

S E R V I S U R E

MANUFACTURERS OF TITANIUM
ANODIZING RACKS



Servi-Sure Corp. welcomes you to review our extensive line of titanium anodizing racks and related items. In this catalog, you will find only a representative sampling of our work, because more than half of our annual rack production involves custom work. Therefore, if you don't see what you need in this catalog, remember...

**ANY RACK ■■■■■■■■■■■■
 SHOWN HERE ■■■■■■■■■■
 CAN BE MODIFIED ■■■■■■■■■■
 TO MEET YOUR CUSTOM ■■■■
 REQUIREMENTS ■■■■■■■■■■**

Look for this symbol on the pages of our catalog.



TITANIUM ANODIZING RACKS? Why is this material, which is so much costlier than aluminum used in anodizing?

The answers are simple:

1. Aluminum racks are consumable. Anodic film builds up, necessitating stripping.
2. Titanium racks are consistent from run to run.
3. Titanium racks don't anodize as do aluminum racks. Therefore, you can use your rectifier to anodize parts, not racks.
4. The higher initial cost of titanium racks is more than offset by the in-process savings, better consistency and longer life advantages of titanium.
5. Above all, our titanium racks carry Servi-Sure quality and thought-through engineering into your tanks. The value of having Servi-Sure racks on the job will be realized again and again, in your anodizing.

From our customer service and sales people to engineering, plant operations and shipping personnel, Servi-Sure speaks volumes about doing a job the right way, every time, to the customer's continued satisfaction. That's why, for your anodizing operation to be its best, talk to Servi-Sure.

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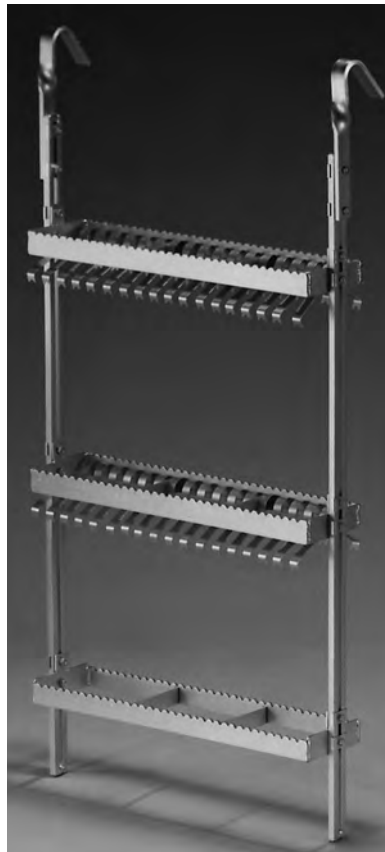
BOX RACKS

Rigid frame box racks are most efficient in their utilization of your tank space. These titanium racks can be hung along the length of your tank or modified slightly to run the width of the tank.

Servi-Sure's rigid frame box racking system features:

- .050" fingers stamped "with the grain" of the titanium material to reduce breakage
- Hollow centers for maximum drainage and reduced carryover
- Notched 1/8" contact rails for better current conductivity without burning
- Single component requirement for easy adding of additional tiers
- Spring fingers available on 1/2", 3/4" and 1" centers
- Unique Servi-Sure frame member designed to act as spring limiter to stop finger action before elastic limit is reached
- Solid titanium slotted vertical spline allows easy vertical adjustments

DOUBLE SPLINE



NO. RF3618D
Double-Tier Box Rack
18" Wide frame components
36" High spline
(double 3/8" square)

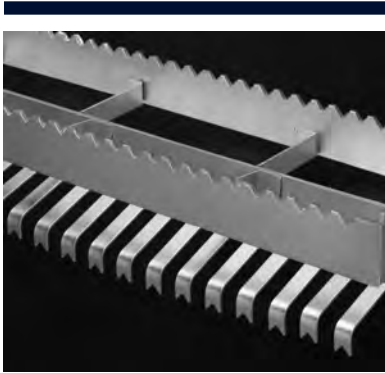
Standard box racks are available in 18", 24" and 30" widths, with any spline style—see following pages for more details.



NO. RF3618
Single-Tier Box Rack
18" Wide frame components
36" High spline
(double 3/8" square)



DOUBLE SPLINE BOX RACK SECTIONS



**Standard,
fingers on 1" centers**

		Parts/Tier
18" Wide	No. RFSM18	36
24" Wide	No. RFSM24	48
30" Wide	No. RFSM30	60



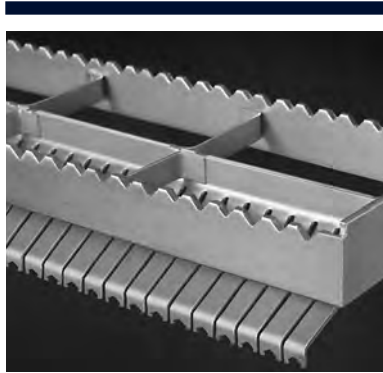
**Improved Capacity,
fingers on 3/4" centers**

		Parts/Tier
18" Wide	No. ICRFSM18	48
24" Wide	No. ICRFSM24	64
30" Wide	No. ICRFSM30	80



**Bottom member,
notches on 1/2" centers**

18" Wide	No. RF18
24" Wide	No. RF24
30" Wide	No. RF30

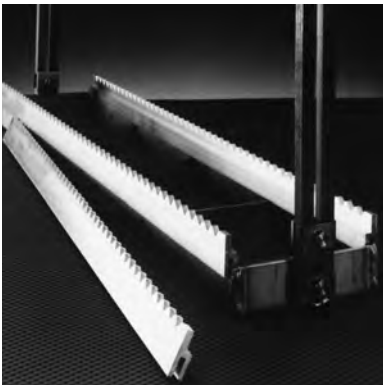


**High Capacity,
fingers on 1/2" centers**

		Parts/Tier
18" Wide	No. HCRFSM18	72
24" Wide	No. HCRFSM24	96
30" Wide	No. HCRFSM30	120

ALUMINUM CONTACT RAIL

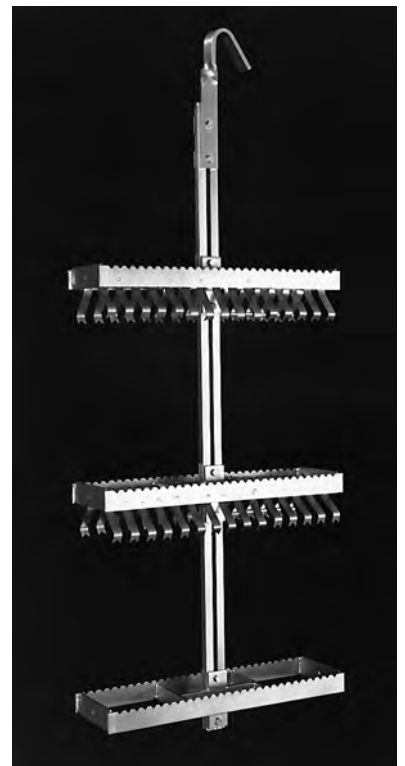
This racking accessory slips over a titanium rail to provide superior aluminum contact when required. The rail easily mounts onto a rack rail and is held in place by the same spring pressure that holds the parts in place—**no fasteners required**. It can easily be removed and stripped after every run. Notches are on 1/2" centers.



18" Wide	No. ACR18
24" Wide	No. ACR24
30" Wide	No. ACR30

SINGLE SPLINE

These Servi-Sure racks feature all the advantages of double spline units, plus one more. A single spline allows a box rack to run across the tank width, thereby increasing the part density and your line productivity, depending on the physical and electrical capacities of your system.



