze / PTFE for dry running in difficult conditions								
Finish: Steel parts hot-dip galvanized								
Article no.	support load F_z [kN]	suitable for pipe diameter	L [mm]	A [mm]	H [mm]	Y [mm]	beam clamps [mm]	weight [kg]
RKS-008-F	8,0	115 - 273	120	186	90	70	M12	6,2
RKS-015-F	16,0	220 - 324	140	206	100	75	M12	8,0
RKS-050-F	50,0	273 - 458	200	266	135	100	M16	15,0

Ordering example: RKS-008-F

- └ Steel parts hot-dip galvanized
- └ Support load 8 kN
- └ Roller support Type RKS with steel taper roll

Notes: Mounting of the roller bearings on steel constructions with profile clamps type PKR, see page 17

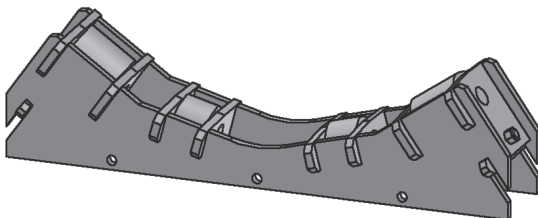


Dual Cylinder Roller Support, Type RSU

Material:	Roller: S235 ; pin: 1.4301 ; sheeks: S235JR
	Bearing bush: composite bearing made of sintered bronze / PTFE for dry running in difficult conditions
Finish:	Steel parts hot-dip galvanized

Article no.	support load F_z [kN]	support diameter [mm]	A [mm]	B [mm]	L [mm]	X [mm]	F [mm]	d [mm]	weight [kg]
RSU-008-F	8	114 - 273	180	62	50	42	100	13,5	2,4
RSU-015-F	15	220 - 420	250	72	60	46	170	13,5	3,9
RSU-025-1-F	25	140 - 508	300	80	80	53	160	13,5	8,8
RSU-025-2-F	25	508 - 835	435	80	80	68	290	13,5	12,4
RSU-050-1-F	50	324 - 760	400	90	100	53	265	18,0	11,9
RSU-050-2-F	50	508 - 965	470	90	100	68	360	18,0	14,9
RSU-050-3-F	50	910 - 1350	640	90	100	82	500	18,0	20,5
RSU-100-1-F	100	508 - 1050	525	120	120	68	370	22,0	25,8
RSU-100-2-F	100	813 - 1350	640	120	120	82	450	22,0	31,3

Special cylinder roller support for high support loads (example).



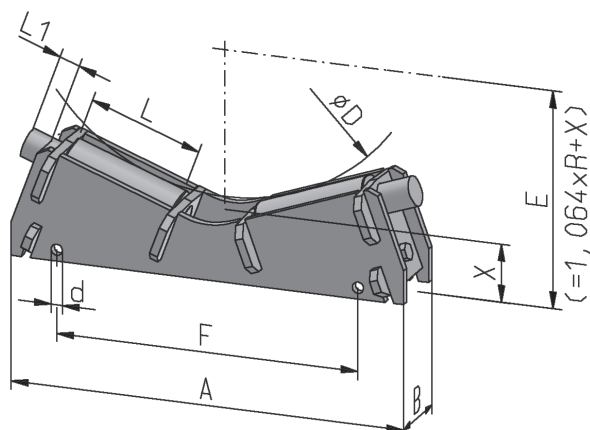
Ordering example: RSU-050-2-F

- Steel parts hot-dip galvanized
- Support diameter 508 - 965 mm
- Support load 50 kN
- Dual cylinder roller support Type RSU

Notes: Support loads are for average diameters and evenly distributed loads.

Can take lateral forces up to 35% of support loads.

Mounting of the roller bearings on steel constructions with profile clamps type PKR, see page 17



Dual Cylinder Roller Support, Type RSA for lift-off prevention

Material:	Roller: S235 ; pin: 1.4301 ; sheeks: S235JR
	Bearing bush: composite bearing made of sintered bronze / PTFE for dry running in difficult conditions
Finish:	Steel parts hot-dip galvanized

