

# Tool Steel Ring 工具钢环形试块

## MAG PARTICLE TEST PIECE

### 磁粉检测试块

The Tool Steel Ring is a standardized test piece commonly used with wet bench magnetic particle equipment. The ring is machined from AISI O1 Tool Steel, annealed, tested and certified to meet AS 5282 specifications. Typically used with a 1 inch central conductor, the Tool Steel Ring has 12 machined holes at increasing depths from the edge and is used to verify the performance of HWDC, FWDC, and 3-phase FWDC magnetizing equipment. Suitable for use with wet or dry materials and visible or fluorescent particles. The number of indications required depends on the waveform and magnetizing current amperage (refer to AS 5282 or ASTM E1444 for more information).

工具钢环形试块是一种标准化测试块，通常用于湿法磁粉探伤机。该试块由 AISI O1 工具钢加工，经过退火、测试和认证，符合 AS 5282 标准要求。工具钢环形试块通常使用直径 1 英寸中心导棒，在边缘加工有不同深度的 12 个通孔，用于验证半波直流 HWDC、全波直流 FWDC 和 3 相全波直流 FWDC 磁粉探伤设备的性能。适用于湿法或干法非荧光或荧光磁粉。所需的磁痕数取决于波形和磁化电流大小（有关详细信息，请参阅 AS 5282 或 ASTM E1444）。



## FEATURES 功能

Dimensions 尺寸	
Outer Diameter 外径	5.00 in / 127.0 mm
Inner Diameter 内径	1.25 in / 31.8 mm
Thickness 厚度	0.88 in / 22.2 mm

Manufactured and annealed to AS 5282 specifications 按照 AS 5282 标准规格制造和退火。

Precision-machined subsurface defects 精密加工的次表面人工缺陷深度:

1. 0.07 in / 1.78 mm
2. 0.14 in / 3.56 mm
3. 0.21 in / 5.33 mm
4. 0.28 in / 7.11 mm
5. 0.35 in / 8.89 mm
6. 0.42 in / 10.67 mm
7. 0.49 in / 12.45 mm
8. 0.56 in / 14.22 mm

9. 0.63 in / 16.00 mm

10. 0.70 in / 17.78 mm

11. 0.77 in / 19.56 mm

12. 0.84 in / 21.34 mm

## INSTRUCTIONS 说明

Place the Tool Steel Ring on a non-ferrous central conductor (1.00 to 1.25 in / 2.5 to 3.2 cm diameter). Clamp the central conductor between head and tail stocks. Set the equipment amperage to the pre-determined levels according to AS 5282 or the table below. Magnetize and apply particles according to normal procedures. Verify the number of indications observed against the minimum number required by AS 5282 or in the table below. If multiple amperages are being checked, proceed from the lowest to the highest setting, demagnetizing the ring between each setting.

将中心导棒（直径为 1.00 至 1.25 英寸 / 2.5 至 3.2 厘米）穿过工具钢环形试块。将中心导棒加持在头尾座之间。根据 AS 5282 或下表，将设备电流设置到预定水平。按照正常流程进行磁化和施加磁粉。

It is recommended to benchmark the performance of the Tool Steel Ring on a specific magnetic particle equipment in order to detect any decrease or change in performance over time.

建议使用工具钢环型试块对同一台磁粉探伤设备进行定期测试，以观察一段时间后是否有性能变化。

For best results, demagnetize ring after use, clean with acetone or equivalent cleaning solvent. Apply oil or other rust protection before storage.

为获得最佳效果，使用后将试块进行退磁，使用丙酮或等效清洁剂清洁。在存放前涂抹机油或进行其他防锈保护。

#### SPECIFICATIONS 符合规范

Compliant with 符合以下标准:

- AS 5282
- ASME BPVC Section V Article 7
- ASTM E709
- ASTM E1444

For use with systems complying to 适用于:

- ISO 9934
- ASTM E3024

#### PART NUMBER 件号

159999 工具钢环形试块

Materials 耗材(磁粉)种类	Amperage FWDC or HWDC 电流大小 半波直流或全波直流	Minimum Holes Indicated 最小磁痕显示 数量
Fluorescent (wet) 荧光(湿法)	500	3
	1000	5
	1500	6
	2500	7
	3500	9
Visible (wet) 非荧光(湿法)	500	3
	1000	4
	1500	5
	2500	6
	3500	8
Dry Powder 干磁粉	500	4
	1000	6
	1500	7
	2500	8
	3500	9

NOTE: The Tool Steel Ring is not intended for use with AC magnetic fields.

注:工具钢环形试块不适用于交流磁场。