**No. SSRF3615D
Double-Tier Box Rack
15" Wide frame components
36" High spline
(double 1/2" square)
Fingers on 1" centers
60-station capacity**

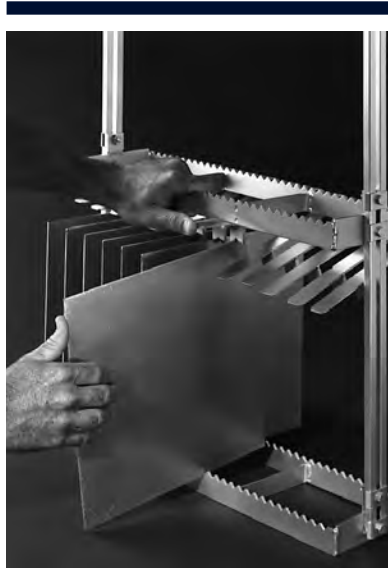
**No. SSRFSM15-15" Wide
single spline spring member**

**No. SSRF15-15" Wide single
spline rigid member**

LARGE PARTS

Many parts are too large or unstable to rack on a conventional box system. The Servi-Sure large part box rack offers these advantages:

- For racking parts 4-1/2" wide and larger
- 3-point racking for stability and larger current requirements
- Built-in spring lifter for easier racking of heavier parts
- Heavy-duty 3/16" spring contact for superior conductivity
- Spring fingers on 1-1/2" centers



Spring member with notched rail

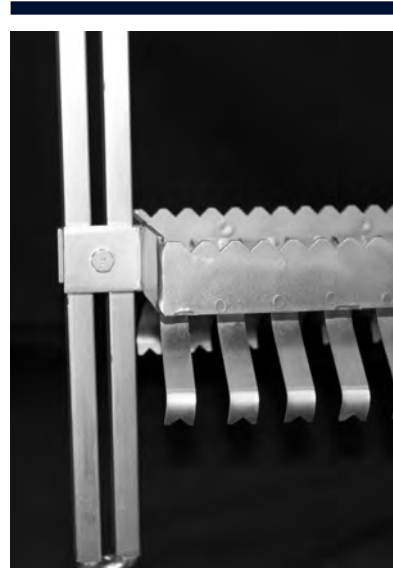
Bottom

18" Wide, 12-station (pictured)
24" Wide, 26-station
30" Wide, 20-station

No. LPBR18
No. LPBR24
No. LPBR30

No. RF18
No. RF24
No. RF30

DIRECT ACCESS OPTION FOR BOX RACKS



The Direct Access option allows your rack to be adjusted from the front of the rack rather than the side. Also, one bolt on each end holds the rack in position without rocking.

DOUBLE RAIL

Certain parts will require additional contact and better stability, because of their size or surface area. Servi-Sure offers a solution in this double rail box rack system. 3-point contact keeps parts from pivoting, while providing better conductivity. Spring fingers on 1" centers, notches on 1/2" centers.

(double rail bottom, standard single rail top shown here)



Double rail spring member

Double rail Bottom

18" Wide **No. RFSM18-DR**
24" Wide **No. RFSM24-DR**
30" Wide **No. RFSM30-DR**

No. RF18-DR
No. RF24-DR
No. RF30-DR

TO ORDER COMPLETE RIGID FRAME BOX RACK SYSTEMS, PLEASE SPECIFY:

1. Rack width
2. Spacing of fingers
3. Length of spline
4. Configuration of spline
5. Number of tiers required

TO ORDER RIGID FRAME BOX RACK COMPONENTS, PLEASE SPECIFY:

1. Rack width
2. Spacing of fingers
3. Spring member or bottom

DISC RACKS

COMPLETE DISC RACKS

For your ordering convenience, Servi-Sure offers these two complete disc rack arrangements, including spline, hook, fasteners and disc/ring components.



No. 1277
36"High
double 3/8"
square spline
2 tiers
Disc/Ring
Style

No. 1266
36"High
double 3/8"
square spline
2 tiers
Disc/Disc
Style

To build your own system, simply order the discs and rings shown here, along with splines, hooks and fasteners shown on **p. 18-19**.

Discs and rings are available to fit:

- Double 3/8" square splines
- Double 1/2" square splines
- 3/4" round splines
- Other style splines-contact Servi-Sure

Not all titanium disc racks are alike. If yours are stamped from a single sheet, the fingers are probably snapping off as shown here. That's because metal has a "grain" and when the spring fingers run against that grain, they quickly fatigue and break off.

The engineer who founded Servi-Sure also developed the notion of fabricating a disc by forming and welding a ring of titanium to a support bracket. In this way, all the fingers run with the grain of the metal and this means they last a lot longer.



New!! Fast Lock Disc and Collar Assemblies

For double 3/8" square spline



QD375S

For double 1/2" square spline



QD500S

Discs for double 3/8" square splines, including fasteners



No. D353

Discs for double 1/2" square splines, including fasteners



No. D553



No. D353A



No. D553A

Ring for double 3/8" square splines



No. HTR100

Ring for double 1/2" square splines



No. HTR500

Standard Disc Features

- Hollow centers for superior drainage, no carryover
- 30 fingers per disc, standard
- .050" thick titanium
- 9" diameter standard
- Backup ring acts as spring limiter
- All discs and rings include fasteners



No. QC750R

FAST LOCK COLLARS

Fast Lock collars are a less expensive alternative to the traditional block collar. If the nut and bolt freeze up, simply break it off and replace it with a new set.

Designed to work with standard disc mounting holes for $\frac{3}{4}$ " round spline discs. Also available for use on double $\frac{3}{8}$ " square splines and double $\frac{1}{2}$ " square splines (for use with D053 disc).

- No. QC750R** - for $\frac{3}{4}$ " round Spline
- No. QC375S** - for double $\frac{3}{8}$ " square spline
- No. QC500S** - for double $\frac{1}{2}$ " square spline

For $\frac{3}{4}$ " diameter round spline



QD750R

Fast Lock Discs and Collars

offer the following advantages:

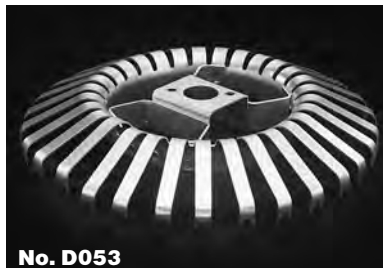
- Fast, one-bolt adjustment
- Easy replacement of frozen and broken locking screws
- Re-use of collar after disc failure
- Fast Lock Rings also available

Discs for $\frac{3}{4}$ " round splines, including block collar and fasteners



No. D953

Basic discs for $\frac{3}{4}$ " round splines, no block collar or fasteners



No. D053



No. D953A



No. D053A

Ring for $\frac{3}{4}$ " round spline, including block collar



No. HTR900

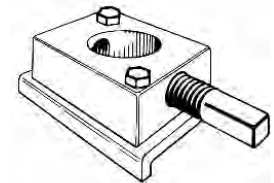
Ring for $\frac{3}{4}$ " round spline, no block collar



No. HTR000

TRADITIONAL BLOCK COLLAR

Designed for a $\frac{3}{4}$ " round spline, the Servi-Sure block collar has been tapped twice and will fit virtually all existing discs. The hole configurations on all Servi-Sure discs, rings and collars are made to industry standards.



Standard items are as follows:

- No. BC900** Collar with no fasteners
- No. BC901** Collar with square head set screw
- No. BC902** Collar with hex head set screw
- No. BC903** Collar with square head set screw and mounting hardware
- No. BC904** Collar with hex head set screw and mounting hardware
- No. BSET** Square head set screw only

CUSTOM RACKS

While many job shop and even captive or dedicated anodizing operations can utilize Servi-Sure standard racks to do quality work, there are also numerous jobs where a complete custom rack is necessary.

Tank size, part dimensions, rectifier capacity, high production runs, automated handling lines, rack mark limitations and many other factors can mandate a custom rack.

At Servi-Sure, over half our racks each year are custom.

Our customers rely on our engineering talent, our anodizing experience and our 30 years of success in rack design to help them make the right choices.

If a standard rack is right for your job or your shop, we'll say so.

