

# RIGID/FLEX SERIES



## INSTALLATION GUIDE - SPACING

### LINEAR SPACING

Riteline centralizers are attached around the carrier pipe in sets that are equally spaced radially. The Linear spacing between each set of centralizers is recommended to be; **1 meter, center to center** for both grouted and un-grouted installations.

This provides adequate space on the pipe for lifting sling/ straps and allowing a sufficient gap for the bell or coupling connection between each pipe. If an installation requires a different linear spacing for any reason then contact Riteline for further advice on what spacings to use.

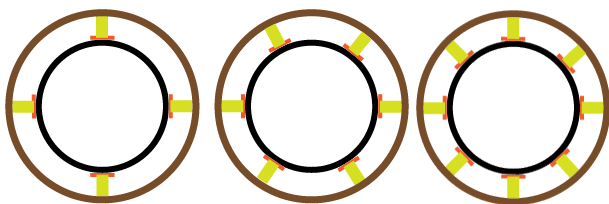
In some cases where the pipe installation is very heavy for un-grouted installations or is very buoyant in grouted installations; the linear spacing is recommended to be reduced to less than 1 m to accommodate the larger loads. Some of these cases are shown in the guide tables on the next page.



At each end of the installation, centralizers should be placed a distance of half of the linear spacing from the end of the pipe to support the overhanging section of the pipe. In most cases this will be **0.5m**.

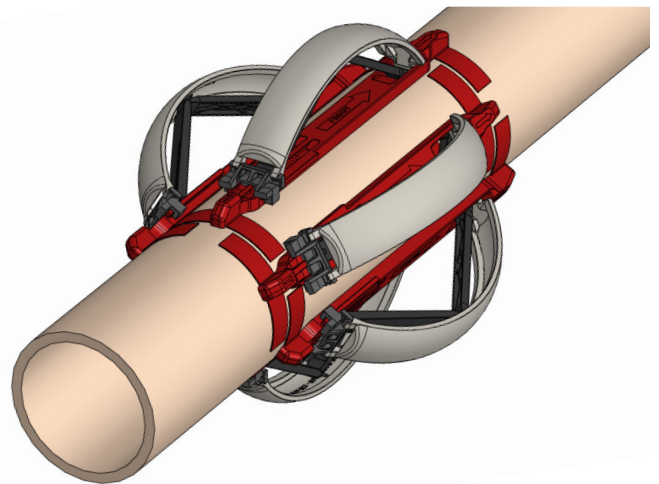
### RADIAL SPACING

The sets of centralizers can be in different configurations depending on the pipe with each configuration having a different number of centralizers. Illustrations of some set configurations can be seen below



Because of the nature of the extended arms on the base plate where the Adhesive strip is applied, each centralizer has to be a minimum distance apart so that these extended arms don't interfere with each other and compromising the bond to the pipe.

This issue is minimized by slightly staggering the centralizers in an alternating pattern going around the pipe, this is shown in the image below.



### CHOOSING BETWEEN THE RIGID AND FLEX SERIES

The flex series can flex and deform around obstacles during installation, it is ideal for use in installations with no casings and where bore is rough and uneven; however, the flex series supports less load so more centralizers are required for the installations, increasing cost.

It is recommended to use the rigid series, unless the bore is rough, with many obstacles that could cause jamming, then the flex is recommended. Miss aligned casings may also require the flex series.

# RIGID/FLEX SERIES

## INSTALLATION GUIDE TABLES



The following tables show the recommended parameters for the Riteline centralizers with the most common pipe types and sizes used for trenchless installations. When using different pipe type or sizes not shown, please contact Riteline for more advice on the recommended parameters. cases where the linear spacing is required to be less than 1 m are highlighted in the tables.

GRP Jacking Pipe (gravity sewer only)					
Carrier Pipe Nominal Dia (DN) (mm)	Carrier Pipe OD (mm)	Recommended Number of Centralizers Per Set			
		Grouted Rigid series	Set spacing (m)	Grouted Flex series	Set spacing (m)
200	272	4	1	6	1
250	324	4	1	8	1
300	345	6	1	10	1
300	376	6	1	10	1
350	401	8	1	12	1
350	427	8	1	14	1
400	501	12	1	18	1
400	515	12	1	20	1
400	530	12	1	20	0.9
450	550	14	1	22	0.95
500	616	16	1	24	0.8
550	650	18	1	26	0.8
600	718	22	1	28	0.7
650	752	24	1	30	0.7
700	820	28	1	32	0.6
750	860	32	1	34	0.6
800	924	36	1	36	0.55
850	960	38	1	38	0.5
900	1026	40	0.9	40	0.5
1000	1099	42	0.85	N/A	N/A
1100	1229	48	0.75	N/A	N/A
1200	1348	52	0.7	N/A	N/A
1300	1434	56	0.65	N/A	N/A
1400	1499	60	0.6	N/A	N/A
1500	1638	64	0.55	N/A	N/A
1600	1720	66	0.5	N/A	N/A

