

# DOES IT FIT?

CARS manufactured overseas should not be worked on with tools of domestic dimensions. In nearly all cases, you can't work properly on a British car without a good selection of wrenches made in Whitworth sizes. And cars built on the European continent require metric wrenches. Attempting to work on foreign machinery with crescent wrenches, vise-grips and pipe wrenches inevitably leads to butchered metal, barked and bleeding knuckles and, often enough, broken parts.

Whitworth and metric wrenches can't always be bought across the counter at the nearest auto supply house. However, if you know their dimensions in decimal inches you frequently can get out of a difficult situation by finding a U.S.-dimensioned tool with a nearly identical opening. For example,  $\frac{7}{32}$  and 5BA Whitworth wrenches are interchangeable, and so are  $\frac{15}{32}$  and 12 millimeter. If the slight difference of a couple of thousandths of an inch is critical, it can be relieved by a few strokes of a file. But there is no substitute for the convenience and security of having a good set of proper tools. High quality sets are available from at least one American tool manufacturer in prices ranging from about \$8 to \$50.

The foreign nomenclature is easily learned—in fact, the metric system is self-explanatory. The Whitworth sizes identified by a fraction followed by the letter "W" refer to the *bolt* diameter and not to the wrench opening. For example, a  $\frac{1}{2}$ W wrench fits the nut for a Whitworth bolt of  $\frac{1}{2}$ -inch diameter; the nut itself is nearly an inch across. Then, the smaller Whitworth sizes use an entirely different system of nomenclature, ranging from 12BA to 0BA. "BA" stands for British Association and the zero to 12 is a converted range of from 6mm to 1.3 mm, zero being the largest and 12 the smallest.

The table that follows makes clear the relationship of U.S., metric, and Whitworth wrench sizes. It shows those that are interchangeable and those that, in a pinch, can most conveniently be filed or ground to double for a size that is hard or impossible to get. This table has not been published in an American magazine before. If you're an enthusiast who enjoys working with the tools, you'll find it of permanent reference value. #

COMPARISON OF U.S., METRIC, AND WHITWORTH WRENCH SIZES

U.S.	Metric	Whitworth	Decimal Inches	Open-End Wrench		Box-End or Socket Wrench	
				Min.	Max.	Min.	Max.
Nominal Nut Size							
5/32	4mm	7BA	.156	.158	.161	.158	.163
			.157	.159	.162	.159	.164
3/16	5mm	6BA	.172	.174	.177	.174	.179
			.187	.190	.193	.190	.195
13/64	7/32	5BA	.193	.195	.198	.195	.200
			.197	.199	.202	.199	.204
15/64	6mm	4BA	.203	.205	.208	.205	.210
			.218	.221	.224	.221	.226
1/4	7mm	3BA	.220	.222	.225	.222	.227
			.234	.236	.239	.236	.241
17/64	8mm	2BA	.236	.238	.241	.238	.243
			.248	.250	.253	.250	.255
9/32	9mm	1BA	.250	.252	.255	.252	.257
			.265	.268	.271	.268	.273
5/16	10mm	0BA	.276	.278	.281	.278	.283
			.281	.284	.288	.284	.290
11/32	11mm	3/16W	.282	.284	.288	.284	.289
			.312	.316	.320	.316	.322
3/8	12mm	1/8W	.315	.317	.321	.317	.322
			.324	.327	.331	.327	.333
7/16	13mm	1/4W	.338	.341	.345	.341	.347
			.343	.347	.351	.347	.353
15/32	14mm	5/16W	.354	.357	.361	.357	.363
			.365	.368	.372	.368	.374
1/2	15mm	3/8W	.375	.378	.382	.378	.384
			.393	.396	.400	.396	.402
17/32	16mm	7/16W	.413	.416	.420	.416	.422
			.433	.436	.440	.436	.442
9/16	17mm	1/2W	.448	.451	.455	.451	.457
			.468	.472	.476	.472	.478
19/32	18mm	5/8W	.472	.475	.479	.475	.481
			.500	.504	.508	.504	.510
5/8	19mm	3/4W	.512	.516	.520	.516	.522
			.525	.529	.533	.529	.535
21/32	20mm	7/8W	.531	.535	.539	.535	.541
			.551	.555	.559	.555	.561
11/16	21mm	1W	.562	.566	.570	.566	.573
			.591	.595	.599	.595	.601
3/4	22mm	1 1/8W	.593	.598	.602	.598	.604
			.600	.604	.608	.604	.612
25/32	23mm	1 1/4W	.625	.629	.633	.629	.636
			.630	.634	.638	.634	.642
13/16	24mm	1 1/2W	.656	.661	.665	.661	.668
			.669	.673	.677	.673	.681
7/8	25mm	1 3/4W	.687	.692	.696	.692	.699
			.709	.715	.720	.715	.723
29/32	26mm	2W	.710	.715	.720	.715	.723
			.748	.753	.758	.753	.761
15/16	27mm	2 1/4W	.750	.755	.760	.755	.763
			.781	.786	.791	.786	.794
31/32	28mm	2 1/2W	.787	.792	.797	.792	.800
			.812	.818	.823	.818	.826
1	29mm	3W	.820	.825	.830	.825	.833
			.827	.832	.837	.832	.840
1-1/16	30mm	3 1/2W	.866	.871	.876	.871	.879
			.875	.880	.885	.880	.888
1-1/8	31mm	4W	.906	.911	.916	.911	.920
			.906	.911	.916	.911	.920
1-3/16	32mm	4 1/2W	.920	.925	.930	.925	.934
			.937	.944	.949	.944	.953
1-1/4	33mm	5W	.945	.950	.955	.950	.959
			.968	.975	.981	.975	.984
			.984	.990	.996	.990	.999
			1.000	1.006	1.012	1.006	1.015
			1.010	1.016	1.022	1.016	1.025
			1.024	1.030	1.036	1.030	1.039
			1.062	1.068	1.074	1.068	1.077
			1.063	1.069	1.075	1.069	1.078
			1.100	1.107	1.113	1.107	1.117
			1.102	1.109	1.115	1.109	1.119
			1.125	1.132	1.139	1.132	1.142
			1.142	1.149	1.156	1.149	1.159
			1.181	1.188	1.195	1.188	1.198
			1.187	1.195	1.202	1.195	1.205
			1.200	1.207	1.214	1.207	1.217
			1.220	1.227	1.234	1.227	1.237
			1.250	1.258	1.266	1.258	1.269
			1.260	1.267	1.275	1.267	1.277
			1.299	1.306	1.314	1.306	1.316