Article no.	support load F_z [kN]	support diameter [mm]	A [mm]	B [mm]	L [mm]	L1 [mm]	X [mm]	F [mm]	d [mm]	weight [kg]
RSA-008-F	8	114 - 273	180	62	50	40	42	100	13,5	2,5
RSA-015-F	15	220 - 420	250	72	60	45	46	170	13,5	4,0
RSA-025-1-F	25	140 - 508	300	80	80	55	53	160	13,5	9,4
RSA-025-2-F	25	508 - 835	435	80	80	55	68	290	13,5	13,0
RSA-050-1-F	50	324 - 760	400	90	100	60	53	265	18,0	12,5
RSA-050-2-F	50	508 - 965	470	90	100	60	68	360	18,0	15,5
RSA-050-3-F	50	910 - 1350	640	90	100	75	82	500	18,0	21,2
RSA-100-1-F	100	508 - 1050	525	120	120	70	68	370	22,0	27,2
RSA-100-2-F	100	813 - 1350	640	120	120	70	82	450	22,0	32,7

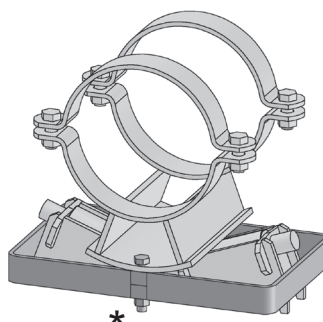
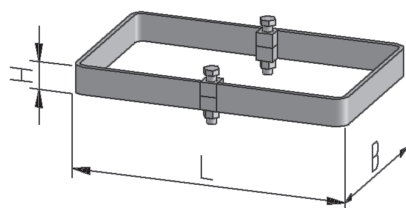
Ordering example: RSA-050-2-F

- Steel parts hot-dip galvanized
- Support diameter 508 - 965 mm
- Support load 50 kN
- Dual cylinder roller support Type RSA for lift-off prevention

Notes: Support loads are for average diameters and evenly distributed loads.

Can take lateral forces up to 35% of support loads.

Mounting of the roller bearings on steel constructions with profile clamps type PKR, see page 17



Lift-off prevention, Type AH for Dual Cylinder roller support Type RSA

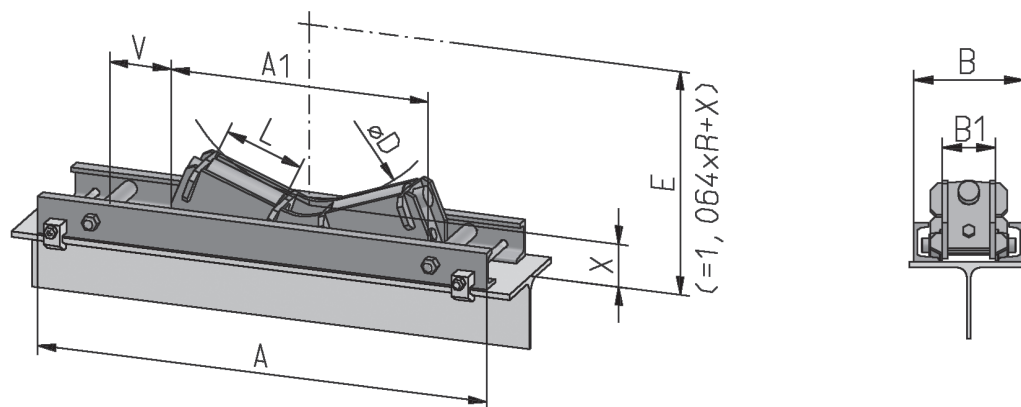
Material:	S235JR
Finish:	Steel parts hot-dip galvanized, complete with bolts and nuts

Article no.	for roller support Type	bolt size on insulating saddle	L [mm]	B [mm]	H [mm]	weight [kg]
AH-RSA-008-F	RSA-008-F	M8	198	300	15	0,9
AH-RSA-015-F	RSA-015-F	M10	266	300	20	1,3
AH-RSA-025-1-F	RSA-025-1-F	M12	322	300	30	2,8
AH-RSA-025-2-F	RSA-025-2-F	M12	438	300	30	3,2
AH-RSA-050-1-F	RSA-050-1-F	M12	420	300	50	5,2
AH-RSA-050-2-F	RSA-050-2-F	M12	490	300	50	5,6
AH-RSA-050-3-F	RSA-050-3-F	M12	640	300	50	6,6
AH-RSA-100-1-F	RSA-100-1-F	M30	550	300	70	15,0
AH-RSA-100-2-F	RSA-100-2-F	M30	666	300	70	16,0