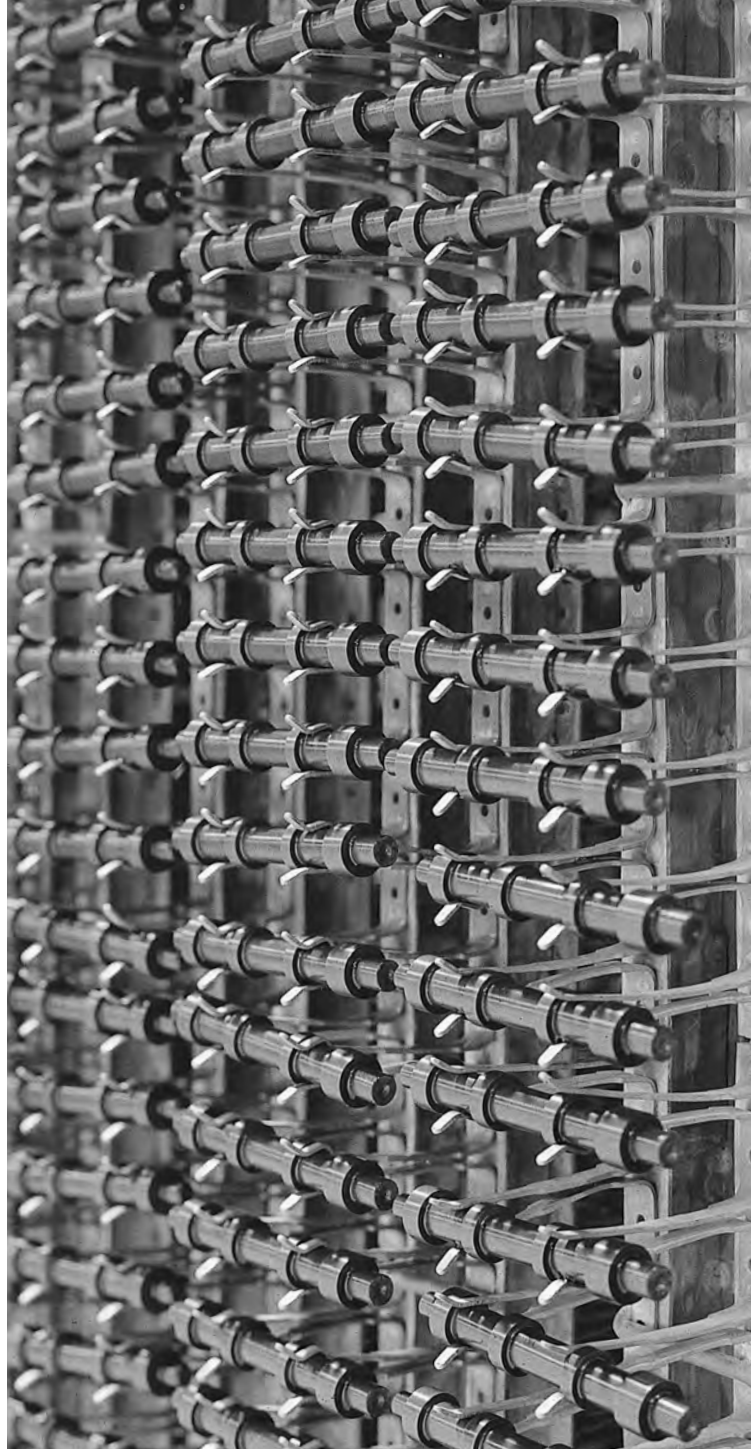
If a custom rack is needed, we'll say so.

To improve the productivity and profit in your anodizing operations, look to the leader in rack design...Servi-Sure.

Shown on these pages are examples of our custom racks in action. You may see a part which looks similar to yours. If so, call us and we'll be glad to give you the details on how we helped solve a problem. Often times, what may seem an insurmountable challenge is one we've tackled already.

Don't let the word "custom" scare you, by the way. In applications where you run high production or high-cost piece parts, the actual cost per station of a custom rack can actually be less than trying to "get by with a standard rack." Call us, we'll prove it to you.





MASTER FRAME

Servi-Sure has faced many racking challenges over our years in business. High density racking for high production runs and hard anodizing on small parts presented us with particular difficulties over that time. Then, as with most dramatic changes in any industry, an idea struck us. Why not design a rack for racks?

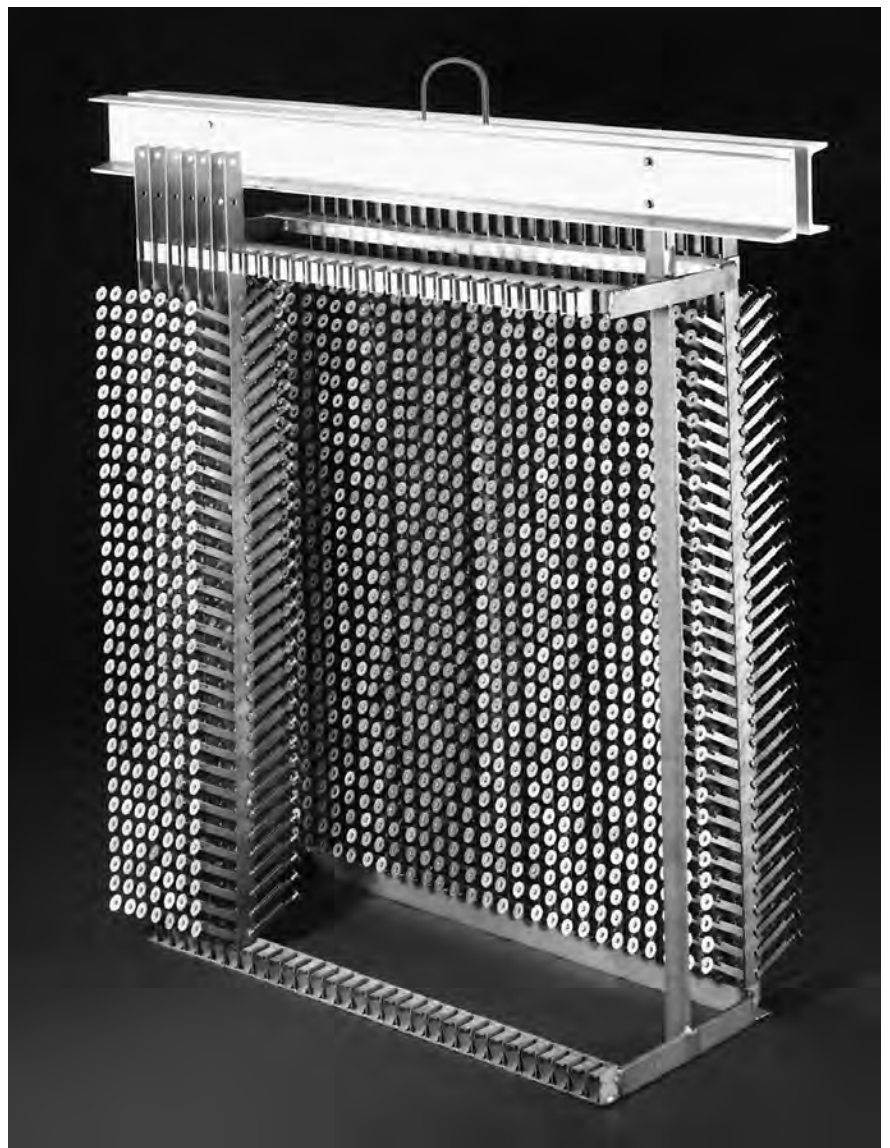
MASTER FRAME is a complete racking system. Servi-Sure engineered and perfected this idea, designed to maximize part density by holding individual racks, top and bottom, rather than having them swing through the tank on separate hooks.

Master Frame from Servi-Sure offers you all these advantages:

- 1. Ease of Racking**—rack sections are loaded off-line where there is ample workspace for loading and unloading parts or using automatic and semi-automatic racking machines.
- 2. Consistent Anodizing**—evenly dispersed anodic film thickness is made more likely, since the current flows through the top and bottom of the rack. Especially good for small parts, run in big batches.
- 3. Improved Electrical Continuity**—Master Frame can be fastened directly to the work bar.

