

Unified® Screening & Crushing PRODUCTIVITY TOOLS



SALES & MANUFACTURING FACILITIES



Unified Screening & Crushing 225 N. Pasadena Street Gilbert, AZ 85233 800-332-6463 sales.az@unifiedscreening.com (Corporate address)



Unified Screening & Crushing #6 Industrial Park Benton, AR 72015 800-458-2770 sales.ar@unifiedscreening.com



Unified Screening & Crushing 8300 West Elowin Court Visalia, CA 93291 800-535-2221 sales.ca@unifiedscreening.com



Unified Screening & Crushing Colorado Wire Cloth 409 Goodrich Avenue, PO Box 160 Platteville, CO 80651 800-332-6280 sales.co@unifiedscreening.com



Unified Screening & Crushing 759 S. E, Federal Hwy., Ste. 310 Stuart, FL 34994 772-210-2618 sales.fl@unifiedscreening.com



Unified Screening & Crushing 305 Fast Walker Road St. Johns, MI 48879 888-464-9473 sales.mi@unifiedscreening.com



Unified Screening & Crushing 3350 Dodd Road Eagan, MN 55121 800-328-0225 sales.mn@unifiedscreening.com



Unified Screening & Crushing 4330 W. Desert Inn Road, Ste.-K Las Vegas, NV 89102 702-222-9799 sales.nv@unifiedscreening.com















Unified Screening & Crushing 136 Crestwick Road Ramseur, NC 27316

PO Box 486 Ramseur, NC 27316 877-784-9791 sales.nc@unifiedscreening.com

Unified Screening & Crushing 200 Cass Drive Clavton, OH 45315 800-626-1897 sales.oh@unifiedscreening.com

Unified Screening & Crushing 9235 Margies Lane Selma, TX 78154 800-470-9473 sales.tx@unifiedscreening.com

Unified Screening & Crushing 1458 South 700 West Salt Lake City, UT 84104 801-975-6482 sales.ut@unifiedscreening.com

Unified Screening & Crushing Polythane 5654 Virginia Byway Bedford, VA 24523 800-328-0225 sales.va@unifiedscreening.com

Unified Screening & Crushing 22020 72nd Avenue Kent, WA 98032 800-562-1971 sales.wa@unifiedscreening.com

Unified Screening & Crushing 400 Wisconsin Drive New Richmond, WI 54017 800-328-0225 sales.wi@unifiedscreening.com



INDEX



Ordering your Unified screening products

Ordering screens, wear parts and accessories from Unified is easy. Call your closest Unified Screening & Crushing location.

You can also call our national sales and customer service team at 866.968.3697 or email info@unifiedscreening.com.

For more product information, visit the Unified website at www.unifiedscreening.com

Sales & Manufacturing Facilities2
Index 3
About Unified4-5
Selecting Screening Media 6
Woven Wire Cloth7-20
Synthetics 21-28
Crushing and Crusher Wear Parts 29-35
Auxiliary Products 37-40
Reference:
Screen Order Form

Operating Equipment Details

Corporate Profile

Decades of growth

What began as a wooden fencing business in St. Paul, Minnesota in 1869 is now an industry-leading group of screening, sizing and crushing media manufacturers across the United States, with 14 production facilities throughout the country. In addition to manufacturing hundreds of thousands of wire, urethane, and rubber screen media products, Unified[®] Screening & Crushing maintains one of the largest inventories of manganese liners and crusher wear parts.

As one of the few remaining family-owned companies in our industry, a commitment to quality, price and service is more than just a slogan, we've lived it for 150 years in business.

On-the-job training

Unified's screening, crushing and wear parts products perform so well on the job, because they are inspired by on-the-job situations. We often develop products while working alongside a customer to solve problems – identifying opportunities on how to use Unified products to their maximum potential, while recognizing challenges a customer might face or innovations we can leverage.

Unified field representatives have previous industry experience. They've worked for quarries, equipment suppliers, foundries or other aggregate and mining-related companies. Anyone can sell products, but the Unified team is focused on solving customer problems – and nothing beats experience in the field.

Quality always matters

To ensure that the Unified products you order meet the highest quality standards, each stage of manufacturing undergoes inspection and verification. We are ANSI/ISO 9001:2015 Internationally Certified. We were one of the first Wire Cloth Manufacturers to achieve Certification in North America. We continue to raise the bar to improve the quality of our products and services to exceed customer expectations.

One call for immediate service

Domestic weaving and regional presence at 14 facilities across the U.S. allow us to offer the best service and on-site expertise for all Unified products.

Whether you have a screen blinding problem or just need to check a delivery date, Unified customer service is just one phone call away: 1-866-968-3697 no matter where you are located in Northern America.



Second-generation President and CEO Tom Lentsch is proud to say that Unified wire products are made from steel wire drawn in American rod and wire mills and manufactured and finished at our 14 locations across the United States.



Unified's current board of directors spans two generations of family leadership (Left to Right): Anne Marie Peltier, Bob Kleason, Debbie Lentsch, Tom Lentsch, Andrew Lentsch.



Unified maintains a commitment to our people: hiring, developing, and motivating a team that focuses on problem-solving and service. (Left to Right) Josh Magrath, Bob Kleason, Jimmy Georgantones

About Unified Screening & Crushing



Local presence, nationwide resources

As a Unified[®] Screening & Crushing customer, you get the best of both worlds. You work with the nearest Unified screening, sizing and crushing media manufacturer — people who know local materials and operations and who provide local delivery and tech support. You can depend on the combined knowledge base, resources, exceptional quality and competitive pricing that Unified offers as a nationwide manufacturer.

Most importantly, you get Unified's outstanding dedication to customer service. Your Unified Team works with you to:

- Minimize downtime. Massive inventory from locations across the country including the largest ready-to-ship crusher parts inventory in North America means you get the right products delivered to your site right when you need them.
- **Optimize production.** Unified's field experts have faced every screening, crushing and sizing situation. We can help you address factors, including: material, moisture-content, equipment type, and expected throughput to develop a solution.
- Maximize profits. Our nationwide material sourcing means you get competitive pricing with lower-cost local delivery.

Whether you have a screen blinding problem or just need to check a delivery date, Unified customer service is just one phone call away: 1-866-968-3697 no matter where you are located in North America.

MISSION STATEMENT

Unified's goal is to provide products, services and expertise that are second to none in the industry. Our focus on customer satisfaction affects all company activities.

BUSINESS PRINCIPAL

Building quality products to help customers operate more productively. Through the strength of our industry leading network, we pledge that any Unified product you buy will perform better than or equal to, any similar product available. Customer problems always receive prompt attention.

Selecting Screening Media

Selecting the right screening media

Unified Screening & Crushing is your total screening solutions company. That means no matter what material you process, from sand to metallic ores, we have the right screen media and wear parts for your operation. Unified's experienced sales and engineering staff will help you select the product that best fits your applications.

Wire Cloth

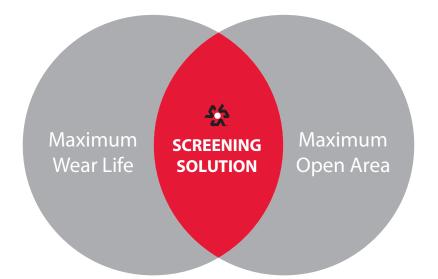
- More throughput and production
- Readily available
- Less upfront cost, compared to other options
- More adaptable design options
- Up to 10 foot wide widths and variable length options

Polyurethane

- Extreme wear life, especially good for wet applications
- Lower maintenance and fewer changeouts for more cost efficient production
- Square or slotted openings
- Modular or tension mats
- Superior design optimizes open area

Rubber

- Scalping applications and coarse dry screening
- · Crushed or natural, impact resistance and extended wear life in dry screening applications
- High impact resistance
- Low maintenance
- Rubber vulcanized with steel plate recommended for heavy weight and high impact applications



WOVEN WIRE CLOTH



WIRE CLOTH

Unified Woven Product Line

Cost efficiency and throughput performance have made woven wire the preferred screening material for a majority of processors. Unified wire cloth products are used for classifying materials including crushed stone, sand and gravel, metallic ores, coal, grains and other foodstuffs. Wire cloth is even used for industrial and architectural applications.

Woven wire capabilities: square and slotted openings manufactured in double crimp, loc-crimp, flat-top, tri-loc, TwinWire, Clean Screens and more. Opening range from 0.36" – 8.00" with wire diameters from 0.047"- 1.00" diameter rod. Many wire alloys offered: primarily – High Carbon, Tufflex[™] and various stainless steels.

Quality Wire Cloth Begins With Certified Materials

Every Unified Screening & Crushing product begins with the highest quality wire. We buy the best wire from selected ISO 9001:2015 vendors for stainless steel, Tufflex, high carbon and oil tempered wire. Every vendor must provide a quality certification along with their materials consistent with the latest ISO-9001:2015 and ASTM standards so we know exactly what's going into each Unified wire cloth product.

High Carbon Steel Alloys

High tensile crimping quality spring steel wire

The Tufflex[™] Difference

The Strong and Durable Alternative Wire ... Tufflex wire is an alternative to high carbon and oil tempered wire. Finer grain structure and higher tensile strength offer greater consistency and flexibility throughout the screen, offering both impact and abrasive resistance.

High Carbon

Abrasion-resistant, hard drawn, high carbon wire that can withstand repeated impact from heavy objects. Recommened for use when material to be screened is heavy and bulky, but moderately abrasive. High carbon wire has the least expensive initial cost.

Stainless Steel

Abrasion and corrosion-resistant, high tensile, hard drawn wire.

S304 Stainless

Standard alloy = 18% chrome / 8% nickel for excellent corrosion resistance.

S316 Stainless

Molybdenum is added to the basic 18% / 8% alloy for increased resistance to chemical corrosion.

S430 Stainless

Chromium alloy with no nickel for higher resistance to chemicals, atmospheric corrosion and oxidation. Handles temperatures up to 1,600 F.

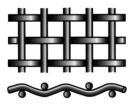


To ensure that the Unified products you order meet the highest quality standards, each stage of manufacturing undergoes inspection and verification. We are ANSI/ISO 9001:2015 Internationally Certified. We were one of the first Wire Cloth Manufacturers to achieve Certification in North America.

