

HND.tex

10 February 2026

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1 Hyprodermic Needle Dimensions HND

1.1 Hyprodermic Needle Dimensions HND

Updated on: 1:36 PM 2/10/2026

Source: Machinery's Handbook, 31st Edition, 2020, page 2704. This is a very similar gauge to Stub's Iron Wire Gauge.

1.1.1 Hyprodermic Needle Dimensions Inside and Outside Dimentions HNDIOD

Gauge	Outside Diameter		Inside Diameter	
	mm	in	mm	in
6	5.156	0.2030	4.394	0.1730
7	4.572	0.1800	3.810	0.1500
8	4.191	0.1650	3.429	0.1350
9	3.759	0.1480	2.997	0.1180
10	3.404	0.1340	2.692	0.1060
11	3.048	0.1200	2.388	0.0940
12	2.769	0.1090	2.159	0.0850
13	2.413	0.0950	1.803	0.0710
14	2.108	0.0830	1.600	0.0630
15	1.829	0.0720	1.372	0.0540
16	1.651	0.0630	1.194	0.0470
17	1.473	0.0580	1.067	0.0420
18	1.270	0.0500	0.818	0.0330
19	1.067	0.0420	0.686	0.0270
20	0.902	0.0355	0.584	0.0230
21	0.813	0.0320	0.495	0.0195
22	0.711	0.0280	0.394	0.0155
22s	0.711	0.0280	0.140	0.0055
23	0.635	0.0250	0.318	0.0125
24	0.559	0.0220	0.292	0.0115
25	0.508	0.0200	0.241	0.0095
25s	0.508	0.0200	0.140	0.0055
26	0.457	0.0180	0.241	0.0095
26s	0.467	0.0184	0.114	0.0045
27	0.406	0.0160	0.191	0.0075
28	0.356	0.0140	0.165	0.0065
29	0.330	0.0130	0.165	0.0065
30	0.305	0.0120	0.140	0.0055
31	0.254	0.0100	0.114	0.0045
32	0.229	0.0090	0.089	0.0035
33	0.203	0.0080	0.089	0.0035

