DATA SHEET

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Sheet #:	D1b
Title:	PROTOTYPE - SCALE CONVERSION CHART
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Updated:	October 1999
First Issued:	August 1946 (D1b)
Originally Compiled by:	Paul Callaham
Revised:	January 1950
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DIRECTIONS:

Prototype measurements are converted to scale inches by adding together the proper elements. Thus, for 13 feet:

	O	HO
10'	2 1/2"	1.378"
3'	5/8"	0.413"
	3 1/8"	1.791"
or	3.125"	1 51/64"

Note: For accuracy in OO and HO scales, it is best to add the decimals and then convert to fractions by using the chart below.

PROTOTYPE TO SCALE DIMENSION CONVERSION

	1-1/2" (1:8)					1" (1:12)					M (1:13.5)					
Prototype (inches)	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Prototype (inches)
1/16"	0.008	0.198	1/128		32	0.005	0.132			36	0.005	0.118			32	1/16"
1/8"	0.016	0.397	1/64	1/64	26	0.014	0.265	1/64	80	27	0.009	0.235	1/128		31	1/8"
1/4"	0.031	0.794	1/32	1/32	20	0.021	0.529	3/128	75	23	0.019	0.470	3/128	76	24	1/4"
1/2"	0.063	1.588	1/16	1/16	14	0.042	1.058	5/128	58	17	0.037	0.941	5/128	63	19	1/2"
3/4"	0.094	2.381	3/32	3/32	11	0.063	1.588	1/16	1/16	14	0.055	1.411	7/128	54	15	3/4"
1"	0.125	3.175	1/8	1/8	8	0.083	2.117	11/128	45	12	0.074	1.881	5/64	48	13	1"
2"	0.250	6.350	1/4	1/4	3	0.167	4.233	21/128	19	6	0.148	3.763	19/128	26	7	2"
3"	0.375	9.525	3/8	3/8		0.250	6.350	1/4	1/4	3	0.222	5.644	29/128	2	3	3"
4"	0.500	12.700	1/2	1/2		0.333	8.467	21/64	R		0.296	7.526	3/8	19/64		4"
5"	0.625	15.875	5/8			0.417	10.583	53/128	Z		0.370	9.407	57/128	3/8		5"
6"	0.750	19.050	3/4			0.500	12.700	1/2	1/2		0.444	11.289	33/64	U		6"
7"	0.875	22.225	7/8			0.583	14.817	75/128			0.519	13.170	75/128			7"
8"	1.000	25.400	1			0.667	16.933	85/128			0.593	15.052	19/32			8"
9"	1.125	28.575	1-1/8			0.750	19.050	3/4			0.666	16.933	85/128			9"
10"	1.250	31.750	1-1/4			0.833	21.167	53/64			0.741	18.815	95/128			10"
11"	1.375	34.925	1-3/8			0.917	23.283	117/128			0.815	20.696	13/16			11"
12"	1.500	38.100	1-1/2			1.000	25.400	1			0.889	22.578	57/64			12"

PROTOTYPE TO SCALE DIMENSION CONVERSION

	3/4" (1:16)					F (1:20.3)					G (1:22.5)					
Prototype (inches)	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Prototype (inches)
1/16"	0.004	0.099			38	0.003	0.078				0.003	0.071				1/16"
1/8"	0.008	0.198	1/128		32	0.006	0.156	1/128		34	0.006	0.141			34	1/8"
1/4"	0.016	0.397	1/64	78	26	0.012	0.313	1/64	80	28	0.011	0.282	1/128		29	1/4"
1/2"	0.031	0.794	1/32	68	20	0.025	0.626	3/128	72	22	0.022	0.564	1/64	74	23	1/2"
3/4"	0.047	1.191	3/64	3/64	17	0.037	0.938	5/128	63	19	0.033	0.847	1/32	1/32	20	3/4"
1"	0.063	1.588	1/16	1/16	14	0.049	1.251	3/64	55	16	0.044	1.129	3/64	3/64	17	1"
2"	0.125	3.175	1/8	1/8	8	0.098	2.502	13/128	40	10	0.089	2.258	5/64	5/64	11	2"
3"	0.188	4.763	3/16	3/16	5	0.148	3.754	19/128	25	7	0.133	3.387	1/8	1/8	8	3"
4"	0.250	6.350	1/4	1/4		0.197	5.005	25/128	9	4	0.178	4.516	3/16	3/16	5	4"
5"	0.313	7.938	5/16	5/16		0.246	6.256	1/4	D		0.222	5.644	15/64	15/64	3	5"
6"	0.375	9.525	3/8	3/8		0.296	7.507	19/64	19/64		0.267	6.773	17/64	17/64		6"
7"	0.438	11.113	7/16	7/16		0.345	8.759	11/32	11/32		0.311	7.902	5/16	5/16	0	7"
8"	0.500	12.700	1/2	1/2		0.394	10.010	25/64	25/64		0.356	9.031	23/64	23/64	00	8"
9"	0.563	14.288	9/16			0.443	11.261	57/128			0.400	10.160	25/64	25/64	00	9"
10"	0.625	15.875	5/8			0.493	12.512	63/128			0.444	11.289	7/16	7/16		10"
11"	0.688	17.463	11/16			0.542	13.764	35/64			0.489	12.418	31/64	31/64		11"
12"	0.750	19.050	3/4			0.591	15.015	19/32			0.533	13.547	17/32	17/32		12"