Ordering example: AH-RSA-050-2-F

- Steel parts hot-dip galvanized
- Support diameter 508 - 965 mm
- Support load 50 kN
- for Dual cylinder roller support Type RSA
- Lift-off prevention Typ AH

* Notes: The lift-off prevention need to be bolted to the roller bearings on site



Dual Cylinder Roller Support, Type RSU / V with lateral movement

Material:	Roller: S235 ; pin: 1.4571 ; sheeks: S235JR
	Bearing bush: composite bearing made of sintered bronze / PTFE for dry running in difficult conditions
	Frame and carriage: S235JR
Finish:	Steel parts hot-dip galvanized

Article no.	support load F_z [kN]	support diameter [mm]	lateral movement V [mm]	A [mm]	B [mm]	A ₁ [mm]	B ₁ [mm]	L [mm]	X [mm]	beam clamps Typ	weight [kg]
RSU-015/V100-F	15,0	220 - 420	100	628	172	250	72	60	46	M16	8,6
RSU-015/V200-F			200	728							9,5
RSU-015/V300-F			300	828							10,4
RSU-025-1/V100-F	25,0	140 - 508	100	678	180	300	80	80	53	M16	15,4
RSU-025-1/V200-F			200	778							16,3
RSU-025-1/V300-F			300	878							17,2
RSU-025-2/V100-F	25,0	508 - 835	100	813	180	435	80	80	68	M16	20,4
RSU-025-2/V200-F			200	913							21,3
RSU-025-2/V300-F			300	1013							22,2
RSU-050-1/V100-F	50,0	324 - 760	100	778	190	400	90	100	53	M20	21,7
RSU-050-1/V200-F			200	878							22,6
RSU-050-1/V300-F			300	978							23,5
RSU-050-2/V100-F	50,0	508 - 965	100	848	190	470	90	100	68	M20	25,1
RSU-050-2/V200-F			200	948							26,0
RSU-050-2/V300-F			300	1048							26,9
RSU-050-3/V100-F	50,0	910 - 1350	100	1018	190	640	90	100	82	M20	32,3
RSU-050-3/V200-F			200	1118							33,2
RSU-050-3/V300-F			300	1218							34,1
RSU-100-1/V100-F	100,0	805 - 1050	100	903	220	525	120	120	68	M20	37,0
RSU-100-1/V200-F			200	1003							37,8
RSU-100-1/V300-F			300	1103							38,6
RSU-100-2/V100-F	100,0	813 - 1350	100	1018	220	640	120	120	82	M20	43,4
RSU-100-2/V200-F			200	1118							44,2
RSU-100-2/V300-F			300	1218							45,0

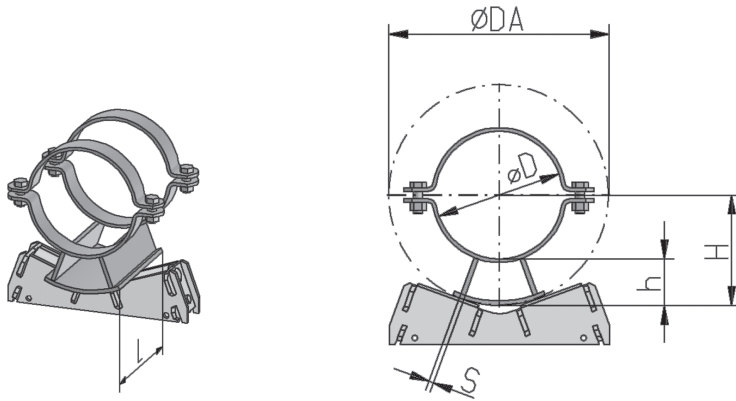
Ordering example: RSU-050-2/V200-F

- Steel parts hot-dip galvanized
- Lateral movement 200 mm
- Support diameter 508 - 965 mm
- Support load 50 kN
- Dual cylinder roller support Type RSU / V with lateral movement

Notes: Support loads are for average diameters and evenly distributed loads.

Can take lateral forces up to 35% of support loads.

