taylor devices inc.

Taylor Damper Retrofit Considerations

Damper Length Adjustment for Retrofit Considerations

Adjustability of the damper lengths is an important consideration when using dampers, especially in retrofit applications. Sometimes an exact damper length is not known until construction crews enter the building, begin demolition, and take field measurements.

Fortunately, there are several methods that can be used to allow for adjustment of the damper assembly length. These allow the damper production to begin with only approximate pin-to-pin lengths. The possible methods to increase installation flexibility discussed in this document include:

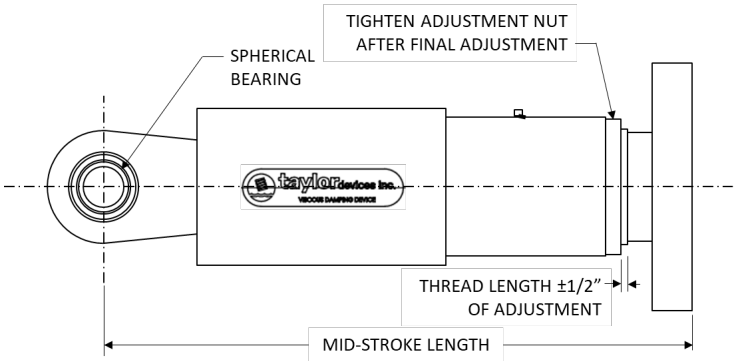
1. Mechanical length adjustment in each damper unit
2. Shim plates for base plate units
3. Using welded tang plates to allow in-field adjustability
4. Telescoping extenders

Three possible configurations are described on the following pages:

- **Configuration 1: Base Plate Dampers with HSS extender**
- **Configuration 2: Integral extender**
- **Configuration 3: Telescoping extender**

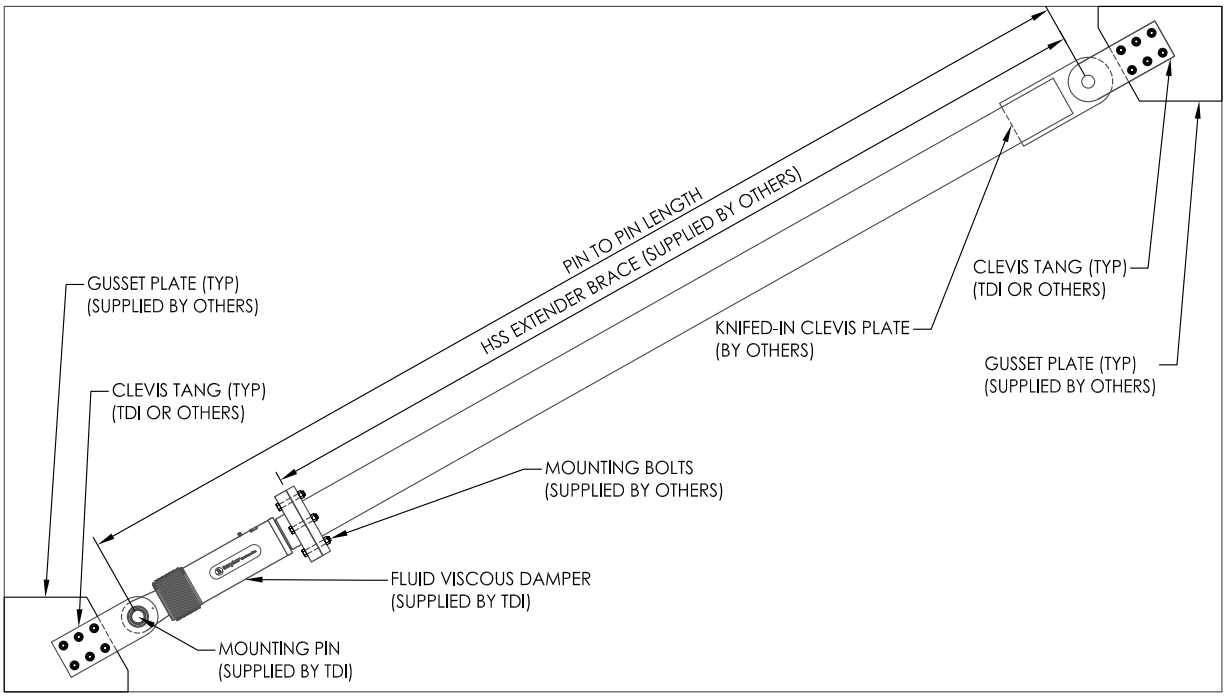
CONFIGURATION 1: BASE PLATE DAMPERS WITH HSS EXTENDERS

Taylor dampers have threaded mechanical adjustment of ±½" (12mm) on dampers 440 KIP (2000kN) and larger and ±¼" (6mm) on dampers 330 KIP(1500kN) and smaller. This is achieved through the threaded section on the end of the damper cylinder as can be seen in the drawing
below.