4. Cost Savings—no more hooks and fasteners, plus the labor to affix them, handle them individually and replace them. Plus, the economies of scale in processing such large quantities simultaneously are substantial and quickly translate to your bottom line.

5. Rack Interchangeability—note the variety of rack sections available from Servi-Sure for the Master Frame system. All 2-way racks shown on p. 12-15 can be easily modified to run in a Master Frame.



The Master Frame system from Servi-Sure is already making big impacts throughout the anodizing industry. Whether you run a job shop, a captive multi-line or single dedicated operation, you owe it to your future to look at Master Frame from Servi-Sure.



SINGLE MASTER FRAME

No. SMF3930
39" solution depth
30" long
700 Amp capacity
28 stations on 1" centers

DOUBLE MASTER FRAME



No. DMF3930
 Two rows of racks for better utilization of tank width-allows for 4 parts racked in the direction of travel

39" solution depth
30" long
700 Amp capacity
Clips on 1" centers to hold up to 28 racks per side, 56 racks per frame

ANY RACK ■■■■■■■■■■
SHOWN HERE ■■■■■■■■■■
CAN BE MODIFIED ■■■■■■■■■■
TO MEET YOUR CUSTOM ■■■■
REQUIREMENTS ■■■■■■■■■■

UTILITY RACKS

As the name suggests, these racks can do a lot of different things for you.

And, in answer to the most frequent question we're asked at Servi-Sure, yes, any of these racks can be modified to your specifications.

ANY RACK SHOWN HERE CAN BE MODIFIED TO MEET YOUR CUSTOM REQUIREMENTS

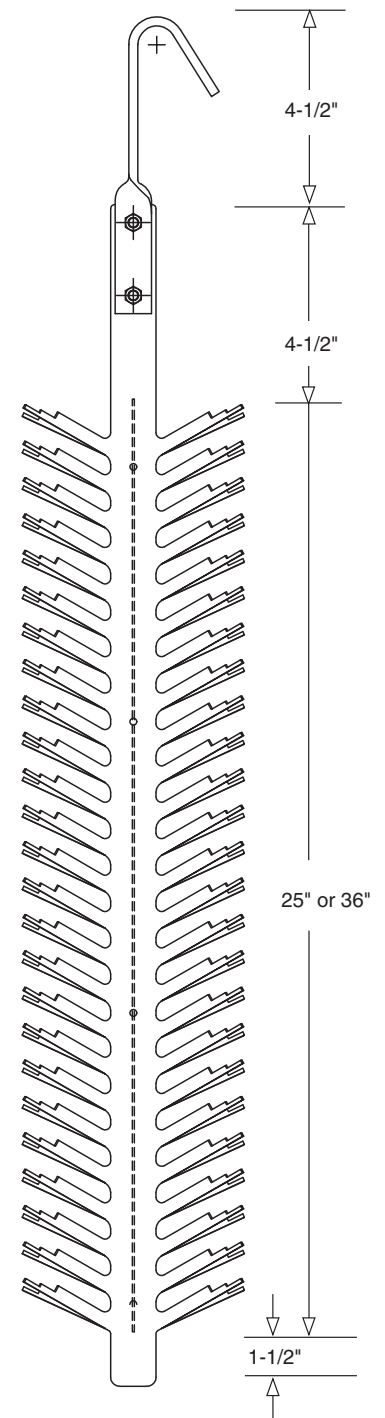
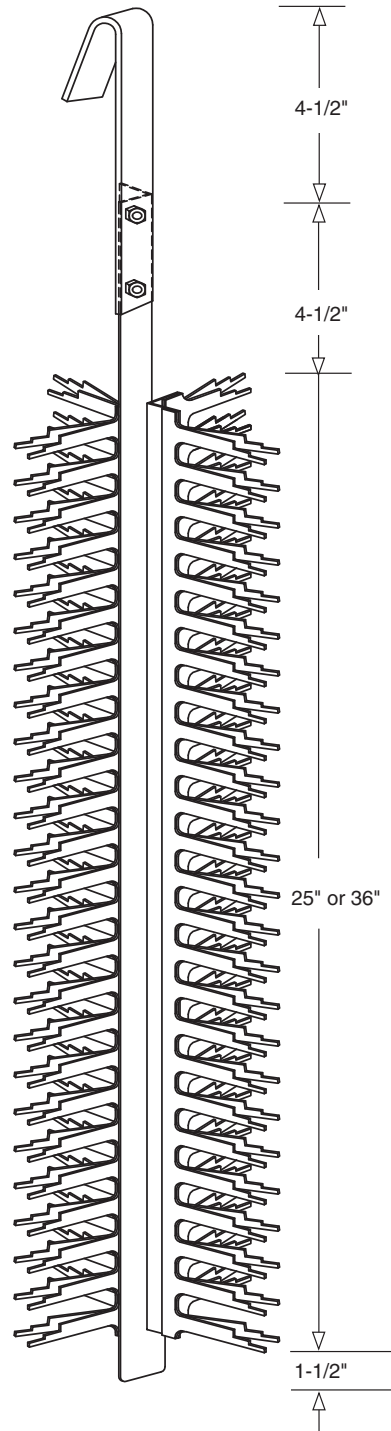
Among the modifications we can make:

- Spline thickness to improve current carrying capacity
- Finger thickness, width and length
- Clip spacing
- Clip angle to reduce air pocketing, improve drainage
- Rack length to suit any tank in the world
- Automatic racking machine use

Our utility racks all include these standard features:

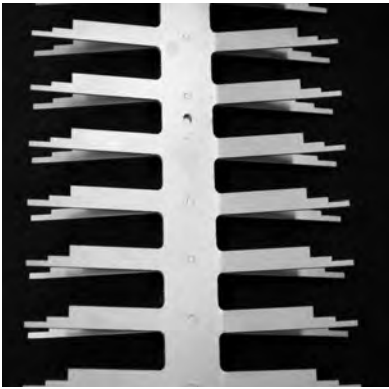
- Spring temper titanium fingers
- With-the-grain construction to maximize life
- Titanium fasteners and aluminum hooks

NOTE: All Servi-Sure's 2-way racks are made with top and bottom tabs to permit their use in racking machines and our own Master Frame system (see p. 10-11).



STEP CLIP RACKS

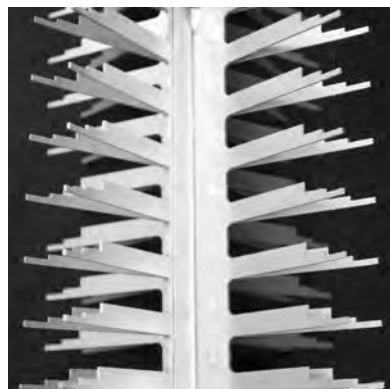
- For racking in I.D.'s from .140" to 3/8"
- Fingers made from .050" thick grade 4 titanium
- Available in various spring thickness and finger spacing
- Fingers on 1" centers at 90° vertical
- Specify suffix "A" for fingers angled up 30°



**2
WAY
RACKS**

No. SC248
2-way, 48 stations, 25" solution depth

No. SC272
2-way, 72 stations, 36" solution depth



**4
WAY
RACKS**

No. SC496
4-way, 96 stations, 25" solution depth

No. SC4144
4-way, 144 stations, 36" solution depth

TINY PARTS RACKS

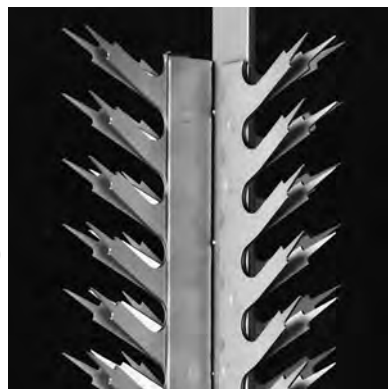
- Modification of our popular fishbone style designed to rack in very small holes, to .070" diameters
- Fingers made from .032" grade 4 titanium
- Fingers angled up for better drainage and part density
- Clips on 3/4" centers, angled up 30°



