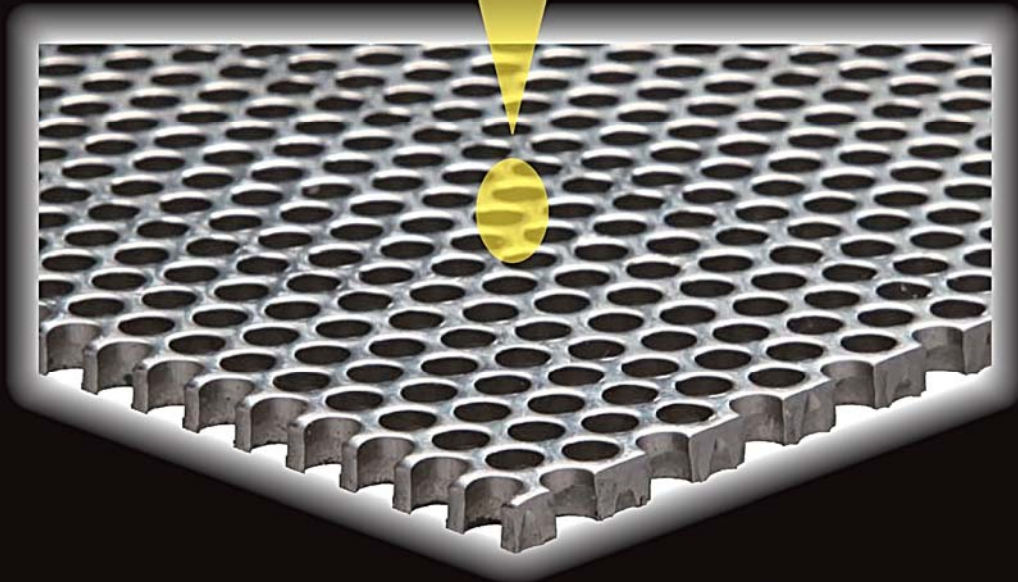




OKS 1895

**Going Beyond  
The Limits**



# **SUPER PUNCHING™**



**No Laser  
No Machining  
Just Punching**



KOBE • AKASHI • SAKAI

## **OKUTANI Ltd.**

Perforated metal & wire mesh since 1895



Featuring One-of-a-Kind Technology

# SUPER PUNCHING™

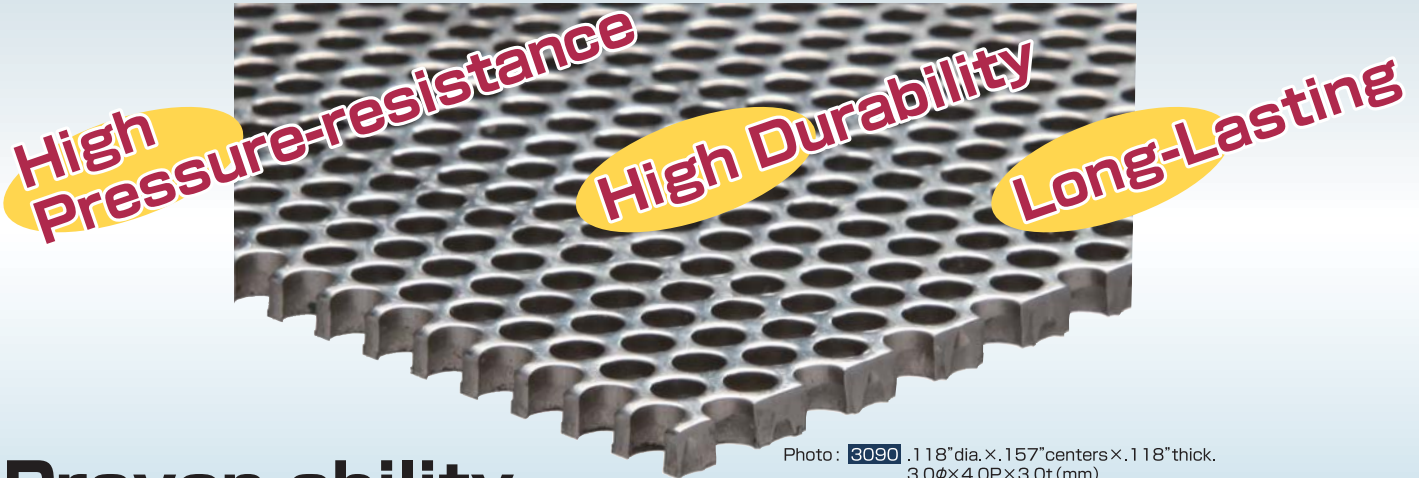


Photo : 3090, 1.18" dia. X. 157" centers X. 1.18" thick.  
3.0φ x 4.0P x 3.0t (mm)

