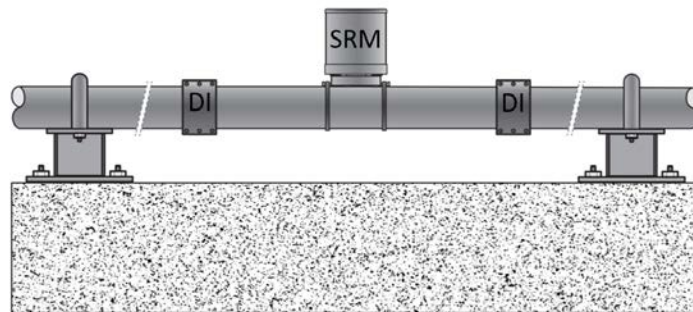


Site Preparation Instructions for Installing Ultimo Striker-Receiver Module (SRM)

FASTEST, EASIEST, BEST PERFORMING INSTALLATION
FOR PIPES NPS < 20" (DN < 500 mm)
SRM with 2 Dynamic Isolators (DI's)



The System must be installed at specific spacing based on pipe size. If the required dimensions and conditions defined below cannot be met, Ultimo Technical Support must be contacted to discuss alternatives and associated performance risks.

Definitions

UPL – Uninterrupted Pipe Length: The minimum length of pipe that is free of all disrupting members that could affect measurement accuracy.

MZ – Measurement Zone: The section of pipe within the UPL where the SRM is located. Requires specific boundaries created by Dynamic Isolators or Rigid Supports.

DI – Dynamic Isolator: Special weight collars mountable on the pipe - used to create the Measurement Zone boundaries.

RS – Rigid Support: Pipe support that prevents pipe movement at points of support and creates Measurement Zone boundaries.

NPS – Nominal Pipe Size: Pipe's ID and OD identifier when imperial units (inches) are used

DN – Diametre Nominel: Pipe's ID and OD identifier when metric units (mm) are used

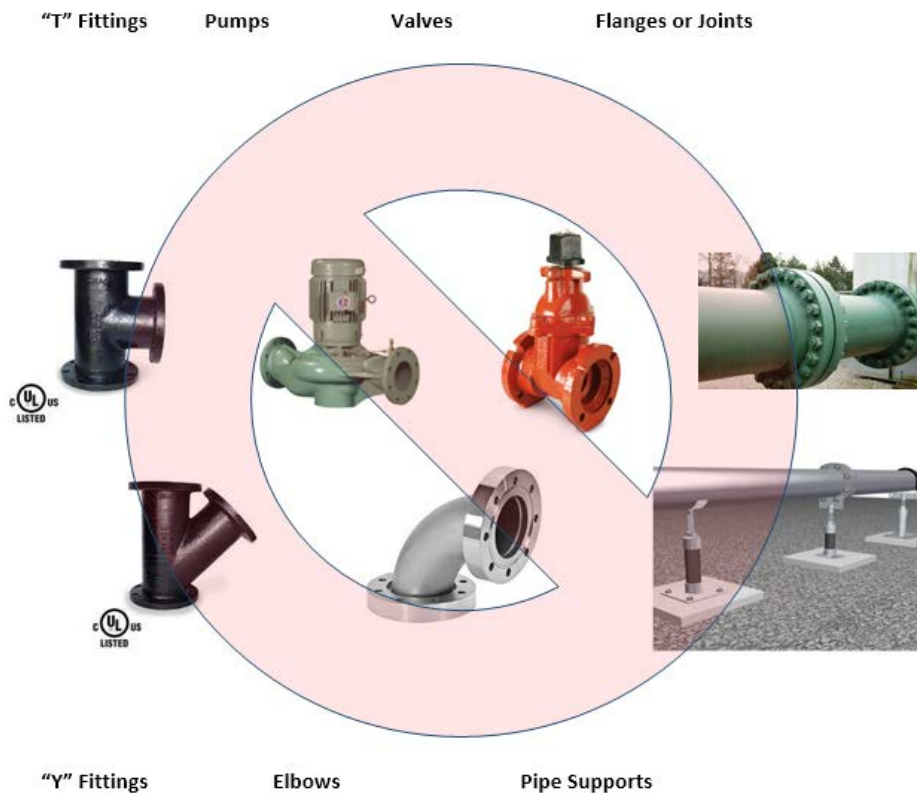
1. Determine Minimum Uninterrupted Pipe Length (UPL) from Table 1:

Table 1

UPL Length (Inches)			UPL Length (mm)		
Pipe Size NPS	Metal	Plastic	Pipe Size DN	Metal	Plastic
3	58	30	80	1483	762
4	67	33	100	1693	847
5	75	37	-	1905	932
6	83	40	150	2117	1017
8	92	43	200	2328	1100
10	100	47	250	2540	1185
12	108	50	300	2752	1270
14	117	53	350	2963	1355
16	125	57	400	3175	1440
18	133	60	450	3387	1524

Note: This is the Minimum allowable length. Longer Lengths are always preferred.

Not Allowed in UPL:



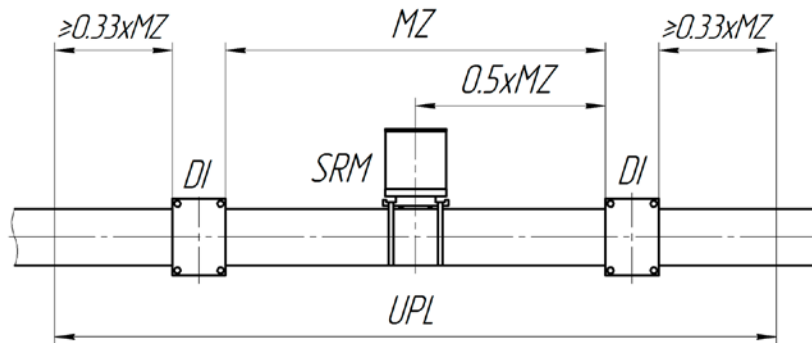
Note: All shown pipe members cannot be present inside the UPL segment of the pipe, but they can define the beginning and/or the end of the UPL pipe segment

2. Find section of uninterrupted pipeline that meets UPL Minimum Length
3. Determine Required Measurement Zone (MZ) Length from Table 2 below:

Table 2

MZ Length (Inches)			MZ Length (mm)		
Pipe Size NPS	Metal	Plastic	Pipe Size DN	Metal	Plastic
3	35	18	80	890	457
4	40	20	100	1016	508
5	45	22	-	1143	559
6	50	24	150	1270	610
8	55	26	200	1397	660
10	60	28	250	1524	711
12	65	30	300	1651	762
14	70	32	350	1778	813
16	75	34	400	1905	864
18	80	36	450	2032	914

4. Mount SRM in center of UPL
5. Install Dynamic Isolators
 - a. Space DI's at Required MZ length
 - b. SRM must be in center of MZ
 - c. DI's must be $\geq (0.33 \times \text{MZ})$ away from end of UPL





Improperly spaced DI and RS



Properly Spaced DI and RS

EXTERNAL FACTORS:

1. SRM must be within 100 ft. (30m) of DPM to preserve signal strength
2. UPL must be far from nearest pump on that pipe line:
 - a. Pipes \leq NPS 10 in.: UPL \geq 100 in. (2.54 m) away from pump
 - b. Pipes $>$ NPS 10 in.: UPL \geq (10 x NPS) in. away from pump



3. Pipe must be clamped to secure supports, at the ends of the UPL, or outside of the UPL, to prevent disturbing vibration!



Pipe sits on station not clamped



Pipe clamped properly