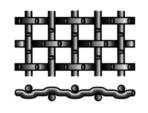
WIRE CLOTH - Weave Styles

Weave Styles

Concerned about weave style? Ask your representative for more info. Your Unified rep selects the appropriate weave style for maximum production. Unified has one of the largest selections of weave styles available.



Double-Crimp A smaller opening weave style. All around efficient and long-wearing performance in a variety of applications.



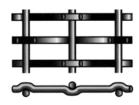
Loc-Crimp

A larger opening weave style for scalping and heavy applications. Wire is locked in place for long wear and accurate opening sizes for the life of the screens.

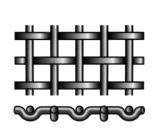
May improve material

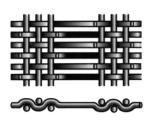
than other weaves.

flow with flatter surface



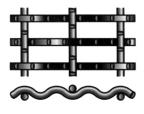
Slotted Opening Single-shute oblong opening solve minor blinding problems for better flow.





Tri-Loc/Tri-Mesh

Long openings help keep sticky or wet material flowing freely. The Tri-Loc weave holds wires securely yet permits slight vibration to keep openings clear.



Intercrimp

Flat Top

Alternate choice for a wide range of nonstandard slotted openings. Extra crimps provide locking and tightness for light wire in openings.



WIRE CLOTH - SuperFlow



SuperFlow

An exceptionally long-lasting, self-cleaning screen that is achieved by replacing the woven wire clusters of Unified's Clean Screen with durable polyurethane strips.

What makes SuperFlow superior?

- Greater flexibility and longer life
- SuperFlow screens handle damp and sticky material when other screen surfaces blind
- Accurate sizing with little or no blinding

WIRE CLOTH - SuperFlow



SuperFlow Weave Styles





D-Style (Diamond) Screens

- Diamond-shaped openings for accurate sizing
- Accurately sizes dry or damp material
- Most accurate Clean Screen for sizing applications
- Range from 3/32" opening to 2" opening (potential expansion in future)

W-Style Screens

- Alternating straight and formed wires vibrate at different frequencies to clean the screening surface
- Triangular-shaped openings for accurate sizing
- More resilient to damage from oversized material
- Range from 1/8" opening to 7/8" opening (possible to expand to 1" at this time, with potential expansion in future)



T-Style Screens

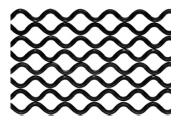
- Unified's T-slot screens are an affordable alternative to highcost piano wire screens
- Uncrimped tension wires
- Clusters located to suit your screen deck
- Almost any wire size and opening combination available ask representative for details
- Range from 1/8" opening to 5/8" opening (range is expanding per customer request)

H-Style weave also available, ask representative for details.

WIRE CLOTH - Clean Screens

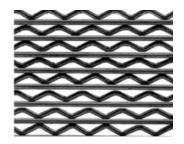
Unified's Clean Screens are high-quality, non-blinding screening surfaces made from crimped and straight wire. They're an ideal choice when you need to greatly reduce pegging, plugging and blinding and still maintain sizing.

- Custom manufactured in three basic styles, (D, W, T below).
- All types deliver higher production rates by combining high percentages of open area and selfcleaning action.
- All products available in Tufflex, stainless steel, and oil tempered wire. Can be hooked with any edge style to fit all screening equipment, side or end tension.
- Separates flakes and slivers from finished product while greatly reducing problems like plugging and blinding.



D-Style (Diamond) Screens

- Diamond-shaped openings for accurate sizing
- Accurately sizes dry or damp material
- Most accurate Clean Screen for sizing applications
- Range from 1/8" opening to 1-1/4" opening



W-Style Screens

- Alternating straight and formed wires vibrate at different frequencies to clean the screening surface
- Triangular-shaped openings for accurate sizing
- More resilient to damage from oversized material
- Range from 3/32" opening to 3/4" opening



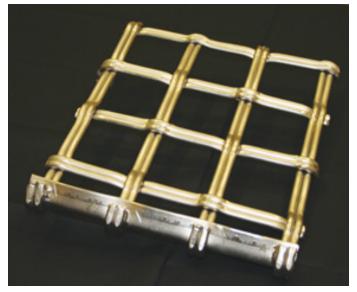
T-Style Screens

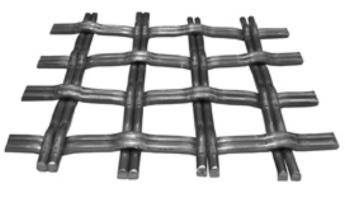
- Unified's T-slot screens are an affordable alternative to high-cost piano wire screens.
- Uncrimped tension wires
- Clusters located to suit your screen deck
- Almost any wire size and opening combination available ask representative for details
- Also available in SuperFlow
- Range from 1/8" opening to 7/8" opening

We are continually developing tooling for additional sizes. Please contact your rep to find out more.

TwinWire







An alternative to large diameter wire or punch plate, TwinWire is designed for high-impact top deck applications. Typically used for 1-1/2" openings and larger, it provides greater durability while maintaining maximum open area. High carbon, stainless steel or Tufflex™ wire is recommended and can be made to fit any screening area.

TwinWire Features:

- Double strand construction both ways or with single/double combined
- Special lock-crimp / flat-top design tooling for maximum tightness and uniformity
- Suggested opening range is 1-1/4" to 8"
- Wire range is 0.244 to 0.625
- Available in High Carbon, Tufflex and Type 304 Stainless Steel

Benefits:

- Double wire construction ensures superior tensile strengths and durability for your heavy impact, top deck screening applications
- Guaranteed to outperform single shute wire in a comparable wire size
- Substantially increases open area over punch plate, urethane or rubber products

Accessories:

- A complete line of screen bolts/J-bolts and clamping rails are in stock for same-day shipping
- Screen rail and clamping systems for better wear and tensioning capability
- Rubber and urethane crown bar protectors, protective liners and many other parts and solutions



The following pages contain a small sampling of our opening sizes and wire gauges (diameters) for light, medium and heavy use. Based on our experience, Unified Screening & Crushing offers standard sizes for various crushing conditions. For any size opening please call us, or check our website. Most openings are in stock for 24-hour service.

