

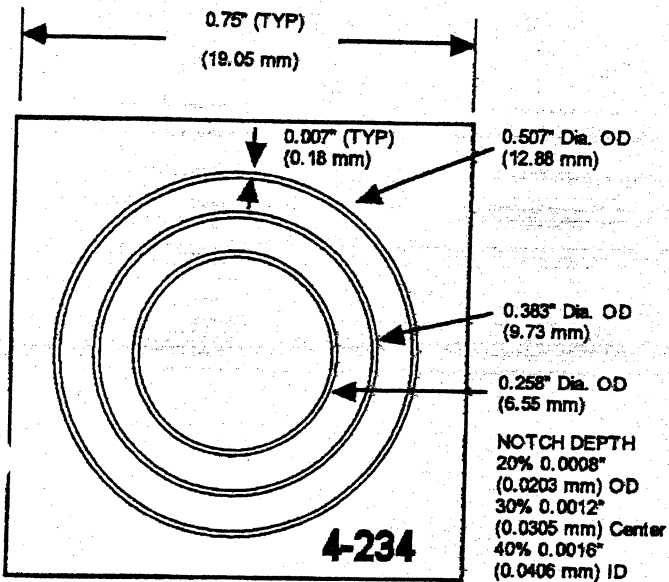
ensure the establishment and balance of fields in the multidirectional magnetization method.

X2.1.1 The shims are available in two thicknesses, 0.002 in. [0.05 mm] and 0.004 in. [0.10 mm]. Thinner shims are used when the thicker shims cannot conform to the part surface in the area of interest.

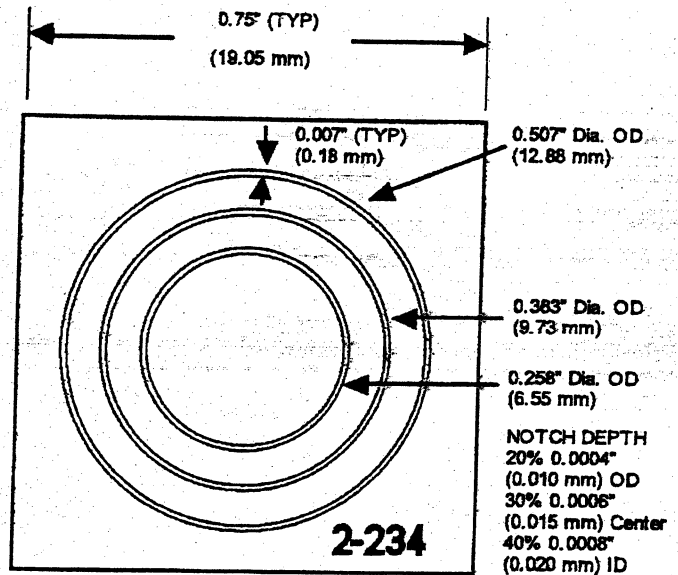
X2.1.2 The shims are available in two sizes, 0.75 in. [19 mm] square for Figs. X2.1 and X2.2 and 0.79 in. [20 mm] square of Fig. X2.3. The shims of Fig. X2.3 are cut, by the user, into four 0.395 in. [10 mm] square shims for use in restricted areas.

X2.2 Shims shall be low carbon steel, AMS 5062 or equivalent.

X2.3 Shims shall be used as specified in AS 5371. Shims are placed in the area(s) of interest with the notches toward the surface of the part being examined. Use enough shims or place the shim in multiple areas to ensure proper field directions and strengths are obtained.



Shim Type 3C4-234
Shim Thickness 0.004" (0.102 mm)



Shim Type 3C2-234
Shim Thickness 0.002" (0.05 mm)

FIG. X2.2 Shims for Magnetic Particle Testing

KSC4-234 (521049)

KSCT234 (519632)