PROTOTYPE TO SCALE DIMENSION CONVERSION

	17/32" (1:22.6)					½" (1:24)					A (1:29)					
Prototype (inches)	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Prototype (inches)
1/16"	0.003	0.070				0.003	0.066				0.002	0.055				1/16"
1/8"	0.006	0.140	1/128		34	0.005	0.132			36	0.004	0.109			37	1/8"
1/4"	0.011	0.281	1/64	80	29	0.010	0.265	1/128		30	0.009	0.219	1/128		31	1/4"
1/2"	0.022	0.562	3/128	74	23	0.021	0.529	3/128	75	22	0.017	0.438	1/64	77	25	1/2"
3/4"	0.033	0.843	1/32	66	19	0.031	0.794	1/32	68	23	0.026	0.657	1/32	71	19	3/4"
1"	0.044	1.124	3/64	56	17	0.042	1.058	3/64	58	20	0.034	0.876	1/32	65	13	1"
2"	0.088	2.248	3/32	43	11	0.083	2.117	11/128	45	17	0.069	1.752	9/128	50	10	2"
3"	0.133	3.372	17/128	29	8	0.125	3.175	1/8	1/8	12	0.103	2.628	13/128	37	7	3"
4"	0.177	4.496	23/128	16		0.167	4.233	21/128	19	8	0.138	3.503	9/64	28	5	4"
5"	0.221	5.619	7/32	2		0.208	5.292	27/128	4	6	0.172	4.379	11/64	17	3	5"
6"	0.265	6.743	17/64	17/64		0.250	6.350	1/4	1/4	4	0.207	5.255	13/64	4		6"
7"	0.310	7.867	5/16	5/16		0.292	7.408	37/128	M		0.241	6.131	31/128	5/16		7"
8"	0.354	8.991	45/128	T		0.333	8.467	21/64	Q		0.276	7.007	35/128	23/64		8"
9"	0.398	10.115	51/128	X		0.375	9.525	3/8	3/8		0.310	7.883	5/16	25/64		9"
10"	0.442	11.239	57/128			0.417	10.583	27/64	27/64		0.344	8.759	11/32	7/16		10"
11"	0.487	12.363	31/64			0.458	11.642	59/128			0.379	9.634	3/16	31/64		11"
12"	0.531	13.487	17/32			0.500	12.700	1/2	1/2		0.413	10.510	53/128	17/32		12"

PROTOTYPE TO SCALE DIMENSION CONVERSION

	No. 1 (1:32)					O_{17} (1:45.2)					O (1:48)					
Prototype (inches)	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Prototype (inches)
1/16"	0.002	0.050				0.001	0.0014				0.001	0.033				1/16"
1/8"	0.004	0.099			38	0.003	0.003			40	0.003	0.066			40	1/8"
1/4"	0.008	0.198			32	0.006	0.006	1/128		35	0.005	0.132		1/64	36	1/4"
1/2"	0.016	0.397	1/64	1/64	26	0.011	0.011	1/64	80	29	0.010	0.265	1/128	75	30	1/2"
3/4"	0.023	0.595			23	0.017	0.017	1/64	78	26	0.016	0.397	1/64	1/16	26	3/4"
1"	0.031	0.794	1/32	1/32	20	0.022	0.022		74	23	0.021	0.529	1/64	45	24	1"
2"	0.063	1.588	1/16	1/16	14	0.044	0.044	3/64	56	17	0.042	1.058	3/64	37	18	2"
3"	0.094	2.381	3/32	3/32	11	0.066	0.066	1/16	51	14	0.063	1.588	1/16	1/8	14	3"
4"	0.125	3.175	1/8	1/8	8	0.089	0.088	3/32	43	11	0.083	2.117	5/64	26	12	4"
5"	0.156	3.969	5/32	5/32	6	0.111	0.111	7/64	34	9	0.104	2.646	7/64	19	10	5"
6"	0.188	4.763	3/16	3/16	5	0.133	0.133	9/64	29	8	0.125	3.175	1/8	3/16	8	6"
7"	0.219	5.556	7/32	7/32	3	0.155	0.155	5/32	23	6	0.146	3.704	9/64	4	7	7"
8"	0.250	6.350	1/4	1/4	2	0.177	0.177	11/64	16	5	0.167	4.233	11/64	1	6	8"
9"	0.281	7.144	9/32	9/32	1	0.199	0.199	13/64	8	4	0.188	4.763	3/16	1/4	5	9"
10"	0.313	7.938	5/16	5/16	0	0.221	0.222	7/32	2	3	0.208	5.292	13/64	H	4	10"
11"	0.344	8.731	11/32	11/32	00	0.243	0.243	1/4	C	3	0.229	5.821	15/64		3	11"
12"	0.375	9.525	3/8	3/8	00	0.266	0.265	17/64	H	2	0.250	6.350	1/4		2	12"