Recommended Openings & Wire Sizes

1/16"(.063)#20 (.035)#18 (.047)#18 (.047)3/32" (.094)#18 (.047)#16 (.063)#14 (.080)#12 (.105)1/8" (.125)#16 (.063)#14 (.080)#12 (.105)5/32" (.156)#16 (.063)#14 (.080)#11 (.120)3/16" (.188)#16 (.063)#14 (.080)#11 (.120)7/32" (.219)#14 (.080)#12 (.105)#10 (.135)1/4" (.250)#13 (.092)#11 (.120)#8 (.162)5/16" (.313)#12 (.105)#10 (.135)#8 (.162)3/8" (.375)#12 (.105)#10 (.135)#8 (.162)7/16" (.438)#10 (.135)#8 (.162)#6 (.192)1/2" (.500)#11 (.120)#8 (.162)#6 (.192)5/8" (.625)#8 (.162)#6 (.192)#4 (.225)3/4" (.750)#6 (.192)#3 (.244)5/16" (.313)7/8" (.875)#6 (.192)#3 (.244)5/16" (.313)1" (1.00)#6 (.192)#3 (.244)5/16" (.313)1" (1.00)#6 (.192)#3 (.244)5/16" (.313)1-1/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)1-1/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)1-1/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)1-1/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)1-1/8" (1.125)5/16" (.313)3/8" (.375)1/2" (.500)1-3/8" (1.375)5/16" (.313)3/8" (.375)1/2" (.500)1-1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)	CLEAR OPENING	LIGHT	MEDIUM	HEAVY
1/8" (.125)#16 (.063)#14 (.080)#12 (.105)5/32" (.156)#16 (.063)#14 (.080)#12 (.105)3/16" (.188)#16 (.063)#14 (.080)#11 (.120)7/32" (.219)#14 (.080)#12 (.105)#10 (.135)1/4" (.250)#13 (.092)#11 (.120)#8 (.162)5/16" (.313)#12 (.105)#10 (.135)#8 (.162)3/8" (.375)#12 (.105)#10 (.135)#8 (.162)7/16" (.438)#10 (.135)#8 (.162)#6 (.192)1/2" (.500)#11 (.120)#8 (.162)#6 (.192)9/16" (.563)#10 (.135)#8 (.162)#6 (.192)5/8" (.625)#8 (.162)#6 (.192)#4 (.225)3/4" (.750)#6 (.192)#3 (.244)5/16" (.313)7/8" (.875)#6 (.192)#3 (.244)5/16" (.313)1" (1.00)#6 (.192)#3 (.244)5/16" (.313)1" (1.00)#3 (.244)5/16" (.313)3/8" (.375)1 - 1/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)1 - 1/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)1 - 1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)1 - 3/8" (1.375)5/16" (.313)3/8" (.375)1/2" (.500)1 - 5/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)2 -0"5/16" (.313)3/8" (.375)1/2" (.500)2 -1/4" (2.250)3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8	1/16" (.063)	#20 (.035)	#18 (.047)	#18 (.047)
5/32"(.156)#16 (.063)#14 (.080)#12 (.105)3/16"(.188)#16 (.063)#14 (.080)#11 (.120)7/32"(.219)#14 (.080)#12 (.105)#10 (.135)1/4" (.250)#13 (.092)#11 (.120)#8 (.162)5/16" (.313)#12 (.105)#10 (.135)#8 (.162)3/8" (.375)#12 (.105)#10 (.135)#8 (.162)7/16" (.438)#10 (.135)#8 (.162)#6 (.192)1/2" (.500)#11 (.120)#8 (.162)#6 (.192)9/16" (.563)#10 (.135)#8 (.162)#6 (.192)5/8" (.625)#8 (.162)#6 (.192)#4 (.225)3/4" (.750)#6 (.192)#3 (.244)5/16" (.313)7/8" (.875)#6 (.192)#3 (.244)5/16" (.313)1" (1.00)#6 (.192)#3 (.244)5/16" (.313)1.4" (1.250)#3 (.244)5/16" (.313)3/8" (.375)11/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)11/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)11/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)11/8" (1.250)5/16" (.313)3/8" (.375)1/2" (.500)13/8" (1.375)5/16" (.313)3/8" (.375)1/2" (.500)13/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313) </td <td>3/32" (.094)</td> <td>#18 (.047)</td> <td>#16 (.063)</td> <td>#15 (.072)</td>	3/32" (.094)	#18 (.047)	#16 (.063)	#15 (.072)
3/16"(.188)#16 (.063)#14 (.080)#11 (.120)7/32"(.219)#14 (.080)#12 (.105)#10 (.135)1/4" (.250)#13 (.092)#11 (.120)#8 (.162)5/16" (.313)#12 (.105)#10 (.135)#8 (.162)3/8" (.375)#12 (.105)#10 (.135)#8 (.162)7/16" (.438)#10 (.135)#8 (.162)#6 (.192)1/2" (.500)#11 (.120)#8 (.162)#6 (.192)9/16" (.563)#10 (.135)#8 (.162)#6 (.192)5/8" (.625)#8 (.162)#6 (.192)#4 (.225)3/4" (.750)#6 (.192)#3 (.244)5/16" (.313)7/8" (.875)#6 (.192)#3 (.244)5/16" (.313)1" (1.00)#6 (.192)#3 (.244)5/16" (.313)1-1/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)1-1/4" (1.250)#3 (.244)5/16" (.313)3/8" (.375)1-1/4" (1.250)#3 (.244)5/16" (.313)3/8" (.375)1-1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)1-5/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)1-5/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.3	1/8" (.125)	#16 (.063)	#14 (.080)	#12 (.105)
7/32" (.219)#14 (.080)#12 (.105)#10 (.135)1/4" (.250)#13 (.092)#11 (.120)#8 (.162)5/16" (.313)#12 (.105)#10 (.135)#8 (.162)3/8" (.375)#12 (.105)#10 (.135)#8 (.162)7/16" (.438)#10 (.135)#8 (.162)#6 (.192)1/2" (.500)#11 (.120)#8 (.162)#6 (.192)9/16" (.563)#10 (.135)#8 (.162)#6 (.192)5/8" (.625)#8 (.162)#6 (.192)#4 (.225)3/4" (.750)#6 (.192)#3 (.244)5/16" (.313)7/8" (.875)#6 (.192)#3 (.244)5/16" (.313)1" (1.00)#6 (.192)#3 (.244)5/16" (.313)1" (1.00)#6 (.192)#3 (.244)5/16" (.313)11/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)11/8" (1.125)#3 (.244)5/16" (.313)3/8" (.375)11/4" (1.250)#3 (.244)5/16" (.313)3/8" (.375)11/4" (1.250)5/16" (.313)3/8" (.375)1/2" (.500)15/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)13/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2. 0"5/16" (.313)3/8" (.375)1/2" (.500)21/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)21/4" (2.250)3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3. 0" </td <td>5/32" (.156)</td> <td>#16 (.063)</td> <td>#14 (.080)</td> <td>#12 (.105)</td>	5/32" (.156)	#16 (.063)	#14 (.080)	#12 (.105)
1/4" (.250)#13 (.092)#11 (.120)# 8 (.162)5/16" (.313)#12 (.105)#10 (.135)# 8 (.162)3/8" (.375)#12 (.105)#10 (.135)# 8 (.162)7/16" (.438)#10 (.135)# 8 (.162)# 6 (.192)1/2" (.500)#11 (.120)# 8 (.162)# 6 (.192)9/16" (.563)#10 (.135)# 8 (.162)# 6 (.192)5/8" (.625)# 8 (.162)# 6 (.192)# 4 (.225)3/4" (.750)# 6 (.192)# 3 (.244)5/16" (.313)7/8" (.875)# 6 (.192)# 3 (.244)5/16" (.313)1" (1.00)# 6 (.192)# 3 (.244)5/16" (.313)1 1/8" (1.125)# 3 (.244)5/16" (.313)3/8" (.375)1 1/8" (1.125)# 3 (.244)5/16" (.313)3/8" (.375)1 1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)1 5/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)1 3/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2. 0"5/16" (.313)3/8" (.375)1/2" (.500)2. 0"5/16" (.313)3/8" (.375)1/2" (.500)2. 1/4" (2.250)3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3. 0" <td>3/16" (.188)</td> <td>#16 (.063)</td> <td>#14 (.080)</td> <td>#11 (.120)</td>	3/16" (.188)	#16 (.063)	#14 (.080)	#11 (.120)
5/16" (.313)#12 (.105)#10 (.135)# 8 (.162)3/8" (.375)#12 (.105)#10 (.135)# 8 (.162)7/16" (.438)#10 (.135)# 8 (.162)# 6 (.192)1/2" (.500)#11 (.120)# 8 (.162)# 6 (.192)9/16" (.563)#10 (.135)# 8 (.162)# 6 (.192)5/8" (.625)# 8 (.162)# 6 (.192)# 4 (.225)3/4" (.750)# 6 (.192)# 3 (.244)5/16" (.313)7/8" (.875)# 6 (.192)# 3 (.244)5/16" (.313)1" (1.00)# 6 (.192)# 3 (.244)5/16" (.313)1 1/8" (1.125)# 3 (.244)5/16" (.313)3/8" (.375)1 1/8" (1.125)# 3 (.244)5/16" (.313)3/8" (.375)1 1/4" (1.250)# 3 (.244)5/16" (.313)3/8" (.375)1 1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)1 3/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)1 3/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2. 0"5/16" (.313)3/8" (.375)1/2" (.500)2. 0"5/16" (.313)3/8" (.375)1/2" (.500)2. 1/4" (2.250)3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)	7/32" (.219)	#14 (.080)	#12 (.105)	#10 (.135)
3/8" (.375)#12 (.105)#10 (.135)# 8 (.162)7/16" (.438)#10 (.135)# 8 (.162)# 6 (.192)1/2" (.500)#11 (.120)# 8 (.162)# 6 (.192)9/16" (.563)#10 (.135)# 8 (.162)# 6 (.192)5/8" (.625)# 8 (.162)# 6 (.192)# 4 (.225)3/4" (.750)# 6 (.192)# 3 (.244)5/16" (.313)7/8" (.875)# 6 (.192)# 3 (.244)5/16" (.313)1"(1.00)# 6 (.192)# 3 (.244)5/16" (.313)11/8" (1.125)# 3 (.244)5/16" (.313)3/8" (.375)11/4" (1.250)# 3 (.244)5/16" (.313)3/8" (.375)13/8" (1.375)# 3 (.244)5/16" (.313)3/8" (.375)13/8" (1.375)# 3 (.244)5/16" (.313)3/8" (.375)13/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)13/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2.1/4" (2.250)3/8" (.375)1/2" (.500)5/8" (.625)3.0"3/8" (.375)1/2" (.500)5/8" (.625)3.0"3/8" (.375)1/2" (.500)5/8" (.625)3.0"3/8" (.375)1/2" (.500)5/8" (.625)3.0"1/2" (.500)5/8" (.625)3/4" (.750)5.0"1/2" (.500)5/8" (.625)3/4" (.750)	1/4" (.250)	#13 (.092)	#11 (.120)	# 8 (.162)
7/16"(.438) $#10(.135)$ $#8(.162)$ $#6(.192)$ $1/2"(.500)$ $#11(.120)$ $#8(.162)$ $#6(.192)$ $9/16"(.563)$ $#10(.135)$ $#8(.162)$ $#6(.192)$ $5/8"(.625)$ $#8(.162)$ $#6(.192)$ $#4(.225)$ $3/4"(.750)$ $#6(.192)$ $#3(.244)$ $5/16"(.313)$ $7/8"(.875)$ $#6(.192)$ $#3(.244)$ $5/16"(.313)$ $1"(1.00)$ $#6(.192)$ $#3(.244)$ $5/16"(.313)$ $1-1/8"(1.125)$ $#3(.244)$ $5/16"(.313)$ $3/8"(.375)$ $1-1/8"(1.250)$ $#3(.244)$ $5/16"(.313)$ $3/8"(.375)$ $1-3/8"(1.375)$ $#3(.244)$ $5/16"(.313)$ $3/8"(.375)$ $1-1/2"(1.500)$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $1-3/4"(1.750)$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $2-1/4"(2.250)$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $2-1/4"(2.250)$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $3.0"$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $3.0"$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $3.0"$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $4.0"$ $1/2"(.500)$ $5/8"(.625)$ $3/4"(.750)$ $5.0"$ $1/2"(.500)$ $5/8"(.625)$ $3/4"(.750)$	5/16" (.313)	#12 (.105)	#10 (.135)	# 8 (.162)
1/2" (.500)#11 (.120)# 8 (.162)# 6 (.192)9/16" (.563)#10 (.135)# 8 (.162)# 6 (.192)5/8" (.625)# 8 (.162)# 6 (.192)# 4 (.225)3/4" (.750)# 6 (.192)# 3 (.244)5/16" (.313)7/8" (.875)# 6 (.192)# 3 (.244)5/16" (.313)1" (1.00)# 6 (.192)# 3 (.244)5/16" (.313)1 - 1/8" (1.125)# 3 (.244)5/16" (.313)3/8" (.375)1 - 1/4" (1.250)# 3 (.244)5/16" (.313)3/8" (.375)1 - 1/2" (1.500)# 3 (.244)5/16" (.313)3/8" (.375)1 - 1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)1 - 5/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)1 - 3/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2 - 0"5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0	3/8" (.375)	#12 (.105)	#10 (.135)	# 8 (.162)