**2
WAY
RACKS**

No. TP264
2-way, 64 stations, 25" solution depth

No. TP292
2-way, 92 stations, 36" solution depth



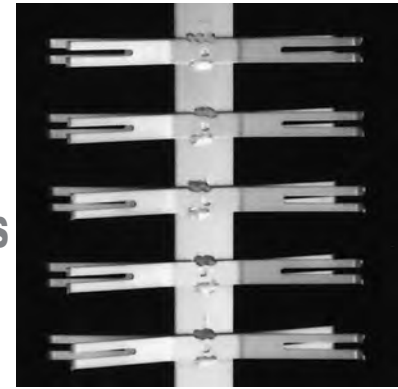
**4
WAY
RACKS**

No. TP4128
4-way, 128 stations, 25" solution depth

No. TP4184
4-way, 184 stations, 36" solution depth

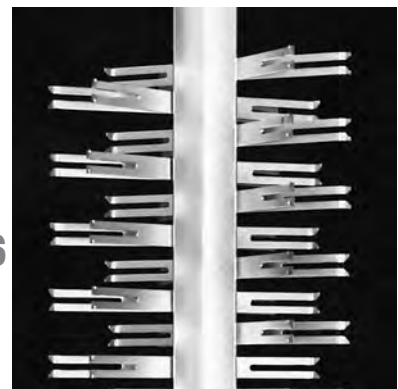
1/2" SPLIT FINGER RACKS

- Split finger design allows all 4 contacts to act as springs
- Insures 4 points of contact
- Formed tips apply pressure in correct direction to hold parts of many shapes and sizes
- Clips are .050" thick and 1/2" wide
- Clips on 1-1/2" vertical centers



No. SF234
2-way, 34 stations, 25" solution depth

No. SF248
2-way, 48 stations, 36" solution depth



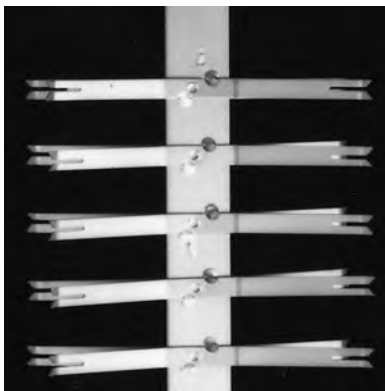
No. SF466
4-way, 66 stations, 25" solution depth

No. SF496
4-way, 96 stations, 36" solution depth

UTILITY RACKS

3/8" SPLIT FINGER RACKS

- Same split finger features as 1/2" racks
- Clips are .050" thick and 3/8" wide
- Clips on 1-1/4" vertical centers



2
WAY
RACKS

No. TES240
2-way, 40 stations, 25" solution depth
No. TES258
2-way, 58 stations, 36" solution depth

FISHBONE RACKS

- Tapered fingers ideal for small holes
- .040" fingers taper down from 1/2" to 1/16" at tip (tip rounded to prevent scratching)
- Clips on 1" centers at 90° to vertical
- Specify suffix "A" for fingers angled up 30°

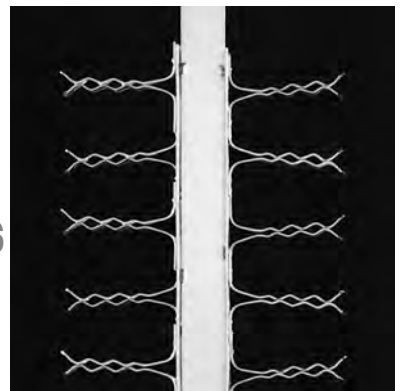


2
WAY
RACKS

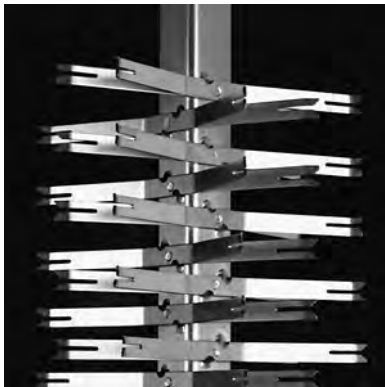
No. 2W48
2-way, 48 stations, 25" solution depth
No. 2W72
2-way, 72 stations, 36" solution depth

WIGGLE FINGER RACKS

- For racking O.D.'s from 3/16" to 3/4"
- Fingers made from .050" x 3/8" grade 4 titanium
- Stations on 1-1/2" centers
- Can be modified to rack smaller or larger O.D.'s

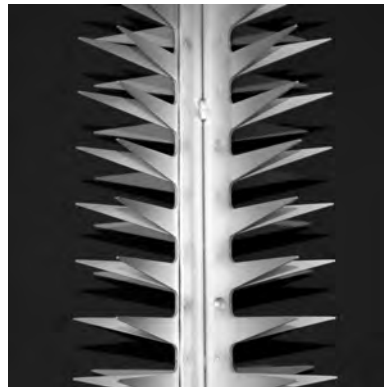


No. WF32
2-way, 32 stations, 25" solution depth
No. WF48
2-way, 48 stations, 36" solution depth



4
WAY
RACKS

No. TES480
4-way, 80 stations, 25" solution depth
No. TES4114
4-way, 114 stations, 36" solution depth

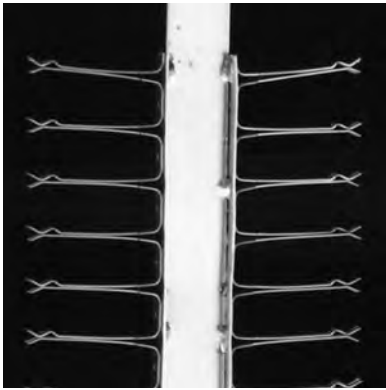


No. 4W96
4-way, 96 stations, 25" solution depth
No. 4W144
4-way, 144 stations, 36" solution depth

ANY RACK ■■■■■■■■■■
SHOWN HERE ■■■■■■■■■■
CAN BE MODIFIED ■■■■■■■■■■
TO MEET YOUR CUSTOM ■■■■
REQUIREMENTS ■■■■■■■■■■

SMALL WIGGLE FINGER RACKS

- For racking O.D.'s from 5/32" to 1/2"
- Clips are 1/4" wide at contact area, 3/8" wide at flexing point for better spring action
- Clips made from .050" thick grade 4 titanium
- Clips use split finger design to ensure 4-6 points of contact
- Clips on 1.05" centers



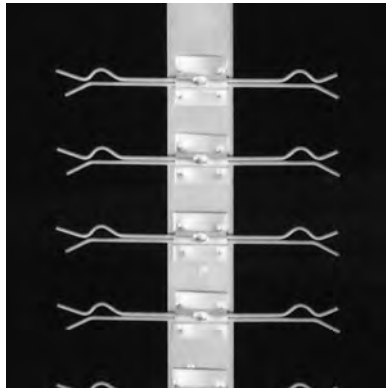
No. SWF48
2-way, 48 stations, 25" solution depth

No. SWF72
2-way, 72 stations, 36" solution depth



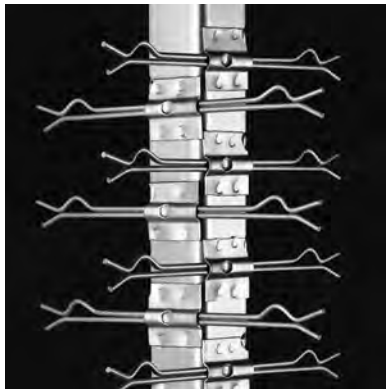
WIRE CLIP RACKS

- For racking small parts on O.D.
- Especially suited for O-ring grooves
- .090" dia. wire (also available .060" dia.)
- Clips on 1-1/2" centers