**Proven ability  
to bore holes with diameters smaller  
than the thickness of the metal sheet.**

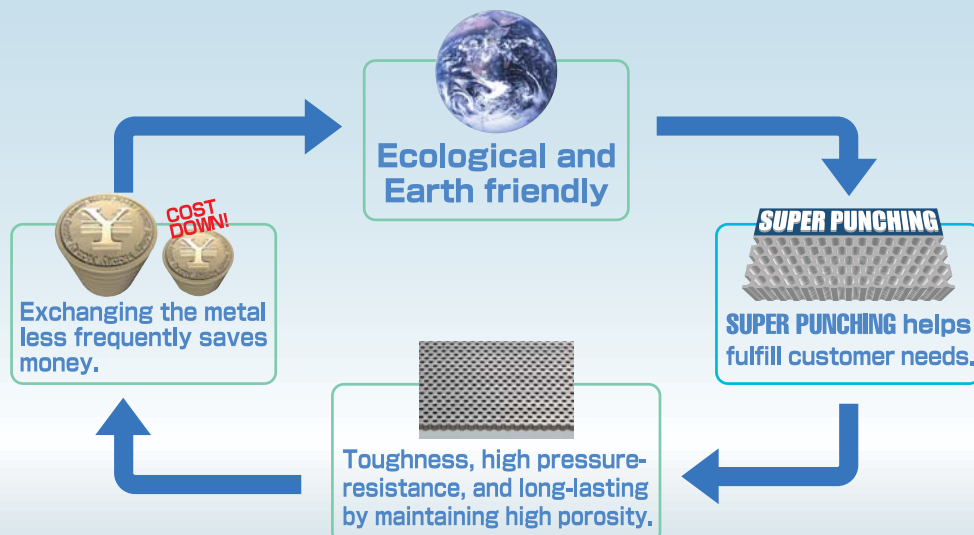
## About SUPER PUNCHING™

- Proven ability to bore holes with diameters **smaller than the thickness** of the metal sheet.
- Smaller pitch size than ever before!  
**Small pitch sizes** punch pressed.
- **Strengthen the metal** by thickening the sheet and retaining the hole diameters.

## Super Punched workpieces are for :

- Products that need high-pressure resistance, and high durability.
- Situations where standard punched metal workpieces can't be used.
- Nuclear plants, Crude-processing plants, Wastewater treatment plants.
- Aircrafts, Watercrafts, Trains.
- Granulators, Crushers.
- Trommels.

## SUPER PUNCHING™ CYCLE

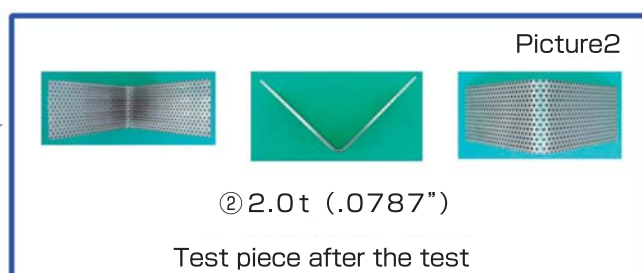
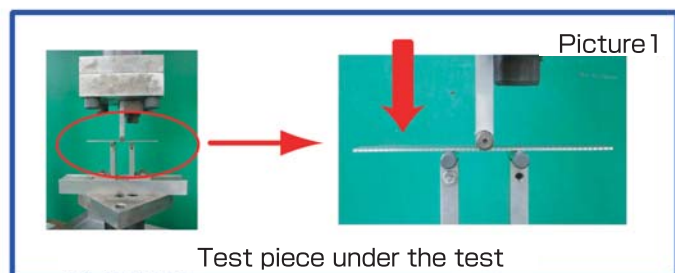