9/16"(.563)#10 (.135)# 8 (.162)# 6 (.192)5/8" (.625)# 8 (.162)# 6 (.192)# 4 (.225)3/4" (.750)# 6 (.192)# 3 (.244)5/16" (.313)7/8" (.875)# 6 (.192)# 3 (.244)5/16" (.313)1" (1.00)# 6 (.192)# 3 (.244)5/16" (.313)1-1/8" (1.125)# 3 (.244)5/16" (.313)3/8" (.375)1-1/4" (1.250)# 3 (.244)5/16" (.313)3/8" (.375)1-3/8" (1.375)# 3 (.244)5/16" (.313)3/8" (.375)1-3/8" (1.375)# 3 (.244)5/16" (.313)3/8" (.375)1-1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)1-3/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2-1/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)2-1/2" (2.500)3/8" (.375)1/2" (.500)5/8" (.625)3.0"3/8" (.375)1/2" (.500)5/8" (.625)3.0"3/8" (.375)1/2" (.500)5/8" (.625)3-1/2" (3.500)3/8" (.375)1/2" (.500)5/8" (.625)4.0"1/2" (.500)5/8" (.625)3/4" (.750)5.0"1/2" (.500)5/8" (.625)3/4" (.750)	7/16" (.438)	#10 (.135)	# 8 (.162)	# 6 (.192)
5/8" (.625)# 8 (.162)# 6 (.192)# 4 (.225)3/4" (.750)# 6 (.192)# 3 (.244)5/16" (.313)7/8" (.875)# 6 (.192)# 3 (.244)5/16" (.313)1" (1.00)# 6 (.192)# 3 (.244)5/16" (.313)1 - 1/8" (1.125)# 3 (.244)5/16" (.313)3/8" (.375)1 - 1/4" (1.250)# 3 (.244)5/16" (.313)3/8" (.375)1 - 3/8" (1.375)# 3 (.244)5/16" (.313)3/8" (.375)1 - 1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)1 - 5/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)1 - 3/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2 - 0"5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 .0"1/2" (.500)5/8" (.625)3/4" (.750)5 .0"1/2" (.500)5/8" (.625)3/4" (.750)	1/2" (.500)	#11 (.120)	# 8 (.162)	# 6 (.192)
3/4"(.750)# 6 (.192)# 3 (.244) $5/16"(.313)$ $7/8"(.875)$ # 6 (.192)# 3 (.244) $5/16"(.313)$ $1"(1.00)$ # 6 (.192)# 3 (.244) $5/16"(.313)$ $1-1/8"(1.125)$ # 3 (.244) $5/16"(.313)$ $3/8"(.375)$ $1-1/4"(1.250)$ # 3 (.244) $5/16"(.313)$ $3/8"(.375)$ $1-3/8"(1.375)$ # 3 (.244) $5/16"(.313)$ $3/8"(.375)$ $1-3/8"(1.375)$ # 3 (.244) $5/16"(.313)$ $3/8"(.375)$ $1-1/2"(1.500)$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $1-5/8"(1.625)$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $1-3/4"(1.750)$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $2.0"$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $2.1/4"(2.250)$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $2-1/4"(2.250)$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $3.0"$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $3.0"$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $3.0"$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $4.0"$ $1/2"(.500)$ $5/8"(.625)$ $3/4"(.750)$ $5.0"$ $1/2"(.500)$ $5/8"(.625)$ $3/4"(.750)$	9/16" (.563)	#10 (.135)	# 8 (.162)	# 6 (.192)
7/8" (.875)# 6 (.192)# 3 (.244)5/16" (.313)1" (1.00)# 6 (.192)# 3 (.244)5/16" (.313)1 - 1/8" (1.125)# 3 (.244)5/16" (.313)3/8" (.375)1 - 1/4" (1.250)# 3 (.244)5/16" (.313)3/8" (.375)1 - 3/8" (1.375)# 3 (.244)5/16" (.313)3/8" (.375)1 - 1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)1 - 5/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)1 - 3/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2 - 0"5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/2" (2.500)3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 - 1/2" (3.500)3/8" (.375)1/2" (.500)5/8" (.625)4 .0"1/2" (.500)5/8" (.625)3/4" (.750)5 .0"1/2" (.500)5/8" (.625)3/4" (.750)	5/8" (.625)	# 8 (.162)	# 6 (.192)	# 4 (.225)
1"(1.00)# 6 (.192)# 3 (.244) $5/16"(.313)$ $1 - 1/8"(1.125)$ # 3 (.244) $5/16"(.313)$ $3/8"(.375)$ $1 - 1/4"(1.250)$ # 3 (.244) $5/16"(.313)$ $3/8"(.375)$ $1 - 3/8"(1.375)$ # 3 (.244) $5/16"(.313)$ $3/8"(.375)$ $1 - 3/8"(1.375)$ # 3 (.244) $5/16"(.313)$ $3/8"(.375)$ $1 - 1/2"(1.500)$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $1 - 5/8"(1.625)$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $1 - 3/4"(1.750)$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $2 - 0"$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $2 - 1/4"(2.250)$ $5/16"(.313)$ $3/8"(.375)$ $1/2"(.500)$ $2 - 1/4"(2.250)$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $3 .0"$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $3 .0"$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $3 - 1/2"(3.500)$ $3/8"(.375)$ $1/2"(.500)$ $5/8"(.625)$ $4 .0"$ $1/2"(.500)$ $5/8"(.625)$ $3/4"(.750)$ $5 .0"$ $1/2"(.500)$ $5/8"(.625)$ $3/4"(.750)$	3/4" (.750)	# 6 (.192)	# 3 (.244)	5/16" (.313)
1 - 1/8" (1.125)# 3 (.244)5/16" (.313)3/8" (.375)1 - 1/4" (1.250)# 3 (.244)5/16" (.313)3/8" (.375)1 - 3/8" (1.375)# 3 (.244)5/16" (.313)3/8" (.375)1 - 1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)1 - 5/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)1 - 3/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2.0"5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/2" (2.500)3/8" (.375)1/2" (.500)5/8" (.625)3.0"3/8" (.375)1/2" (.500)5/8" (.625)3 - 1/2" (3.500)3/8" (.375)1/2" (.500)5/8" (.625)4.0"1/2" (.500)5/8" (.625)3/4" (.750)5.0"1/2" (.500)5/8" (.625)3/4" (.750)	7/8" (.875)	# 6 (.192)	# 3 (.244)	5/16" (.313)
1 - 1/4" (1.250) # 3 (.244) 5/16" (.313) 3/8" (.375) 1 - 3/8" (1.375) # 3 (.244) 5/16" (.313) 3/8" (.375) 1 - 1/2" (1.500) 5/16" (.313) 3/8" (.375) 1/2" (.500) 1 - 5/8" (1.625) 5/16" (.313) 3/8" (.375) 1/2" (.500) 1 - 3/4" (1.750) 5/16" (.313) 3/8" (.375) 1/2" (.500) 1 - 3/4" (1.750) 5/16" (.313) 3/8" (.375) 1/2" (.500) 2.0" 5/16" (.313) 3/8" (.375) 1/2" (.500) 2.0" 5/16" (.313) 3/8" (.375) 1/2" (.500) 2.1/4" (2.250) 5/16" (.313) 3/8" (.375) 1/2" (.500) 2 - 1/2" (2.500) 3/8" (.375) 1/2" (.500) 5/8" (.625) 3.0" 3/8" (.375) 1/2" (.500) 5/8" (.625) 3.0" 3/8" (.375) 1/2" (.500) 5/8" (.625) 3.1/2" (3.500) 3/8" (.375) 1/2" (.500) 5/8" (.625) 3.0" 1/2" (.500) 5/8" (.625) 3/4" (.750) 5.0" 1/2" (.500) 5/8" (.625) 3/4" (.750)	1" (1.00)	# 6 (.192)	# 3 (.244)	5/16" (.313)
1 - 3/8" (1.375)# 3 (.244)5/16" (.313)3/8" (.375)1 - 1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)1 - 5/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)1 - 3/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2 - 0"5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/2" (2.500)3/8" (.375)1/2" (.500)5/8" (.625)3 .0"3/8" (.375)1/2" (.500)5/8" (.625)3 - 1/2" (3.500)3/8" (.375)1/2" (.500)5/8" (.625)4 .0"1/2" (.500)5/8" (.625)3/4" (.750)5 .0"1/2" (.500)5/8" (.625)3/4" (.750)	1 - 1/8" (1.125)	# 3 (.244)	5/16" (.313)	3/8" (.375)
1 - 1/2" (1.500)5/16" (.313)3/8" (.375)1/2" (.500)1 - 5/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)1 - 3/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2. 0"5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3 - 1/2" (3.500)3/8" (.375)1/2" (.500)5/8" (.625)4. 0"1/2" (.500)5/8" (.625)3/4" (.750)5. 0"1/2" (.500)5/8" (.625)3/4" (.750)	1 - 1/4" (1.250)	# 3 (.244)	5/16" (.313)	3/8" (.375)
1 - 5/8" (1.625)5/16" (.313)3/8" (.375)1/2" (.500)1 - 3/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2. 0"5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/2" (2.500)3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3 - 1/2" (3.500)3/8" (.375)1/2" (.500)5/8" (.625)4. 0"1/2" (.500)5/8" (.625)3/4" (.750)5. 0"1/2" (.500)5/8" (.625)3/4" (.750)	1 - 3/8" (1.375)	# 3 (.244)	5/16" (.313)	3/8" (.375)
1 - 3/4" (1.750)5/16" (.313)3/8" (.375)1/2" (.500)2. 0"5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/2" (2.500)3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3 - 1/2" (3.500)3/8" (.375)1/2" (.500)5/8" (.625)4. 0"1/2" (.500)5/8" (.625)3/4" (.750)5. 0"1/2" (.500)5/8" (.625)3/4" (.750)	1 - 1/2" (1.500)	5/16" (.313)	3/8" (.375)	1/2" (.500)
2. 0"5/16" (.313)3/8" (.375)1/2" (.500)2 - 1/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)2- 1/2" (2.500)3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3 - 1/2" (3.500)3/8" (.375)1/2" (.500)5/8" (.625)4. 0"1/2" (.500)5/8" (.625)3/4" (.750)5. 0"1/2" (.500)5/8" (.625)3/4" (.750)	1 - 5/8" (1.625)	5/16" (.313)	3/8" (.375)	1/2" (.500)
2 -1/4" (2.250)5/16" (.313)3/8" (.375)1/2" (.500)2- 1/2" (2.500)3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3 -1/2" (3.500)3/8" (.375)1/2" (.500)5/8" (.625)4. 0"1/2" (.500)5/8" (.625)3/4" (.750)5. 0"1/2" (.500)5/8" (.625)3/4" (.750)	1 - 3/4" (1.750)	5/16" (.313)	3/8" (.375)	1/2" (.500)
2- 1/2" (2.500)3/8" (.375)1/2" (.500)5/8" (.625)3. 0"3/8" (.375)1/2" (.500)5/8" (.625)3 - 1/2" (3.500)3/8" (.375)1/2" (.500)5/8" (.625)4. 0"1/2" (.500)5/8" (.625)3/4" (.750)5. 0"1/2" (.500)5/8" (.625)3/4" (.750)	2.0"	5/16" (.313)	3/8" (.375)	1/2" (.500)
3.0"3/8"(.375)1/2"(.500)5/8"(.625)3 -1/2"(3.500)3/8"(.375)1/2"(.500)5/8"(.625)4.0"1/2"(.500)5/8"(.625)3/4"(.750)5.0"1/2"(.500)5/8"(.625)3/4"(.750)	2 -1/4" (2.250)	5/16" (.313)	3/8" (.375)	1/2" (.500)
3 -1/2" (3.500) 3/8" (.375) 1/2" (.500) 5/8" (.625) 4. 0" 1/2" (.500) 5/8" (.625) 3/4" (.750) 5. 0" 1/2" (.500) 5/8" (.625) 3/4" (.750)	2- 1/2" (2.500)	3/8" (.375)	1/2" (.500)	5/8" (.625)
4.0" 1/2" (.500) 5/8" (.625) 3/4" (.750) 5.0" 1/2" (.500) 5/8" (.625) 3/4" (.750)	3.0″	3/8" (.375)	1/2" (.500)	5/8" (.625)
5. 0" 1/2" (.500) 5/8" (.625) 3/4" (.750)	3 -1/2" (3.500)	3/8" (.375)	1/2" (.500)	5/8" (.625)
	4.0"	1/2" (.500)	5/8" (.625)	3/4" (.750)
6.0"1/2" (.500)5/8" (.625)3/4" (.750)	5.0″	1/2" (.500)	5/8" (.625)	3/4" (.750)
	6. 0″	1/2" (.500)	5/8" (.625)	3/4" (.750)