Table 1: Hyprodermic Needle Dimensions HNDt

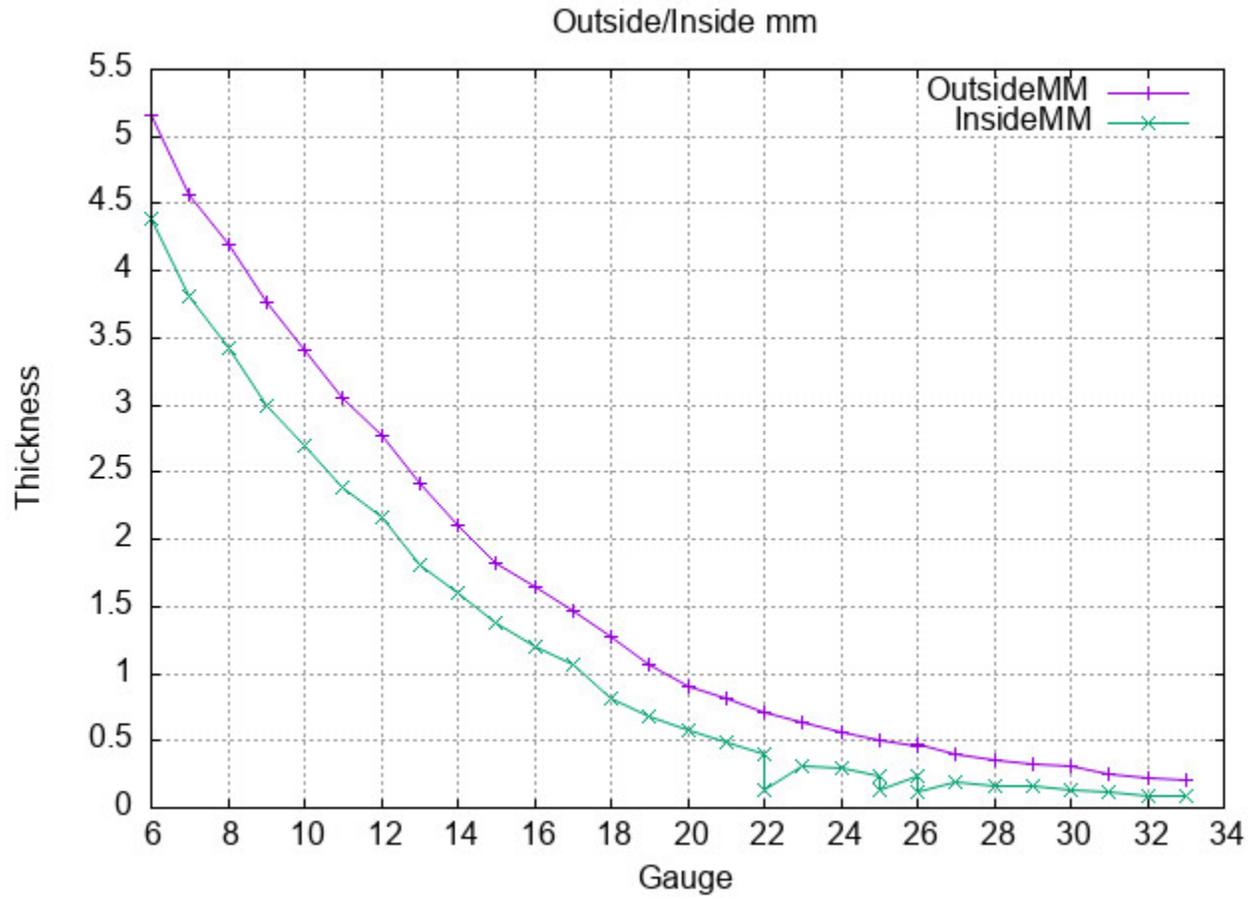
Glitches in plots: In these gauges there are three “special” gauge values, 22s, 25s and 26s. When they are plotted I dropped the “s” and plotted these values along with the rest of the data. At the “s” points there is an otherwise unexpected, but explainable “glitch”.

Needle Nominal Outside Diameter		Needle Nominal Inside Diameter
Gauge	Tolerance (in)	Tolerance (in)
7	±0.0010	±0.0030
8		
9		±0.0020
10		
12		
14	±0.0005	±0.0015
16		
17		
19	+0.0005	+0.0015
25s		
26		
26s		
27	-0.0000	-0.0000

Table 2: Hypodermic Needle Dimentions, Tolerances

Note most gauge IDs are omitted where nothing changes.