# Specifications of SUPER PUNCHING™ perforated metal

| No.   | Material |              |          | Finish | Hole Dia.       | Centers          | Thickness       | Number of Holes per sq. inch | Open Area | Maximum Size        |                     |
|-------|----------|--------------|----------|--------|-----------------|------------------|-----------------|------------------------------|-----------|---------------------|---------------------|
|       | JIS      | AISI (UNS)   | EN       |        |                 |                  |                 |                              |           | Width               | Length              |
| 3010  | SUS304J2 |              | EN1.4567 | 2D     | .029"<br>0.75mm | .059"<br>1.50mm  | .039"<br>1.00mm | 331.3                        | 22.6%     | 24.00"<br>609.6mm   | 36.00"<br>914.4mm   |
| 3015  | SUS304J2 |              | EN1.4567 | 2D     | .029"<br>0.75mm | .078"<br>2.00mm  | .039"<br>1.00mm | 186.8                        | 12.8%     | 36.00"<br>914.4mm   | 48.00"<br>1,219.2mm |
| ☆3020 | SUS304J2 |              | EN1.4567 | 2D     | .031"<br>0.80mm | .063"<br>1.60mm  | .039"<br>1.00mm | 291.6                        | 22.7%     | 24.00"<br>609.6mm   | 36.00"<br>914.4mm   |
| 3023  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .035"<br>0.90mm | .078"<br>2.00mm  | .039"<br>1.00mm | 186.8                        | 18.4%     | 48.00"<br>1,219.2mm | 48.00"<br>1,219.2mm |
| ☆3025 | SUS304J2 |              | EN1.4567 | 2D     | .039"<br>1.00mm | .078"<br>2.00mm  | .047"<br>1.20mm | 186.8                        | 22.8%     | 48.00"<br>1,219.2mm | 48.00"<br>1,219.2mm |
| ☆3028 | SUS304J2 |              | EN1.4567 | 2D     | .039"<br>1.00mm | .118"<br>3.00mm  | .047"<br>1.20mm | 83.0                         | 10.1%     | 48.00"<br>1,219.2mm | 48.00"<br>1,219.2mm |
| ☆3029 | SUS304J2 |              | EN1.4567 | 2D     | .039"<br>1.00mm | .078"<br>2.00mm  | .059"<br>1.50mm | 186.8                        | 22.8%     | 24.00"<br>609.6mm   | 48.00"<br>1,219.2mm |
| 3030  | SUS304J2 |              | EN1.4567 | 2D     | .039"<br>1.00mm | .118"<br>3.00mm  | .059"<br>1.50mm | 83.0                         | 10.1%     | 24.00"<br>609.6mm   | 48.00"<br>1,219.2mm |
| 3033  | SUS304J2 |              | EN1.4567 | 2D     | .039"<br>1.00mm | .098"<br>2.50mm  | .059"<br>1.50mm | 119.5                        | 14.6%     | 24.00"<br>609.6mm   | 48.00"<br>1,219.2mm |
| 3040  | SUS304J2 |              | EN1.4567 | 2D     | .047"<br>1.20mm | .094"<br>2.40mm  | .078"<br>2.00mm | 129.6                        | 22.7%     | 24.00"<br>609.6mm   | 48.00"<br>1,219.2mm |
| ☆3045 | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .059"<br>1.50mm | .118"<br>3.00mm  | .078"<br>2.00mm | 83.0                         | 22.8%     | 24.00"<br>609.6mm   | 48.00"<br>1,219.2mm |
| ☆3050 | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .078"<br>2.00mm | .118"<br>3.00mm  | .078"<br>2.00mm | 83.0                         | 40.4%     | 36.00"<br>914.4mm   | 72.00"<br>1,828.0mm |