Industry Opening Tolerances*

	TOLERANCE INCHES
OPENING INCHES	+ or -
1/16 to 1/8 Inclusive	0.007
Over 1/8 to 3/16 Inclusive	0.010
Over 3/16 to 1/4 Inclusive	0.012
Over 1/4 to 3/8 Inclusive	0.015
Over 3/8 to 1/2 Inclusive	0.017
Over 1/2 to 3/4 Inclusive	0.020
Over 3/4 to 1 Inclusive	0.030
Over I to 1-1/2 Inclusive	0.045
Over 1-1/2 to 3 Inclusive	0.075
Over 3 to 5 Inclusive	0.100
Over 5 to 7 Inclusive	0.125
Over 7	0.188

*ASTM E2016-06

Our openings are within tolerances. Consult your Unified Rep with any special concerns.

Openings and Wire Sizes

The chart below illustrates the available wire diameters used to manufacture most aggregate/mining wire cloth applications.

	-	A	AUGE & CTUAL AMETER	LINEAL FT./LB.
			1.00″	0. 37
			.75	0.67
			.625″	0.96
			.500″	1.50
			.438″	1.96
			.375″	2.67
			.313″	3.83
		3	.244	6.30
U		4	.225	7.41
0		5	.207	8.95
U		6	.192	10.17
0		7	.177	11.97
		8	.162	14.29
U		9	.148	17.05

	AC	UGE & TUAL METER	LINEAL FT./LB.
•	11	.120	25.82
	12	.105	33.69
•	13	.092	44.78
•	14	.080	58.58
•	15	.072	72.32
•	16	.063	95.98
•	17	.054	128.57
	18	.047	166.17
•	19	.041	223.04
	20	.035	309.59

Most Commonly-Used Openings & Wire Sizes

Unified stocks hundreds of different square opening screen sizes, in addition to manufacturing thousands of various design specifications.

OPENING WIDTH	WIRE DIAMETER	GAUGE	WEIGHT LB/SQ FT	% OPEN SPACE TO AREA	OPENING WIDTH	WIRE DIAMETER	GAUGE	WEIGHT LB/SQ FT	% OPEN SPACE TO AREA
3/32" (.094″)	.035"	#20	0.65	51.8	7/16" (.438″)	.120"	#11	1.69	61.5
,	.047"	#18	1.04	45.2		.135"	#10	2.09	58.4
	.063	#16	1.70	35.0		.148"	#9	2.47	55.8
	.072"	#15	2.17	32.5		.162"	#8	2.90	53.2
1/8" (.125″)	.047"	#18	0.85	52.8		.177"	#7	3.40	50.7
., - (,	.063"	#16	1.43	44.2		.192"	#6	3.92	48.3
	.080"	#14	2.15	37.2	1/2" (.500")	.120"	#11	1.51	65.0
	.092"	#13	2.71	33.2		.135"	#10	1.88	62.0
	.105"	#12	3.37	29.5		.148"	#9	2.22	59.5
5/32" (.156″)	.063"	#16	1.24	50.8		.162"	#8	2.61	57.1
0,02 (100)	.080"	#14	1.88	43.0		.177"	#7	3.06	54.5
	.105"	#12	2.97	35.8		.192"	#6	3.54	52.2
	.120"	#11	3.75	32.0		.244"	#3	5.39	45.2
3/16" (.188″)	.063"	#16	1.05	56.0	9/16" (.563″)	.120"	#11	1.38	67.7
3,10 (.100)	.080"	#14	1.60	49.1		.162"	#8	2.40	60.1
	.092"	#13	2.04	45.0		.177"	#7	2.81	57.6
	.105"	#12	2.56	41.1		.192"	#6	3.26	55.4
	.120"	#11	3.22	37.2		.207"	#5	3.72	53.1
7/32" (.219″)	.080"	#14	1.44	53.6	5/8" (.625")	.120"	#11	1.25	70.3
//32 (.219)	.105"	#12	2.32	45.4	0,0 (1020)	.135"	#10	1.56	67.6
	.120"	#12	2.92	41.4		.148"	#9	1.85	65.4
	.135"	#10	3.56	38.0		.162"	#8	2.18	63.1
1/4" (.250″)	.080"	#14	1.28	57.4		.192"	#6	2.97	58.5
1/4 (.250)	.092"	#13	1.64	53.4		.225"	#4	3.94	54.0
	.105"	#12	2.07	49.6	3/4" (.750″)	.148"	#9	1.58	69.8
	.120"	#12	2.62	45.6		.162"	#8	1.87	67.6
	.135"	#10	3.21	42.2		.192"	#6	2.56	63.4
	.148"	#9	3.76	39.4		.207"	#5	2.93	61.4
	.162"	#8	4.38	36.8		.225"	#4	3.41	59.2
	.192"	#6	5.82	32.0		.244"	#3	3.95	56.9
	.225"	#4	7.55	27.7		5/16"		6.13	49.8
9/32" (.281″)	.105"	#12	1.91	52.8		3/8"		8.44	44.4
5/52 (.2017)	.120"	#11	2.42	45.9	13/16" (.813")	.207"	#5	2.76	63.4
	.135"	#10	2.97	45.5	7/8" (.875")	.162"	#8	1.64	71.2
5/16" (.313″)	.080"	#14	1.07	63.4		.192"	#6	2.25	67.2
3/10 (.313)	.105"	#12	1.74	56.0		.225"	#4	3.01	63.3
	.120"	#11	2.21	52.2		.244"	#3	3.54	60.8
	.135"	#10	2.72	48.8		5/16"		5.44	54.3
	.148"	#10	3.20	46.0		3/8"		7.52	49.0
	.162"	#8	3.74	43.4	15/16" (.938")	.244"	#3	3.33	62.7
	.192"	#6	5.00	38.4	,	.313"		5.17	56.2
3/8" (.375″)	.192	#0	1.51	61.0	1" (1.00")	.135″	#10	1.04	77.6
5/0 (.373)	.120"	#12	1.92	57.4	. (1.50)	.162"	#10	1.46	74.0
	.120	#11	2.37	57.4 54.1		.192"	#6	2.01	70.4
	.135 .148"	#10 #9	2.37	54.1 51.4		.225"	#0 #4	2.69	66.6
	.140 .162"	#9 #8	3.27	48.7		.225	#4	3.12	64.6
	.162 .192"		3.27 4.39	48.7 43.8		.244 5/16″	π.3	4.90	58.0
	.192" .244"	#6 #3	4.39 6.62	43.8 36.7		3/8'		4.90 6.79	52.9
	.244 5/16"	#3	6.62 9.99	36.7 29.7		5/0		0.79	52.7

Don't see a size you need? Ask your Unified representative.

R

Most Commonly-Used Openings and Wire Sizes

Unified weaves wire cloth for all kinds of screening and sizing applications and uses all types of materials; High Carbon steel, Tufflex[®], oil tempered, types 304/430 stainless steel, and other alloys.