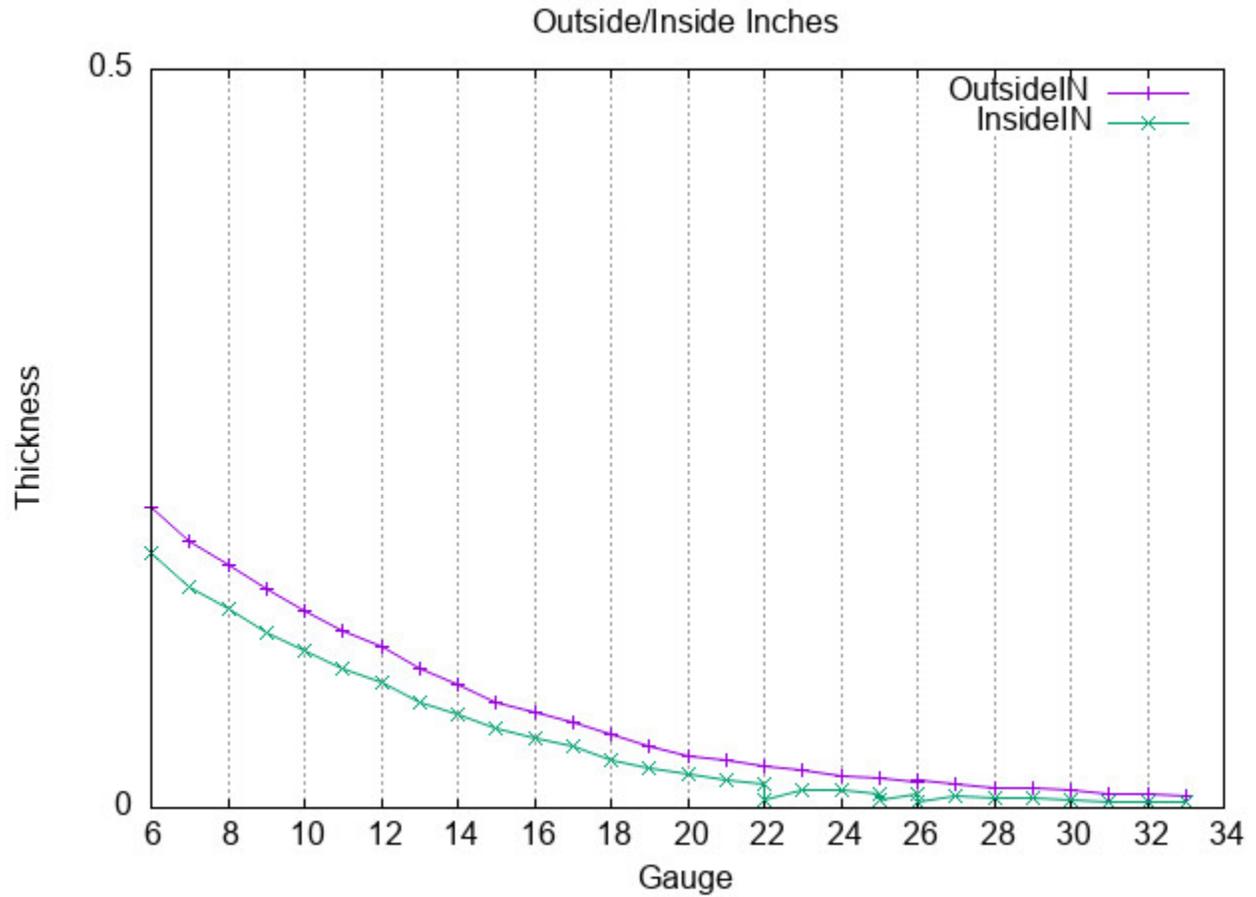
Plot of Inside vs Outside mm diameterse HNDouinmm



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Figure 1: Inside vs Outside Hyprodermic Needle mm diameters HND.inc