PVC-U SN8 (gravity sewer only)					
Carrier Pipe Nominal Dia (DN) (mm)	Carrier Pipe OD (mm)	Recommended Number of Centralizers Per Set			
		Grouted Rigid series	Set spacing (m)	Grouted Flex series	Set spacing (m)
150	160	4	1	4	1
225	250	4	1	6	1
300	315	6	1	8	1
375	400	8	1	12	1

RESTRAIN PVC-U SN16 (gravity sewer only)						
Carrier Pipe Nominal Dia (DN) (mm)	Carrier Pipe OD (mm)	Socket OD (mm)	Recommended Number of Centralizers Per Set			
			Grouted Rigid series	Set spacing (m)	Grouted Flex series	Set spacing (m)
100	110.2	115				
150	160.3	170	4	1	4	1
225	250.4	260	4	1	6	1
300	315.5	330	6	1	8	1

MSCL (water only)			
Carrier Pipe Nominal Dia (DN) (mm)	Carrier Pipe OD (mm)	Recommended Number of Centralizers Per Set	
		Un-Grouted Rigid	Set spacing (m)
150	168	6	1
200	219	8	1
225	257	10	1
250	273	10	1
300	337	12	1
375	419	16	1
450	502	20	1
600	660	26	1
750	800	30	0.8
825	914	34	0.85
900	972	38	0.75
1050	1125	44	0.65
1150	1200	46	0.6

DUCTILE IRON (water only)			
Carrier Pipe Nominal Dia (DN) (mm)	Carrier Pipe OD (mm)	Recommended Number of Centralizers Per Set	
		Un-Grouted Rigid	Set spacing (m)
150	177	6	1
225	259	10	1
300	345	12	1
375	426	16	1
450	507	20	1
600	667	26	1
750	826	32	0.85

POLYPROPYLENE SN10 and POLYPROPYLENE SN20 (gravity sewer only)						
Carrier Pipe Nominal Dia (DN) (mm)	Carrier Pipe OD (mm)	Max Socket OD (mm)	Recommended Number of Centralizers Per Set			
			Grouted Rigid series	Set spacing (m)	Grouted Flex series	Set spacing (m)
225	259	305	4	1	6	1
300	344	403	6	1	10	1
375	428	502	8	1	16	1
450	514	603	12	1	20	0.95
525	600	704	16	1	24	0.8
600*	682	750	20	1	26	0.7

\* DN800 is available only for SN10. SN20 is available up to and including DN525

Centrifugal Cast GRP SN10 (gravity sewer only)					
Carrier Pipe Nominal Dia (DN) (mm)	Carrier Pipe OD (mm)	Recommended Number of Centralizers Per Set			
		Grouted Rigid series	Set spacing (m)	Grouted Flex series	Set spacing (m)
250	272	4	1	6	1
300	324	6	1	10	1
350	376	8	1	12	1
400	427	10	1	16	1
450	478	10	1	18	0.95
500	530	14	1	20	0.85
550	550	14	1	22	0.8
600	616	18	1	24	0.75
650	650	22	1	26	0.7
700	718	24	1	28	0.65
750	752	26	1	30	0.6
800	820	30	1	32	0.55
900	924	36	0.95	36	0.5
1000	1026	40	0.85	N/A	N/A
1100	1099	42	0.75	N/A	N/A
1200	1229	46	0.65	N/A	N/A

Filament Wound GRP SN10 (water and gravity sewer)							
Carrier Pipe Nominal Dia (DN) (mm)	Carrier Pipe OD (mm)	Recommended Number of Centralizers Per Set					
		Grouted Rigid series	Set spacing (m)	Grouted Flex series	Set spacing (m)	Un-Grouted Rigid	Set spacing (m)
250	272	4	1	6	1	10	1
300	324	6	1	10	1	12	1
350	376	8	1	12	1	14	1
400	427	10	1	16	1	16	1
450	478	10	1	18	0.9	18	1
500	530	14	1	20	0.85	20	1
550	550	14	1	22	0.8	22	1
600	616	18	1	24	0.75	24	1
650	650	22	1	26	0.7	26	1
700	718	24	1	28	0.65	28	1
750	752	26	1	30	0.6	30	1
800	820	30	1	32	0.55	32	1
900	924	36	0.95	36	0.5	36	1
1000	1026	40	0.85	N/A	N/A	40	1
1100	1099	42	0.75	N/A	N/A	42	0.9
1200	1229	46	0.6	N/A	N/A	46	0.75