OPENING WIDTH	WIRE DIAMETER	GAUGE	WEIGHT LB/SQ FT	% OPEN SPACE TO AREA	OPENING WIDTH	WIRE DIAMETER	GAUGE	WEIGHT LB/SQ FT	% OPEN SPACE TO AREA
1 - 1/16" (1.063″)	.244″	#3	2.98	66.1	2 - 1/4" (2.250″)	5/16"		2.46	77.1
	.313"		4.68	59.6		3/8"		3.46	73.4
1 - 1/8" (1.125″)	.244"	#3	2.83	67.5		1/2"		5.91	66.9
	5/16"		4.45	61.2		5/8″		8.90	61.2
	3/8"		6.19	56.3	2- 1/2" (2.500")	5/16"		2.24	79.0
1 - 1/4" (1.250")	.244"	#3	2.58	70.0		3/8"		3.16	75.6
	5/16"		4.08	64.0		1/2"		5.41	69.4
	3/8"		5.69	59.2		5/8"		8.16	64.0
1 - 3/8" (1.375″)	.244"	#3	2.40	72.0		3/4″		11.37	59.2
	5/16"		3.77	66.4	3" (3.000″)	.244"	#3	1.18	85.5
	3/8"		5.26	61.7		5/16"		1.90	82.0
	7/16″		6.95	57.6		3/8"		2.68	79.0
	1/2″		8.83	53.8		1/2"		4.62	73.5
	5/8″		13.10	47.3		5/8"		7.00	68.5
1 - 1/2" (1.500″)	.244"	#3	2.21	74.0		3/4″		9.79	64.0
	5/16"		3.50	68.5	3 - 1/2" (3.500")	3/8"		2.33	81.6
	3/8"		4.90	64.0		1/2"		4.03	76.6
	7/16"		6.48	59.9		5/8"		6.13	72.0
	1/2"		8.25	56.3	4" (4.000")	3/8"		2.07	83.6
1-5/8" (1.625″)	.244"	#3	2.07	75.5		1/2"		3.58	79.0
	5/16"		3.29	70.3		5/8"		5.46	74.8
	3/8"		4.60	65.9		3/4"		7.68	70.9
	7/16"		6.10	62.0	5" (5.000")	1/2"		2.98	82.6
	1/2"		7.77	58.4		5/8"		4.61	79.0
1 - 3/4" (1.750″)	.244"	#3	1.93	77.0		3/4"		6.30	75.6
	5/16"		3.07	71.9	6" (6.000″)	1/2"		2.54	85.2
	3/8"		4.30	67.8		5/8"		3.92	82.0
	7/16"		5.71	64.0		3/4"		5.37	79.0
	1/2"		7.29	60.5					
1 - 7/8" (1.875″)	.375"		4.07	69.4					
2" (2.000")	.244"	#3	1.71	79.4					
	5/16"		2.73	74.8					
	3/8"		3.84	70.9					
	7/16"		5.11	67.3					
	1/2″		6.53	64.0					

5/8″

9.79

58.0

Don't see a size you need? Ask your Unified representative.

Hooks & Edge Preparation

Below is a sampling of some of our popular hooks.

Get the correct edge preparation and screen size for proper fit on original equipment.



US-1

Plain Formed Edge for screens of 5/16" and larger diameter wire.

Edges are annealed by controlled heating before forming to eliminate cracking and breakage.



US-2 ET

End Tension Reinforced Shroud Banded Edge is compatible with all OEM replacement applications. Excellent for .244" wire and lighter.

Hook lengths will vary to meet OEM specifications. Any dimension and profile is available upon request.



US-3

Inside Reinforced Formed Edge for screens of .313" diameter wire and larger can provide superior tensioning.

A 1/8" steel angle insert is welded inside the wire hooks, strengthening the screen for uniform tensioning and ease of installation on vibrating equipment. Also available in endtensioned format.



US-2

Reinforced Shroud Banded Edge is standard for screens of up to 3/8" wire diameter.

Standard shrouding is 18 gauge steel with other thicknesses available.



US-2 Square

Any hook and angle will be manufactured to your specifications. Other hook dimensions are available upon request.

When ordering non-standard edges, give angle of formed edge and hook length.

*Custom hook edges available



US-4

Welded Bent Plate Edge for 5/16" wire diameters and larger. 3/16" or 1/4" steel angle is welded on the screen edge.

Rubber inserts are also available for additional pull-out resistance on .080 diameter wire and smaller.

Several shroud styles are available to fit specific types of OEM equipment and are designed to meet specific customer requirements.

Proper screen size and tensioning are critical for effective screening and longer screen life. Unified edge preparations fit OEM and customer-designed equipment properly for optimum tensioning. Banded edges strengthen hooked edges and provide even tensioning across the screen.

Technical Information

Discuss your specific application with a Unified wire cloth expert: 866-968-3697.

1. Finished Panel Size

Flat screens without hooked edges: Simply measure the length and width of the screen in inches. Example: 48" wide and 72" long.

Flat screens with hooked edges: You need to determine the screen length and its OCW (outside clamping width) or ICW (inside clamping width) in inches. You can either:

- Check the OEM equipment manual, or
- Measure an old screen, or
- If an old screen is not available, measure the clear width between the vibrator side plates and subtract 1-1/2" to determine the OCW.
- Overall screen box size is also helpful.

2. Screen Length and Lapped Screens

When specifying screen length, always measure along the clamping edge and be sure to indicate any screen overlap, if required. Give the overall width first, then specify the length of the hook and the amount of screen overlap you need.

Example: 60" OCW x 96" long, 96" hook allowing for 2" lap (98" total length).

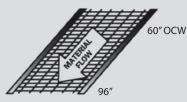
Lapped ends eliminate any leakage of oversized materials where screen sections meet. Normally, laps are 1" to 2" and are typically ordered with screens having an opening size of 1/4" or smaller.

3. Slot Direction

When ordering screens with oblong openings, the slot direction must be specified in numerical terms. Note that Unified uses numerical terms when describing slot direction on your acknowledgments, packing slips and invoices. Also indicate the type of weave or number of shute wires (such as single shute or triple shute).

Examples of common slot direction phrases:

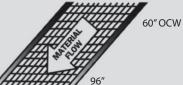
Slots parallel to 60"



S-Slot Slots RA Slots against the flow Slots right angle to flow Cross Slot Slots right angle to hook strips

Screen openings horizontal to material flow

Slots parallel to 96"



L-Slot Slots SP Slots parallel to flow Slots with the flow Slots parallel to hook strips

Screen openings vertical to material flow

Note that these are for side tension screens. End tension screens will change slot direction orientation.

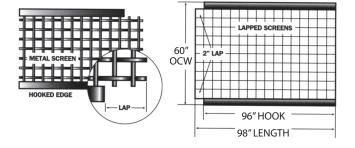
4. Special Fabricated Screens

Some shaker screens require special fabrication to meet all OEM specifications. Check your existing screens for the following features, and note them on your order:

- 1. One hook up, one hook down
- 2. Four-way tensioning
- 3. Brazed center hold-down holes, with or without reinforcing washers
- 4. Center crowns

- 5. Rolling for rotary screens
- 6. Brazed laps
- 7. Skid bars
- 8. Welded or brazed edge wires





Installation & Maintenance of Wire Screens

NOTES:



Screen Maintenance

- 1. Inspect all clamping bars for corrosion and wear.
- Make sure bars are not warped or worn to the point that they cannot provide even, tight tension
- 2. Inspect all nuts and bolts.
- Replace all worn or stripped parts in the screen assembly
- 3. Maintain support deck.
- Remove channel rubber to inspect steel bars for wear, high and low spots for bar breakage
- Support area must be uniform to ensure an even and tight fit
- 4. Change Out channel rubber frequently.
- Changing channel rubber is recommended every time, or at least every other time, the screen is replaced
- Remember that channel rubber will wear from the bottom up, as well as from the top down. Check both sides
- Mixing channel rubber sizes or styles such as flat-top and round-top on the same deck will result in improper tensioning
- 5. **Check** cushion and spread of material feed.
- Cushioning of feed to the screen deck is essential to maximizing screen life. Use feed plates or stone boxes so that materials do not hit the wire cloth directly
- For maximum screen life and production, material should be spread out to feed evenly over the entire screening surface. This also reduces uneven equipment wear as the vibrator is operating in a more balanced condition
- 6. **Inspect** equipment for proper operation (balance and vibration).
- An unbalanced machine can cause premature wire cloth failure
- Equipment with a violent, uneven vibrating motion will cause stresses in the screen, causing premature failure of the screen cloth. The cloth may actually break apart
- Correct the unbalanced condition before continuing the screening operation

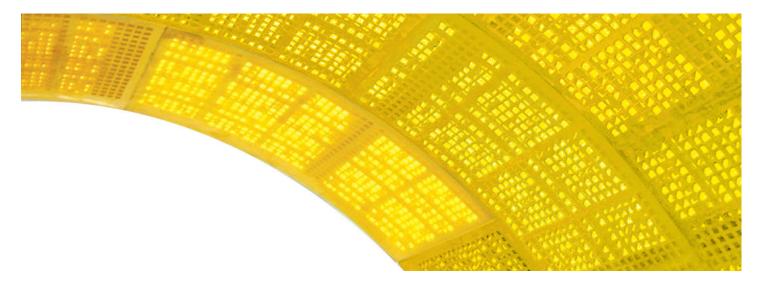
Screen Installation

- 1. Channel rubber or crown bar rubber must be replaced before new screens are installed to assure longer screen life.
- 2. Screens should be centered on the deck before clamping rails are applied.
- 3. Use new tension bolts and tension all bolts equally on both sides of the vibrator. All hole positions on clamping bars must be used.
- 4. Make certain that butted screen panels are tight together and overlapping screens are properly installed to avoid oversized material leakage.
- 5. Clamping rails must be exact length of the screen panel being installed. Never overlap clamping rails.
- 6. After four to eight hours of operation, retighten the screen to take up any stretch that might occur.
- 7. Worn clamping rails should be replaced to assure proper tensioning.

SYNTHETIC



Polyurethane - FLOWMAX



Unified's proprietary and patented, FLOWMAX polyurethane screening system, standard 1' X 2' urethane module, is extremely adaptable to either a flat deck permanent screening system or a crowned deck (No Deck Modification) tensionable screening system.

FLOWMAX

- Longer life may last 15 to 20 times the life of wire cloth
- Reduced plugging and blinding; better production performance
- Tapered openings allowing for material to break away
- Openings ranging from 0.3mm to 152mm, (0.01" to 6")
- 30mm to 70mm thick modules; can include dams and diverters
- Variety of materials available; ethers or esters ranging from 60A to 90A durometer
- Assortment of urethane modules offered, for the diverse collection of polyurethane screening systems
- Custom module fabrication available

FLOWMAX is Easy to Install

The tensionable FLOWMAX frame is constructed out of heavy duty steel. The frame dimensions are the same as the wire cloth screen the polyurethane system replaces. Installation is exactly the same as a wire screen. No special tools or labor skills required.