Plot of Inside vs Outside inch diameters HNDouinin



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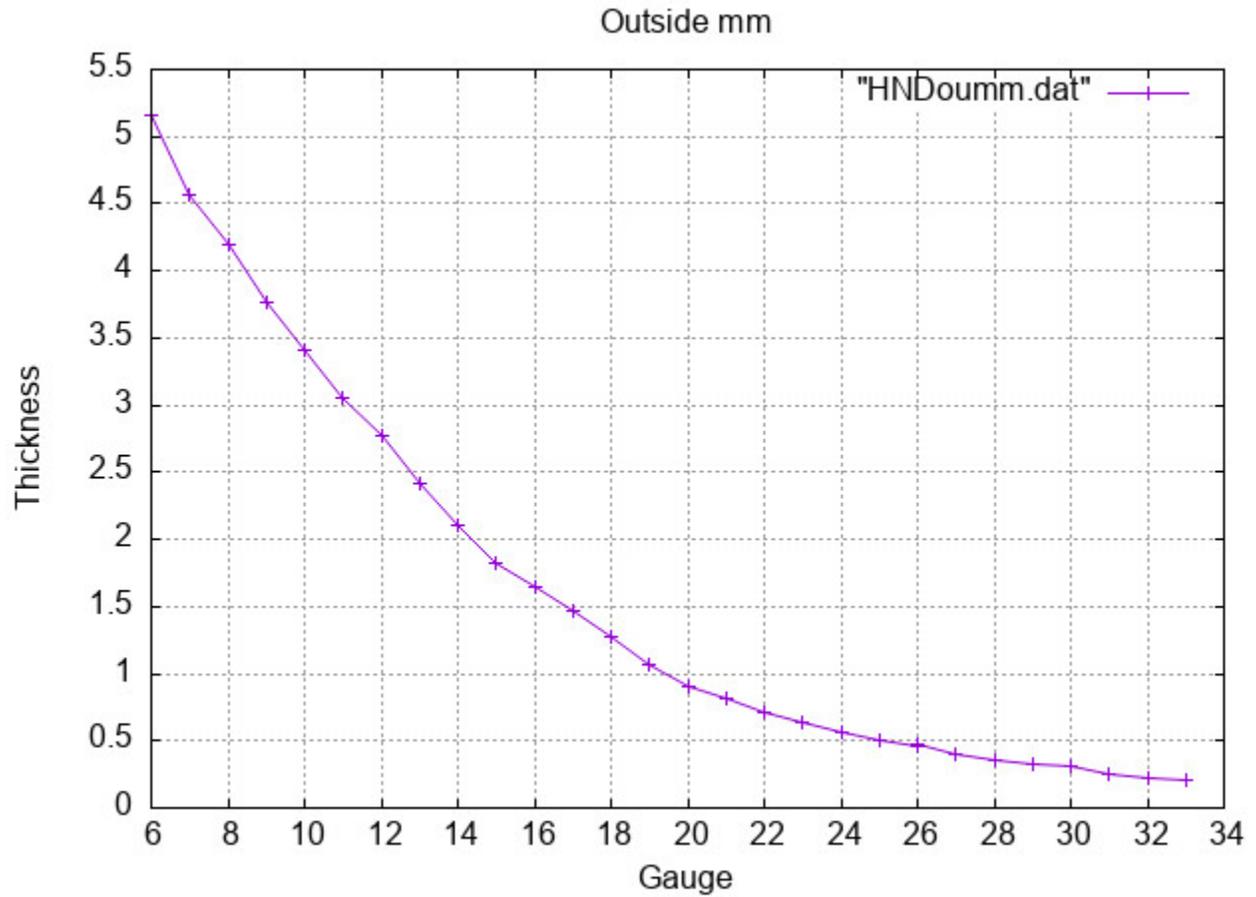
Figure 2: Inside vs Outside Hyprodermic Needle inch diameters HND.inc

1.1.2 Hyprodermic Needle Dimensions Outside Dimentions HYNDOD

Gauge	Outside Diameter	
	mm	in
6	5.156	0.2030
7	4.572	0.1800
8	4.191	0.1650
9	3.759	0.1480
10	3.404	0.1340
11	3.048	0.1200
12	2.769	0.1090
13	2.413	0.0950
14	2.108	0.0830
15	1.829	0.0720
16	1.651	0.0630
17	1.473	0.0580
18	1.270	0.0500
19	1.067	0.0420
20	0.902	0.0355
21	0.813	0.0320
22	0.711	0.0280
22s	0.711	0.0280
23	0.635	0.0250
24	0.559	0.0220
25	0.508	0.0200
25s	0.508	0.0200
26	0.457	0.0180
26s	0.467	0.0184
27	0.406	0.0160
28	0.356	0.0140
29	0.330	0.0130
30	0.305	0.0120
31	0.254	0.0100
32	0.229	0.0090
33	0.203	0.0080

