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Superseding J1291 MAY89

**(R) Automotive Hydraulic Brake System—Metric Banjo Bolt Connections**

1. **Scope**—This SAE Standard documents dimensional metric specifications for hydraulic brake system threaded ports and banjo bolts for the interconnection of major components in automotive hydraulic brake systems. Banjo blocks are not covered by this document.

The purpose of this document is to recommend preferred metrically dimensioned components (including alternative choices). Some applications may require sizes or forms other than those shown herein, and this document does not preclude such other details when they are required.

2. **References**

- 2.1 **Applicable Publications**—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated the latest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J512—Automotive Tube Fittings

SAE J1290—Automotive Brake System—Metric Tube Connections

3. **Threaded Ports (Banjo Bolts)**—Threaded ports for banjo bolts should be dimensioned as shown in Figure 1 and Table 1.

4. **Banjo Bolts**—Banjo bolts should be dimensioned as shown in Figure 2 and Table 2.

NOTE—This standard supersedes SAE J1258 (Cancelled 1980). Tubing, end flares, threaded ports for tube nuts, and male tube nuts are covered by SAE Recommended Practice J1290.

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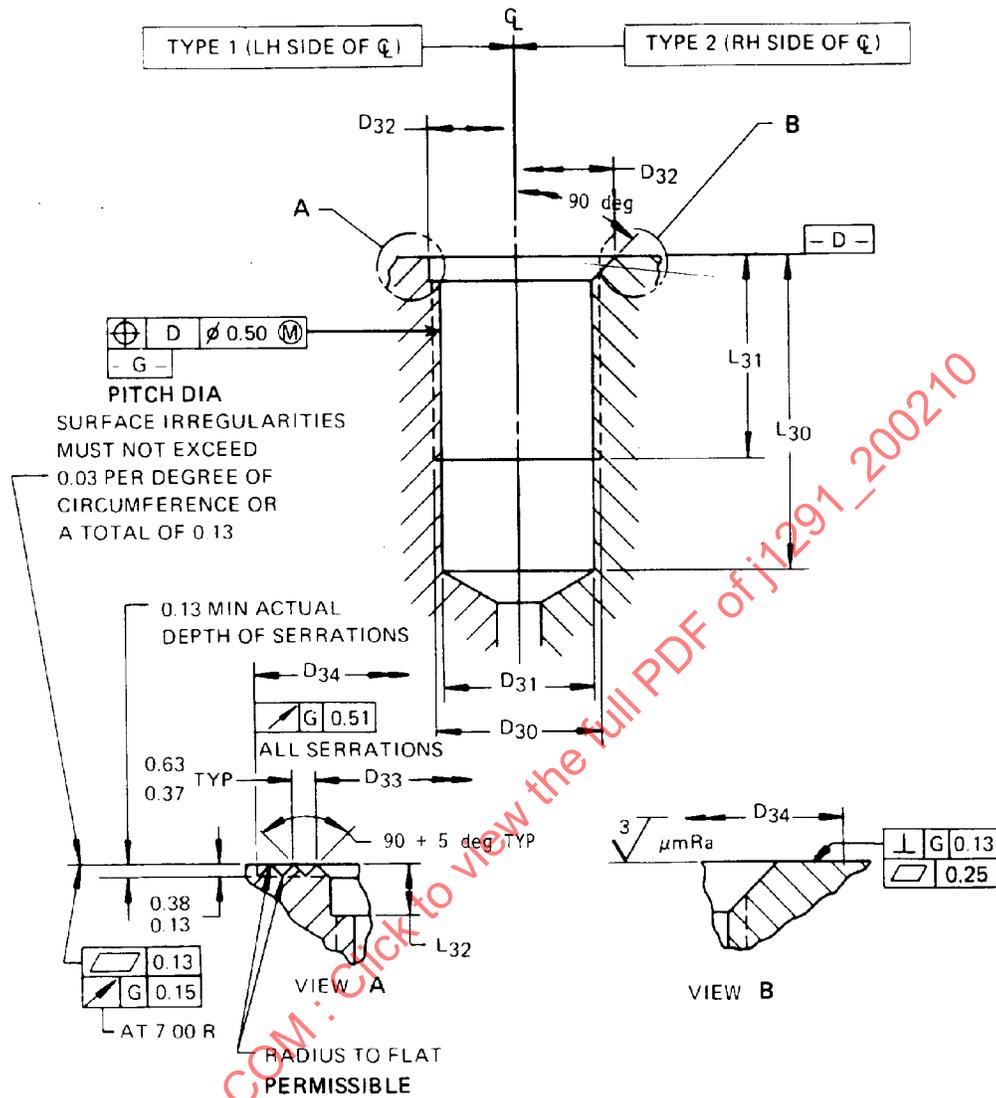


FIGURE 1—THREADED PORTS FOR BANJO BOLTS (mm)

TABLE 1—DIMENSIONS AND TOLERANCES FOR THREADED PORTS FOR BANJO BOLTS (mm)

D <sub>30</sub> Thread 6H Preference 1	D <sub>30</sub> Thread 6H Preference 2	D <sub>30</sub> Thread 6H Pitch	Pitch max	Pitch min	Minor max	Minor min	D <sub>31</sub> +0.0 -0.3	D <sub>32</sub>	D <sub>32</sub>	D <sub>33</sub> +0.0 -0.5	D <sub>34</sub>	D <sub>34</sub>	L <sub>30</sub> +0.0 -1.0	L <sub>31</sub> min	L <sub>32</sub> +0.0 -1.0
								+0.0 -0.2 Type 1	+0.0 -0.2 Type 2		+0.0 -0.5 Type 1	+0.0 -0.5 Type 2			
M10	M11	1.0	9.500	9.350	9.153	8.917	8.50	10.25	11.6	11.25	18.25	48.3	18.5	12.5	1.80
M10	M11	1.5	9.206	9.026	8.676	8.376	8.70	10.25	11.6	11.25	18.25	48.3	18.5	12.5	1.80
M10	M11	1.0	10.500	10.350	10.153	9.917	9.40	11.25	12.7	12.25	19.25	48.3	18.5	12.5	1.80
M10	M11	1.5	10.206	10.026	9.676	9.376	9.70	11.25	12.7	12.25	19.25	48.3	18.5	12.5	1.80
M12	M11	1.0	11.510	11.350	11.153	10.917	10.30	12.25	13.8	13.25	20.25	48.3	18.5	12.5	1.80
M12	M11	1.5	11.216	11.026	10.676	10.376	10.70	12.25	13.8	13.25	20.25	48.3	18.5	12.5	1.80

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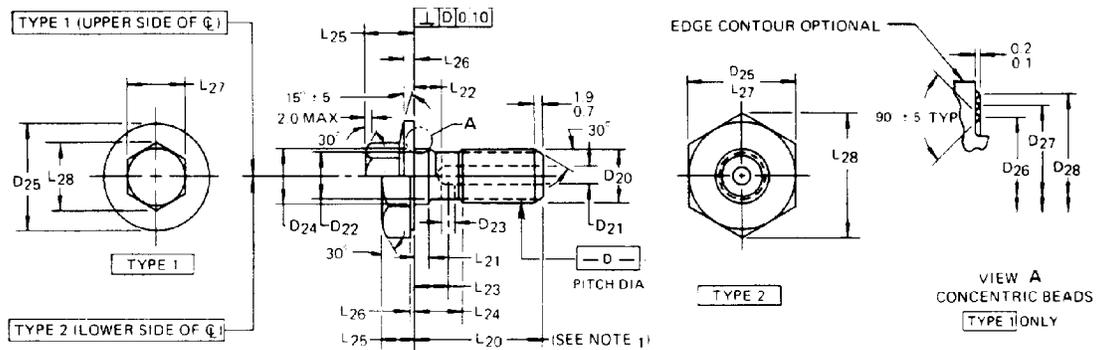


