



MACHINING AND OPERATING INSTRUCTIONS: DUNHAM TOOL EXPANDING MISER MANDRELS

PLEASE READ COMPLETE INSTRUCTIONS BEFORE BEGINNING

Warning: Over expansion of the mandrel may exceed elastic limit of material causing permanent damage to mandrel.

A. MACHINING THE MANDREL

1. Chuck the shank of the Miser Mandrel in a collet, jaw chuck, or fixture.
2. Now you can manually screw in the draw bolt until you have caused .005" of expansion in the mandrel O.D. at the very front end of mandrel. *(It is advised at this point that you operate the mandrel, expanding and contracting the mandrel multiple times before machining, up to a maximum of .006" this will break in the Miser Mandrel.)*
3. Once the mandrel has been expanded (as directed in step 2) you are now ready to turn the mandrel to size. You may want to turn the mandrel to .001" to .002" larger than the maximum part size to start out.

Example: A part with an I.D. of 1" plus or minus .002", machine mandrel to 1.003" or 1.004" diameter. This will permit holding parts of high or low tolerance.

You can test your part fit and skim cut more off the mandrel diameter if needed following the same procedure.

Caution: Light cuts and feeds are recommended when turning mandrel to desired size. If your mandrel is reduced in size more than 1/2" diameter (example-1 1/2" diameter to 3/4" diameter) it is advisable to recheck the .005" expansion before taking the final cut.

Caution: Over expansion will greatly reduce accuracy. We recommend expansions not to exceed .006" when close concentricity is desired. Expansion of .010" to .015" can be obtained, but concentricity may be impaired.

4. Once you have completed the machining of the mandrel you can back off the draw bolt to return the mandrel to its relaxed state.

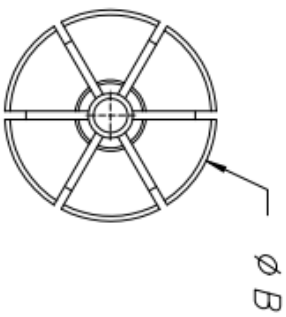
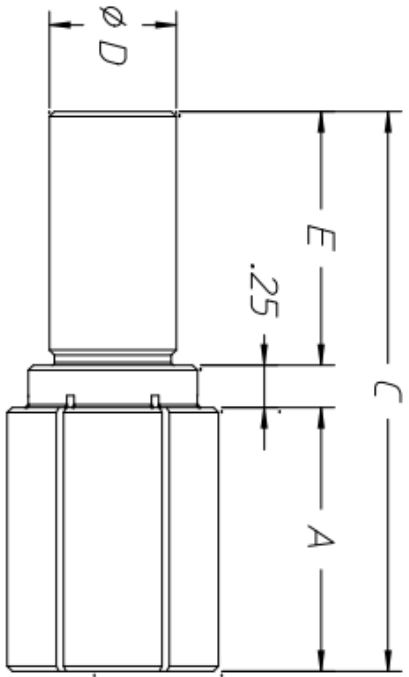
Caution: Do Not Expand and Contract mandrel without Part on Mandrel after initial sizing (step 2).

B. Maintenance

1. Keep your Miser Mandrel clean, and the draw bolt lightly lubricated to avoid the mandrel sticking in the expanded position.



**For additional information visit www.DunhamTool.com

Rev Date. 3/2/2023



PART NO.

MANDREL NO.	A	B	C	D	MACHINEABLE RANGE MIN. - MAX	E
MM0	1.13"	.50"	2.13"	.375"	.312" - .500"	1.000"
MMX	1.13"	.63"	2.13"	.375"	.375" - .625"	1.000"
MM1	1"	1.25"	2.813"	.750"	.500" - 1.250"	1.500"
MM2	1.5"	1.25"	3.313"	.750"	.500" - 1.250"	1.500"
MM3	1.5"	2"	3.313"	.750"	.750" - 2.000"	1.500"
MM4	2"	3.75"	3.813"	1.000"	.750" - 3.750"	1.500"
MM5	2"	5"	3.813"	1.000"	.750" - 5.000"	1.500"
MM6	2"	6"	3.813"	1.000"	.750" - 6.000"	1.500"

MATERIAL		FINISH		HEAT TREAT	
REFERENCE DRAWING:					
UNLESS OTHERWISE SPECIFIED DECIMAL DIM. .XX ±.015 .XXX ±.005 FRACTIONAL DIM. ±1/64 ANGLES ±1° ROUND EDGES .005-.015 CORNERS FILLETS .005-.020 SURFACE FINISH 32/					
TITLE		 DUNHAM TOOL COMPANY DIVISION OF LITSE CORPORATION MISER MANDREL SERIES			
 USED ON SCALE	PM-09-047 2/9/2015	DR. CHK. PART NO.	DATE		
REV.	DATE	CHANGES		BY	