No. WCR234
2-way, 34 stations, 25" solution depth

No. WCR248
2-way, 48 stations, 36" solution depth



No. WCR466
4-way, 66 stations, 25" solution depth

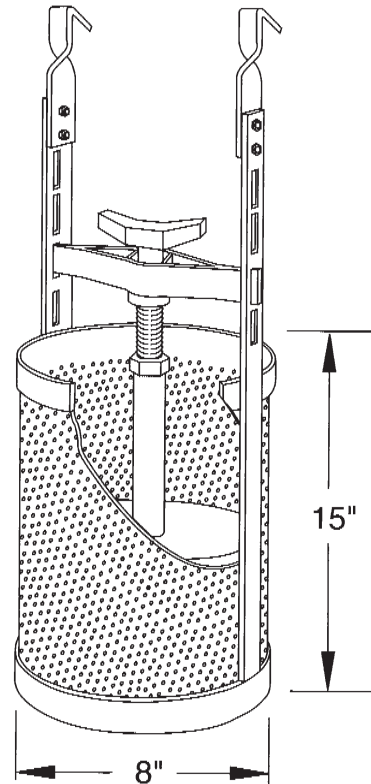
No. WCR496
4-way, 96 stations, 36" solution depth

ANODIZING BASKET

For bulk anodizing small parts such as nuts, bolts, screws, stampings and more, this all-titanium basket features:

- Fast and easy loading/unloading... a few turns of the T-handle and the entire lid comes right out
- Completely adjustable for various size loads
- No tools required
- Sturdy construction
- 1/8" dia. holes on 3/16" centers, staggered
- Usable as a dipping basket
- G10 plastic nut for easy, low cost maintenance...won't damage screw

No. AB815
includes 2 aluminum hooks and titanium fasteners

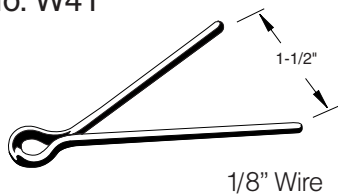


CLIPS & TIPS

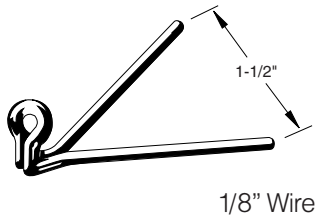
These all-titanium clips and tips are in stock for immediate shipment. All clips have 9/32" holes and clearance for 1/4" screws. They easily mount to our structural members and splines (see p. 18) or to your aluminum rack structures.

NOTE: These drawings are for reference only. Contact Servi-Sure for additional dimensional info and material specifications.

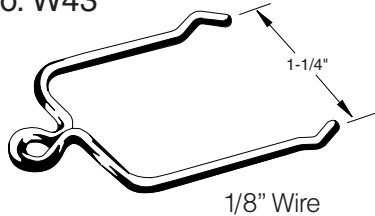
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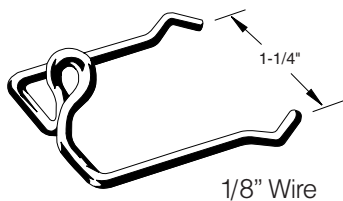
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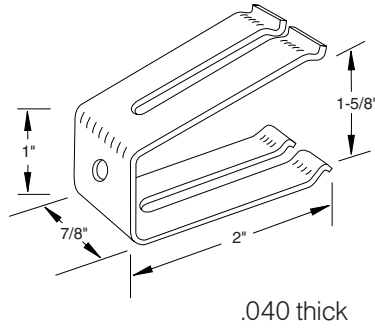
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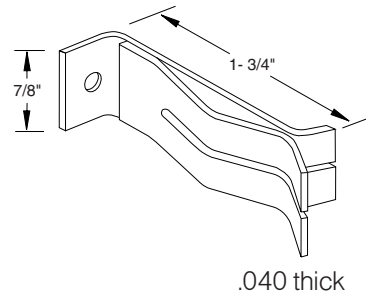
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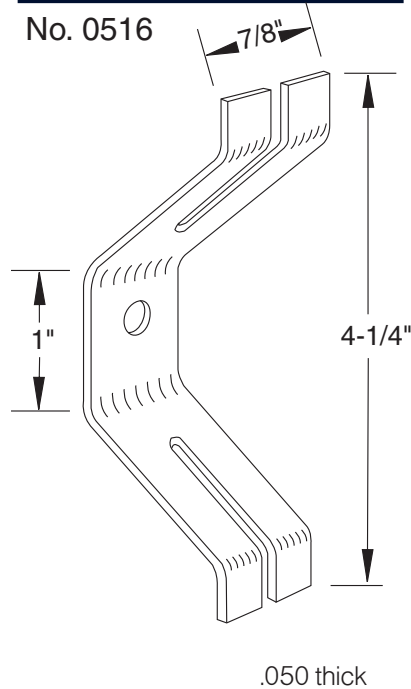
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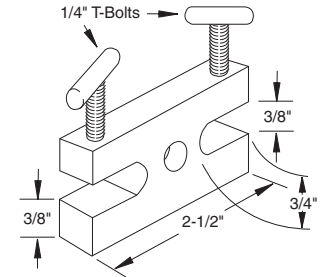
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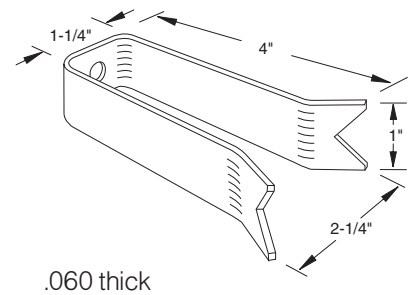
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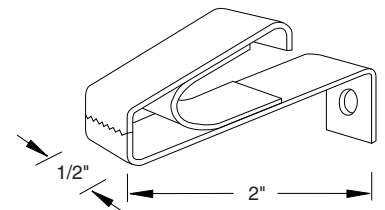
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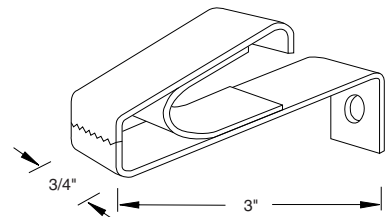
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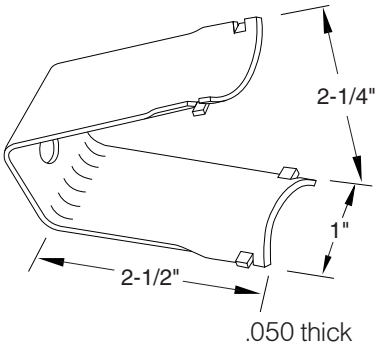
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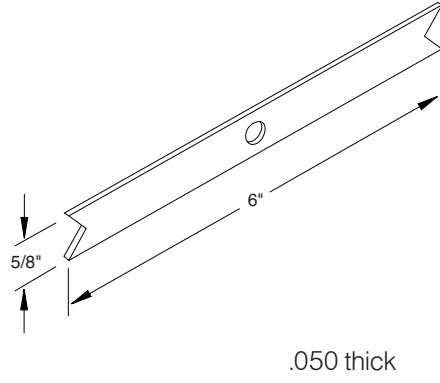
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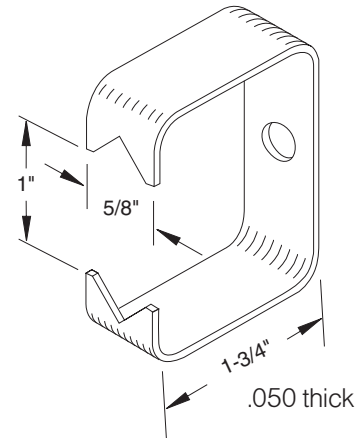
No. NC2