Table 3: Hyprodermic Needle Outside Dimensions HNDOD

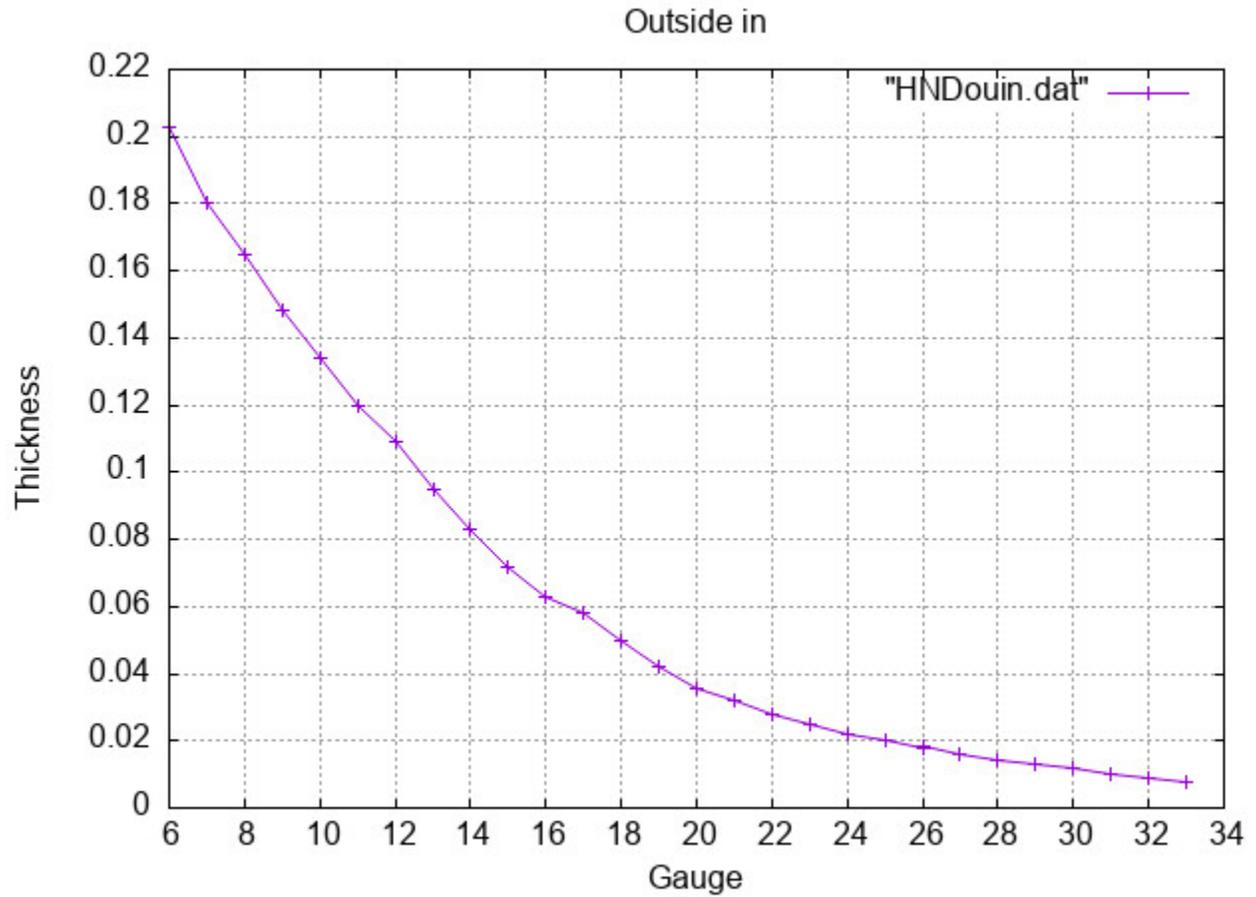
Plot of Outside mm diameterse HNDoumm



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Figure 3: Outside Hydrodermic Needle mm diameters HND.inc