| 3060  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .059"<br>1.50mm | .118"<br>3.00mm  | .098"<br>2.50mm | 83.0                         | 22.8%     | 36.00"<br>914.4mm   | 72.00"<br>1,828.0mm |
| 3065  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .078"<br>2.00mm | .137"<br>3.50mm  | .098"<br>2.50mm | 60.9                         | 29.6%     | 36.00"<br>914.4mm   | 72.00"<br>1,828.0mm |
| 3070  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .078"<br>2.00mm | .118"<br>3.00mm  | .118"<br>3.00mm | 83.0                         | 40.4%     | 36.00"<br>914.4mm   | 36.00"<br>914.4mm   |
| 3075  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .078"<br>2.00mm | .157"<br>4.00mm  | .118"<br>3.00mm | 46.7                         | 22.7%     | 48.00"<br>1,219.2mm | 48.00"<br>1,219.2mm |
| 3080  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .098"<br>2.50mm | .197"<br>5.00mm  | .118"<br>3.00mm | 29.8                         | 22.7%     | 48.00"<br>1,219.2mm | 72.00"<br>1,828.8mm |
| ☆3090 | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .118"<br>3.00mm | .157"<br>4.00mm  | .118"<br>3.00mm | 46.7                         | 51.1%     | 36.00"<br>914.4mm   | 72.00"<br>1,828.8mm |
| 3095  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .157"<br>4.00mm | .197"<br>5.00mm  | .118"<br>3.00mm | 29.8                         | 58.2%     | 36.00"<br>914.4mm   | 72.00"<br>1,828.8mm |
| ☆3100 | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .118"<br>3.00mm | .197"<br>5.00mm  | .157"<br>4.00mm | 29.8                         | 32.7%     | 36.00"<br>914.4mm   | 36.00"<br>914.4mm   |
| 3105  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .137"<br>3.50mm | .236"<br>6.00mm  | .157"<br>4.00mm | 20.7                         | 30.9%     | 36.00"<br>914.4mm   | 72.00"<br>1,828.8mm |
| 3110  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .157"<br>4.00mm | .236"<br>6.00mm  | .157"<br>4.00mm | 20.7                         | 40.4%     | 36.00"<br>914.4mm   | 72.00"<br>1,828.8mm |
| 3150  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .157"<br>4.00mm | .315"<br>8.00mm  | .197"<br>5.00mm | 11.7                         | 22.7%     | 36.00"<br>914.4mm   | 72.00"<br>1,828.8mm |
| 3155  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .177"<br>4.50mm | .374"<br>9.50mm  | .197"<br>5.00mm | 8.3                          | 20.4%     | 48.00"<br>1,219.2mm | 96.00"<br>2,438.4mm |
| ☆3170 | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .177"<br>4.50mm | .413"<br>10.50mm | .236"<br>6.00mm | 6.8                          | 16.7%     | 36.00"<br>914.4mm   | 72.00"<br>1,828.8mm |
| ☆3173 | SUS304   | 304(S30403)  | EN1.4307 | 2B     | .197"<br>5.00mm | .236"<br>6.00mm  | .059"<br>1.50mm | 20.7                         | 63.2%     | 48.00"<br>1,219.2mm | 96.00"<br>2,438.4mm |
| ☆3175 | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .197"<br>5.00mm | .315"<br>8.00mm  | .236"<br>6.00mm | 11.7                         | 35.5%     | 36.00"<br>914.4mm   | 72.00"<br>1,828.8mm |
| 3180  | SUS304L  | 304L(S30403) | EN1.4307 | 2B     | .236"<br>6.00mm | .354"<br>9.00mm  | .236"<br>6.00mm | 9.2                          | 40.4%     | 36.00"<br>914.4mm   | 72.00"<br>1,828.8mm |