- 1. Simply position the module in the frame along one edge. The modules themselves install with an ordinary rubber mallet.
- 2. Strike the opposite edge with a mallet. Continue down the edge until the module is completely seated.
- 3. Install the FLOWMAX frame, with modules, into your screen deck as you would any wire cloth screen. Install subsequent modules in a similar fashion until all are installed.

Polyurethane - FLOWMAX



Unified's FLOWMAX systems offer major advantages over other polyurethane systems

- Modular panels (1'X 2' standard)
- Maximum open area
- Superior fastening

FLOWMAX modules use the best available screening area, (Maximum Open Area), in conjunction with optimum efficiency for maintaining and replacing. Worn out modules can be replaced without removing or replacing the entire screen.

Unified's permanent FLOWMAX system will maximize the available screening surface from feed-to-discharge, side-toside and top-to-bottom translating into more throughput for the screening process. Permanent systems can be installed on/off-site with knowledgeable Unified representatives assisting with the installation process.

FLOWMAX urethane modules are interchangeable between a permanent and removable system.

Unified's FLOWMAX system can be installed in sieve bends, trommels or almost any other screening configuration.



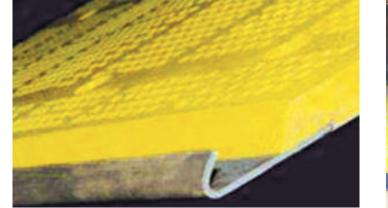
FLOWMAX's universal and patented fastening method provides substantial locking force eliminating the required use of pins, plugs or other loose parts. This fastening method assures reliable holding strength within the screening system, meaning the modules will not "pop out" or "slide down" the deck.

Unified's removable (No Deck Modification) FLOWMAX system can be installed and tensioned into a crowned deck directly replacing a wire cloth screen. Frequent specification changes present no challenges, simply substitute the FLOWMAX modules to achieve the required specification or remove the system in minutes.

Polyurethane - TwinThane

TwinThane Tension Mats

- Available in either polyester or polyether
- No screen deck modifications required, manufactured to match your specific requirements
- As easy to install as wire cloth
- Best suited for wet and washing applications
- Cable or steel tube reinforced
- Openings to 2.50"





Accessories - Urethane

Unified carries replacement parts for most systems.



Rubber - FLOWMAX



A modular rubber system for high-impact applications, processing dry materials, scalping applications.

Costs less than polyurethane and lasts longer than wire cloth.

Permanent or removable systems are available.

1' x 2' module panels are standard with other sizes available.

Ask your Unified sales representative about other systems.

Rubber - Products

Rubber Screens and Rubber-Clad Perforated Plate

- Suited for scalping applications
- Tough rubber surface molded to a full steel backing plate
- Provides increased abrasion and impact resistance
- Suited for dry or wet applications, and crushed or natural products
- Openings range from 1" to 10"
- Round or square
- Rubber thickness from 1" to 5" with steel backing thickness from 1/4" to 1/2"
- 60 durometer wear resistance rubber
- Special hole patters available
- Bolt down or hooked
- With or without skid bars
- Rubber tension mats also available
- Thickness determined by size and weight of material



Accessories - Rubber

Rubber Canoe Liners

- Manufactured with an all steel backing plate
- Used under crusher or hoppers at the feed end of the conveyor
- Protects steel surfaces with rubber

Rubber Graphite Liners

- Prevent sticky buildup
- Easy replacement and installation
- Increased wear life
- Used in feeder bins, chutes, feed and discharge lip liners
- Eliminates clear-out down time

Rubber Chute Liners

- Modular system
- 12"x 12" to 24"x 24" or tailor made to any chute, bin, or hopper
- Suited for high impact and abrasion applications
- Designed to outlast mild steel and AR Plate

Rubber - UNI-SHIELD

Unified Screening & Crushing is proud to partner with another American company to bring you the only rubber screen media that utilizes encapsulated wire cloth technology. Uni-Shield Screen media gives the screen the structural integrity needed to withstand the rigors of a continuous screening operation while offering the extended wear life customers have come to expect from using rubber media.

Uni-Shield is a direct replacement for side tensioned wire cloth screen media. It is best suited for applications where abrasive, sharp material, or high tonnages are present.

Uni-Shield screens typically achieve 5-7 times the wear life of wire cloth screen panels. The specialized rubber compound allows for fantastic abrasion and cut resistance, making it well-suited for more aggressive applications than that of wire cloth or other urethane-coated wire products.

Striking a balance between increased wear life and increased productivity.



APPLICATIONS

- $\cdot \, \text{Sizing}$
- Washing
- · Feed zone on portable plants

HOOK CONFIGURATIONS

- · Hooks both up
- \cdot One hook up / one hook down



- \cdot Custom designed screen size to fit any deck
- · 1.00" Standard thickness
- \cdot Precision made wire cloth internal structure
- · Available opening sizes from .750" to 2.00"
- · Available in 40 durometer and 65 durometer rubber

And you can count on Unified Screening & Crushing for

- TwinScalp and TwinFlex Tension Screens
- Flowmax Modular Systems
- Floating Feed Cone Liners and Hoppers
- Sheet/Roll Rubber, Canoe Liners, Belt Scrapers
- Feed Plates
 - · Chute Liners

· Mainframe Liners

27

Other Screen Media



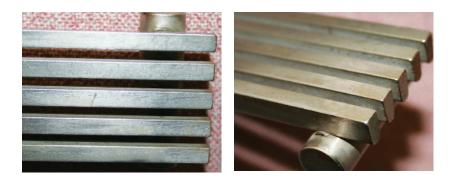
R

Steel Punch Plate

- Punch plate is available in hexagonal or round openings for screening material of a specific size
- Openings can be staggered to prevent material from riding the bar, and tapered to help prevent blinding







Profile/Wedge Wire Screens Material can be welded into frames

- Belt Scrapers
- Idlers/Accessories
- Skirt Board Rubber
- Canoe Liners
- Channel Rubber/ Urethane
- Bolts/Fasteners

CRUSHER WEAR PARTS







Unified maintains the largest inventories of crusher parts in strategic locations across North America (our California facility pictured above). Our standards and specifications on fitment and chemical composition guarantee the most consistent liner and wear parts possible.

Cone, Jaw and Impact Crusher Replacement Parts for the following Original Equipment Manufacturers (OEM):

- ABM
- Allis Chalmers
- Armadillo
- Austin Western
- Baxter
- BI-Pegson
- Bohringer
- Birdsboro
- Buchanan
- Canica
- CEC
- Cedarapids
- Clemro
- Cemco
- Diamond
- Eagle
- El-Jay
- El-Russ
- Excel

- Extec
- Farrel Bacon
- Gator
- Hartl
- HazemagHewitt-Robins
- Inertia
- I-Rock
- ISC
- JCI
- Kangwon
- Kleemann
- Kobelco
- Komatsu
- Kue-Ken
- Kurtz
- Lima-Hamilton
- Lippmann
- Lokomo

- McCloskey
- Metso
- Minyu
- Missouri-Rogers
- Nordberg
- Pegson
- Pettibone
- Pioneer
- Sandvik
- Spokane
- Stedman
- Svedala
- Symons
- Telsmith
- Tesab
- Torgerson
- Traylor
- Trio
- Universal

Our aftermarket crusher parts are EU European certified manufactured.

- S
- С

Crushing

Alloys:

- Standard MN: 13-14.5%
- 18% MN: 18-19.5%
- 21% MN: 21-23%

Our huge inventory - with more than 10,000 patterns available - is ready for immediate shipment. And, we can engineer or re-engineer any part for your crusher needs.

Here is a partial list of our available wear parts:

- Anvils (VSI)
- Blow Bars (HSI)
- Bowl Liners
- Concaves
- Concave Segments
- Curtain Liners
- Feed/Distributor Plates
- Finlay
- FLOWBAK nonhazardous backing material
- Impact Plates
- Jaques
- KPI
- KPI-JCI
- Main Shaft Sleeves

- Mantles (upper/lower)
- McCloskey
- Movable/Swing Jaws
- Nut Caps
- Nut Protectors
- Parker
- Rebel
- Rogers
- Side/Cheek/Key/Heel
- Shaft Impactor Parts
- Shaft Nuts
- Stationary/Fixed Jaws
- Torch/Burn Rings
- Terex
- Wedges

Consistent high-grade raw materials allow you to handle even the most demanding rock conditions.

Don't see a category for a part you need? Call 1-866-968-3697 to talk to a Unified representative.







Largest Inventory in North America of Jaws and Cones



Over 10,000 Patterns Available in 14%, 18% and 21% Supporting Parts for Crushers

- Torch Rings
- Mantle Caps
- Cheek Plates

Floating Feed Cone Liners & Hoppers

- Main Frame Liners
- Feed Plates

Benefits

- Protects OEM product
- Lowers noise
- Easy replacement



Crusher Wear Parts



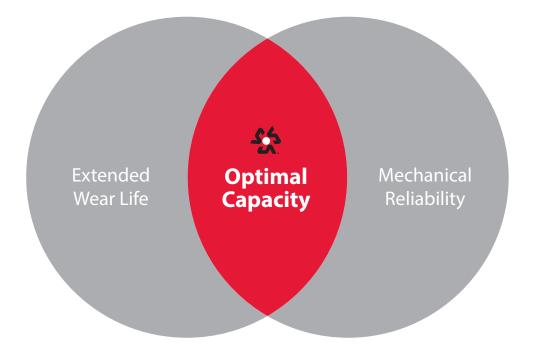




These jaws were re-designed for a customer crushing highly-abrasive material.

Increasing the thickness and a special tooth profile allowed the customer to crush more tons per hour.

Customization gave them longer wear life and fewer jaw change outs, creating more production time.



Crusher Wear Parts

Guaranteed Fit

If we don't have it in stock, our crusher parts experts will visit on-site to design or engineer a product specific to your needs.

VSI and HSI Parts

- Available in various alloys; Martensitic, Low & High Chrome
- Ceramic Inserts Available (HSI only)

Benefits of VSI:

Allows you to maximize first-pass product yield









Crusher Wear Parts



Worldwide Market

Unified Screening & Crushing sells worldwide to quarry and mining operations. We supply wear replacement parts for all OEM crushers and any unique applications.