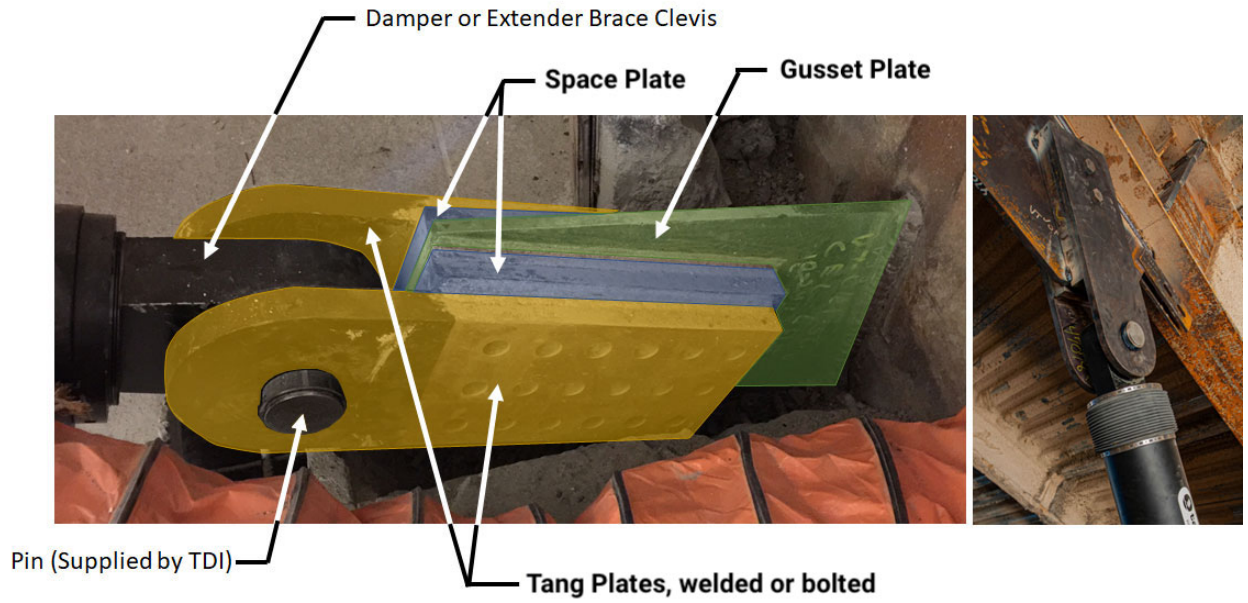
Sometimes shim plates (as seen below) are used to provide further length adjustment. Single shim plates or multiple shim plates can be used. Shim plates up to 1 inch (25mm) thick have been used between the damper and the (contractor supplied) HSS extender brace.

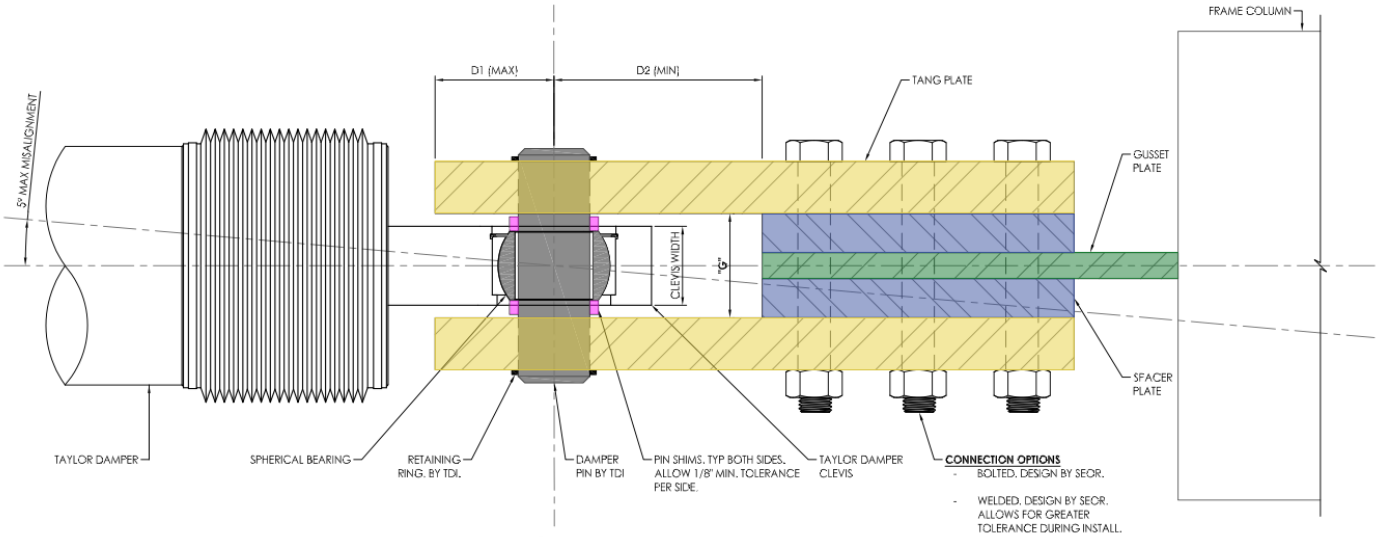
In other cases the tang plate is welded (as shown here) to accommodate minor adjustments in length to suit field conditions:



The gusset plates and tang plates may also be dimensionally adjusted and cut by the steel fabricator to provide the correct geometry, as they are simple and easy for the fabricator to customize.

