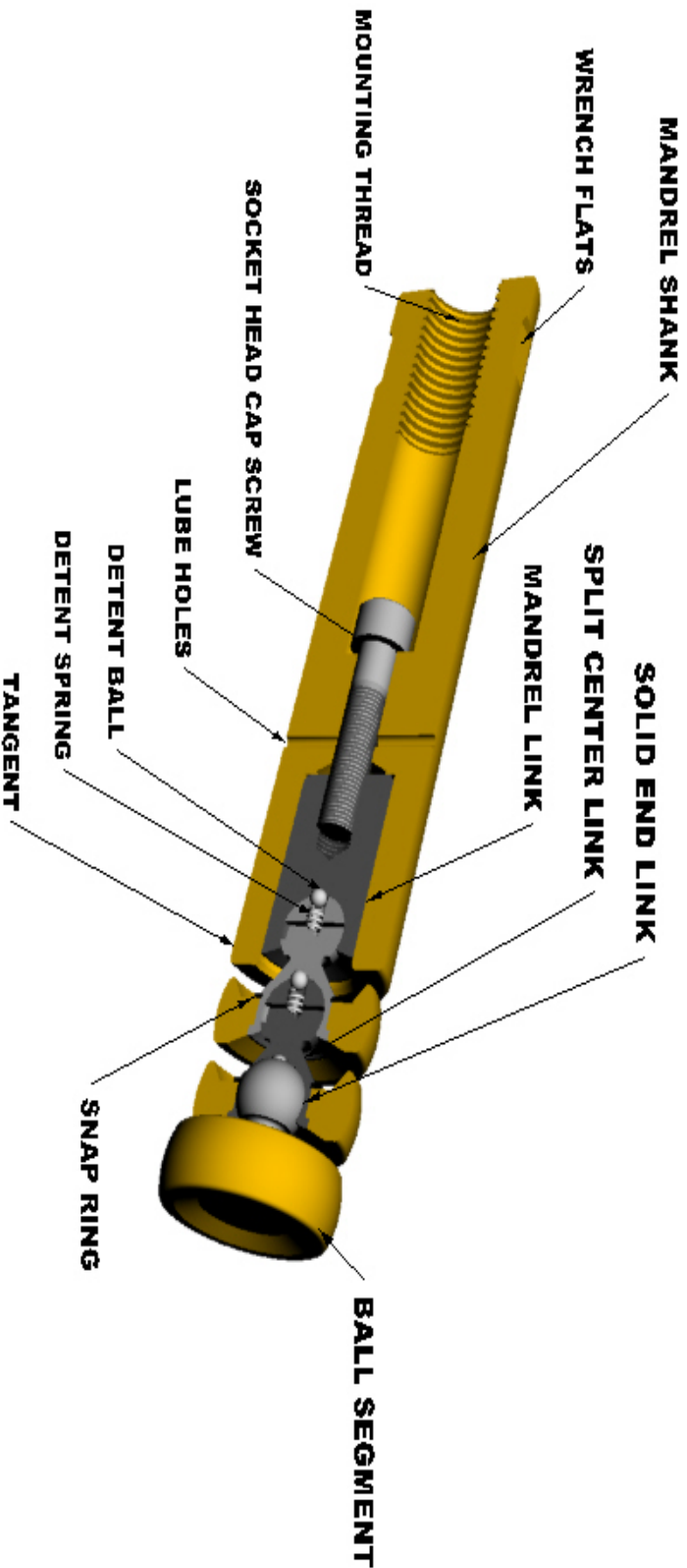


OPERATION AND MAINTENANCE OF OMNI-FLEX MANDRELS

DO:	DO NOT:
<ol style="list-style-type: none"> 1. Set Mandrel tangent as recommended by chart below for original set-up. 2. Test ball swivel limits before bending. Bottom all balls into bend die groove; all balls should contact. 3. Occasionally rotate Mandrel on mandrel rod to distribute wear. 4. Lubricate Mandrel body and balls properly and frequently. 	<ol style="list-style-type: none"> 1. DO NOT drive Mandrel into tube with bending machine mandrel extractor. This may shear ball retainer rings resulting in linkage failure. Special rings are available for this application. 2. DO NOT over-clamp onto balls during bending. Breakage of balls and links will result. 3. DO NOT use more balls than required/recommended.



DISASSEMBLY	
<ol style="list-style-type: none"> 1. Mandrel sizes of 5/6" O.D. and smaller are factory-repairable ONLY. All other sizes can be field-repaired. Online Video at www.omnibend.com 2. Remove Mandrel-link cap screw from Mandrel body with suitable Allen-Head T-wrench. (All sizes available from factory) 3. Remove Mandrel link from work end of Mandrel. Link splits into two halves, releasing ball string. 	<ol style="list-style-type: none"> 4. Remove snap ring from ball link. Slide ball off link. 5. Ball link splits into two halves, releasing next ball and link. 6. Repeat steps 4 & 5 until desired disassembly is accomplished. <p>NOTE: Each Link contains a small detent Ball and Spring. When disassembling Links, use caution to avoid losing these small parts.</p>

REASSEMBLY	
1. To re-assemble, reverse above procedure.	

TANGENT SETTING																																					
STANDARD	<table border="1"> <tr> <td>TUBE O.D.</td> <td>1/4 to 5/16</td> <td>3/8 to 7/16</td> <td>1/2 to 9/16</td> <td>5/8 to 11/16</td> <td>3/4 to 7/8</td> <td>1</td> <td>1 1/8 to 1 5/8</td> <td>1 3/4 to 2</td> <td>2 1/8 to 3 1/4</td> <td>3 3/8 to 4 1/2</td> <td>4 5/8 to 6</td> </tr> <tr> <td>TANGENT inches</td> <td>0.030</td> <td>0.077</td> <td>0.100</td> <td>0.125</td> <td>0.170</td> <td>0.205</td> <td>0.125</td> <td>0.187</td> <td>0.250</td> <td>0.312</td> <td>0.375</td> </tr> <tr> <td>TANGENT mm</td> <td>0.8</td> <td>2.0</td> <td>2.5</td> <td>3.2</td> <td>4.3</td> <td>5.2</td> <td>3.2</td> <td>4.7</td> <td>6.4</td> <td>7.9</td> <td>9.5</td> </tr> </table>	TUBE O.D.	1/4 to 5/16	3/8 to 7/16	1/2 to 9/16	5/8 to 11/16	3/4 to 7/8	1	1 1/8 to 1 5/8	1 3/4 to 2	2 1/8 to 3 1/4	3 3/8 to 4 1/2	4 5/8 to 6	TANGENT inches	0.030	0.077	0.100	0.125	0.170	0.205	0.125	0.187	0.250	0.312	0.375	TANGENT mm	0.8	2.0	2.5	3.2	4.3	5.2	3.2	4.7	6.4	7.9	9.5
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