

# Deflection Gauges

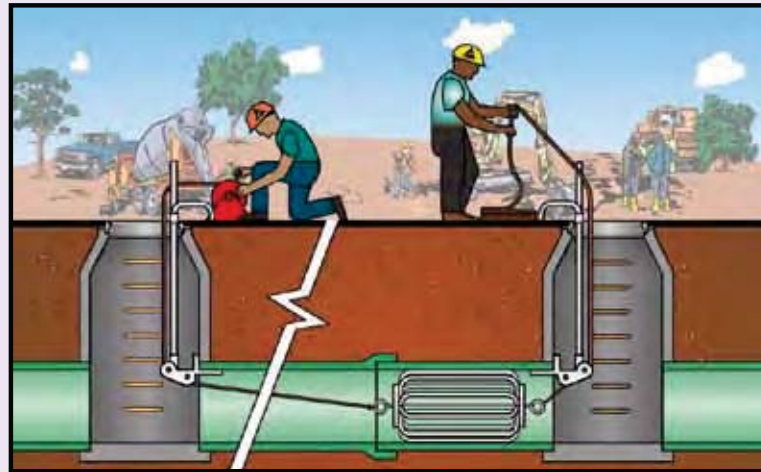
## Deflection Gauges

Deflection Gauges (mandrels) are used to test flexible sewer pipe for out-of-roundness or deflection per ASTM specifications D3034 and F679. This testing ensures that flexible pipe has been properly bedded and backfilled (ASTM D2321) to give optimal performance.

Both steel and aluminum gauges utilize a nine arm design to ensure the pipe is tested accurately. This design also allows gravel and debris to easily pass through. Other gauges can get hung up – causing a deflection test to fail, even though the pipe is within tolerance. Sized to .01", both deflection gauge styles meet ASTM requirements.



### Deflection Test



Nominal Size	Pipe	Average ID	Base ID*	5% Deflection	7.5% Deflection
<b>ASTM Specification D3034 (4" - 15")</b>					
4"	SDR 35	3.965	3.895	3.70	3.60
6"	SDR 26	5.764	5.612	5.33	5.19
6"	SDR 35	5.893	5.742	5.46	5.31
8"	SDR 26	7.715	7.488	7.11	6.93
8"	SDR 35	7.891	7.665	7.28	7.09
10"	SDR 26	9.644	9.342	8.87	8.64
10"	SDR 35	9.864	9.563	9.08	8.84
12"	SDR 26	11.480	11.102	10.55	10.27
12"	SDR 35	11.737	11.361	10.79	10.51
15"	SDR 26	14.053	13.575	12.90	12.56
15"	SDR 35	14.374	13.898	13.20	12.86

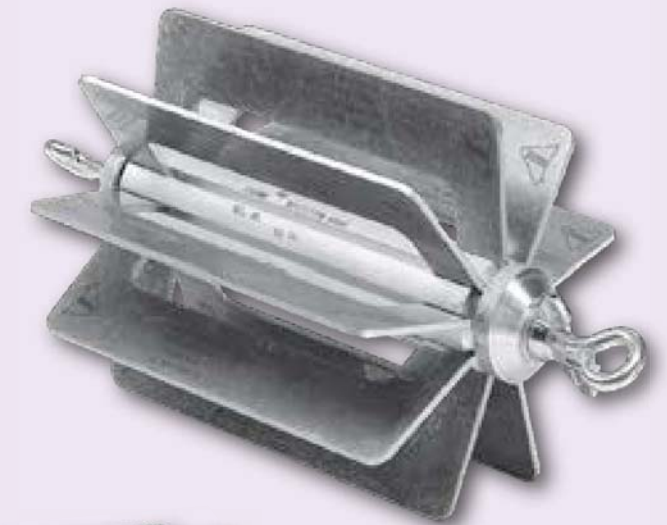
Nominal Size	Pipe	Average ID	Base ID*	5% Deflection	7.5% Deflection
<b>ASTM Specification F679 (18" - 27")</b>					
18"	SDR 26	17.177	16.586	15.76	15.34
18"	SDR 35	17.564	16.976	16.13	15.70
21"	SDR 26	20.249	19.545	18.57	18.08
21"	SDR 35	20.707	20.004	19.00	18.50
24"	SDR 26	22.781	21.964	20.87	20.32
24"	SDR 35	23.296	22.481	21.36	20.79
27"	SDR 26	25.674	24.744	23.51	22.89
27"	SDR 35	26.258	25.327	24.06	23.43
30"	SDR 35	29.306	28.673	26.29	26.52

\*Base Inside Diameter (Base ID) - Allows for out of roundness and wall thickness tolerances as defined by ASTM standards.