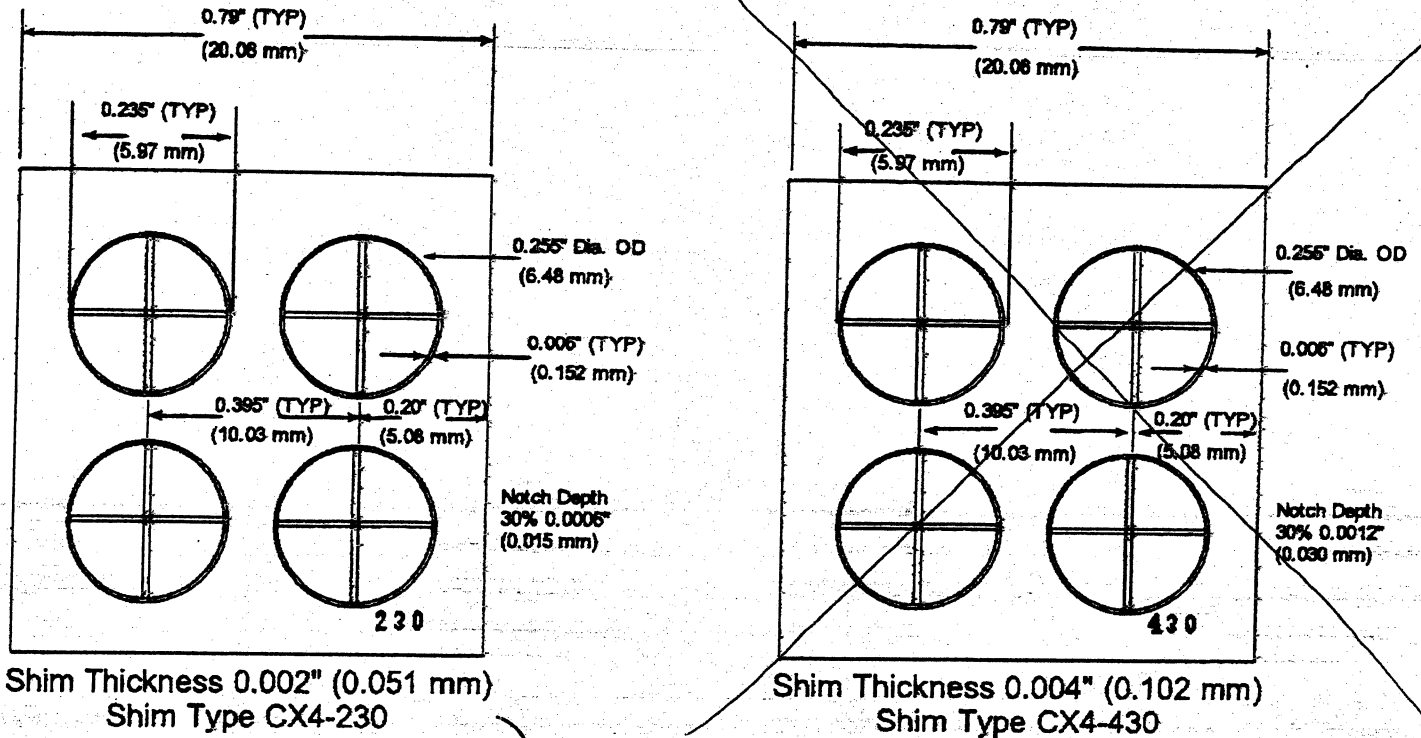


FIG. X2.3 Shims for Magnetic Particle Testing

KSC4-230(519631)

X3. FLEXIBLE LAMINATED STRIPS FOR MAGNETIC PARTICLE TESTING

X3.1 Flexible laminated strips are typically used to ensure proper field direction during magnetic particle examination. The longitudinal axis of the strip should be placed perpendicular to the direction of the magnetic field of interest in order to generate the strongest particle indications on the strip.

X3.1.1 The strips are available in two types, General Use and Aerospace Use. Both types of strip contain a steel layer sandwiched between two brass plates that are 0.0020 in. [0.05 mm] thick. The bottom brass layer acts as a lift-off of 0.0020 in. [0.05 mm] from the examination surface. The brass is non-magnetic and functions only to provide lift-off and to protect the steel layer. The entire strip may have a polymeric coating for further protection.

X3.1.2 The longitudinal dimension of the strips is 1.95 in. [50 mm] and the width of the strip is 0.47 in. [12 mm].

X3.1.3 Both types of strips contain three longitudinal slots in the center steel layer.

X3.1.3.1 The widths of the slots in the General strip are 0.0075 in. [0.00030 mm], 0.009 in. [0.00035 mm], and 0.010 in. [0.00040 mm].

X3.1.3.2 The widths of the slots in the Aerospace strip are 0.003 in. [0.00012 mm], 0.004 in. [0.00016 mm] and 0.005 in. [0.00020 mm].

X3.2 The center steel layer of the strips is made of a high "μ" magnetic material.

X3.3 Strips shall be placed in the area(s) of interest part or surface being examined. Use enough strips or place the strips in multiple areas to ensure that proper field directions are obtained.

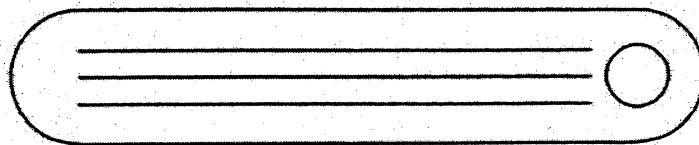
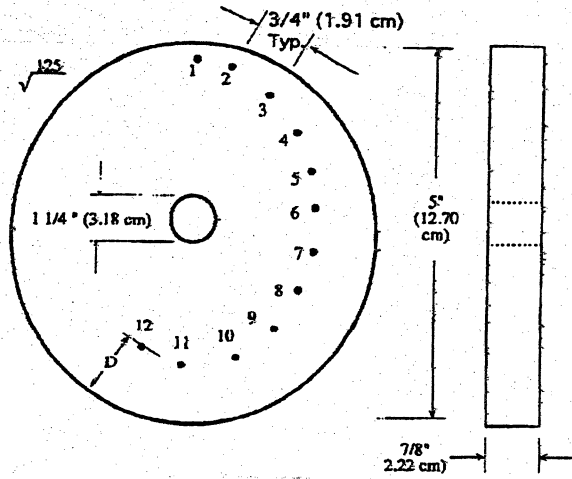


FIG. X3.1 The longitudinal lines represent the location of the slots cut into the center steel layer of either the General or Aerospace flexible laminated strips.