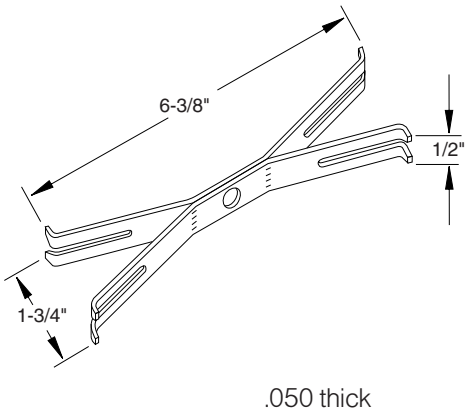
No. NC1



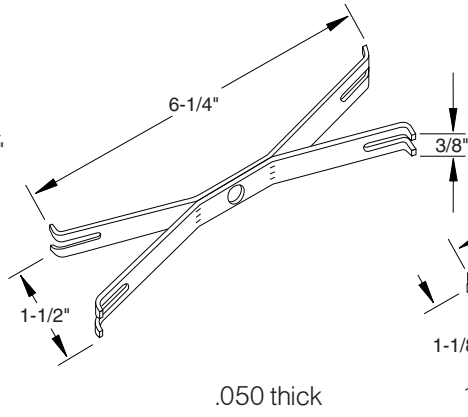
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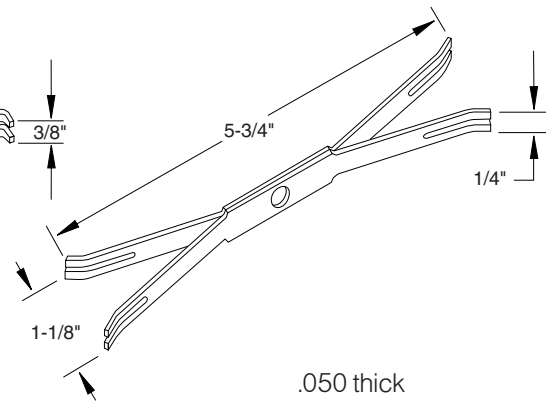
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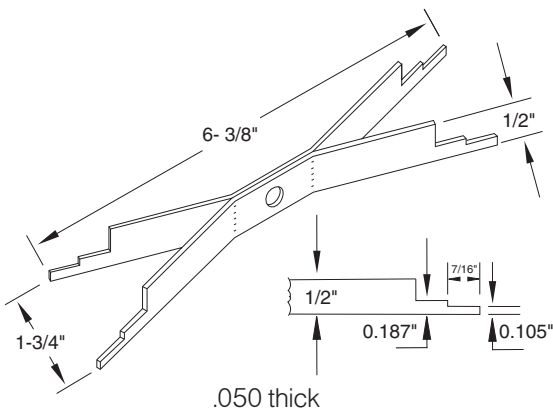
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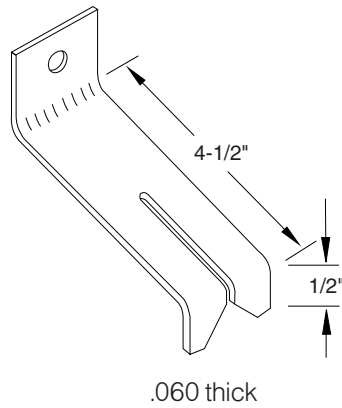
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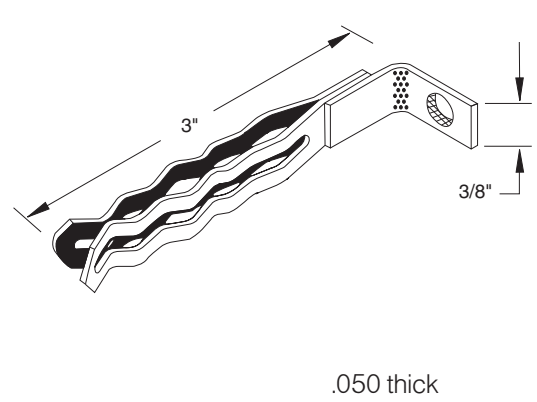
No. SC1



No. LP1



No. WF1

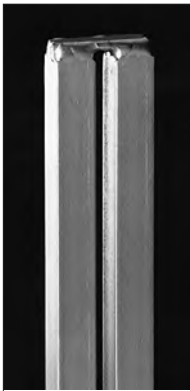


SPLINES & STRUCTURES

Solid Titanium Splines

	36"	42"	48"	60"
Double 3/8" square	V336	V342	V348	V360
Double 1/2" square	V536	V542	V548	V560
Double 3/4" square	V736	V742	V748	V760
3/4" round	V936	V942	V948	V960

Consult factory for other lengths.



DOUBLE SQUARE SPLINE



ROUND SPLINE

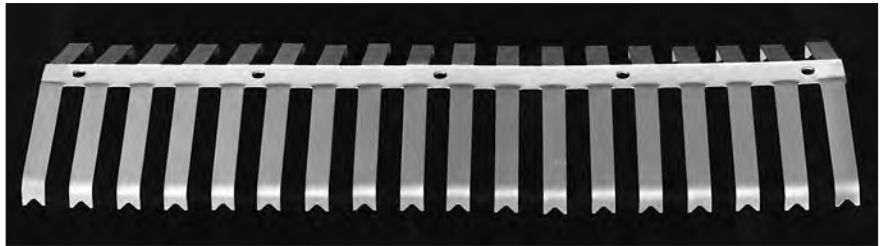
Construction Angles

1" x 1" angle made of .070" thick titanium, with 9/32" diameter holes, 1/4" screw clearance on 1" centers. Sold in any length, priced by the inch. Can be run vertically, horizontally or used to build a grid.

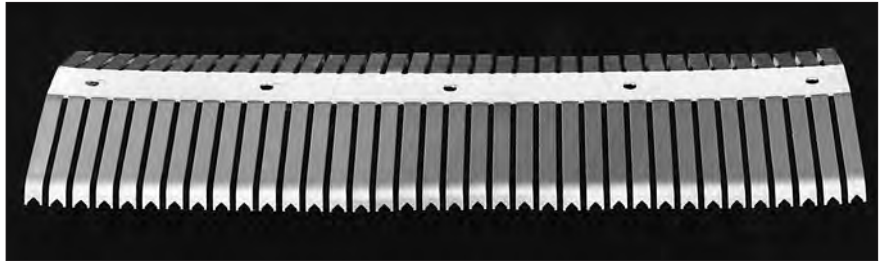


Box Rack Components

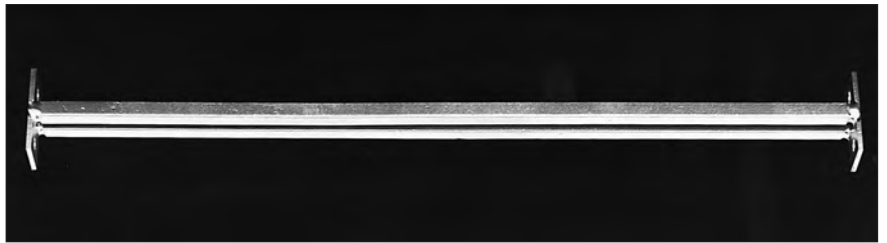
.050" spring temper titanium box rack stampings for "old style" box racks - available in standard widths of 18", 24" and 30".



Wide Series - 1/2" fingers on 1" centers, Nos. WS18, WS24, WS30



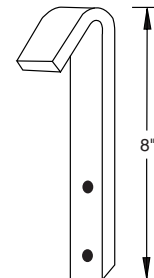
Narrow Series - 3/8" fingers on 1/2" centers, Nos. NS18, NS24, NS30



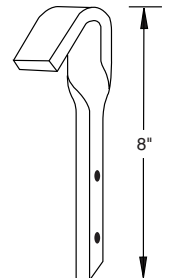
Horizontals - Double 3/8" square bars for attaching box rack stampings. Clamp plate on each end for attachment to verticals. Nos. H318, H324, H330