Plot of Outside inch diameters HNDouin



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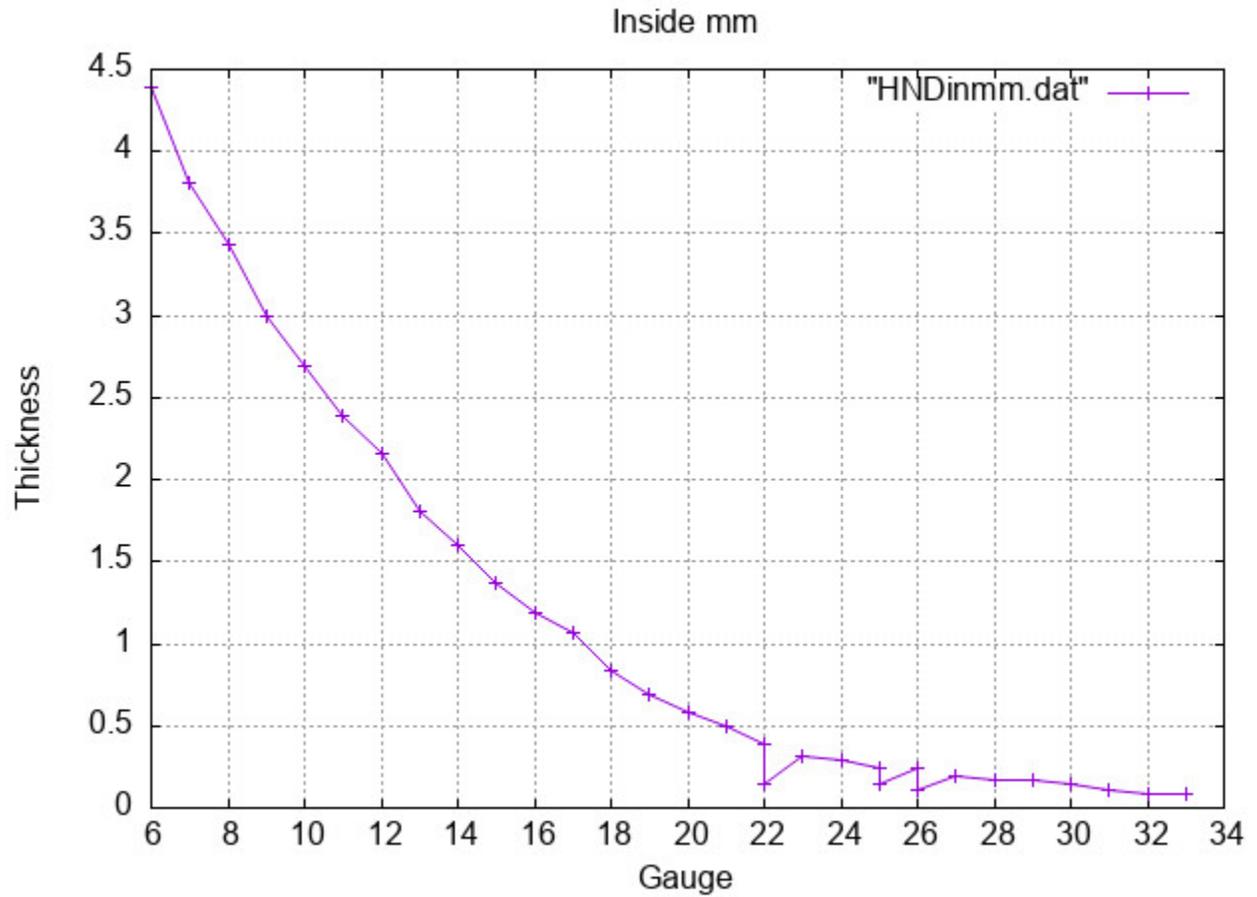
Figure 4: Outside Hyprodermic Needle inch diameters HND.inc

1.1.3 Hyprodermic Needle Dimensions Inside Dimensions HNDID

Gauge	Inside Diameter	
	mm	in
6	4.394	0.1730
7	3.810	0.1500
8	3.429	0.1350
9	2.997	0.1180
10	2.692	0.1060
11	2.388	0.0940
12	2.159	0.0850
13	1.803	0.0710
14	1.600	0.0630
15	1.372	0.0540
16	1.194	0.0470
17	1.067	0.0420
18	0.818	0.0330
19	0.686	0.0270
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21	0.495	0.0195
22	0.394	0.0155
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26	0.241	0.0095
26s	0.114	0.0045
27	0.191	0.0075
28	0.165	0.0065
29	0.165	0.0065
30	0.140	0.0055
31	0.114	0.0045
32	0.089	0.0035
33	0.089	0.0035