Mounting of the roller bearings on steel constructions with profile clamps type PKR, see page 17

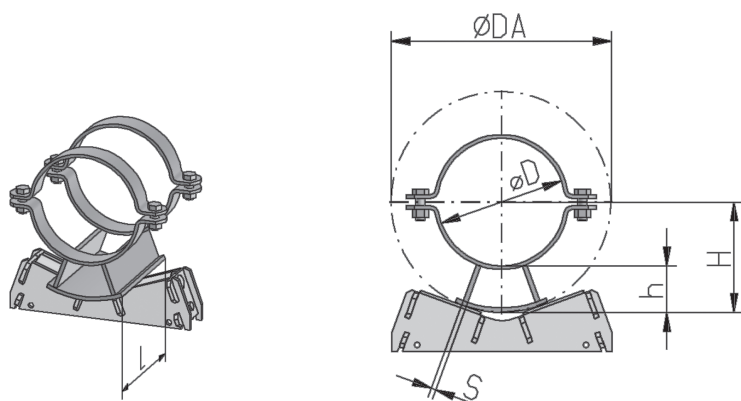


Saddle with pipe clip, Type ISRU

DN 50 - DN 200

Material:	S235JR
Finish:	hot-dip galvanized
Pipe clips according to DIN 3567 Form A	
Bolts and nuts according to DIN ISO 4017/ 4032 - 8.8 / 8 hot-dip galvanized (DIN EN ISO 898)	

Article no.	support load F_z [kN]	Ø pipe [mm]	h insulation thickness [mm]	H installation height [mm]	DA-Ø [mm]	L [mm]	s [mm]	weight [kg]
ISRU-061/030-R-F	1,5	60,3	30	60	120	300	5	2,9
ISRU-061/050-R-F			50	80	160			3,4
ISRU-061/080-R-F			80	110	220			4,6
ISRU-061/100-R-F			100	130	260			5,2
ISRU-061/120-R-F			120	150	300			5,9
ISRU-077/030-R-F	1,5	76,1	30	68	140	300	5	3,2
ISRU-077/050-R-F			50	88	180			3,7
ISRU-077/080-R-F			80	118	240			4,9
ISRU-077/100-R-F			100	138	280			5,7
ISRU-077/120-R-F			120	158	320			6,4
ISRU-089/030-R-F	1,5	88,9	30	75	150	300	5	3,4
ISRU-089/050-R-F			50	95	190			4,0
ISRU-089/080-R-F			80	125	250			5,0
ISRU-089/100-R-F			100	145	290			5,8
ISRU-089/120-R-F			120	165	330			6,5
ISRU-115/030-R-F	2,0	114,3	30	88	175	300	5	5,5
ISRU-115/050-R-F			50	108	215			6,2
ISRU-115/080-R-F			80	138	275			7,3
ISRU-115/100-R-F			100	158	315			8,0
ISRU-115/120-R-F			120	178	355			8,6
ISRU-140/040-R-F	4,0	139,7	40	110	220	300	5	6,3
ISRU-140/050-R-F			50	120	240			6,7
ISRU-140/080-R-F			80	150	300			7,8
ISRU-140/100-R-F			100	170	340			8,4
ISRU-140/120-R-F			120	190	380			9,2
ISRU-169/040-R-F	4,0	168,3	40	125	250	300	5	7,0
ISRU-169/050-R-F			50	135	270			7,9
ISRU-169/080-R-F			80	165	330			9,3
ISRU-169/100-R-F			100	185	370			10,2
ISRU-169/120-R-F			120	205	410			11,2
ISRU-220/040-R-F	10,0	219,1	40	150	300	300	6	9,0
ISRU-220/050-R-F			50	160	320			9,3
ISRU-220/080-R-F			80	190	380			10,6
ISRU-220/100-R-F			100	210	420			11,5
ISRU-220/120-R-F			120	230	460			12,4



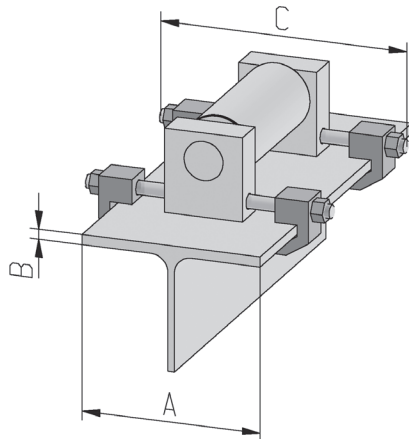
Saddle with pipe clip, Type ISRU

DN 250 - DN 500

Material:	S235JR
Finish:	hot-dip galvanized
Pipe clips according to DIN 3567 Form A	
Bolts and nuts according to DIN ISO 4017/ 4032 - 8.8 / 8 hot-dip galvanized (DIN EN ISO 898)	