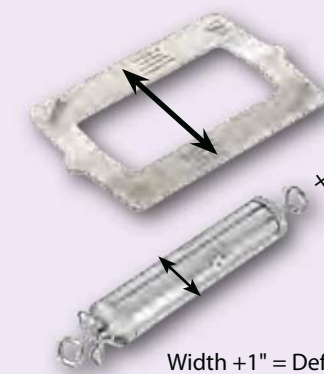
# Aluminum Deflection Gauges

## Aluminum Fin Style Deflection Gauge:

- Lightweight, corrosion-resistant
- Field-verifiable without a proving ring
- Assembles without tools
- All sizes fit through standard 24" manhole
- Fins for 4"-15" gauges have skid size equal to the nominal pipe size—gauge will meet regional codes and will not tip in the line
- Nine-fin design ensures testing accuracy
- Open design allows gravel and debris pass-through



Deflection Gauge Set



Width +1" = Deflection gauge outside diameter

### Field Verification:

Cherne's Fin Style Deflection Gauges are designed to be field verified by inspectors without the use of a proving ring. Simply place two fins end to end as pictured to the right and measure the width. Add one inch to the mandrel and you have the outside dimension of the gauge. Using this method simplifies the inspector's job of verifying sizes on deflection gauges.

Part Number	Nominal Size	Pipe	Deflection	Product Weight
<b>Aluminum Fin Sets</b>				
285688	6", 8", 10"	SDR 26	5%	18 lbs
285005	6", 8", 10"	SDR 35	5%	18 lbs
285013	6", 8", 10"	SDR 35	7.5%	18 lbs
285698	8", 10", 12"	SDR 26	5%	19 lbs
285021	8", 10", 12"	SDR 35	5%	19 lbs
285048	8", 10", 12"	SDR 35	7.5%	19 lbs

Nominal Size	Pipe	5% Deflection	7.5% Deflection	Product Weight
<b>Deflection Gauge Part Numbers</b>				
4"	SDR 35	285056	285137	1.5 lbs
6"	SDR 26	285638	Custom	2 lbs
6"	SDR 35	285072	285153	2 lbs
8"	SDR 26	285648	Custom	2.5 lbs
8"	SDR 35	285080	285161	2.5 lbs
10"	SDR 26	285658	Custom	3 lbs
10"	SDR 35	285099	285188	3 lbs
12"	SDR 26	285668	Custom	4 lbs
12"	SDR 35	285102	285196	4 lbs
15"	SDR 26	285678	Custom	5 lbs
15"	SDR 35	285110	285218	5 lbs
18"	SDR 35	285536	285560	8 lbs
21"	SDR 35	285544	285579	10 lbs
24"	SDR 35	285552	285587	11 lbs
27"	SDR 35	285595	285609	12 lbs

Larger and custom sizes are available.



### Air-Loc® Line Stringer

- Strings lines between manholes quickly
  - Use lines to pull deflection gauges
- See page 52



# Steel Deflection Gauges

## Fixed Steel Style Deflection Gauge:

- Durable, zinc-plated construction resists corrosion
- Conforms to mandrel sizing specifications—blade length is equal to or greater than the nominal pipe size
- Nine-arm design ensures testing accuracy
- Open design allows gravel and debris pass-through



# Proving Rings

## Proving Ring:

- Used to verify deflection gauge sizes
- Standard sizes: 6"-15" SDR 35 5% deflection and 8"-12" SDR 35 7.5% deflection
- Custom sizes for 5"-18" also available



Proving Ring in Use

Nominal Size	Pipe	5% Deflection	7.5% Deflection	Product Weight
<b>Deflection Gauge Part Numbers</b>				
6"	SDR 26	286008	286128	5 lbs
6"	SDR 35	286068	286188	5 lbs
8"	SDR 26	286018	286138	7 lbs
8"	SDR 35	286078	286198	7 lbs
10"	SDR 26	286028	286148	8 lbs
10"	SDR 35	286088	286208	8 lbs
12"	SDR 26	286038	286158	9 lbs
12"	SDR 35	286098	286218	9 lbs
15"	SDR 26	286048	286168	13.5 lbs
15"	SDR 35	286108	286228	13.5 lbs
18"	SDR 35	286118	286238	15 lbs
18"	SDR 26	286058	N/A	18 lbs
21"	SDR 35	286278	N/A	18 lbs
24"	SDR 35	286288	N/A	21 lbs

Larger and custom sizes are available.

Part Number	Nominal Size	Pipe	Deflection	Product Weight
<b>Proving Rings</b>				
073199	6"	SDR 35	5%	4 oz (.11 kg)
073202	8"	SDR 35	5%	4 oz (.11 kg)
073253	8"	SDR 35	7.5%	4 oz (.11 kg)
073210	10"	SDR 35	5%	6 oz (.17 kg)
073261	10"	SDR 35	7.5%	6 oz (.17 kg)
073229	12"	SDR 35	5%	6 oz (.17 kg)
073288	12"	SDR 35	7.5%	6 oz (.17 kg)
073237	15"	SDR 35	5%	7 oz (.20 kg)

Larger and custom sizes are available.