Table 4: Hyprodermic Needle Inside Dimensions HNDID

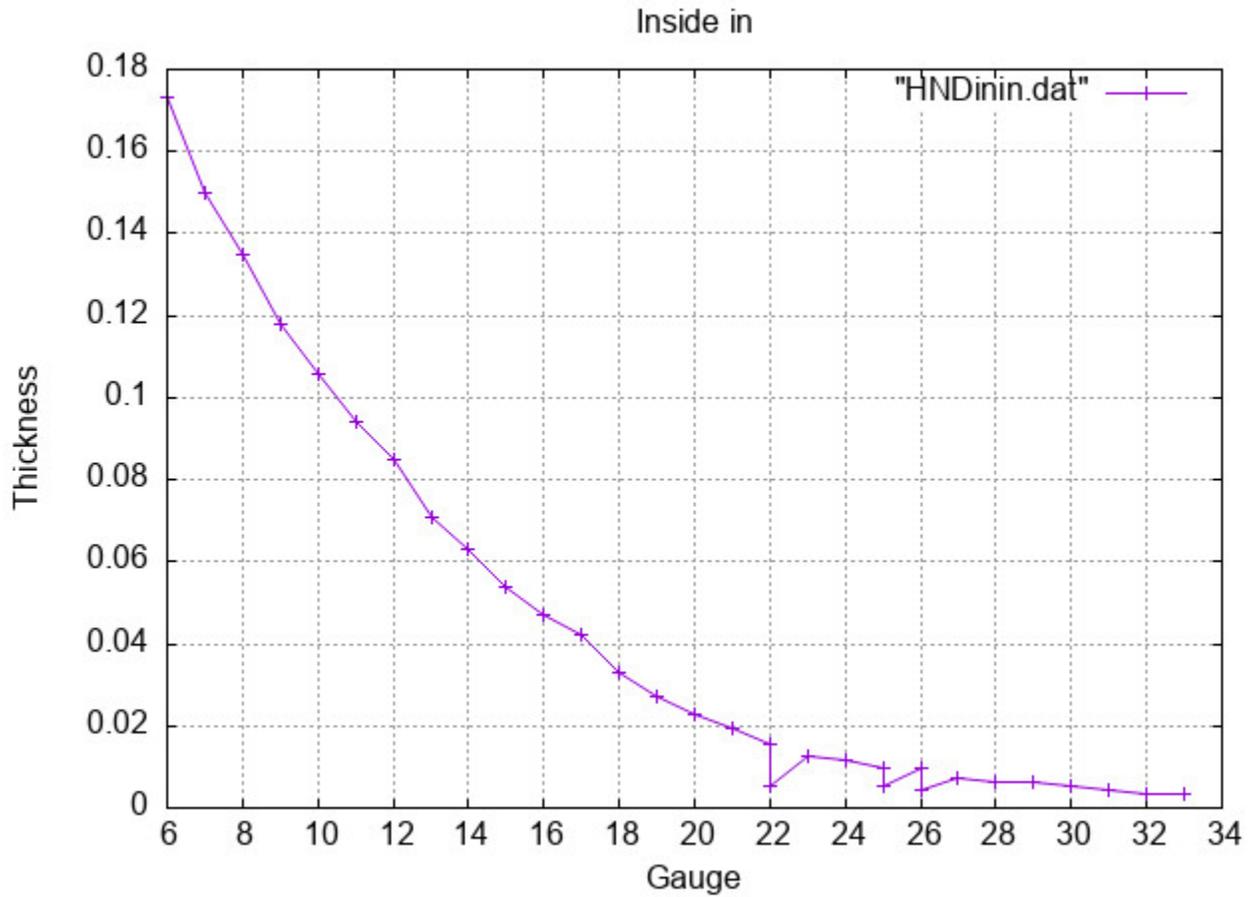
Plot of Inside mm diameterse HND_{inmm}



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Figure 5: Inside Hydrodermic Needle mm diameters HND.inc

Plot of Inside inch diameters HND_{in}



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Figure 6: Inside Hyprodermic Needle inch diameters HND.inc

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Machinery's Handbook, 31st Edition, [2](#)

Stub's Iron Wire Gauge, [2](#)