PROTOTYPE TO SCALE DIMENSION CONVERSION

	S (1:64)					OO (1:76.2)					HO (1:87.1)					
Prototype (inches)	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Prototype (inches)
1/16"	0.001	0.025				0.001	0.021				0.001	0.018				1/16"
1/8"	0.002	0.050				0.002	0.042				0.001	0.036				1/8"
1/4"	0.004	0.099			38	0.003	0.083			36	0.003	0.073			40	1/4"
1/2"	0.008	0.198	1/128		32	0.007	0.167			34	0.006	0.146			35	1/2"
3/4"	0.012	0.298			29	0.010	0.250	1/128		31	0.009	0.219	1/128		31	3/4"
1"	0.016	0.397	1/64	1/64	26	0.013	0.333	1/64	80	29	0.012	0.292	1/64	80	29	1"
2"	0.032	0.794	1/32	1/32	20	0.026	0.667	3/128	71	23	0.023	0.583	3/128	74	23	2"
3"	0.047	1.191	3/64	3/64	17	0.039	1.000	5/128	61	19	0.035	0.875	1/32	65	19	3"
4"	0.063	1.588	1/16	1/16	14	0.052	1.333	7/128	55	18	0.046	1.166	3/64	56	17	4"
5"	0.078	1.984	5/64	5/64	12	0.066	1.667	1/16	51	16	0.057	1.458	7/128	53	15	5"
6"	0.094	2.381	3/32	3/32	11	0.079	2.000	5/64	47	14	0.069	1.750	9/128	50	13	6"
7"	0.109	2.778	7/64	7/64	9	0.092	2.333	3/32	42	13	0.080	2.041	5/64	46	12	7"
8"	0.125	3.175	1/8	1/8	8	0.105	2.667	7/64	36	12	0.092	2.333	3/32	42	11	8"
9"	0.141	3.572	9/64	9/64	7	0.118	3.000	15/128	31	11	0.103	2.625	7/64	37	10	9"
10"	0.156	3.969	5/32	5/32	6	0.131	3.333	1/8	30	10	0.115	2.916	15/128	32	9	10"
11"	0.172	4.366	11/64	11/64		0.144	3.667	19/128	27	9	0.126	3.208	1/8	30	8	11"
12"	0.188	4.763	3/16	3/16	5	0.157	4.000	5/32	22	8	0.138	3.499	17/128	29	7	12"

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PROTOTYPE TO SCALE DIMENSION CONVERSION

	TT (1:120)					N (1:160)					Z (1:220)					
Prototype (inches)	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Decimal (inches)	Metric (mm)	Nearest Fraction	Drill #	B&S Wire Gage	Prototype (inches)
1/16"	0.0005	0.013				0.0004	0.010				0.0003	0.007				1/16"
1/8"	0.001	0.026				0.0008	0.020				0.0006	0.014				1/8"
1/4"	0.002	0.053				0.002	0.040				0.001	0.029				1/4"
1/2"	0.004	0.106			38	0.003	0.079			38	0.002	0.058				1/2"
3/4"	0.006	0.159			34	0.005	0.119			36	0.003	0.087				3/4"
1"	0.008	0.212	1/128	77	32	0.006	0.159	1/128		34	0.005	0.115			36	1"
2"	0.017	0.423	1/64	72	25	0.013	0.318	1/64	80	28	0.009	0.231	1/128		31	2"
3"	0.025	0.635	3/128	66	22	0.019	0.476		76	24	0.014	0.346	1/64	81	27	3"
4"	0.033	0.847	1/32	58	19	0.025	0.635	3/128	72	22	0.018	0.462		77	25	4"
5"	0.042	1.058	3/64	55	17	0.031	0.794	1/32	68	20	0.022	0.577	3/128	74	23	5"
6"	0.050	1.270		53	16	0.038	0.953	5/128	62	19	0.027	0.693		70	21	6"
7"	0.058	1.482	7/128	51	15	0.044	1.111		57	17	0.032	0.808	1/32	67	20	7"
8"	0.067	1.693	9/128	48	14	0.050	1.270	3/64	55	16	0.036	0.924		64	19	8"
9"	0.075	1.905	5/64	45	13	0.056	1.429	7/128	54	15	0.041	1.039	5/128	59	18	9"
10"	0.083	2.117	11/128	42	12	0.063	1.588	1/16	1/16	14	0.045	1.155	3/64	56	17	10"
11"	0.092	2.328	3/32	39	11	0.069	1.746	9/128	50	13	0.050	1.270		55	16	11"
12"	0.100	2.540	13/128		10	0.075	1.905	5/64	48	12	0.055	1.385	7/128	54	15	12"