FIGURE 2—Banjo Bolts (mm)

TABLE 2—DIMENSIONS AND TOLERANCES FOR BANJO BOLTS (mm)<sup>(1)</sup>

D <sub>20</sub> Thread 6g Pref- erence 1	D <sub>20</sub> Thread 6g Pref- erence 2	D <sub>20</sub> Thread 6g Pitch	Pitch φ min	Pitch φ max	D <sub>21</sub> +0.0 -0.3	D <sub>22</sub> +0.0 -0.1	D <sub>23</sub> +0.0 -0.3	D <sub>24</sub> +0.0 -0.1	D <sub>25</sub> Type 1 +0.0 -1.0	D <sub>25</sub> Type 2 +0.0 -0.5	D <sub>26</sub> +0.0 -0.5	D <sub>27</sub> +0.0 -0.5	D <sub>28</sub> +0.0 -0.5	L <sub>20</sub> +0.0 -0.8	L <sub>21</sub> +0.0 -0.6	L <sub>22</sub> +0.0 -1.0	L <sub>23</sub> +0.0 -0.6	L <sub>24</sub> +0.0 -0.6	L <sub>25</sub> Type 1 +0.0 -1.1	L <sub>25</sub> Type 2 +0.0 -0.5	L <sub>26</sub> Type 1 +0.0 -0.3	L <sub>27</sub> Type 1 +0.0 -0.3	L <sub>27</sub> Type 2 +0.0 -0.3	L <sub>28</sub> Type 1 +0.0 -0.6	L <sub>28</sub> Type 2 +0.0 -0.6	
M10	M11	1.0	9.212	9.324	3.4	8.99	2.6	10.0	18.0	L <sub>27</sub>	13.0	14.3	15.6	See Note	3.0	4.0	6.5	8.6	9.6	6.6	1.5	0.6	11.0	15.0	12.7	17.3
M10	M11	1.5	8.862	8.994	3.4	8.99	2.6	10.0	18.0	L <sub>27</sub>	13.0	14.3	15.6	See Note	3.0	4.0	6.5	8.6	9.6	6.6	1.5	0.6	11.0	15.0	12.7	17.3
M10	M11	1.0	10.212	10.324	3.4	9.99	2.6	11.0	19.0	L <sub>27</sub>	14.0	15.3	16.6	See Note	3.0	4.0	6.5	8.6	10.6	7.2	1.8	0.6	12.0	16.0	13.9	18.5
M10	M11	1.5	9.862	9.994	3.4	9.99	2.6	11.0	19.0	L <sub>27</sub>	14.0	15.3	16.6	See Note	3.0	4.0	6.5	8.6	10.6	7.2	1.8	0.6	12.0	16.0	13.9	18.5
M12	M11	1.0	11.206	11.324	3.4	10.99	2.6	12.0	20.0	L <sub>27</sub>	15.0	16.3	17.6	See Note	3.0	4.0	6.5	8.6	11.6	7.8	2.0	0.6	13.0	17.0	15.0	19.6
M12	M11	1.5	10.854	10.994	3.4	10.99	2.6	12.0	20.0	L <sub>27</sub>	15.0	16.3	17.6	See Note	3.0	4.0	6.5	8.6	11.6	7.8	2.0	0.6	13.0	17.0	15.0	19.6

1. Dimension dependent on thickness of banjo block, which is not covered by this document. Pitch diameters shown above apply to plain (unplated or uncoated) bolts. Basic pitch diameters (minimum pitch diameters for internal threads in Table 1) shall apply to plated or coated bolts after plating or coating. For information relative to materials, finishes, and workmanship, refer to SAE J512. For thread sizes, refer to DIN 13. For hex sizes, refer to DIN 176.

5. Notes

5.1 Marginal Indicia—The change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

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