Hooks

Made of 1/4" x 1" aluminum - consult factory regarding titanium or copper hooks



No. HS100



No. HT101

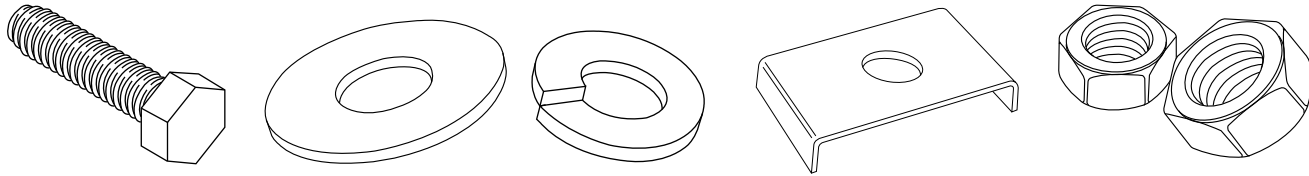
ANY RACK SHOWN HERE CAN BE MODIFIED TO MEET YOUR CUSTOM REQUIREMENTS

TITANIUM FASTENERS

Hex Head Bolts

Size	Size Across		Length						
	Flats	1/2"	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"	2-1/2"
10-24	5/16"	✓	✓	✓	✓	✓	✓		
1/4-20	3/8"	✓	✓	✓	✓	✓	✓	✓	✓
5/16-18	1/2"		✓	✓	✓	✓	✓	✓	✓
3/8-16	9/16"		✓	✓	✓	✓	✓	✓	✓

✓ – Indicates item is normally in stock, available for same day shipment



Flat Washers & Lock Washers

Bolt Size	Thickness	O.D.	Flat Washers	Lock Washers
#10"	.050	5/8"	✓	✓
1/4"	.060	5/8"	✓	✓
5/16"	.060	3/4"	✓	✓
3/8"	.060	7/8"	✓	✓

- No Minimum order requirement
- Other sizes are available, call for information
- Threaded rod also available

Hex Nuts

Size	Size Across		Thickness
	Flats		
10-24	3/8"	.125	✓
1/4-20	7/16"	.215	✓
5/16-18	1/2"	.265	✓
3/8-16	9/16"	.325	✓

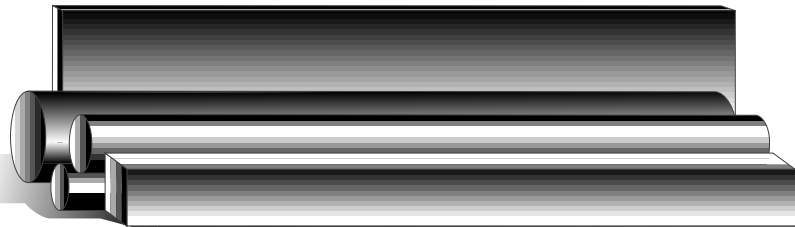
Saddle Washers

For Fastening to Double Square Splines

Double 3/8" Square (1/4" Bolt)	✓
Double 1/2" Square (1/4" Bolt)	✓
Double 1/2" Square (5/16" Bolt)	✓
Double 1/2" Square (3/8" Bolt)	✓

TITANIUM

Ti



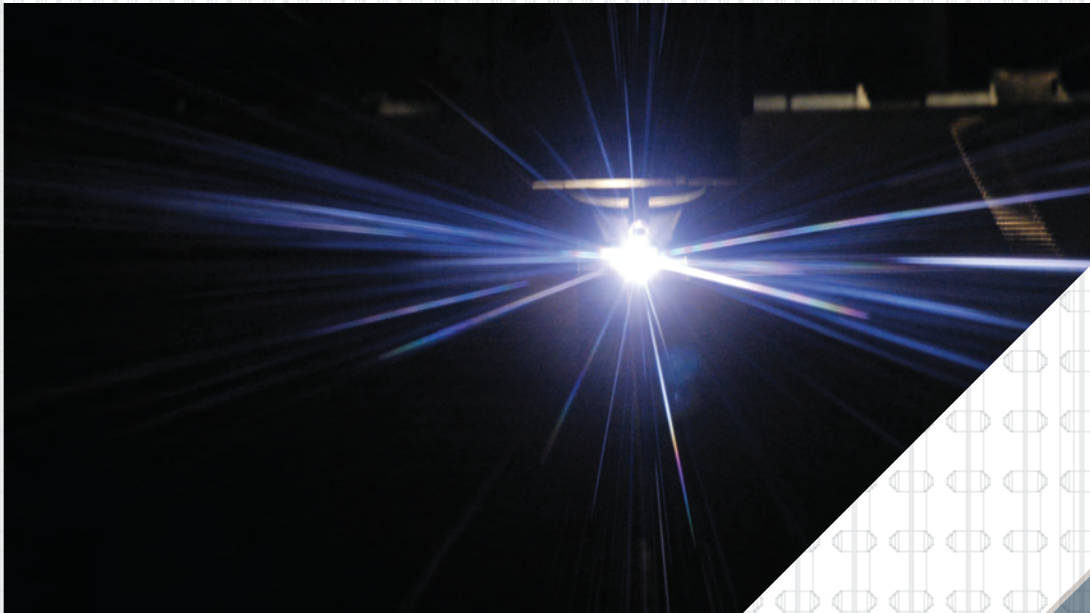
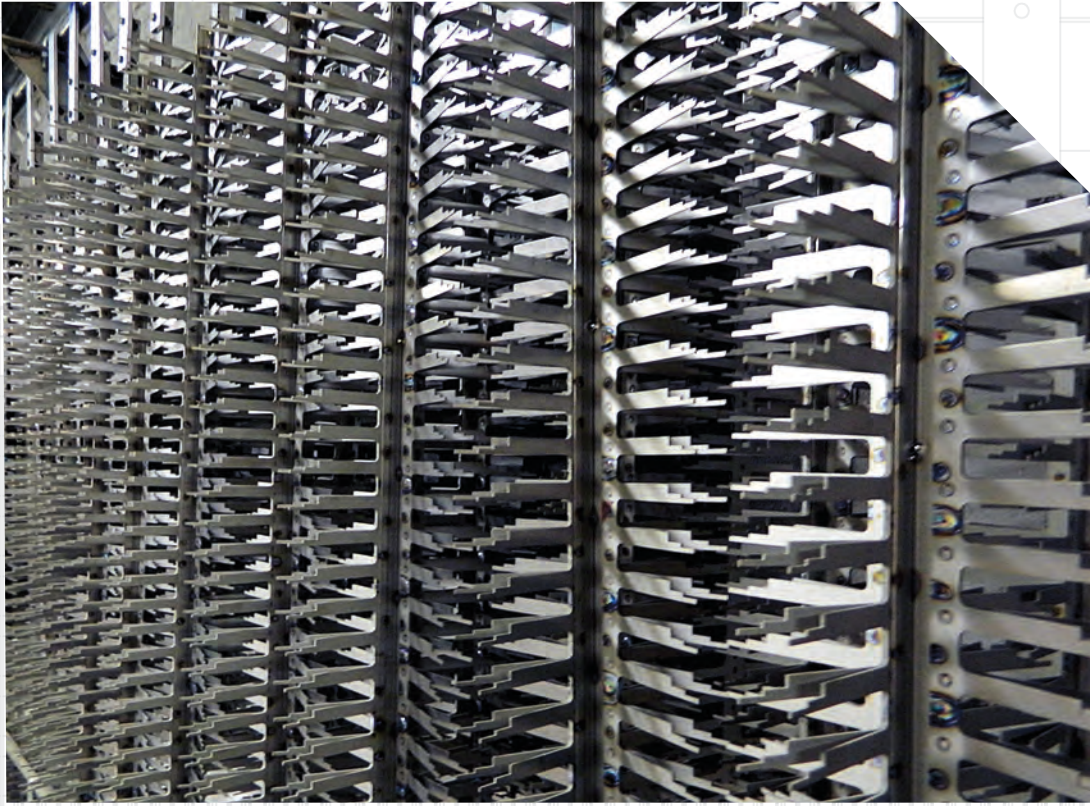
For those anodizers who make their own titanium racks, we encourage you to take advantage of our material inventory. Because we are primarily a rack manufacturer, we have an extensive supply of those shapes and sizes needed for rack fabrication and maintenance.

Our stock includes.

- Sheet**—Spring & Soft
- Wire**—Spring & Soft
- Plate**
- Square Bar**
- Round Bar**
- Weld Rod**

Ti

Material can be sheared to your size requirements and deburred at a very reasonable cost. Shipments can normally be made within 24 hours. Contact us for pricing and availability of your specific material requirements.



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servisure.com

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