Article no.	support load F_z [kN]	Ø pipe [mm]	h insulation thickness [mm]	H installation height [mm]	DA-Ø [mm]	L [mm]	s [mm]	weight [kg]
ISRU-273/050-R-F	10,0	273,0	50	187	375	300	10	15,0
ISRU-273/080-R-F			80	217	435			17,2
ISRU-273/100-R-F			100	237	475			18,6
ISRU-273/120-R-F			120	257	515			20,1
ISRU-273/150-R-F			150	287	575			22,3
ISRU-324/050-R-F	20,0	323,9	50	212	425	300	12	18,0
ISRU-324/080-R-F			80	242	485			20,7
ISRU-324/100-R-F			100	262	525			22,4
ISRU-324/120-R-F			120	282	565			24,2
ISRU-324/150-R-F			150	312	625			26,8
ISRU-356/050-R-F	20,0	355,6	50	228	455	300	12	19,6
ISRU-356/080-R-F			80	258	515			22,2
ISRU-356/100-R-F			100	278	555			24,0
ISRU-356/120-R-F			120	298	595			25,7
ISRU-356/150-R-F			150	328	655			28,4
ISRU-407/050-R-F	40,0	406,4	50	254	510	300	15	30,0
ISRU-407/080-R-F			80	284	570			33,3
ISRU-407/100-R-F			100	304	610			35,5
ISRU-407/120-R-F			120	324	650			37,7
ISRU-407/150-R-F			150	354	710			41,0
ISRU-457/050-R-F	40,0	457,0	50	278	560	300	15	32,2
ISRU-457/080-R-F			80	308	620			35,5
ISRU-457/100-R-F			100	328	660			37,7
ISRU-457/120-R-F			120	348	700			39,9
ISRU-457/150-R-F			150	378	760			43,3
ISRU-508/050-R-F	40,0	508,0	50	304	608	300	15	35,9
ISRU-508/080-R-F			80	334	668			39,1
ISRU-508/100-R-F			100	354	708			41,3
ISRU-508/120-R-F			120	374	748			43,4
ISRU-508/150-R-F			150	404	808			46,7

Notes: Other dimensions on request.



Beam clamps for Roller Supports, Type PKR

Material:	S235, clamps GS 45, threaded parts 8.8 / 8, hot-dip galvanized
Vorspannung:	M12 - 30 Nm, M16 - 60 Nm, M20 - 90 Nm
Finish:	complete, incl. nuts, hot-dip galvanized

Article no.	beam dimensions A B [mm]	thread rod C [mm]			insert for roller support F_z [kN]	weight per set [kg]
PKR-120/12-F	100 - 120	8 - 19	180		4 - 25	1,0
PKR-160/12-F	130 - 160	8 - 19	220			1,2
PKR-200/12-F	170 - 200	8 - 19	260			1,4

Article no.	beam dimensions A B [mm]	thread rod C [mm]			insert for roller support F_z [kN]	weight per set [kg]
PKR-160/16-F	130 - 160	8 - 19	260		50	2,1
PKR-200/16-F	170 - 200	8 - 19	300			2,1
PKR-240/16-F	210 - 240	8 - 19	340			4,4
PKR-300/16-F	260 - 300	8 - 19	400			4,6

Article no.	beam dimensions A B [mm]	thread rod C [mm]			insert for roller support F_z [kN]	weight per set [kg]
PKR-160/20-F	130 - 160	8 - 19	260		100	6,2
PKR-200/20-F	170 - 200	8 - 19	300			6,4
PKR-240/20-F	210 - 240	8 - 19	340			6,6
PKR-300/20-F	260 - 300	8 - 19	400			6,8

Ordering example: RKR-160/12-F

- Steel parts hot-dip galvanized
- Thread rod Ø
- Beam width 130 - 160 mm, z.B. HEA 160
- Beam clamps for roller support Type PKR

Delivery services / Technical information (Status 12/2017)

Expert advice

With our many years of experience as suppliers to the pipeline and plant construction industries we are well placed to assist you with expert advice on the design and detail for projects including. We can provide tailor made solutions for specific problems and applications.

Loads

The calculation loads mentioned in this document were made with statically models under certain conditions and parameters.

All possible care is taken: compliance and applicable technical regulations and applicable standards, guarantees are given against the loads for the static cases shown in the catalog, these are approximate values. Liabilities for the particular application cannot be derived. Any unauthorized variations or changes would invalidate any warranty and guarantee on our part.