Unified's VSI Vertical Shaft Impactor Parts

Unified provides impact wear parts in a range of wear resistant alloys, including high-chrome white iron martensitic steels - with or without ceramic inserts and manganese alloys.

Impact wear parts can be customized upon request.

Horizontal Shaft Impactor Parts / HSI - Blow Bars

Unified has a large stock of HSI wear parts throughout our locations. Call for more information on all in stock items including ceramic wear inserts.





FLOWBACK - Non-hazardous

Protect backing liners and wear parts on almost any crusher industrial crusher equipment. Easy mixing and standard application, helps to eliminate gaps that can weaken parts and shorten wear life. Safe for you and the environment.



Crusher Part Inquiry Information

There are many similarities in Impact Crushers, when requesting a quote please include the following information:

Manufacturer
Model of Crusher
OEM Part Numbers
Correct Nomenclature
Alloy
(Most foundries have their alloy on the casting and the ends of the blow bars are color coded.
If unsure, please include all the numbers on the casting)
Physical dimensions
(Include length, width and thickness of blow bars)
Application
Feed size
Crushing what?
Recycling?
Number of blow bars
(3 bars, 4 bars, running 2 new bars and 2 worn bars (Dummies) in a 4 bar)

What is secondary curtain set at?

R

AUXILIARY PRODUCTS AND USES



Other Unified Products

Screen Rails



Screen Rails offered in rubber, steel, or urethane, available in many styles. A-36 steel rails are standard.

Money-Saver rails. 1/4" or 3/8" thick steel hole protector patch welded onto the steel rail.

The recessed holes in the Money-Saver, heavy-duty steel, double-faced heavy-duty steel and rubber rails reduce head wear on the tension bolts.

Double faced heavy duty rails. 1/4" or 3/8" thick steel double faced wear strip welded on the steel rail.

Rubber rails. 1/2" rubber vulcanized onto a 5/16" steel rail, backing plate in between.

Rubber full-faced rails. Due to the flexibility of the patented vulcanized rubber tread design, large rocks hitting the rubber flex it inward instead of penetrating and breaking the rubber.



Polyurethane Clad Rails

1/4" steel with 1/2" polyurethane.

Channel Rubber

Available in 60-75 durometer, flat-top or round-top and 50' and 100' rolls. In stock for immediate delivery.

Round Top Long Leg

• Available in 1/4", 3/8" & 1/2"

Heavy Hex

• Available in 1/4", 3/8", 1/2" & 3/4"

New - extra wear life channel rubber-XMBR (3/8" available)

- Channel urethane
- Available in 1/4", 3/8" & 1/2"



Channel Rubber



Channel Rubber - Some profile options

Screen Tension Accessories



Screen Bolts and Fasteners

- Bolts, nuts and washers
- Bolts in various steel grades
- Shaker Screen Bolts
- J-Bolts
- Slotted pin and wedge tensioning assemblies
- All Bolts are available from stock in a wide range of sizes and style



Other Unified Products

Pulley/Tack-on-Wing Repair Kit

1/2" natural rubber vulcanized to a precision formed steel backing plate which is easily tack-welded to the pulley. One size pad fits all pulleys. Field cut to any pulley length. This product replaces worn out lagging at 1/4 the cost of a new pulley. You replace only the rubber lagging, not the pulley. Outlasts steel three-to-one and installs in minutes on site.

Tack-On Wing Pulley Repair Kit

1/2" thick vulcanized rubber on a precision formed steel backing plate. Bent with a 3/16" crown. Replaceable lagging, shown in photos to right.

Other Polyurethane Products & Accessories

High quality polyether and polyester urethane compounds in durometers from 60 to 90 Shore A.

Products are engineered for the most demanding applications.

- Classifier Shoes
- Clamp Rails
- Chute Liners
- Urethane Sheets and Rolls
- Spray Bar Deflectors Available in 1-1/2" to 3" Pipe

Pipe Patches

Magnetic Urethane Pipe Patches

Available in a variety of diameters (12 different sizes). Also available - curved or flat.



Pipe patches have a 1-3/8" nominal thickness.







Industrial

If a metal material can be drawn into wire, Unified can weave it into an industrial wire cloth product — with openings from 12 inches down to 2 microns. Wire cloth or mesh is ideal for a huge range of filtering and straining applications, and can serve as a substrate, barrier or conductor.



Industrial Fine Mesh Screens

Unified manufactures fine mesh screen out of any commercially available wire mesh including bolting cloth and mill grade. Meshes range from 1 mesh to 800 mesh. These screens are used to process bulk and powdered products. Industry applications include food processing, pharmaceuticals, minerals, industrial sand, with screens to fit Tyler, Midwestern, Sprout Bauer and more.

Fine Mesh Hooked Screens

Unified's fine mesh hooked screens are designed to fit a wide variety of OEM applications and equipment. A wide range of hook styles and edge treatments, such as plain formed edges and reinforced shroud banded edges, are available with all shroud alloys including galvanized, stainless and others. Our sales team works with you to make sure you get the correct edge preparation and screen size for proper fit on your vibrating screen decks.

Fabric, Metal & Vinyl Edges

Unified offers mesh screens with fabric, metal and vinyl edges to fit equipment from ROTEX, Tyler, Midwestern, Sweco and other OEMs. Metal edges are generally for heavier materials processing, scalping and ball supports. Fabric edges, including high temperature edging, are often used in food processing and high heat applications, while vinyl edges are used to meet high sanitary processing requirements.

Pre-tensioned Screens

Most commonly known as Sweco, or round-style screens, these screens are typically used in vibrating round separators to separate solids from liquids or to size dry material particles. Unified can supply any mesh size from 1 mesh to 800 mesh, in screen diameters up to 6' x 6'.

Unified Screening & Crushing Date_____

Opening: Wire Size:	□ High Carbor							
Wire Size:	□ High Carbor							
Wire Size:	□ High Carbor							
	□ High Carbor							
	•					Oil		Other
Screen Size								
Screen Size:	OCW Outside to Outside Flat - Trimmed	🗆 Flat	le to Inside of Hool - Untrimmed				1"	US-1 No ShroudUS-2 Shroud
	Rubber Insert:		.ap: □ Y		Standard	Side Tensi	ion •	 US-2 Shroud US-3 Inside Reinfo US-4 Weld On A: B:
	MIDTH		Ή		Rounded	End Tensi	on	US-2 Shroud US-3 Inside Reinfo US-4 Weld On A: B:
	creen:				Square E	nd Tension	1	B:
Slot Directi		5-Slot L Perpendicular to	Direction:	Both Ho	oks Same D	□ L-Slot		e Hook Up One Hook Do
Bar Spacing	g For Clean Scree	ens or SuperFlo	w					
# of Bars: # of Strips: Measure from ce		(A) Bar on Cent				(B) No Ba		e of Plate to Plate)
←	→ Bai	Spacing:						Lap: 🗆 Y
	Ba	on Center: 🗆 Y	ΠN					ΠN
Special Instruction	ns:							

Second Screening & Crushing

Date_____

Customer:										
Opening:										
Wire Size:										
Wire Type:	🛛 High C	Carbon		LEX 🗆	Stainless Stee		Oil		Other	
Screen Size	e									
Screen Size:	🛛 Flat - Tr		□ Flat	e to Inside of Hoo - Untrimmed		60°		1"		US-1 No Shroud US-2 Shroud
	Rubber Inse	ert: Y N	ı	.ap: □ Y		Standard		ion	□ □ A:	US-2 Shroud US-3 Inside Reinforced US-4 Weld On
Enter Width of So	WIDTH		LENGT	Ή		Rounded	End Tensi	ion •	□ □ A:	US-2 Shroud US-3 Inside Reinforced US-4 Weld On
Enter Length of S	Screen:					Square Er	nd Tensio	n		Other
Slot Direct	tion			Direction:	Both Hoo	oks Same D	irection	🗆 One	e Hoo	k Up One Hook Down
		□ S-Slot ⊥ Per _l	oendicular to	Flow			□ L-Slo Pa	t rallel to F	Flow	
Bar Spacin	ng For Clean	⊥ Per _l							Flow	
Bar Spacin # of Bars: # of Strips: Measure from c		⊥ Per		ow er Line				ar on Ce	enter	
# of Bars: # of Strips:	center out	⊥ Per Screens o (A)	r SuperFle Bar on Cent	er Line			(B) No Ba	ar on Ce	enter	
# of Bars: # of Strips: Measure from c	center out	Per	r SuperFle Bar on Cent	er Line			(B) No Ba	ar on Ce	enter	to Plate)

Screening & Crushing

Date:	-	
Company Name:	-	
Contact Name:	-	
Email:	_ Phone:	Cell:
Screening		
<u>Screen Deck</u>		
Make/Model:	Material being s	screened:
□ Wet Application □ Dry Applicatio	n	
Deck Width: Deck I	Length:	Wall-toWall Width:
Incline of Deck: Lengt	h of Screen	
# of Decks in Screen plant:		
□ End Tension □ Side Tension	□ Crown Bars	
Jaw/Cone		
Make/Model:	OEM#:	
Preferred Vendor:		
% of Manganese:		
VSI/HSI		
Alloy Type: 🛛 High Chrome 🗆	Medium Chrome 🛛 Low	Chrome
Ceramic Non-Ceramic		
HSI: Number of Bars on Rotor:		
VSI: OEM #:		

Screening & Crushing

Date:		
Company Name:		
Contact Name:		
Email:	Phone:	Cell:
Screening		
Screen Deck		
Make/Model:	Material being screene	d:
□ Wet Application □ Dry Application		
Deck Width: Deck Len	gth:	Wall-toWall Width:
Incline of Deck: Length c	f Screen	
# of Decks in Screen plant:		
□ End Tension □ Side Tension	□ Crown Bars	
Jaw/Cone		
Make/Model:	OEM#:	
Preferred Vendor:		
% of Manganese:	_	
VSI/HSI		
Alloy Type: 🗆 High Chrome 🗆 Me	edium Chrome 🛛 Low Chrom	e
Ceramic Non-Ceramic		
HSI: Number of Bars on Rotor:	_	
VSI: OEM #:		



Unified[®] Screening & Crushing

unifiedscreening.com