All items are 60 deg. staggerd pattern and without margins in four sides (factory pre-cut)

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Purpose              | Flexural test for <b>SUPER PUNCHING™</b> perforated metal                                                                                                                                                                                                                                                                                                                                                                              |
| 2. Samples to be tested | Stainless steel perforated metal (details as below)                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. Test Method          | <p>Three point bending flexural test</p> <p>(1) Testing equipment : Shimazu Universal Tester type : AG-X100kN</p> <p>(2) Test conditions</p> <p>(a) Number of test pieces : 3 pieces (*3)</p> <p>(b) Environmental temperature : Room temperature (23°C or 73.4°F)</p> <p>(c) Test speed : 1mm/min</p> <p>(d) Dimensions of test piece : 40mm width × 150mm length</p> <p>(3) Perforated patterns : D1.5mm × P3.0mm staggered (*3)</p> |

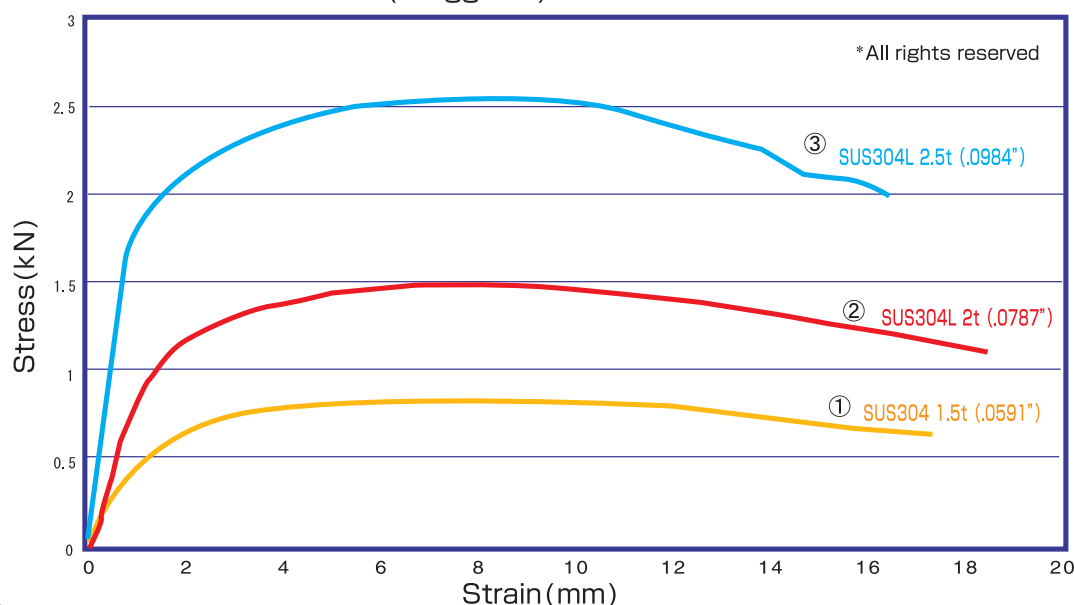


Result of bending test

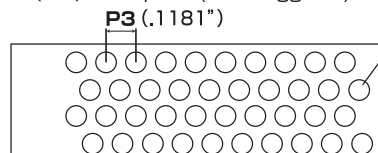
| Type of patterns | Material (*4) | Dimensions of specimen (mm) |               | Max. flexural load Pmax (kN) | Max. flexural stress σmax (MPa) |
|------------------|---------------|-----------------------------|---------------|------------------------------|---------------------------------|
|                  |               | Width (b)                   | Thickness (h) |                              |                                 |
| Staggered        | SUS304        | 40.0                        | 1.47          | 0.848                        | 841                             |
|                  | SUS304L       | 40.0                        | 1.91          | 1.485                        | 869                             |
|                  | SUS304L       | 40.0                        | 2.49          | 2.553                        | 904                             |

Remarks : Maximum flexural stress ( $\sigma_{max}$ ) =  $3PL/2b'h^2$ , L=40mm, b'=b-1.5×8

Stress-Strain Curve (Staggered)