PE100 SDR11 PN16 (water & pressure sewer) and PE100 SDR17 PN10 and PE100 SDR26 PN8 (gravity sewer)						
Carrier Pipe OD (mm)	Recommended Number of Centralizers Per Set					
	Grouted Rigid series	Set spacing (m)	Grouted Flex series	Set spacing (m)	Un-Grouted Rigid	Set spacing (m)
125	4	1	4	1	4	1
140	4	1	4	1	4	1
160	4	1	4	1	6	1
180	4	1	4	1	6	1
200	4	1	4	1	8	1
225	4	1	4	1	8	1
250	4	1	6	1	10	1
280	4	1	6	1	10	1
315	4	1	8	1	12	1
355	6	1	10	1	14	1
400	8	1	12	1	14	1
450	8	1	16	1	16	1
500	10	1	18	1	18	1
560	14	1	22	0.95	22	1
630	16	1	24	0.8	24	1
710	20	1	28	0.75	28	1
800	26	1	30	0.65	30	1

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## ASSEMBLY INSTRUCTIONS



### STEP 1

- Slide part B onto part A so that the front face on part B is facing towards the front of part A, as shown in the images to the right.



### STEP 2

- Set the Ratcheting jig to the desired height by pushing the knob in and sliding it.
- Place part A with part B attached to it, into the jig as shown in the images to the left.
- Push down on the top of part A so that part B moves along the ratchet teeth (you will hear a clicking noise). push until you feel a hard stop this means it is now set to the correct height.



### STEP 3 (rigid series only)

- Snap the small clip on part D onto the bar on Part C if not already attached.
- Place assembled parts A and B flat on a table or similar surface to make the next steps easier.
- Place the large clip on part D onto the short bar on part A and push it down using the palm of your hand until it snaps on as shown in the images to the right until it snaps on.
- Place part C so that the teeth on it are touching the front face of part B as shown in the images to the right.



### STEP 4

- Place the double clips on part E onto the 2 bars on part B and push down so that the clips snap on as shown in the images to the left.
- Make sure teeth on part C are still touching the front face of part B as shown in the images to the left.



## STEP 5

- Again, make sure teeth on part C are still touching the front face of part B as shown in the images to the right.
- Bend part E over parts C and D and place the single clip onto the long bar on part A.
- Snap the clip onto the bar fully by pushing down firmly in the middle of part E as shown in the images to the right, you will hear and feel it snap in.



## STEP 6

- Measure the circumference of the pipe using a flexible measuring tape and divide this value by the number of centralizers per sett for the given installation (determined using the guide tables) to get the radial spacing of each centralizer.
- Make marks around the pipe that are equally spaced out radially by using the measurement determined in 6a as the distance between each mark.
- Move along the pipe 1 m and repeat step b, continue this all the way along the length of the pipe.



## STEP 7

- Remove the liner that is on the adhesive strips on the part A.
- Line up the front part of the spacer assembly so that the front of part A is on one of the marks made in step 5 and the body of part A is running parallel to the pipe. The front of part A should be pointing in the direction that the pipe will be inserted into the hole.
- Push down the assembly so that the adhesive strips loosely stick to the pipe and then apply pressure along the strips to firmly attach the assembly to the pipe.

## IMPORTANT NOTES

**Riteline products should not be exposed to a naked flame or sparks from welding Failure to shield the product whilst welding may result in damage.**

Conditions of Sale and Use / Warranty:

Due to the varying conditions and applications for which Riteline products are used, neither Riteline or Riteline Marketing (collectively, Riteline) offer any warranty for the products suitability for any particular purpose. Accordingly, the Purchaser is deemed to have assessed the suitability of the goods for the intended application and to the extent permitted by law, liability of Riteline for breach of any implied, express, or statutory warranty or condition which cannot be excluded is restricted, at Riteline's option, to:

- The replacement of goods found to be defective in material and workmanship; or
- The payment of the cost of having such goods replaced;

Replacement of or payment for such goods is subject the goods being returned to us within 12 months of shipment by Riteline.