Materials

The materials and characteristics are in accordance to the corresponding standards and should be used as a minimum requirement. For the characteristics and quality, Bernecker will only accept warranty in combination with an inspection certificate 3.1

Special design

For your individual requirements we also offer special pipe supports. Either as a variant production through the use of other:

- materials (e.g. P265GH, P275NL1)
- coatings (e.g. Duplex)
- diameter (e.g. RA-102-R)
- lengths (e.g. GLY-200/324L500-RB3)
- heights (e.g. GLY-175/324-RB3)

or according to your specifications routines or static specification.

General tolerances

The general tolerances are for lengths, angles, shape and location in accordance with ISO 2768-cL and 13920-1-CG.

SI units (metric)

The physical quantities are stated in SI units as follows:

- Dimensions in **mm**
- Loads in **kN**
- Temperatures at **80°C**
- Weights in **kg**,

if not stated otherwise.

Heat treatment

We can hot form and heat treat components to order, e.g. **stress-free annealing, normalizing or hardening** of high temperature materials. On request we supply a diagram of the heat treatment and temperature curve of the heat treated components supplied.

Corrosion protection and surface finishes

Components

- The corrosion protection of in accordance to DIN EN ISO 12944.
- Hot-dip galvanized is standard to DIN EN ISO 1461 or ASTM 123.
- Prepare acc. to ISO 8501-3-P1 (Edges broken and burr-free)
- According to your needs and specifications we can also provide our component parts with the following surface treatment:
Blasting (acc. to 8501-1 SA2 1/2), pickling, oiling, basic coating, painting or galvanic surface treatment.

Complement

- Hot dip galvanized screwing acc. to DIN EN ISO 10684 (tZn)
- Galvanized screwing acc. to ISO4042 (A2A or superior)
- The coatings tZn and A2A are chrome(IV)-free.

Prefabrication service

Supplied complete to site

As a specialist manufacturer in the field of pipe supports we can fabricate all supports and ancillaries for you ready to install, complete with labeling, to order.

Pre-assembled components with hard stamped article-name can optimize the assembling process and allow time savings on site; however, it is an additional service.

Acceptance / Certificates

On request we can supply our pipe support products to **DIN EN 10204** with

- **acceptance test certificates 3.1**
- **certificate of compliance 2.2 / 2.1**

We can arrange for acceptance tests (NDT, etc.) to be carried out by the TÜV or other inspectorate on our premises if required. Inspections by our customers can be arranged at any time.

Our Safety is your Guarantee

We operate in a quality assurance system that is certified to DIN ISO 9001. This is your guarantee that we will turn your specifications and requirements into a fully functional and reliable system that is right for the job.

Registrations

- **DIN ISO 9001:2008**
(Quality management)
- **AD 2000 W-0** (Certification according to pressure equipment directive)
- **DIN EN 1090-1**
(Requirements for conformity assessment of structural components)
- **DIN EN ISO 3834-2**
(Comprehensive quality)

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For any typographical errors, product changes due to technical developments and changing model no liability is accepted. In addition, all components must be used according to purposes.

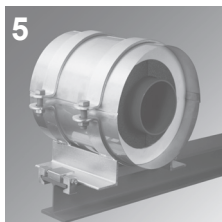
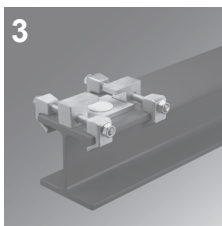
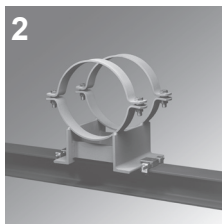
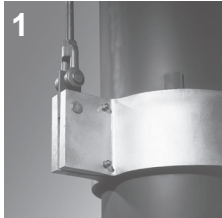
Our general terms and conditions apply.

Regular screwing AD 2000 / VGB R 510 L		
Material	Strength i.a.w. DIN 267-13	Temp.
	bolt / nut	
S235JR	8.8 / 8	≤ 300 °C
S355J2+N	8.8 / 8	≤ 300 °C
P265GH	KG / KG	≤ 450 °C
16Mo3	KG / KG	≤ 500 °C
13CrMo4-5	GA / GA	≤ 530 °C
10CrMo9-10	GA / GA	≤ 580 °C
X6CrNi 18 10	A4 / A4	≤ 580 °C
X6CrNiMoTi 17-12-2	A4 / A4	≤ 580 °C



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