Hole	1	2	3	4	5	6
Diameter	0.07	0.07	0.07	0.07	0.07	0.07
Note 1	[1.78 mm]	[1.78 mm]	[1.78 mm]	[1.78 mm]	[1.78 mm]	[1.78 mm]
"D"	0.07	0.14	0.21	0.28	0.35	0.42
Note 2	[1.78 mm]	[3.56 mm]	[5.33 mm]	[7.11 mm]	[8.89 mm]	[10.67 mm]
Hole	7	8	9	10	11	12
Diameter	0.07	0.07	0.07	0.07	0.07	0.07
Note 1	[1.78 mm]	[1.78 mm]	[1.78 mm]	[1.78 mm]	[1.78 mm]	[1.78 mm]
"D"	0.49	0.56	0.63	0.70	0.77	0.84
Note 2	[12.45 mm]	[14.22 mm]	[16.00 mm]	[17.78 mm]	[19.56 mm]	[21.34 mm]

NOTE 1—All hole diameters are ± 0.005 in. [± 0.13 mm]. Rings with holes 10 through 12 are optional.
 NOTE 2—Tolerance on the D distance is ± 0.005 in. [± 0.13 mm].
 NOTE 3—All other dimensions are ± 0.03 in. [± 0.76 mm].

FIG. X1.1 ANSI KETOS Steel Tool Ring

X2. REFERENCE STANDARD NOTCHED SHIMS FOR MAGNETIC PARTICLE INSPECTION PER AS 5371

X2.1 The following standard flawed shims are typically used to establish proper field direction and ensure adequate field strength during technique development in magnetic particle examination. The shims in Fig. X2.1 may be used to

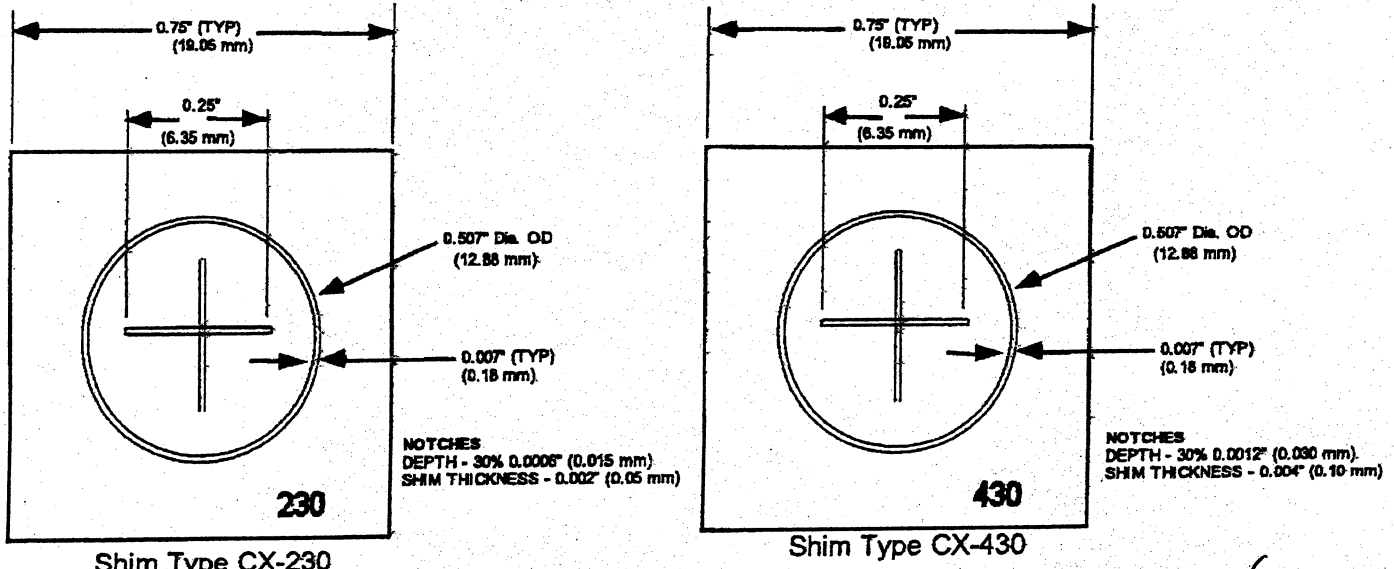


FIG. X2.1 Shims for Magnetic Particle Testing

KSC 230 (519630)
Standard

KSC 430 (521048)