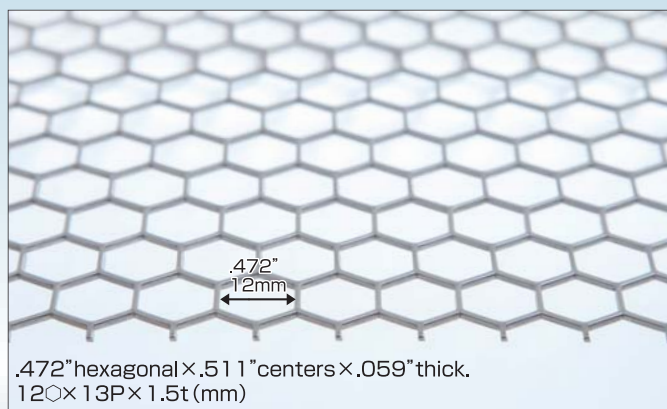
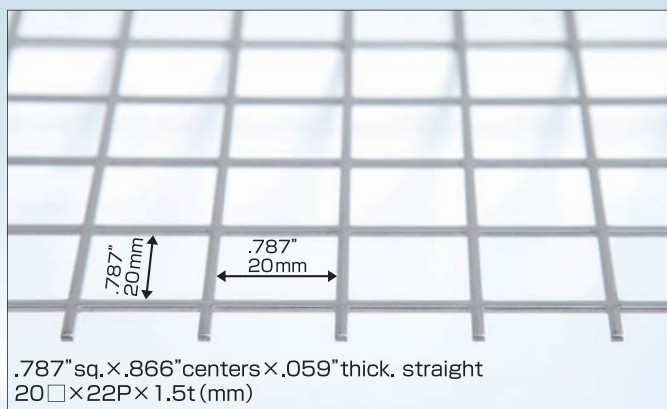
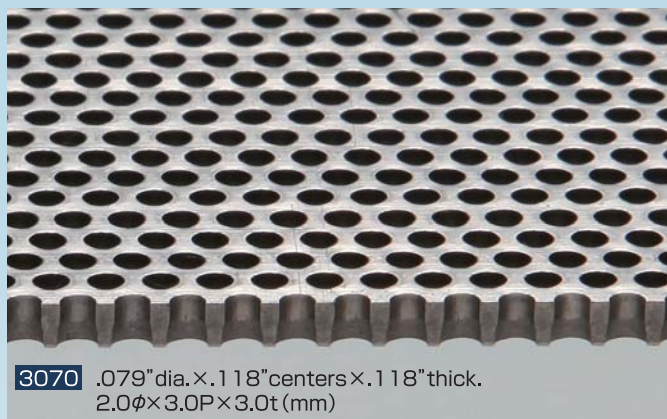
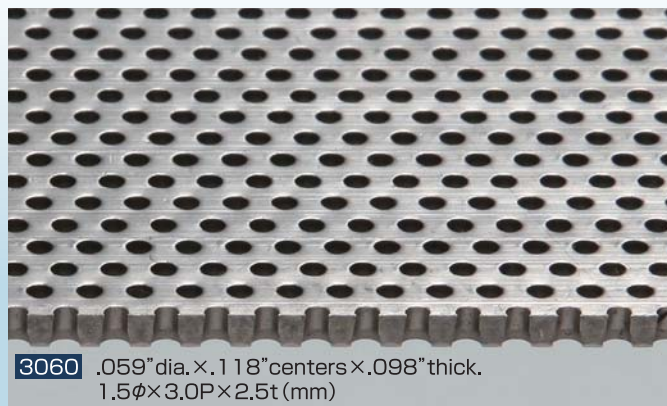
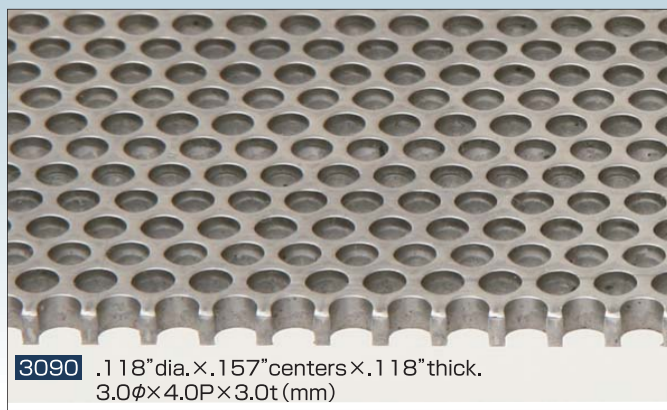


(\*3) Test piece (60° staggered)



φ1.5 (.1181")

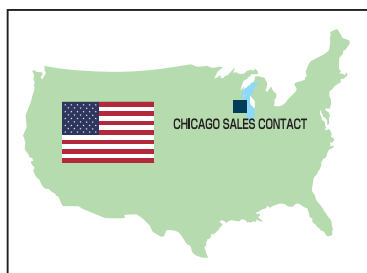
(\*4) Material SUS304L : ISO X2CrNi18-9 (EN 1.4307) 2.5t × φ1.5 × P3.0 (mm)  
SUS304L : ISO X2CrNi18-9 (EN 1.4307) 2.0t × φ1.5 × P3.0 (mm)  
SUS304 : ISO X5CrNi18-10 (EN 1.4301) 1.5t × φ1.5 × P3.0 (mm)



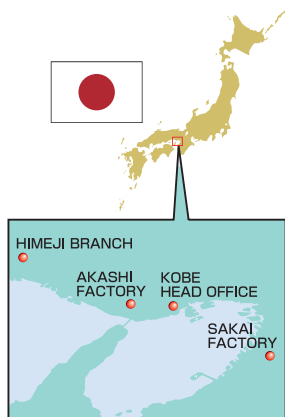
# With over a hundred years of history



## Over 1000 items are here



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Global Potential Market  
Development Program



### **OKUTANI Ltd.**

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