DAMPER CONNECTION DETAILS



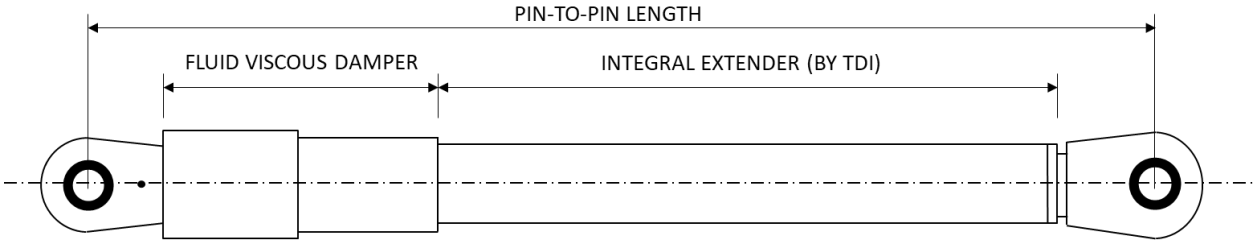


MODEL NUMBER	FORCE RATING		"G"		"D_1 (MAX)"		"D_2 (MIN)"		CLEVIS WIDTH	
	kip	kN	INCHES	mm	INCHES	MM	INCHES	MM	INCHES	mm
17120	55	250	2.63	67	2.75	69.9	2.75	69.9	1.67	43
17130	110	500	3.13	80	3.50	88.9	3.00	76.2	2.16	55
17140	165	750	3.25	83	3.75	95.3	3.75	95.3	2.31	59
17150	220	1000	3.75	95	5.00	127.0	4.50	114.3	2.78	71
17160	330	1500	4.00	102	5.25	133.4	4.75	120.7	3.03	77
17170	440	2000	4.75	121	6.50	165.1	5.50	139.7	3.56	91
17180	750	3500	6.00	152	7.00	177.8	7.00	177.8	4.60/4.38*	117/111*
17190	975	4500	7.00	178	8.00	203.2	7.00	177.8	5.56	142
17200	1350	6000	9.00	229	9.00	228.6	8.00	203.2	6.06	152
17210	1800	8000	9.00	229	12.00	304.8	12.50	317.5	7.00	178

** DENOTES MODEL WITH DIFFERENT CLEVIS SIZE ON EACH END*

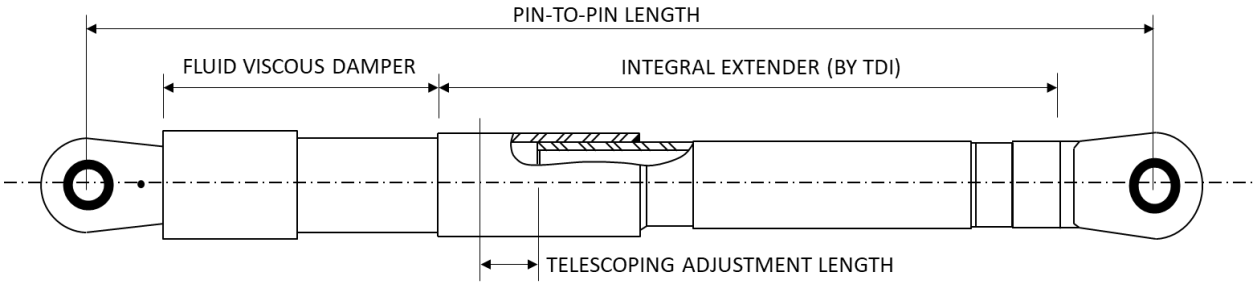
CONFIGURATION 2: INTEGRAL EXTENDER

These extenders are typically used for architectural reasons as they eliminate the large flange connection and are more asthetically appealing. Adjustments can be made in the same way as for Configuration 1 with HSS extenders (except there is no option for shims in the middle of the assembly).



CONFIGURATION 3: TELESCOPING EXTENDER

The telescoping extender is often detailed for up to ±15” (381mm) of length adjustment in the field to accommodate various installation lengths and/or unknown field conditions. The adjustability of the telescoping region allows for fewer unique damper specifications, simplifying the fabrication and construction process.



The telescoping damper is welded around the perimiter of the nested “telescoping” tubes after installation. The multi piece design allows this style of damper to be brought into the building in pieces that can be designed to fit into a service elevator.

Telescoping dampers can also be easily handled and maneuvered, as shown below: