



A Division of TITAN Metal Industries, Inc

A proud member of IHAA, AAC, and NASF

STANDARD PRODUCT CATALOG



RIGHTech Fabrications is your resource for high quality anodizing and plating equipment. We are the industry leader in the design and fabrication of racks, baskets, and coils for metal finishers. With decades of experience, we understand your specific anodizing and plating challenges and build in the answers that will make your operation more effective.

Discover Our Team

As proud members of IHAA, AAC, and NASF, our CEF-certified customer service and sales staff are trained in electrical, mechanical, chemical, industrial, and materials engineering. Every product benefits from the broadest knowledge base in the industry.

Discover Our Designs

Racks, baskets and coils are what we do best. We work with titanium, aluminum, stainless steel, and zirconium. See our individual catalog pages under the products tab.

Discover Our Solutions

Our investment in CAD, Laser and Waterjet technologies helps you meet your exact requirements by providing consistent quality and improved material utilization. We pass our lean efficiencies to you.



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HI-LODE FRAMES

Durable. Versatile. High-Performance.

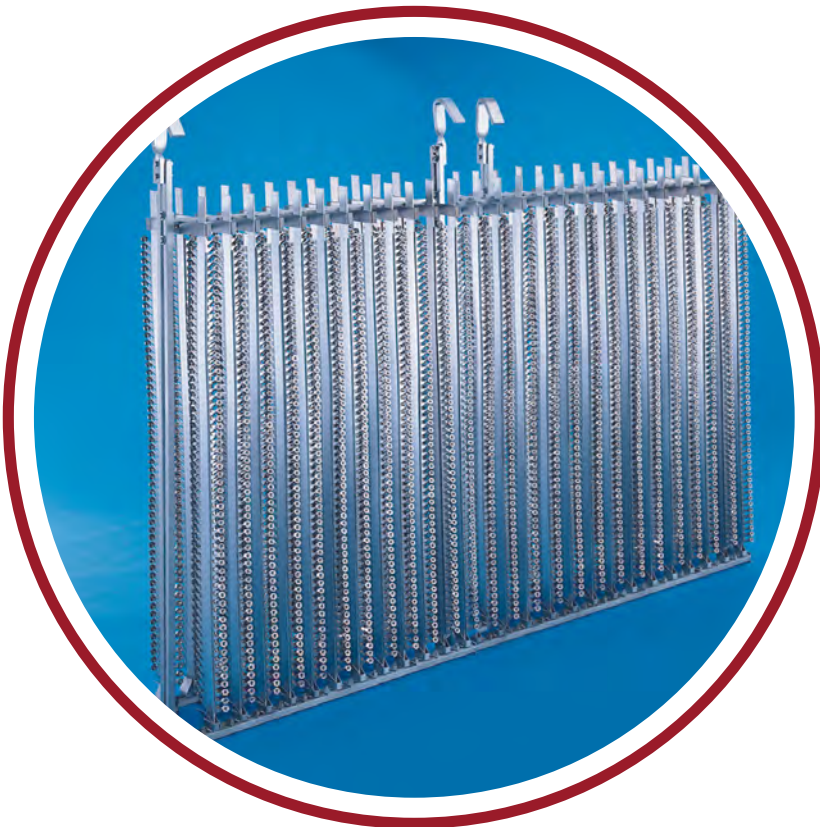
- Key Features:

- **High Efficiency:**

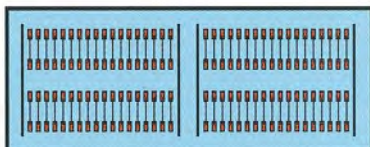
- Splines matched to rectifier capacity
- Superior conductivity reduces energy use
- More parts per cubic foot of tank space
- Fewer loads, faster processing

- **Versatile & Scalable:**

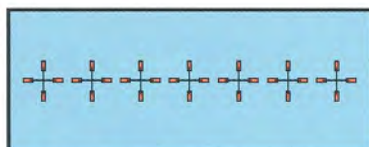
- Handles a wide range of part sizes and shapes
- One system accommodates various part configurations
- Quick-connect racks for fast setup and changeover



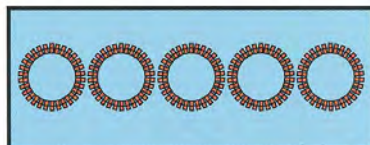
Tank Working Dimensions 24"W x 60" L x 36" Solution Depth



High Density System = 4608 Parts



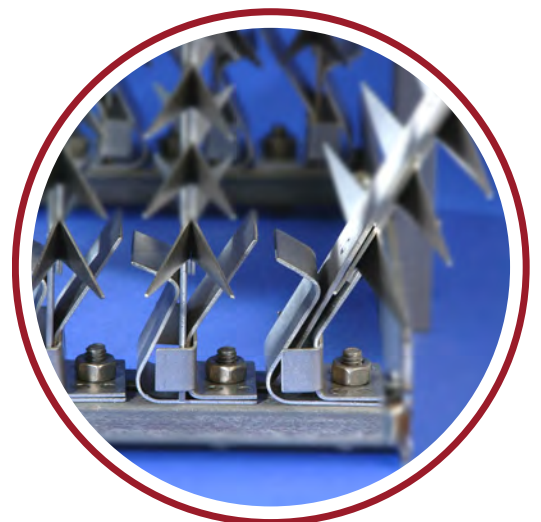
Standard 4-Way Rack = 840 Parts



Standard 8-Tier Discs = 1200 Parts



Standard 36" 2-Way Rack = 1440 Parts



HI-LODE FRAMES

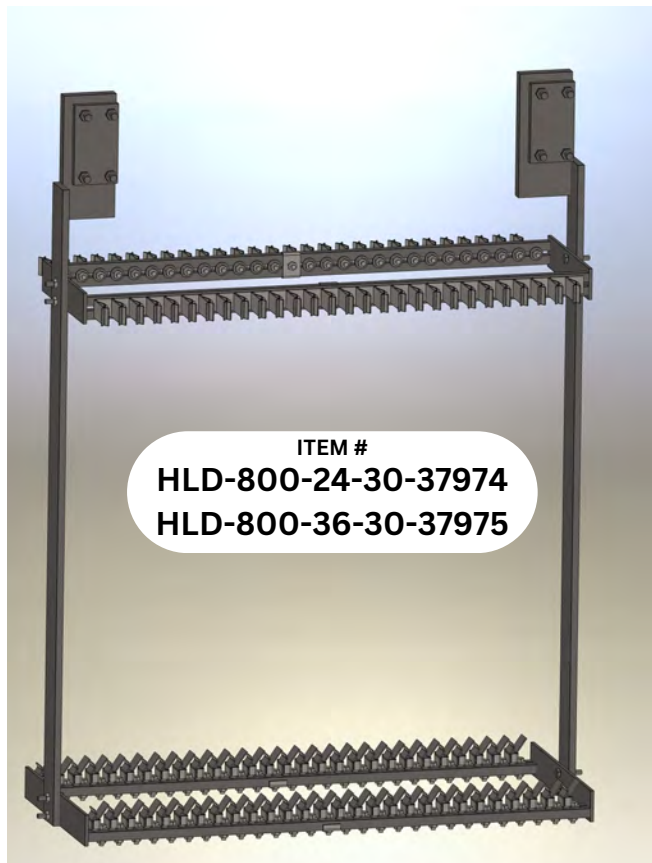
Boost your productivity—without investing in new lines.

The Hi-Lode system is engineered to maximize output without expanding your anodizing line. Its innovative design allows you to rack up to five times more parts than standard systems—boosting throughput, reducing labor, and increasing efficiency.

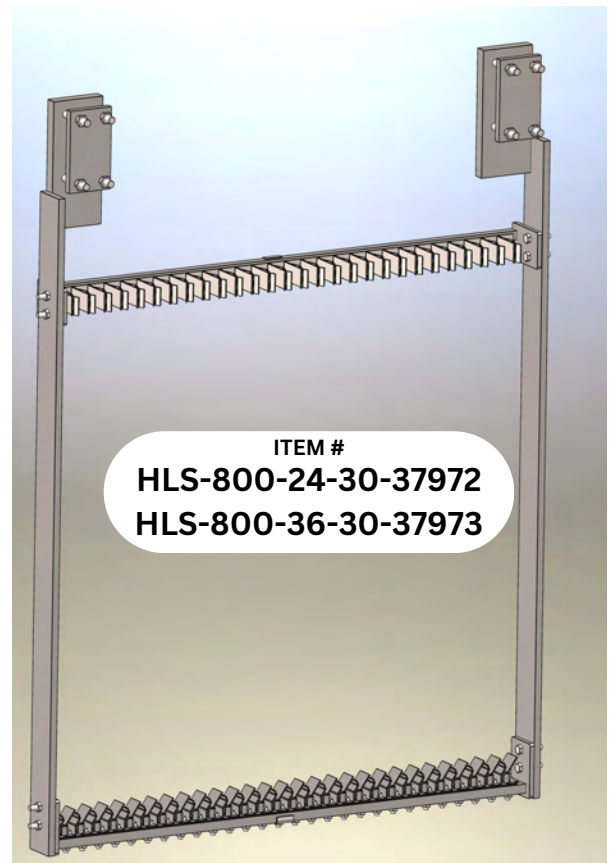
- **Low Maintenance & Easy Handling:**

- Modular components—no welding required for replacements
- Spring-temper clips ensure optimal rack contact
- Unique bottom clip allows zero insertion force for racks

Hi-Lode Double Sided



Hi-Lode Single

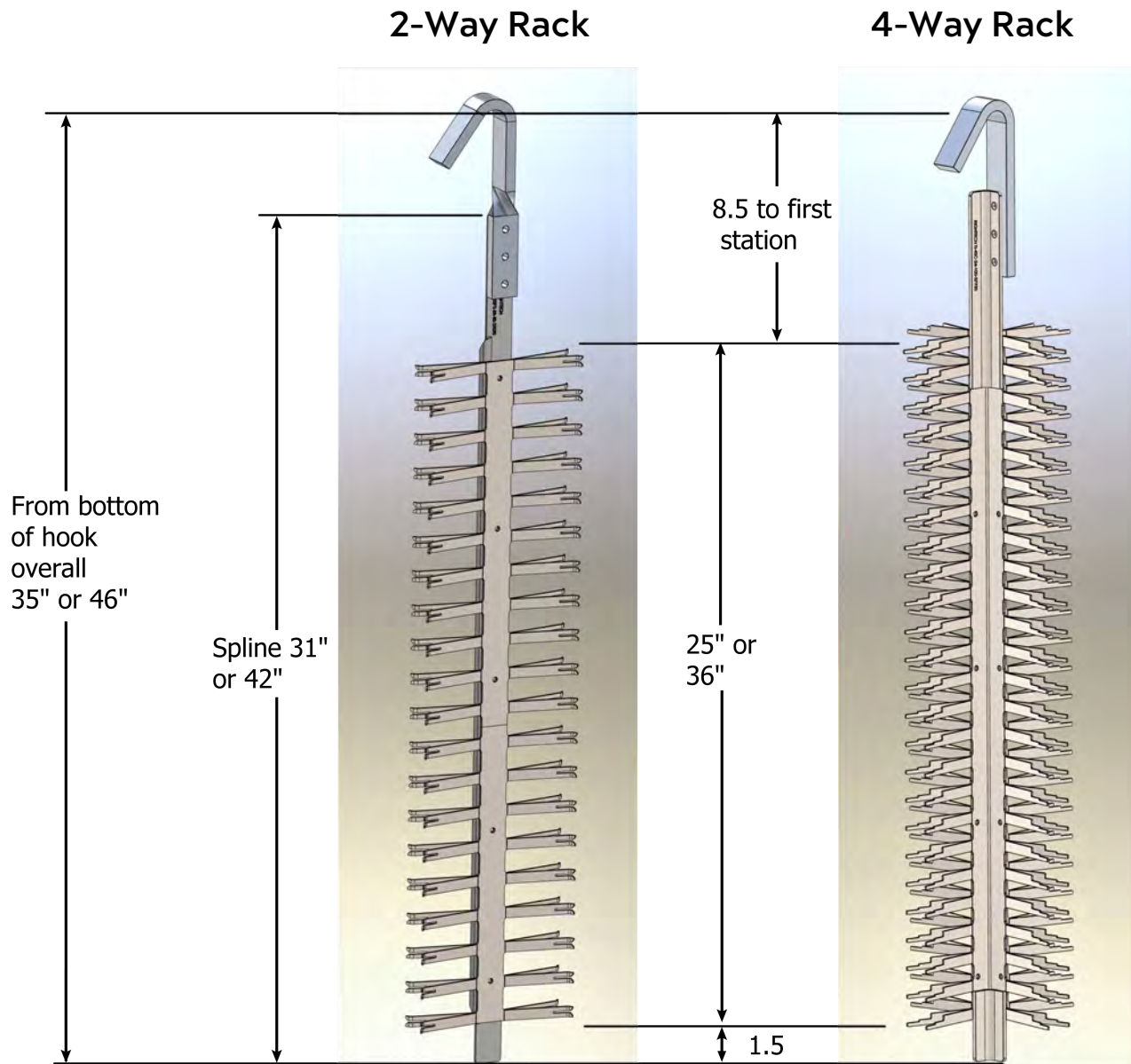


See Clip Page 24 for CL-121-050 (Top clip) and 34461 (Bottom Clip)

UTILITY RACKS

Utility racks are the backbone of most anodizing lines. Since anodizing relies on an electrical circuit within the tank, racks must be treated as critical electrical components.

RIGHTech racks feature a single, full-length spline for superior current flow, consistent results, and lasting durability.



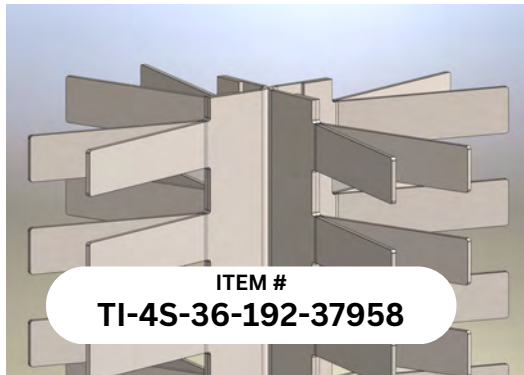
Each rack includes an aluminum hook and titanium fasteners.

UTILITY RACKS

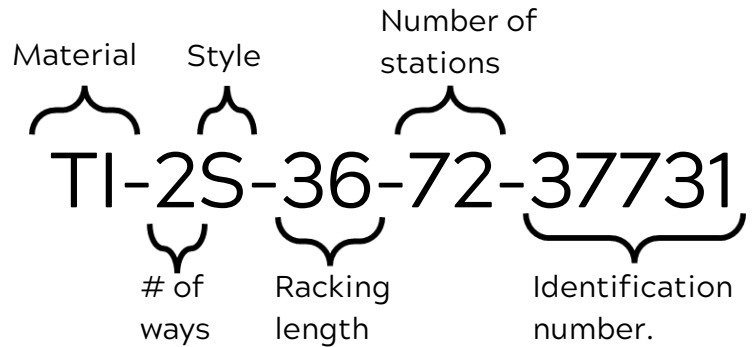
FLAT FINGER RACK

Flat Finger Racks are a traditional, reliable option for general ID racking.

- Made from 0.032" thick Grade 4 Titanium
- Ideal for interior dimension (ID) racking
- Available configurations:
 - 2-way or 4-way
 - 1/2" or 3/8" fingers



GET TO KNOW YOUR RACK



For clarity and uniformity, our standard rack code conveys information quickly and easily.

Each rack family will have additional information at the bottom of the page

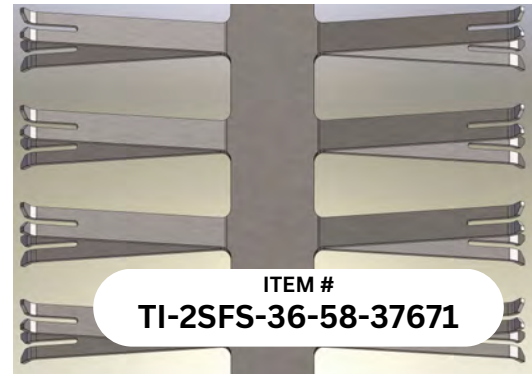
	Description	Centers	24" Length	Number of stations	36" Length	Number of stations
2 Way	3/8" Flat Finger Rack	0.75"	TI-2S-24-66-37732	66	TI-2S-36-96-37733	96
	1/2" Flat Finger Rack	1.00"	TI-2S-24-50-37730	50	TI-2S-36-72-37731	72
4 Way	3/8" Flat Finger Rack	0.75"	TI-4S-24-132-37957	132	TI-4S-36-192-37958	192
	1/2" Flat Finger Rack	1.00"	TI-4S-24-100-37955	100	TI-4S-36-144-37956	144

UTILITY RACKS

SPLIT FINGER RACK

Split Finger Racks offer a fantastic balance between seating a part quickly and securely.

- 0.050" thick Grade 4 Titanium
- Split-finger tip for firm, reliable contact
- Ideal for interior dimension (ID) racking
- Available in:
 - 2-way or 4-way configurations
 - 1/2" or 3/8" widths



Split fingers apply independent pressure at each of the four contact points—ideal for irregular or non-uniform holes.

Consistent contact ensures excellent conductivity and helps prevent arcing.

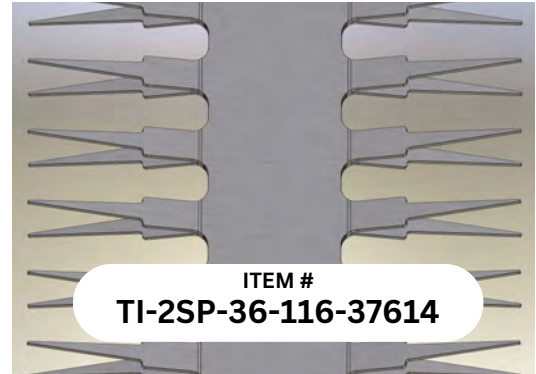
	Description	Centers	24" Length	Number of stations	36" Length	Number of stations
2 Way	3/8" Splitfinger Rack	1.25"	TI-2SFS-24-40-37670	40	TI-2SFS-36-58-37671	58
	1/2" Splitfinger Rack	1.50"	TI-2SF-24-34-37672	34	TI-2SF-36-48-37673	48
4 Way	3/8" Splitfinger Rack	1.25"	TI-4SFS-24-80-37932	80	TI-4SFS-36-116-37933	116
	1/2" Splitfinger Rack	1.50"	TI-4SF-24-68-37934	68	TI-4SF-36-96-37935	96

UTILITY RACKS

SMALL PARTS RACK

Small Part Racks offer a secure fit for even the smallest holes.

- 0.032" thick Titanium Grade 4
- Tapered sharp point tip
- Fingers on 0.625" Centers
- Small ID racking
- Offered in:
 - 2 way
 - 4 way
 - Straight
 - Inclined



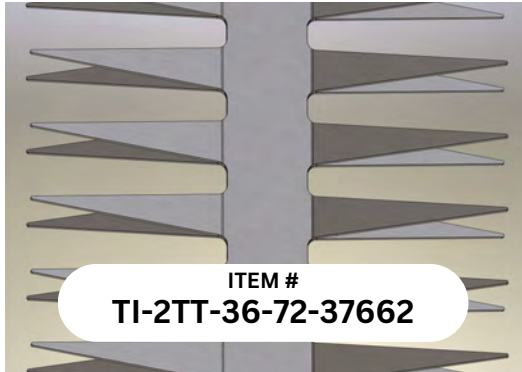
Incline racks offer additional drainage for through hole parts.

They're ideal for part geometries that typically limit close racking—staggered shoulders allow for tighter, more efficient spacing.

	Description	24" Length	Number of stations	36" Length	Number of stations
2 Way	Small Parts Rack	TI-2SP-24-80-37613	80	TI-2SP-36-116-37614	116
	Inclined Small Parts Rack	TI-2ISP-24-80-37615	80	TI-2ISP-36-116-37616	116
4 Way	Small Parts Rack	TI-4SP-24-160-37907	160	TI-4SP-36-232-37908	232
	Inclined Small Parts Rack	TI-4ISP-24-160-37909	160	TI-4ISP-36-232-37910	232

UTILITY RACKS

TAPER TIP RACK



ITEM #
TI-2TT-36-72-37662

- 0.040" thick Titanium Grade 4
- Tapered Finger 0.040" Tip
- Fingers on 1.0" Centers
- Tapered fingers for ID racking



ITEM #
TI-2ITT-36-72-37664

- Inclined are angled at 30°



ITEM #
TI-4ITT-24-100-37940

- Offered in 4 way



ITEM #
TT6W-216-8-FB-33028

- Offered in 6 way

	Description	24" Length	Number of stations	36" Length	Number of stations
2 Way	Taper Tip Rack	TI-2TT-24-50-37661	50	TI-2TT-36-72-37662	72
	Inclined Taper Tip Rack	TI-2ITT-24-50-37663	50	TI-2ITT-36-72-37664	72
4 Way	Taper Tip Rack	TI-4TT-24-100-37938	100	TI-4TT-36-144-37939	144
	Inclined Taper Tip Rack	TI-4ITT-24-100-37940	100	TI-4ITT-36-144-37941	144
6 Way	Step Clip	TT6W-144-8-FB-33028	144	TT6W-216-8-FB-33028	216

UTILITY RACKS

STEP CLIP RACK

Perfect for racking in small holes.
Offer 2 racking diameters per finger.

- Titanium grade 4
- Fingers on 1.0" Centers
- Offered in:
 - Straight
 - Narrow tipped
 - Inclined
 - 4 way
 - 6 way



ITEM #
TI-2SC-36-72-37567



ITEM #
TI-4ISCN-24-100-37824



ITEM #
NT6W-144-8-FB-27506

	Description	Material Thickness	1st Step	2nd Step	24" Length	Number of stations	36" Length	Number of stations
2 Way	Step Clip	0.05	0.100	0.188	TI-2SC-24-50-37567	50	TI-2SC-36-72-37567	72
	Step Clip Narrow Tip	0.05	0.063	0.125	TI-2SCN-24-50-37566	50	TI-2SCN-36-72-37572	72
	Step Clip Inclined	0.05	0.100	0.188	TI-2ISC-36-72-37571	50	TI-2ISC-36-72-37571	72
	Step Clip Narrow Inclined	0.05	0.063	0.125	TI-2ISCN-24-50-37570	50	TI-2ISCN-36-72-37572	72
4 Way	Step Clip	0.05	0.100	0.188	TI-4SC-24-100-37750	100	TI-4SC-36-144-37752	144
	Step Clip Narrow Tip	0.05	0.063	0.125	TI-4SCN-24-100-37751	100	TI-4SCN-36-144-37753	144
	Step Clip Inclined	0.05	0.100	0.188	TI-4ISC-24-100-37822	100	TI-4ISC-36-144-37823	144
	Step Clip Narrow Inclined	0.05	0.063	0.125	TI-4ISCN-24-100-37824	100	TI-4ISCN-36-144-37825	144
6 Way	Step Clip	0.03	0.100	0.188	TI-6SC-24-144-38844	144	TI-6SC-36-216-27506	216
	Step Narrow Tip	0.03	0.063	0.125	TI-6SCN-24-144-38845	144	TI-6SCN-36-216-27509	216

UTILITY RACKS

WIGGLE FINGER RACKS

Great for OD racking of cylindrical parts. Ideal for shafts, male threads, and small parts without ID features. Pro tip: Use in tandem on a Hi-Lode frame to securely rack long shafts.

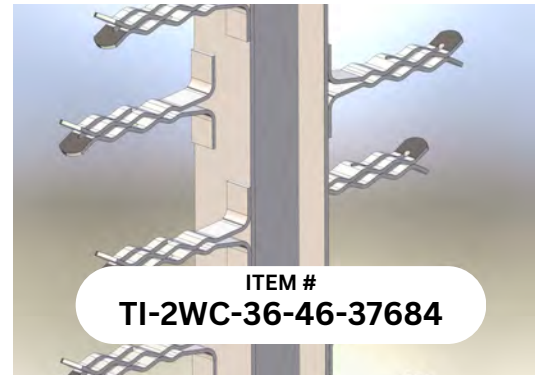


SMALL WIGGLE FINGER

- 0.050" thick Titanium Grade 4
- Small Wiggle Finger 1/4" wide
- Fingers on 1.0" Centers
- OD racking



- Offered in 4 way



WIGGLE FINGER 3/8" WIDE

- 0.050" thick Titanium Grade 4
- Wiggle Finger 3/8" Wide
- Fingers on 1.5" Centers
- OD racking



- Offered in 4 way

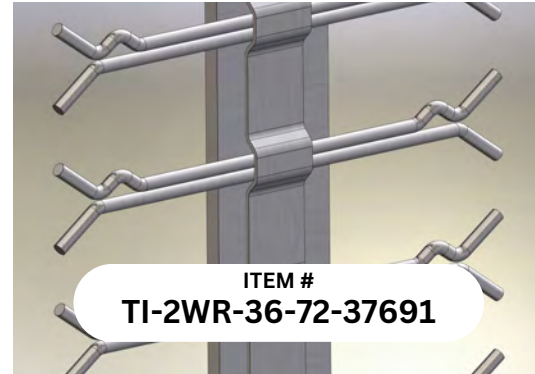
	Description	Centers	Width	24" Length	Number of stations	36" Length	Number of stations
2 Way	Small Wiggle Finger	1.0"	0.25"	TI-2SWC-24-48-37685	48	TI-2SWC-36-70-37686	70
	Wiggle Finger	1.5"	0.38"	TI-2WC-24-32-37683	32	TI-2WC-36-46-37686	46
4 Way	Small Wiggle Finger	1.0"	0.25"	TI-4SWC-24-96-37944	96	TI-4SWC-36-140-37945	140
	Wiggle Finger	1.5"	0.38"	TI-4WC-24-64-37942	64	TI-4WC-36-92-37943	92

UTILITY RACKS

WIRE RACKS

Wire Racks are a go-to choice when minimal rack marks are critical.

- Made from 0.093" diameter Grade 4 Titanium
- Features CL-91 wire clip
- Fingers spaced on 1.0" centers
- Designed for OD racking
- Ergonomic and easy to handle
- Holds a wide range of part sizes and shapes
- Available in:
 - 2-way or 4-way configurations



	Description	24" Length	Number of stations	36" Length	Number of stations
2 Way	Wire Rack	TI-2WR-24-50-37690	50	TI-2WR-36-72-37691	72
4 Way	Wire Rack	TI-4WR-24-104-37967	104	TI-4WR-36-148-37968	148

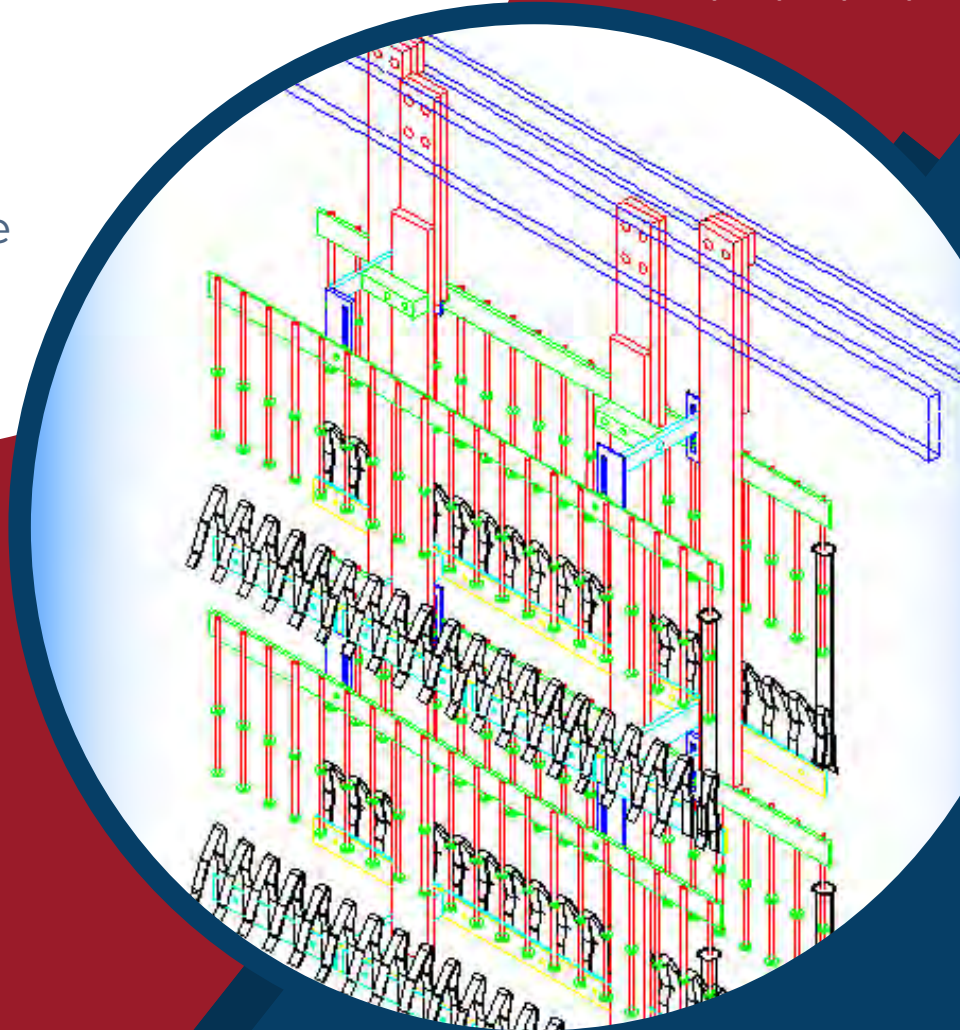
Custom Titanium Racks

Partner with us to raise
your bottom line with the
RIGHT racking!

HIGHLIGHTS

- Any Size Part or Complexity
- Maximized Throughput
- Easy On-Site Maintenance
- Consistent Electrical Flow

GET STARTED



Contact us:

(888) 922-0052

www.righttechfabs.com



Custom Titanium Racks

Any Size or Complexity

RIGHTech custom racks handle parts of all sizes and complexities—no part is too large or intricate for efficient anodizing.

Maximized Throughput

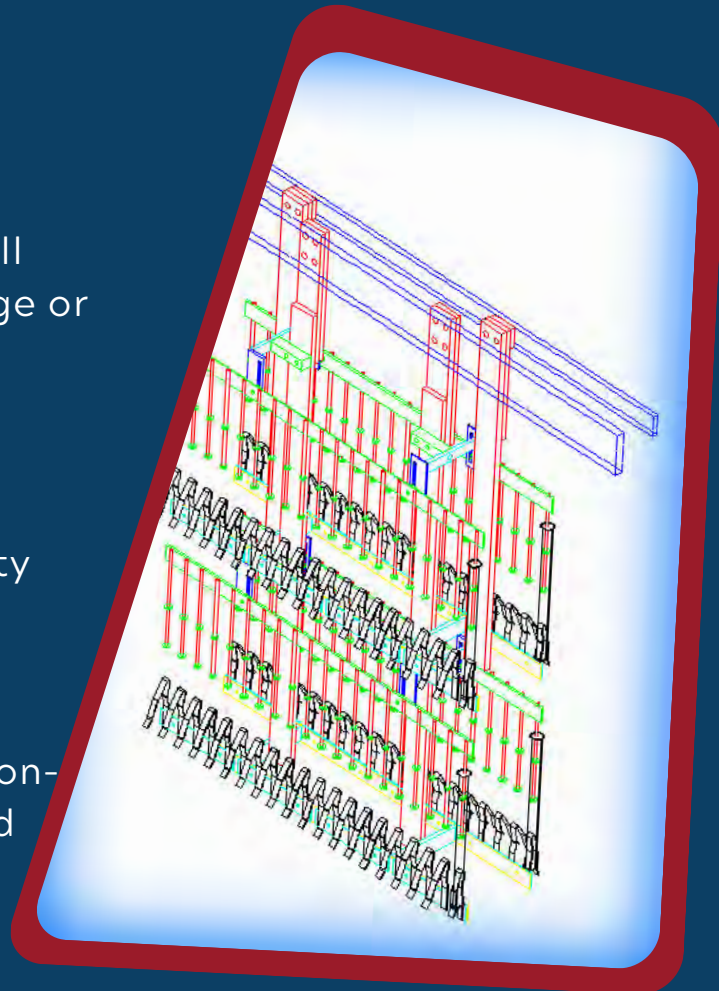
Built to hold more parts, load faster, and unload easily—our racks boost productivity and profitability every run.

Easy On-Site Maintenance

Key components are designed for quick, on-site replacement to reduce downtime and keep production moving.

Consistent Electrical Flow

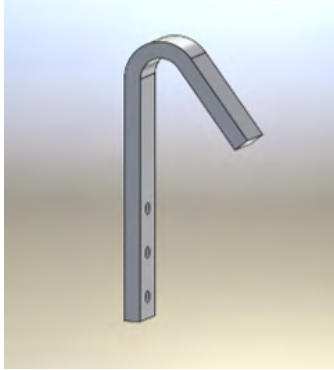
Precision-sized components ensure optimal current distribution for consistent, high-quality anodizing across every part.



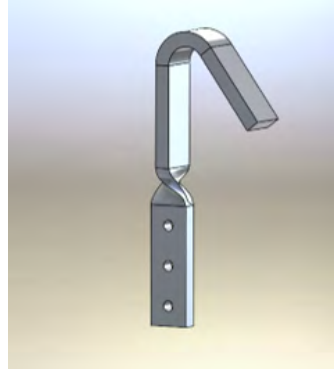
Sales@RightTechFabs.com



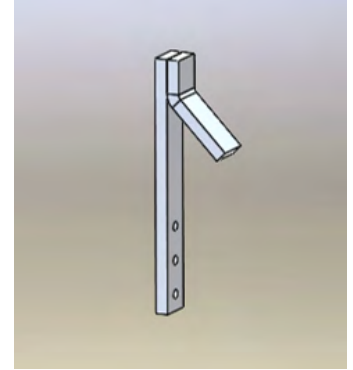
HOOKS



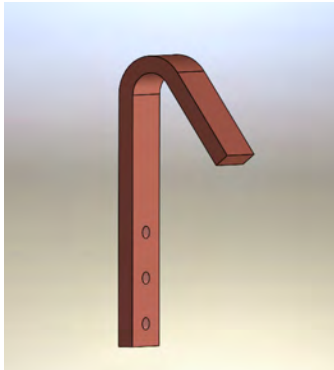
ITEM #
AH-1



ITEM #
AH-2



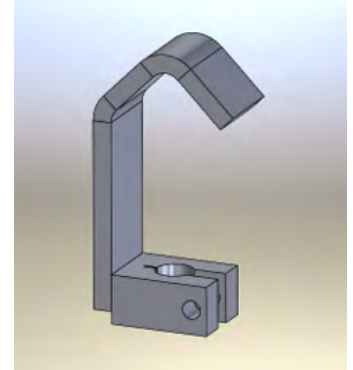
ITEM #
AH-3



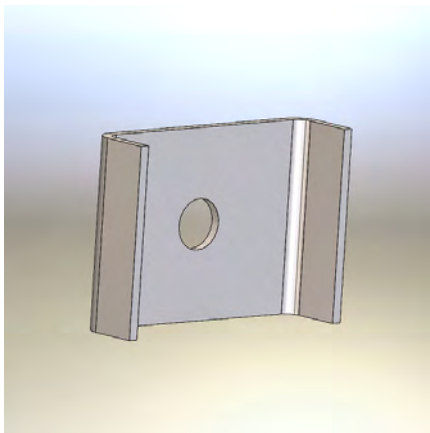
ITEM #
CH-1



ITEM #
CH-2



ITEM #
AH-5

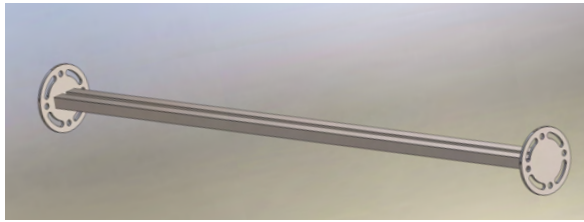


Saddle Washers

Saddle washers keep double splines from spreading apart, limiting twists on spline-based racking.

Saddle Washer	Sized for
ASW.03	Double 3/8"
BSW.04	Double 1/2"
ESW.06	Double 3/4"

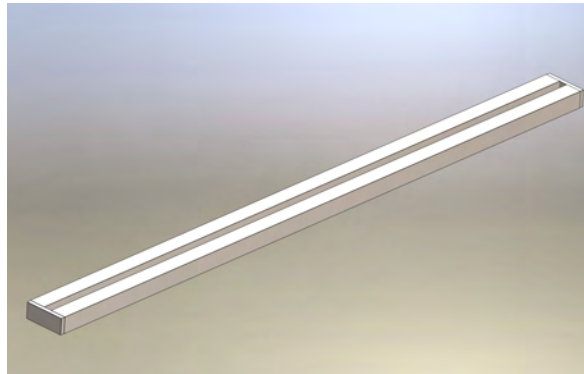
SPLINES



ITEM #
UHS4-36

UNIVERSAL HORIZONTAL SPLINE

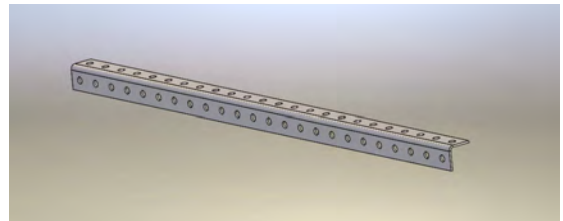
- 0.125 PAD
- Available in $\frac{3}{8}$ sq (UHS3) or $\frac{1}{2}$ (UHS4)
- Lengths available on request.



ITEM #
TS4-42

DOUBLE SPLINE

- 0.125 PAD
- Available in
 - $\frac{3}{8}$ sq (TS3),
 - $\frac{1}{2}$ sq (TS4),
 - $\frac{3}{4}$ sq TS6
- Lengths available on request.



ITEM #
0.080 X 1 X 1 TI Angle

23820

- 0.080 thickness
- 0.281 DIA holes on 1" centers
- Lengths 24-54" available on requests.



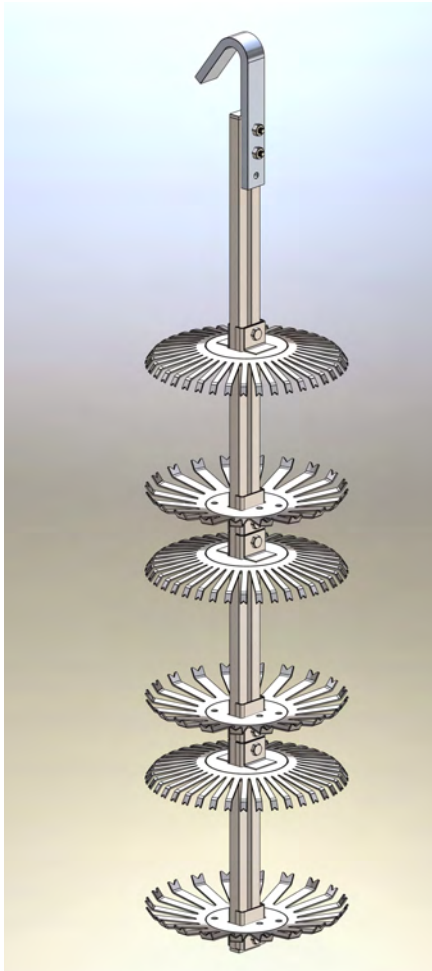
ITEM #
TI-4S-36-192-37958

ROUND SPLINE

- 0.750 DIA spline
- Offered with or without holes
- For use with round collars
- Lengths available on request.

Disc Racks for Anodizing

RIGHTech's disc racks are built to meet the demands of anodizing, offering durability, adaptability, and precision.



Key Features

- **Sturdy Titanium Construction:** Built from high-grade titanium to withstand the rigors of anodizing for long-lasting durability.
- **Optimized Contact for Uniform Anodizing:** Strategically placed contact points ensure excellent conductivity, minimizing burn risks and delivering a smooth, even finish.
- **Versatile Configurations:** Available in various designs and adjustable setups, RIGHTech disc racks adapt easily to different part sizes, maximizing space and workflow.

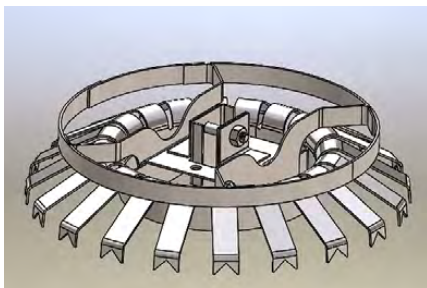
Customization & Applications

RIGHTech offers tailored disc rack solutions to meet specific anodizing needs. Ideal for industries such as automotive, aerospace, electronics, and more, our racks support both low- and high-volume production with consistent, reliable results.

Why Choose RIGHTech Disc Racks?

- Durable, cost-effective design
- Precision engineering for consistent quality
- Flexible layouts with multiple options
- Expert support from start to finish

Enhance your anodizing process with RIGHTech disc racks—built for performance and reliability. Contact us to learn how our solutions can improve your operations.

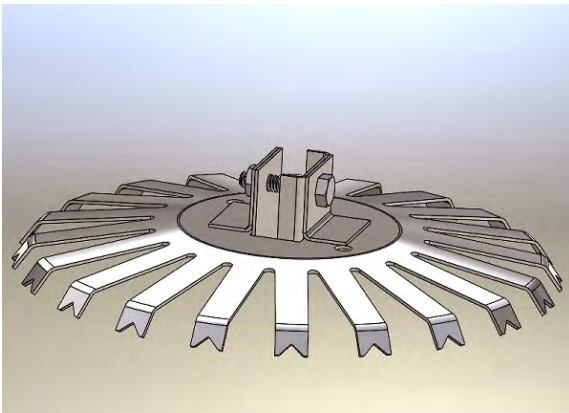


DISC RACKS

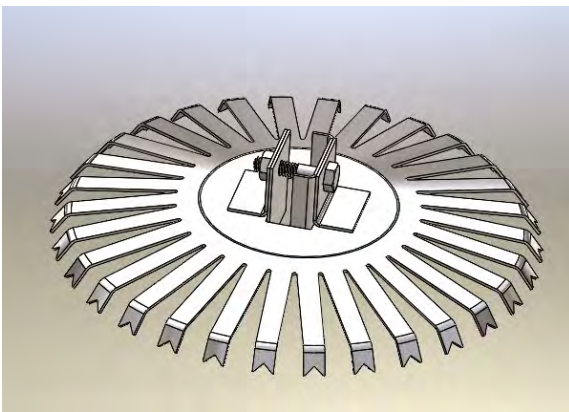
D-DISC RACKS

The D-Disc is a versatile, low-profile disc crafted from a single piece of CP Titanium and stamped for durability. Its unique design allows for more racking levels, maximizing efficiency and performance in anodizing processes.

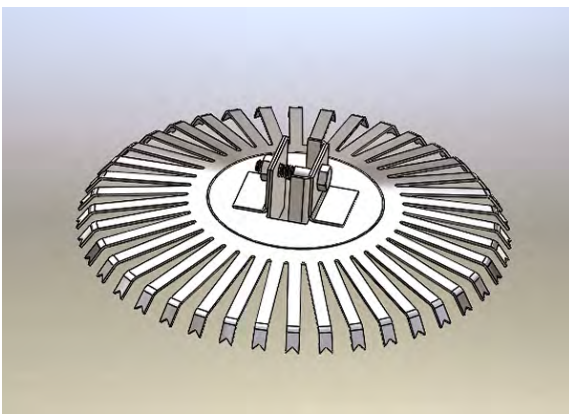
*Replace material XXX with desired material for example D-A-050-38394



20 Finger D-Disc Item Codes							
Type		Collar		Material		Sta #	Drawing
D	-	A	-	XXX	-	20	38394
D	-	B	-	XXX	-	20	38395
D	-	C6	-	XXX	-	20	38396
D	-	E1	-	XXX	-	20	38397
D	-	E3	-	XXX	-	20	38398
D	-	E4	-	XXX	-	20	38399



30 Finger D-Disc Item Codes							
Type		Collar		Material		Sta #	Drawing
D	-	A	-	XXX	-	30	38388
D	-	B	-	XXX	-	30	38389
D	-	C6	-	XXX	-	30	38390
D	-	E1	-	XXX	-	30	38390
D	-	E3	-	XXX	-	30	38392
D	-	E4	-	XXX	-	30	38393



40 Finger D-Disc Item Codes							
Type		Collar		Material		Sta #	Drawing
D	-	A	-	XXX	-	40	38400
D	-	B	-	XXX	-	40	38401
D	-	C6	-	XXX	-	40	38402
D	-	E1	-	XXX	-	40	38403
D	-	E3	-	XXX	-	40	38404
D	-	E4	-	XXX	-	40	38405

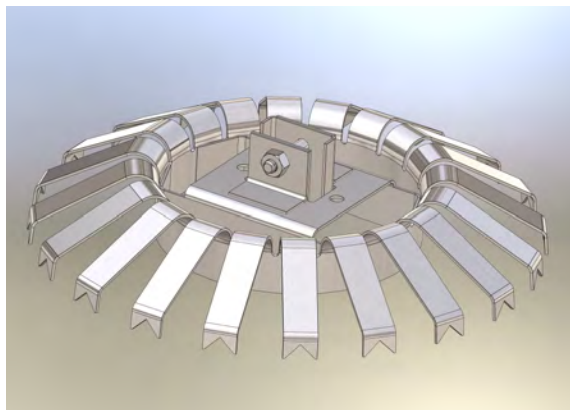
DISC RACKS

PERMA-FLEX DISC - STYLE "DP"

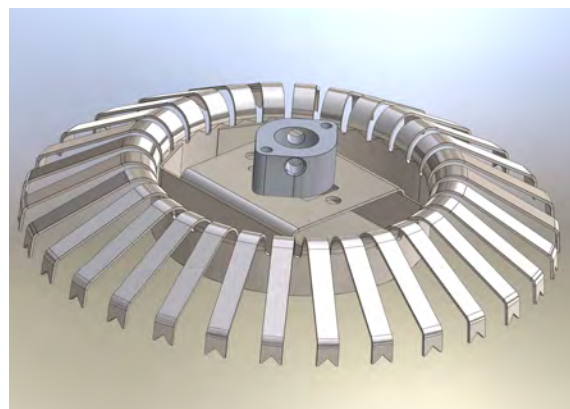
The Perma-Flex Disc - Style "DP" is precision-cut and rolled, aligning the titanium grain along the length of the fingers. This creates a uniform longer lasting spring, ensuring consistent and reliable use over time.

Choose Perma-Flex for operations requiring flexibility and long-term reliability.

*Replace XXX with desired material - for Example DP-A-050-20-38412



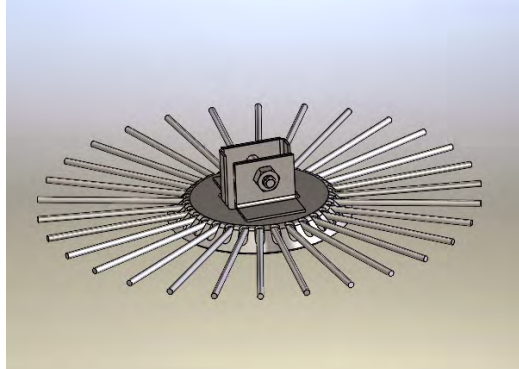
20 Finger DP-Disc Item Codes							
Type		Collar		Material		Sta #	Drawing
DP	-	A	-	XXX	-	20	38412
DP	-	B	-	XXX	-	20	38413
DP	-	C6	-	XXX	-	20	38414
DP	-	E1	-	XXX	-	20	38415
DP	-	E3	-	XXX	-	20	38416
DP	-	E4	-	XXX	-	20	38417



30 Finger DP-Disc Item Codes							
Type		Collar		Material		Sta #	Drawing
DP	-	A	-	XXX	-	30	38406
DP	-	B	-	XXX	-	30	38407
DP	-	C6	-	XXX	-	30	38408
DP	-	E1	-	XXX	-	30	38409
DP	-	E3	-	XXX	-	30	38410
DP	-	E4	-	XXX	-	30	38411

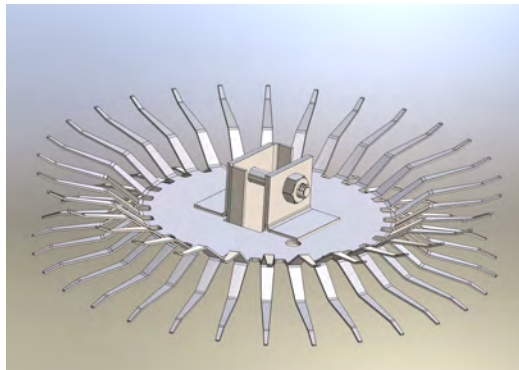
SPECIALTY DISCS

DW-30



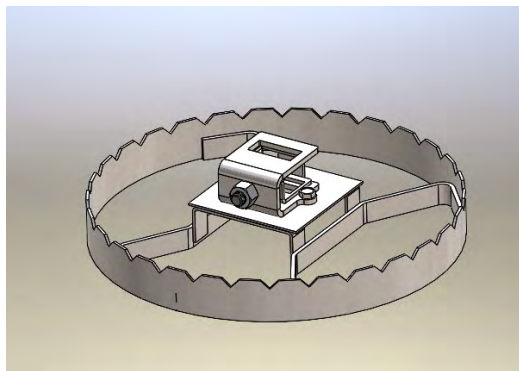
Shown with A collar

Wire disks allow for minimal rack marks.



Shown with B collar

DTL Discs are for smaller parts in a Disc style rack.



Shown with E collar

DX discs provides a solid foundation for spring discs.

10 Finger DW-Disc Item Codes

Type		Collar		Sta #		Drawing
DW	-	A	-	10	-	38438
DW	-	B	-	10	-	38439
DW	-	C6	-	10	-	38440
DW	-	E1	-	10	-	38441

20 Finger DW-Disc Item Codes

DW	-	A	-	20	-	38434
DW	-	B	-	20	-	38435
DW	-	C6	-	20	-	38436
DW	-	E1	-	20	-	38437

30 Finger DW-Disc Item Codes

DW	-	A	-	30	-	38430
DW	-	B	-	30	-	38431
DW	-	C6	-	30	-	38432
DW	-	E1	-	30	-	38433

20 Finger DTL-Disc Item Codes

Type		Collar		Sta #		Drawing
DTL	-	A	-	20	-	38424
DTL	-	B	-	20	-	38425
DTL	-	C6	-	20	-	38426
DTL	-	E1	-	20	-	38427
DTL	-	E3	-	20	-	38428
DTL	-	E4	-	20	-	38429

30 Finger DTL-Disc Item Codes

DTL	-	A	-	30	-	38418
DTL	-	B	-	30	-	38419
DTL	-	C6	-	30	-	38420
DTL	-	E1	-	30	-	38421
DTL	-	E3	-	30	-	38422
DTL	-	E4	-	30	-	38423

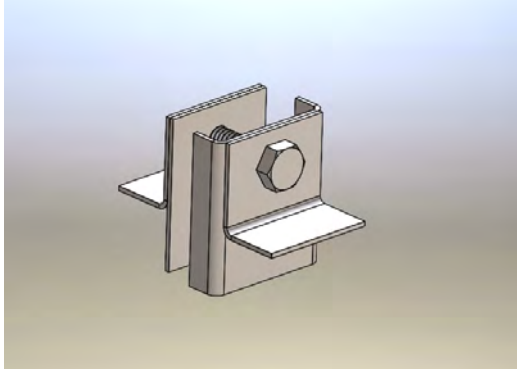
DX-for D Disc Item Codes

Type		Collar		Notches		For		Drawing
DX	-	A	-	060	-	D	-	38442
DX	-	B	-	060	-	D	-	38443
DX	-	C6	-	060	-	D	-	38444
DX	-	E1	-	060	-	D	-	38445
DX	-	E3	-	060	-	D	-	38446
DX	-	E4	-	060	-	D	-	38447

DX-for DP Disc Item Codes

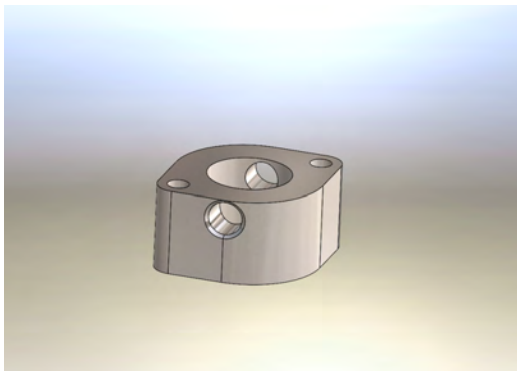
DX	-	A	-	060	-	DP	-	38448
DX	-	B	-	060	-	DP	-	38449
DX	-	C6	-	060	-	DP	-	38450
DX	-	E1	-	060	-	DP	-	38451
DX	-	E3	-	060	-	DP	-	38452
DX	-	E4	-	060	-	DP	-	38453

DISC ACCESSORIES

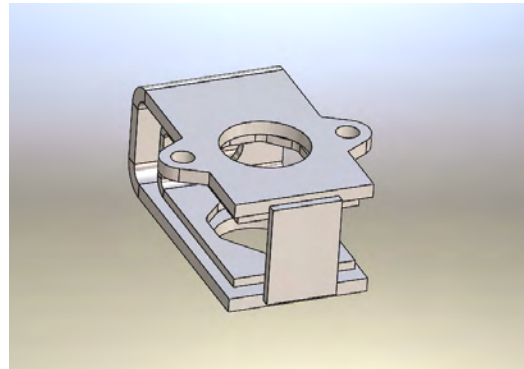


A and B collar style

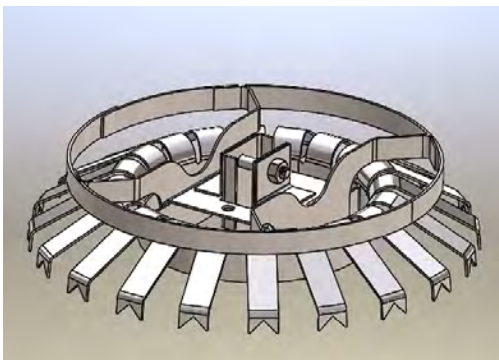
Collar	Spline
A	Double 3/8"
B	Double 1/2"
C6	3/4" Round
E1	3/4" Round
E3	Double 3/8"
E4	Double 1/2"



C6 collar style



E1 collar - Center cutout will differ with other styles



Ask about our disk limiters
for longer lasting racks

Box Racks for Anodizing

Maximize performance with RIGHTech's precision-engineered box racks—built for durability, adaptability, and peak electrical performance. These modular racks are a cost-effective solution to efficiently use tank space and ensure consistent, high-quality results.

Key Features:

Quick Repairs, Zero Downtime:

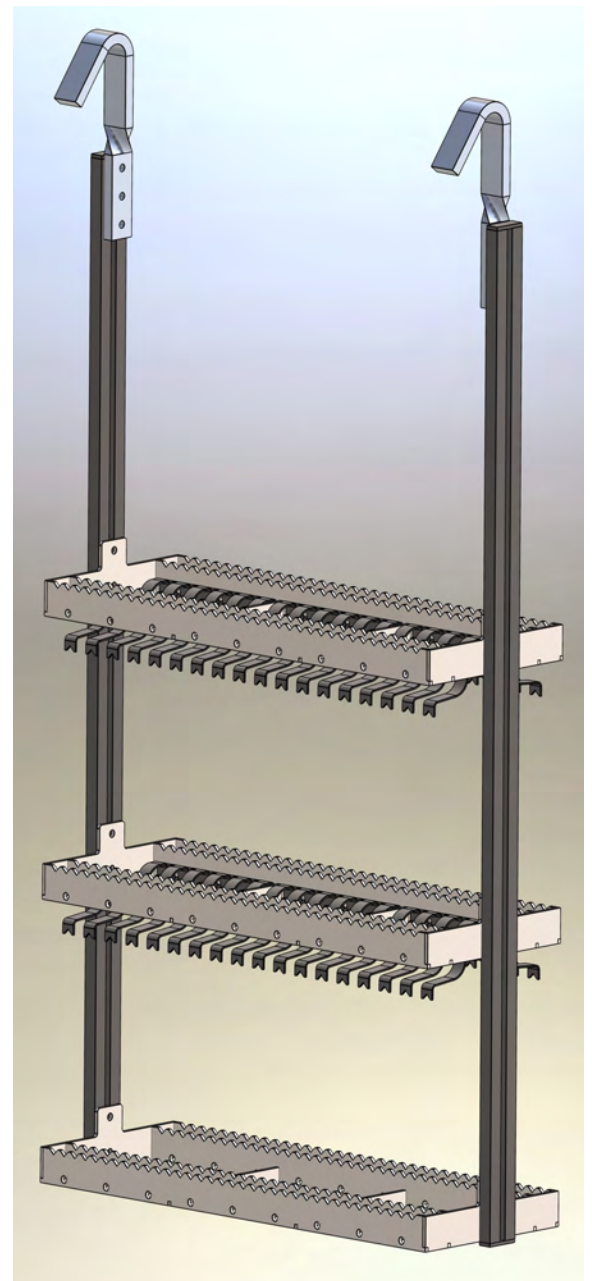
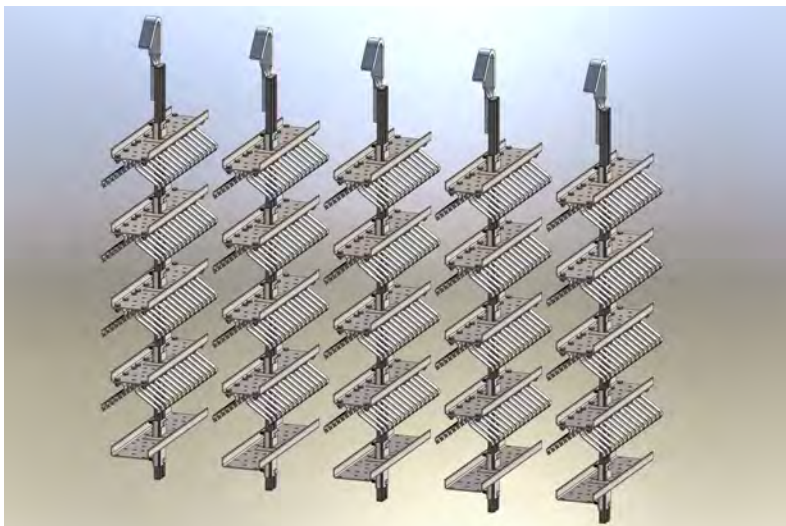
Modular, bolt-on fingers allow fast, on-site replacements without production delays.

Efficient Design for Maximum Throughput:

Accommodates various part sizes and shapes while optimizing tank space.

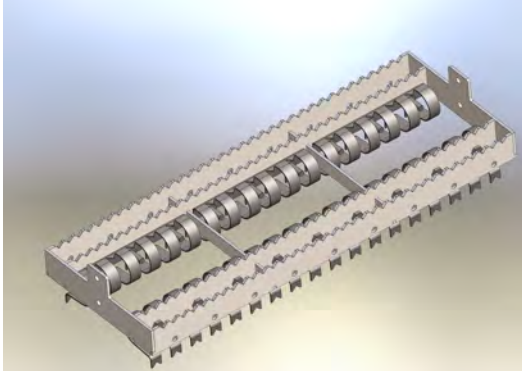
Superior Electrical Performance:

Notched contact rails improve conductivity for even current distribution, reducing burn marks and ensuring uniform anodic film.

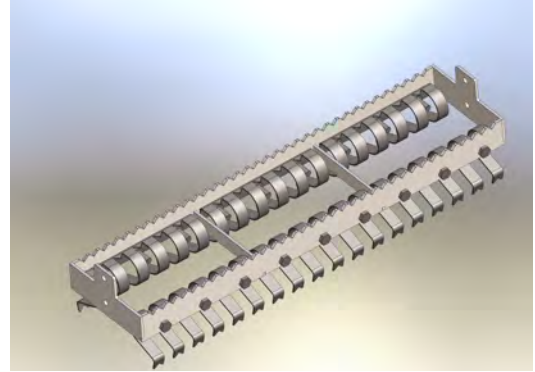


BOX RACKS

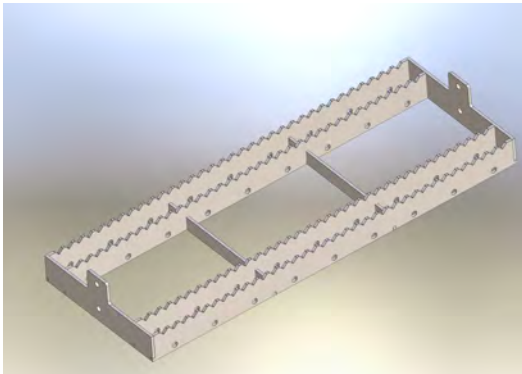
DOUBLE RAIL BOX RACK TOP



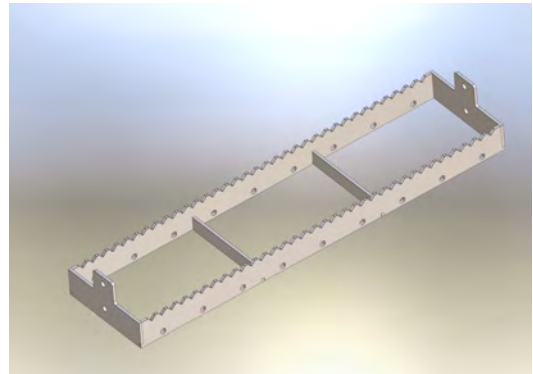
SINGLE RAIL BOX RACK TOP



DOUBLE RAIL BOX RACK BOTTOM



SINGLE RAIL BOX RACK BOTTOM



Rack Width	1/2" Fingers on 1.0 Centers	3/8" Fingers on 3/4" Centers
Top Spring Members		
18"	NBRT-818-BO-37396	NBRTS-618-BO-37376
24"	NBRT-824-BO-34739	NBRTS-624-BO-37378
30"	NBRT-830-BO-36088	NBRTS-630-BO-37373
Bottom Members		
18"	NBRB-818-BO-37397	NBRTS-618-BO-37375
24"	NBRB-824-BO-34738	NBRTS-624-BO-37377
30"	NBRB-830-BO-36087	NBRTS-630-BO-37392

Rack Width	1/2" Fingers on 1.0 Centers	3/8" Fingers on 3/4" Centers
Top Spring Members		
18"	NBRTS-818-BO-26977	NBRTS-618-BO-38854
24"	NBRTS-824-BO-33442	NBRTS-624-BO-38855
30"	NBRTS-830-BO-36090	NBRTS-630-BO-38856
Bottom Members		
18"	NBRBS-818-BO-26976	NBRBS-618-BO-38857
24"	NBRBS-824-BO-33421	NBRBS-624-BO-38858
30"	NBRBS-830-BO-36089	NBRBS-630-BO-38859

BOX RACKS

Space Saver Box Rack

Space saver racks are oriented perpendicular to your flight bar allowing for more racks (and parts!) in your tank. Perfect for narrow parts that don't fill up your working window. Available in wither $\frac{3}{4}$ " (-3) or 1" (-4) spacing



*also available SBOT-3

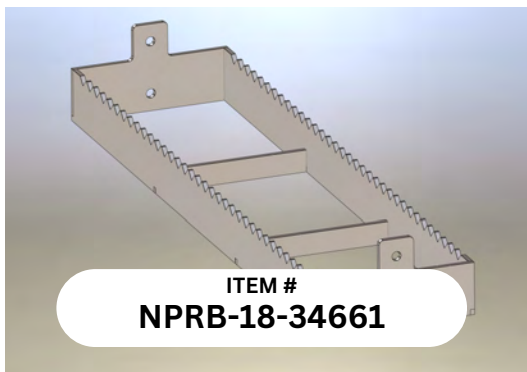
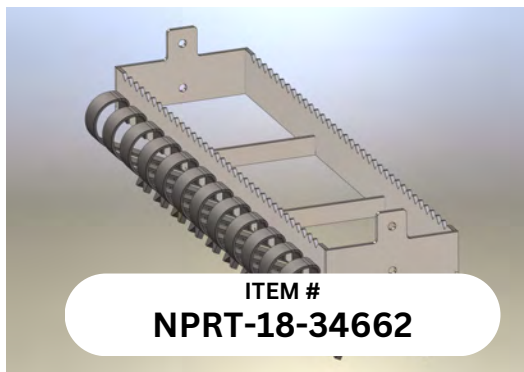


*also available SBOB-3

Panel Box Rack

Robust design, parts sit widely on two rails enabling you to easily run:

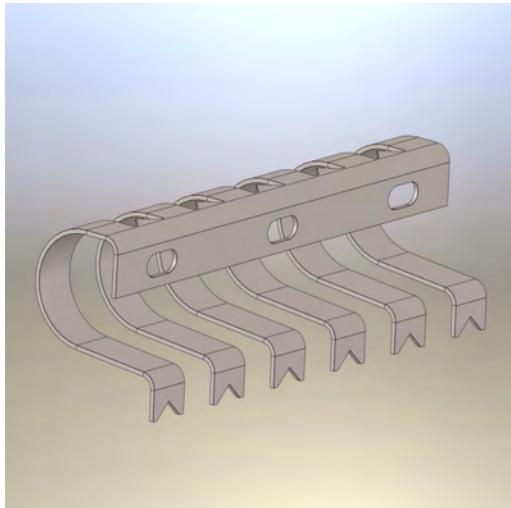
- Higher-Amperage Parts
- Eliminate any "wiggling" of the workpiece which leads to burning
- Perfect for heavy or oversized parts



Rack Width	3/4" Fingers on 1.500 Centers	# of Fingers
	Top Spring Members	
18"	NPRT-18-34662	12
24"	NPRT-24-34664	16
30"	NPRT-30-34666	20

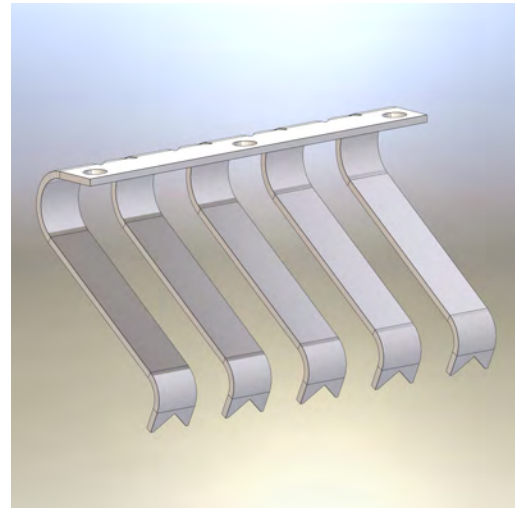
Rack Width	Notches on 1/2" Centers
	Bottom
18"	NPRB-18-34661
24"	NPRB-24-34663
30"	NPRB-30-34665

REPLACEMENT CLIPS



ITEM #
NBR-8

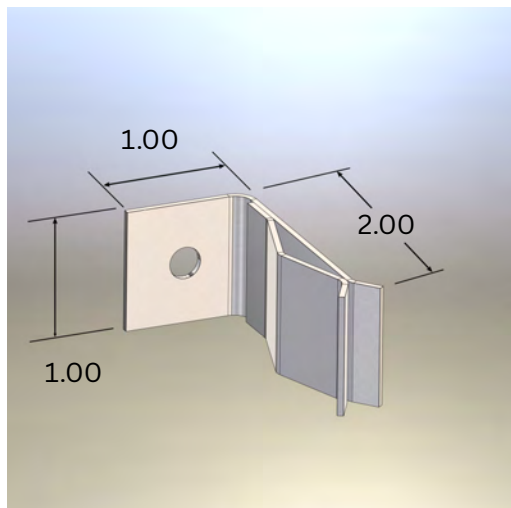
- 0.050 thick titanium grade 4
- 6 fingers - 3/8" spacing
- For use with NBR racks
- *also available NBR-8 with 1" spacing



ITEM #
SBOF-4

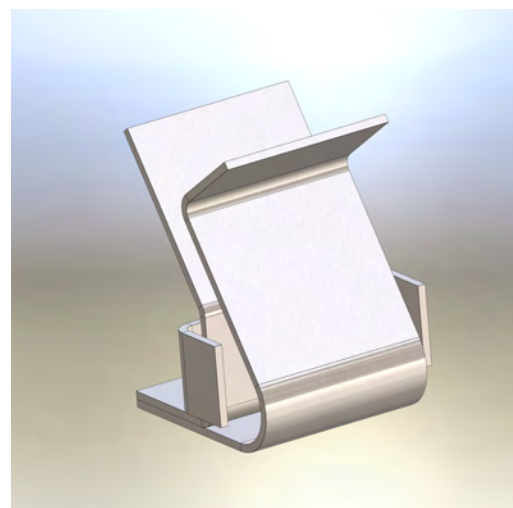
- 0.050 thick titanium grade 4
- 5 fingers - 1" spacing
- For use with space saver racks
- *also available SBOF-3 - with 3/4" spacing

HI-LODE REPLACEMENT CLIPS



ITEM #
CL-121-050

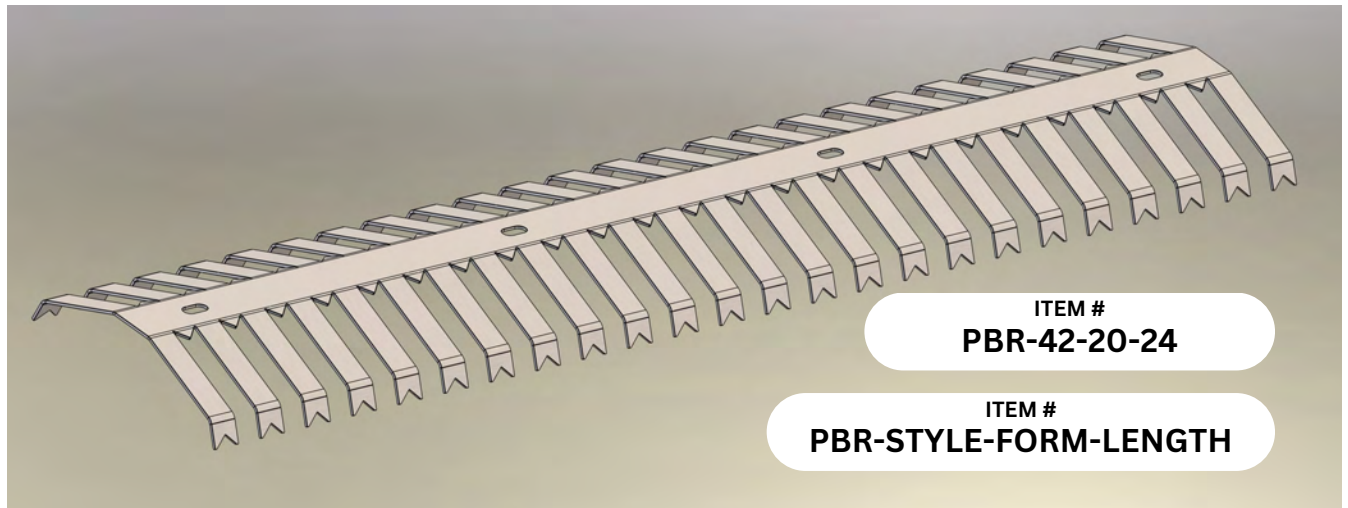
- Top portion of Hi-Lode Rack



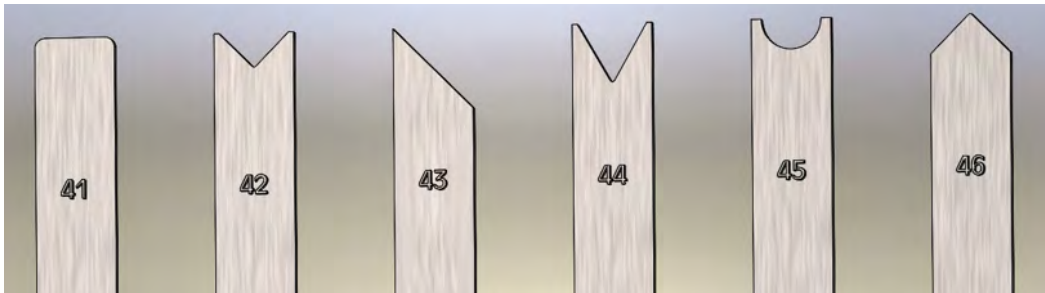
ITEM #
MFB-34461

- Bottom portion of Hi-Lode Rack

PBR



- 0.050" thick Titanium Grade 4
- Piano box rack
- Pick a tip style
- Fingers on 1.0" centers
- Available in 18", 24", 30, 36"
- For use to be mounted UHS splines, see page #15



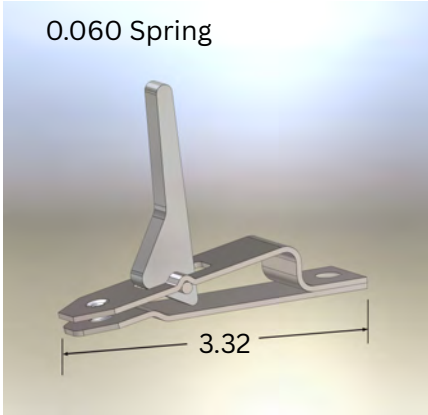
FINGER STYLE

- 41 - Flat
- 42 - 90° Notch
- 43 - Offset Taper
- 44 - 60° notch
- 45 - Half moon
- 46 - 90° Notch

CLIPS

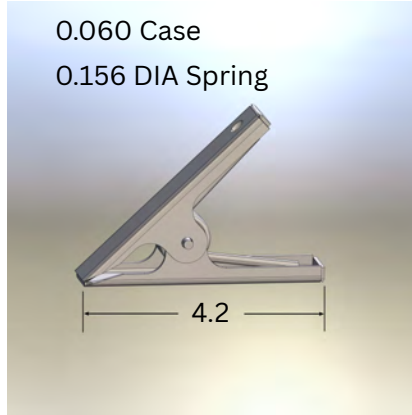
ITEM #
CL-525-060-22573

0.060 Spring

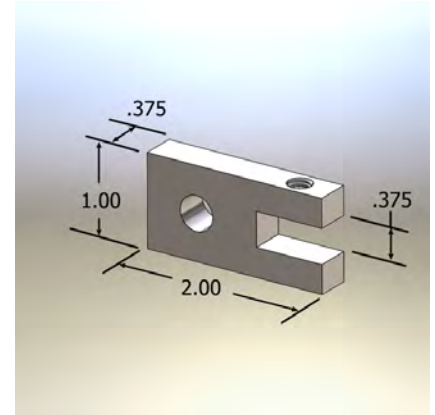


ITEM #
CL-500-4-6031

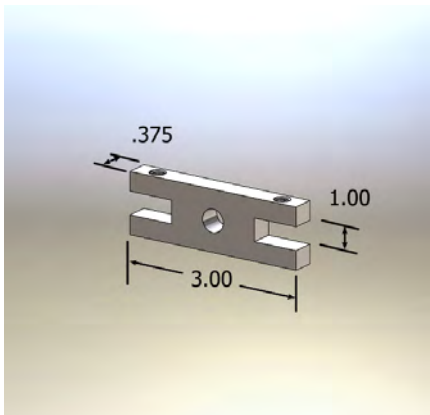
0.060 Case
0.156 DIA Spring



ITEM #
CL-214-5951

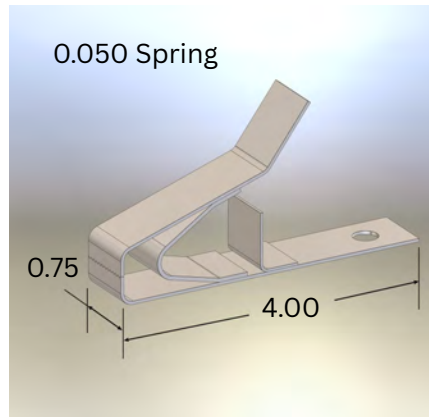


ITEM #
CL-220-4476



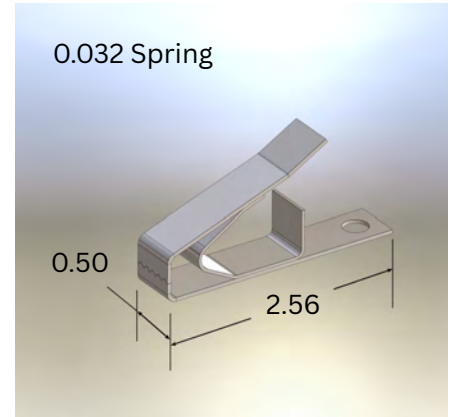
ITEM #
CL-325-1027

0.050 Spring

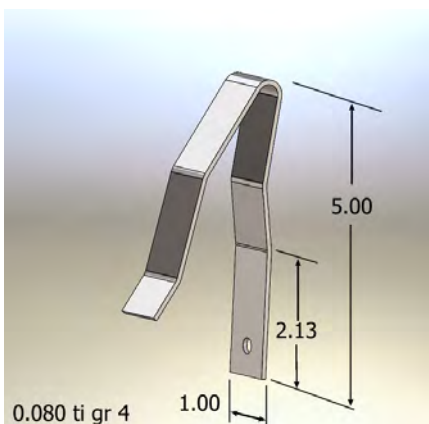


ITEM #
CL-326-1404

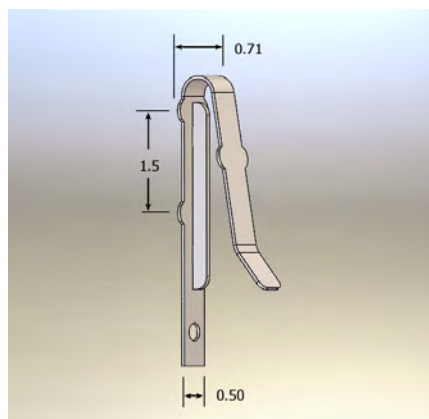
0.032 Spring



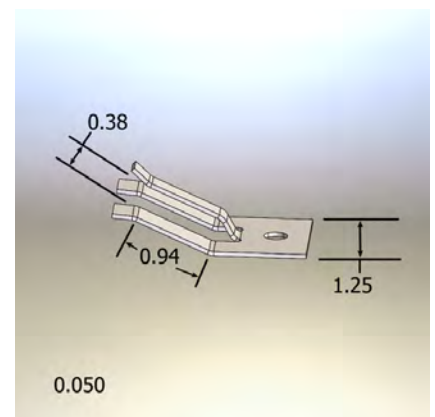
ITEM #
CL-420-8002



ITEM #
1" tube clip

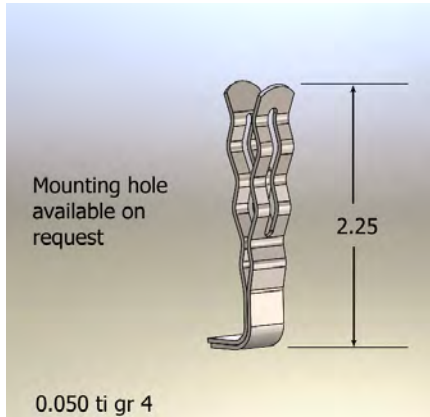


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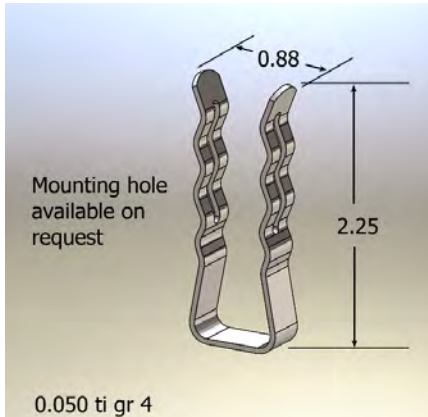


CLIPS

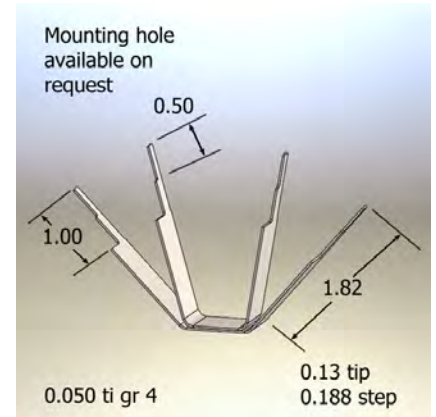
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CL-48-2333



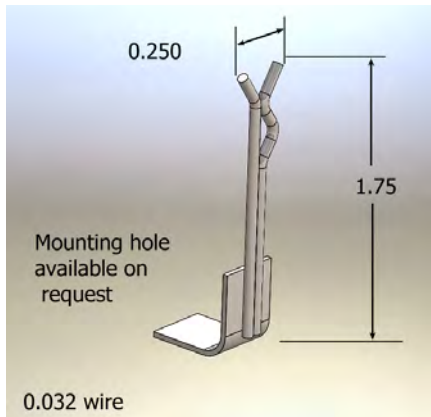
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CL-49-8012



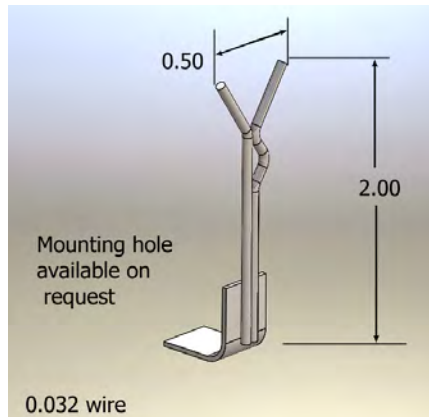
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CL-32-8848



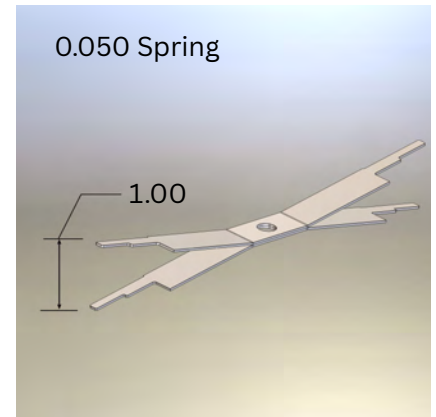
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CL-90-7151



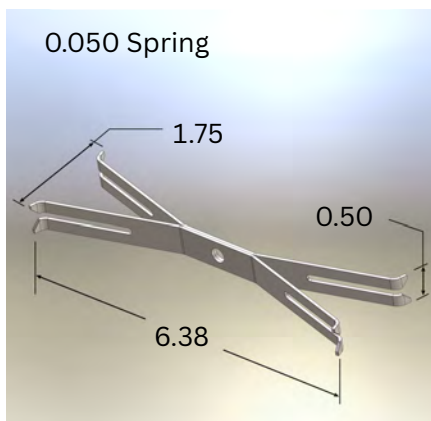
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CL-91-29832



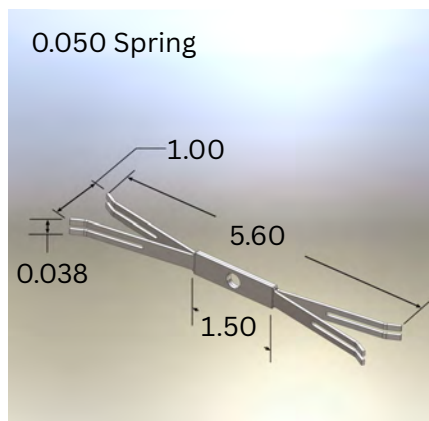
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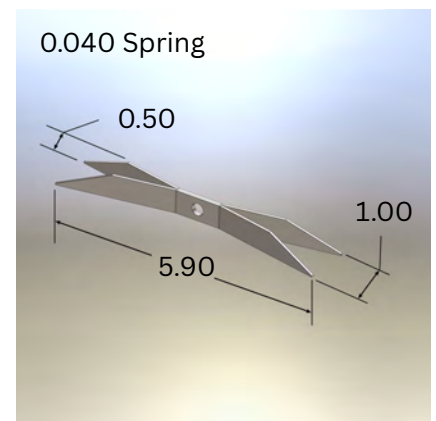
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ITEM #
CL-SF3-32128



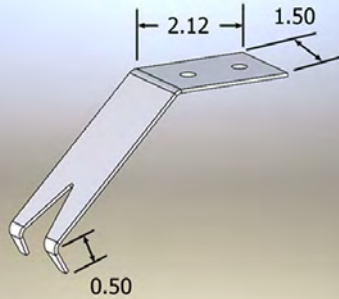
ITEM #
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CLIPS

ITEM #
31401

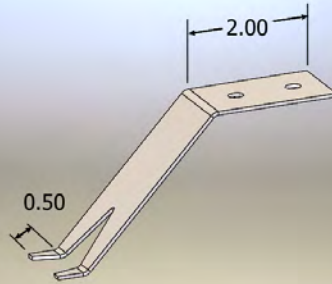
0.063 Spring



0.063

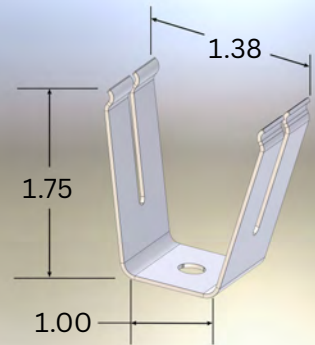
ITEM #
36663

0.063 Spring

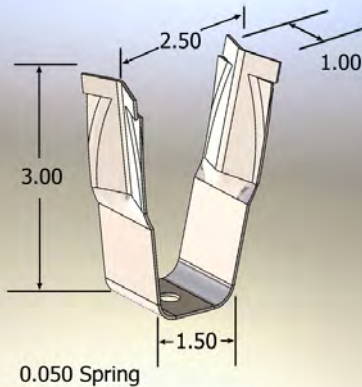


ITEM #
21777

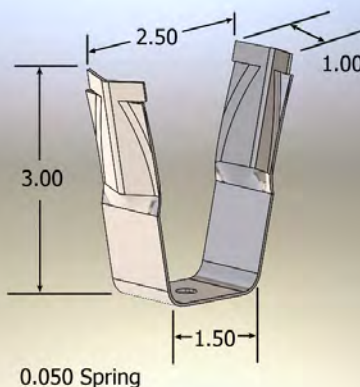
0.050 Spring



ITEM #
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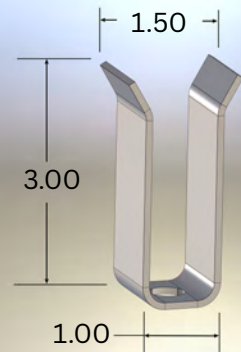


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CL-420-8002

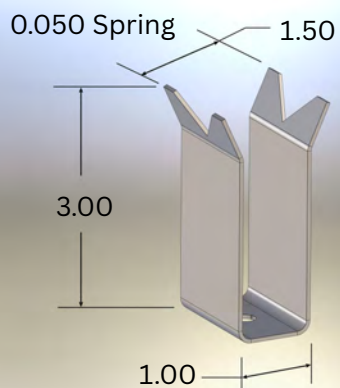


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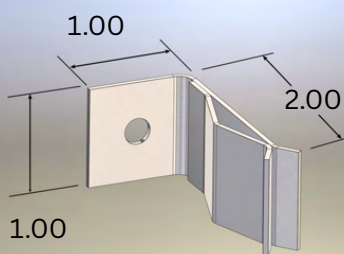
0.050 Spring



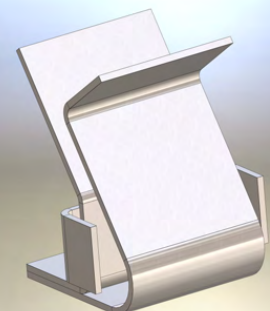
ITEM #
CL-113-7449



ITEM #
CL-121



ITEM #
14266



SPECIALTY BASKETS

LTL BASKETS

Need to bulk anodize small parts in a timely manner without racking?

Less Than Load (LTL) baskets allow for mass anodizing of parts such as fasteners.

Tighten lid ensure proper contact and anodize parts at any quantity.

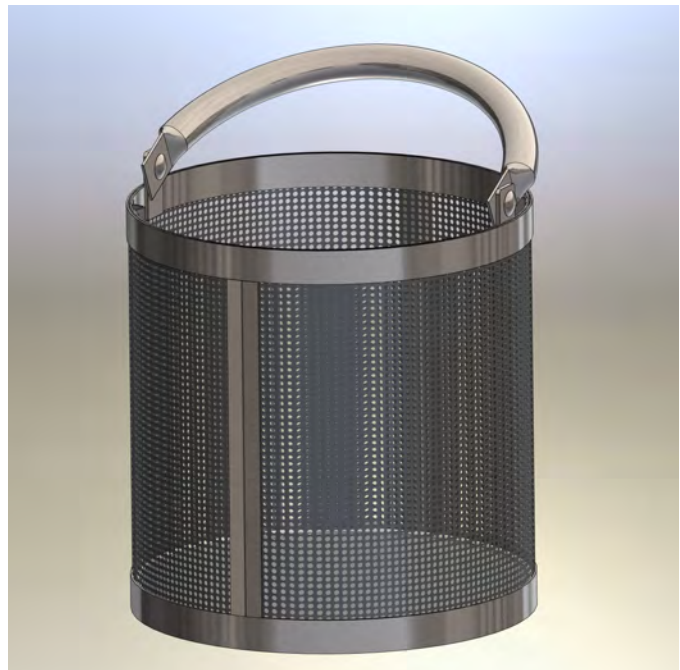


SPIN DRYER BASKETS

Quickly dry parts in a container designed to fit most spin-dry units.

Standard size: 12" diameter x 10" height, stainless steel construction.

Custom sizes available upon request.



Titanium Anode Baskets

Standard Styles and Sizes

- Rectangular— $2\frac{1}{2}" \times 6" \times \text{Length}$
- Round— $2\frac{1}{2}" \text{ Diameter} \times \text{Length}$
- Standard Stock lengths include 18", 24", 30". Other lengths built to order.
- All Baskets available in Titanium, Zirconium, Stainless Steel and Monel

Mesh Types & Choosing the Right One

- Mini-Expanded— $\frac{3}{16}" \times \text{SWD} \times \frac{1}{2}" \text{ LWD}$ 65% mesh open area
- Large-Expanded— $\frac{1}{2}" \times \text{SWD} \times 1\frac{1}{4}" \text{ LWD}$ 75% mesh open area
- Perforated— $\frac{1}{2}" \text{ dia. on } \frac{1}{16}" \text{ staggered centers}$ 50% mesh open area

SWD = Short Width Dimension LWD = Long Width Dimensions on Diamond Pattern

Industry Standard calls for 2:1 Anode to Cathode ratio when calculating anodes in a bath.

- **Mini-Expanded Mesh** is the most commonly used mesh type, offering a compromise between enough open area and basket stability.
- **Large-Expanded Mesh** is highly used for large anode ball applications.
- **Perforated** is the most durable and used with a variety of anode material.



MINI-EXPANDED



LARGE-EXPANDED



PERFORATED

Basket Amperage and Hooks

Rectangular Baskets are standard with 50 AMPS/Bskt Double Contact Hooks. Higher amperage is available (i.e. 100 AMPS, 150 AMPS and 200+ AMPS). To determine the AMPS needed per basketed, use the following formula:

$$\text{AMPS needed per basket} = \frac{\text{Total AMPS of Tank}}{\text{Total Number of Baskets}}$$

Amperage Rating per Hook:

- 25 AMP = $\frac{1}{8}" \times 1"$ Double Contact Hook or $\frac{3}{8}"$ Square Bar Hook
- 50 AMP = $\frac{1}{4}" \times 1"$ Double Contact Hook or $\frac{1}{2}"$ Square Bar Hook
- 75 AMP = $\frac{3}{8}" \times 1"$ Double Contact Hook or $\frac{5}{8}"$ Square Bar Hook
- 100 AMP = $\frac{1}{2}" \times 1"$ Double Contact Hook or $\frac{3}{4}"$ Square Bar Hook

Considerations for Basket Sizing

The following rules of thumb are recommended for sizing baskets:

- Baskets should be 2" to 4" shorter than the longest piece of work
- Baskets should be 1" above the solution level
- Hook length is measured from the top of anode bar to 1" above the solution level
- Quantities for rectangular baskets should be three (3) $2\frac{1}{2}" \times 6"$ baskets for every two feet of bus bar

Anode Quantities

Quantities of anodes to fill baskets	RECTANGULAR $2\frac{1}{2}" \times 6" \times L$	ROUND $2\frac{1}{2}" \text{ Dia} \times L$
Nickel Buttons: lbs/inch of length	3 lbs/inch	.8 lbs/inch
Copper Chunks: lbs/inch of length	$2\frac{1}{2}$ lbs/inch	.75 lbs/inch
2" Copper Balls: lbs/inch of length	2 lbs/inch	.625 lbs/inch



QUICK REFERENCE GUIDE

TITAN Metal Finishing has assembled this reference guide containing standard specifications and "Rules of Thumb" used or applied in the Metal Finishing industry.

TITAN Metal Finishing produces a complete line of Titanium Metal Finishing Equipment including:

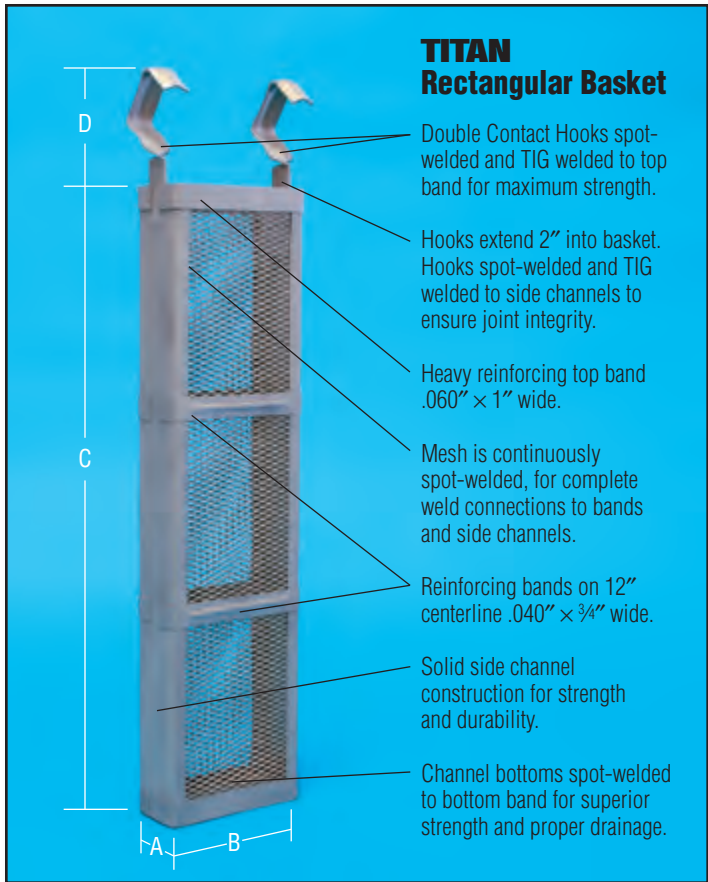
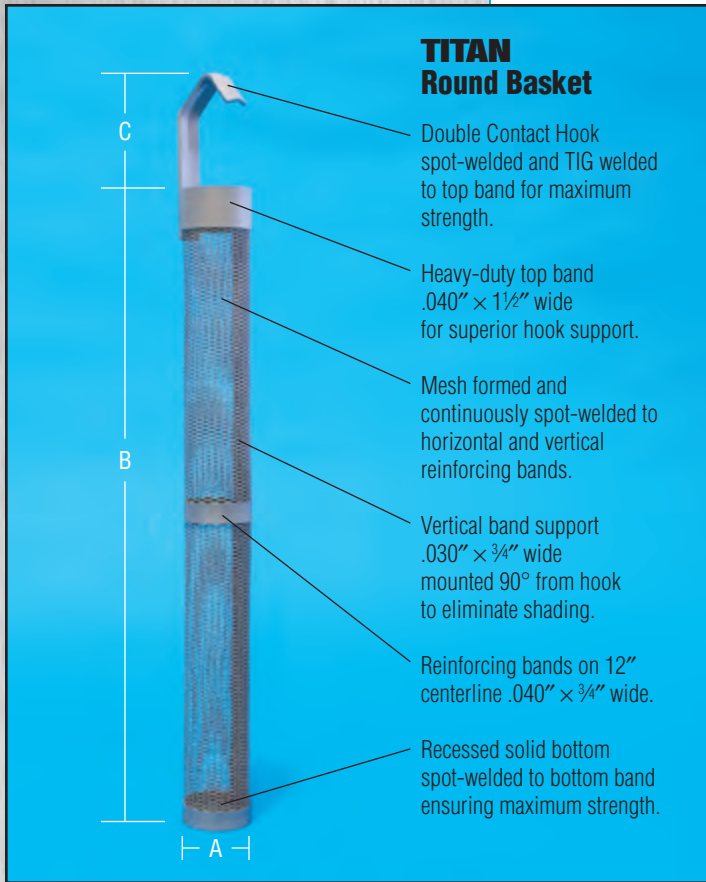
- Titanium Anode Baskets
- Immersion Heating & Cooling Coils
- Shell & Tube Heat Exchangers
- Titanium-Clad Copper Bus Bars
- Tanks, Tank Liners
- Anode Hooks
- Auxiliary Anodes
- Custom Fabricated Products

TITAN[®]

METAL FINISHING

A Division of TITAN Metal Industries, Inc

352 Balboa Circle • Camarillo, California 93012
 PHONE 805.487.5050 FAX 805.487.5047
 EMAIL finishing@titanmf.com



Basket Options

- Inverted “V” Lift Hooks, Inverted “U” Hooks and Reverse Lift Hooks for easier access in lifting baskets
- Submergible Hooks
- Loading Chutes for easier anode loading
- Mesh on four sides of basket for greater anode-to-cathode ratio

For Heavy Duty applications, we offer the following basket options:

- Heavier Hooks for strength and current carrying capabilities
- Ti Clad Copper Hooks for higher amperage rating
- Thicker mesh material to minimize bulging of basket
- Thicker side channel construction

TITAN
METAL FINISHING
A Division of TITAN Metal Industries, Inc

Please supply the following information upon submitting an inquiry to **TITAN** via phone, fax or e-mail:

1. Quantity _____
2. Material Type _____
3. Mesh Type ☐ Mini-Expanded ☐ Large-Expanded ☐ Perforated
4. Basket Style ☐ Round ☐ Rectangular
5. Dimensions of Basket:
 - A. _____
 - B. _____
 - C. _____
 - D. _____
6. Style and Size of Hook _____
7. Amperage Required Per Basket _____
8. Options _____
9. Contact and Phone _____

USA: PHONE 805.487.5050 • FAX 805.487.5047 **INDIA:** PHONE +91.120.4248100 • FAX +91.120.4248006

Immersion Coils

TITAN supplies Titanium Immersion Coils in many different configurations to meet the specific needs of the industry. Grid coils are used to achieve the maximum heat transfer area in the least amount of dimensional space, while Serpentine and "U" coils are used in situations where smaller heat transfer requirements are needed.

Sizing Heating Coils

Calculate the BTUs required to heat up a plating tank. Once the BTUs are established, calculate the amount of square footage of coil to put into the tank.

Required Input:

- Tank size
- Operating temperature
- Ambient temperature
- Solution density
(1 gallon of water = 8.33 lbs)
- Total gallons
(length in feet × width in feet × depth in feet × 7.5)
- Heat-up time (hours)
- Heating source
(steam pressure or hot water temperature)

STEP 1: ABTUs/Hr:

$$\frac{\text{gallons} \times \text{solution density} \times \Delta T (\text{Oper. temp} - \text{Amb. temp})}{\text{Heat-up time}}$$

STEP 2: AMTD (average mean temperature difference) for Steam:

$$\frac{(\text{Steam temp} - \text{Amb. temp}) + (\text{Steam temp} - \text{Oper. temp})}{2}$$

or AMTD for Hot Water:

$$\frac{(\text{Hot Water temp} - \text{Amb. temp}) + ((\text{Hot Water temp} - 10^\circ\text{F}) - \text{Oper. temp})}{2}$$

STEP 3: Total Square Footage Required:

$$\frac{\text{ABTUs / Hr}}{150 \text{ U-factor for hot water (or 200 U-factor for steam)} \times \text{AMTD}}$$

STEP 4: Square Footage per Coil:

$$\frac{\text{Total square footage required}}{\text{Number of coils per tank}}$$

Sizing Cooling Coils

Calculate the BTUs required to be removed from the plating tank. Then calculate the amount of square footage of coil to put into the tank.

Required Input:

- Tank size
- Operating temperature
- Temperature of Cooling Source
- Total AMPs
- Total Volts
- Solution Density (1 gallon of water = 8.33 lbs)

$$\text{BTUs/Hr: AMPs} \times \text{Volts} \times 3.412$$

Square Footage Required:

$$\frac{\text{BTUs/Hr}}{150 \text{ U-factor} \times (\text{Oper. temp} - \text{temp of Cooling Source})^*}$$

*Must have at least 15° ΔT between Oper. temp and Cooling Source

BTUs/Hr Without AMPs & Volts Input:

$$\text{STEP 1: } \frac{\text{Gallons} \times \text{solution density}}{\text{Time it takes to build to maximum temperature}}$$

$$\text{STEP 2: Max. temp} - \text{Oper. temp} = \text{Temperature Difference}$$

$$\text{STEP 3: (Step 1)} \times (\text{Step 2}) = \text{BTU/Hr to be removed}$$

$$\text{STEP 4: Complete above formula to obtain square footage needed for cooling}$$

EXAMPLE: Input = 2000 gallons, 8.33lbs/gal Oper. Temp = 170°F Max. Temp = 200°F
4 hours to reach Max. Temp. Cooling Water Temp = 60°F

$$\text{FORMULA: } 2000 \times 8.33 = 16,600 / 4 \text{ hours} = 4165; 4165 \times 30^\circ\text{F (Temp. Difference)} = 124,950 \text{ BTUs/Hr}$$

$$\frac{124,950 \text{ BTU}}{150 \text{ U-factor} \times (170^\circ\text{F Oper. temp} - 60^\circ\text{F Cooling Water})} = 7.6 \text{ sq. ft.}$$



QUICK REFERENCE GUIDE

TITAN Metal Finishing has assembled this reference guide containing standard specifications, formulas and "Rules of Thumb" used in the Metal Finishing industry. These formulas cannot be used in all circumstances. For more detailed thermal evaluation, please contact TITAN's technical staff.

TITAN Metal Finishing produces a complete line of Titanium Metal Finishing Equipment including:

- Titanium Anode Baskets
- Immersion Heating & Cooling Coils
- Shell & Tube Heat Exchangers
- Titanium-Clad Copper Bus Bars
- Tanks, Tank Liners
- Anode Hooks
- Auxiliary Anodes
- Custom Fabricated Products

TITAN[®]

METAL FINISHING

A Division of TITAN Metal Industries, Inc

www.titanmetalfinishing.com

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P H O N E 805.487.5050 F A X 805.487.5047
E M A I L finishing@titanmf.com

Determining Your TITAN Coil Model Number

1. Match the square footage calculated from the formulas in this Reference Guide to the coils shown in the following charts.
2. Select the coil with the height and length to fit in your tank.
3. Add customer supplied information (*) for columns A, C and D.

TITAN Coil Model Numbers contain eight fields of information:

- A.** Material Type: Ti, Zr, Nb, Ta or SS
B. Coil Style: G = Grid; S = Serpentine; H = Helical; U = "U"
C. Orientation: H = Horizontal; V = Vertical; B = Bottom Mount
D. Heat/Cool Source: S = Steam; W = Water; F = Freon
E. Number of Passes (as below)
F. Length of Coil (as required)
G. Riser Length (as below) can be special ordered
H. Square Footage Per Coil (as below)

EXAMPLE:

A	B	C	D	E	F	G	H
TI	G	H	S	8	22	36	5.5

Model #TIGHS8-22-36-5.5

Ti; Grid; Horizontal; Steam; 8 Pass;
 22" Long; 36" Risers; 5.5 sq. ft. / coil

Larger and custom coils available upon request.

TITAN Grid Coil Model Numbers (20, 24 and 28 Pass Grid Coils are available upon request)

8 Pass (Body Height = 12")							
A	B	C	D	E	F	G	H
*	G	*	*	8	22	36	4.5
*	G	*	*	8	28	36	5.5
*	G	*	*	8	34	36	6.5
*	G	*	*	8	46	36	8.5
*	G	*	*	8	58	36	10.5
*	G	*	*	8	70	36	13.5
*	G	*	*	8	82	36	15
*	G	*	*	8	94	36	17
*	G	*	*	8	106	36	19
*	G	*	*	8	118	36	21

TITAN Serpentine Coil Model Numbers

4 Pass (Body Height = 19")							
A	B	C	D	E	F	G	H
*	S	*	*	4	28	36	2.5
*	S	*	*	4	34	36	3.5
*	S	*	*	4	46	36	4.5
*	S	*	*	4	58	36	5.5
*	S	*	*	4	70	36	6.5
*	S	*	*	4	82	36	7.5
*	S	*	*	4	94	36	8.5
*	S	*	*	4	106	36	9.5
*	S	*	*	4	118	36	10.5

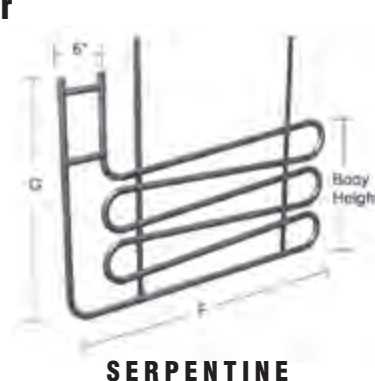
12 Pass (Body Height = 18")							
A	B	C	D	E	F	G	H
*	G	*	*	12	22	36	6.5
*	G	*	*	12	28	36	8
*	G	*	*	12	34	36	10
*	G	*	*	12	46	36	13
*	G	*	*	12	58	36	16
*	G	*	*	12	70	36	19
*	G	*	*	12	82	36	22.5
*	G	*	*	12	94	36	25.5
*	G	*	*	12	106	36	28.5
*	G	*	*	12	118	36	31

6 Pass (Body Height = 21")							
A	B	C	D	E	F	G	H
*	S	*	*	6	34	36	5.5
*	S	*	*	6	46	36	6.75
*	S	*	*	6	58	36	8.5
*	S	*	*	6	70	36	10
*	S	*	*	6	82	36	11.5
*	S	*	*	6	94	36	13
*	S	*	*	6	106	36	14.5
*	S	*	*	6	118	36	16

14 Pass (Body Height = 21")							
A	B	C	D	E	F	G	H
*	G	*	*	14	22	48	8.5
*	G	*	*	14	28	48	10.5
*	G	*	*	14	34	48	12
*	G	*	*	14	46	48	15
*	G	*	*	14	58	48	18.5
*	G	*	*	14	70	48	22.5
*	G	*	*	14	82	48	26
*	G	*	*	14	94	48	29.5
*	G	*	*	14	106	48	33.5
*	G	*	*	14	118	48	37

8 Pass (Body Height = 30")							
A	B	C	D	E	F	G	H
*	S	*	*	8	34	48	7.5
*	S	*	*	8	46	48	9.5
*	S	*	*	8	58	48	11.5
*	S	*	*	8	70	48	13.5
*	S	*	*	8	82	48	15.5
*	S	*	*	8	94	48	17.5
*	S	*	*	8	106	48	19.5
*	S	*	*	8	118	48	21.5

*Customer supplied information



SERPENTINE



GRID

Standard Coil Features

- 1" O.D. titanium tubing
- 3/4" to 2" NPT Nipples
- Horizontal or Vertical orientation for side wall mounting (bottom mounts available)
- Support braces between riser tubes for coil strength
- All styles equipped for water or steam
- Grid coils incorporate D-shaped tube vertical manifold design
- Pressure tested at 150psi
- 100% inert gas purged welds
- 5-year warranty on workmanship



Coil Options:

- Hanger straps
- Anti-flotation Arms
- Solution Level Jackets
- Material: Titanium, Stainless Steel, Zirconium, Tantalum, Niobium

Please supply the following information upon submitting an inquiry to **TITAN** via phone, fax or e-mail:

1. Quantity _____
2. Material Type _____
3. Style _____
4. Accessories Required _____
5. Model Number _____
6. For Heating or Cooling _____
7. Heating/Cooling Source _____
8. Heating/Cooling Source Temperature _____
9. Tank Size & Solution Level _____
10. Operating Temperature _____
11. Ambient Temperature _____
12. Weight of Solution (if not water) _____
13. Desired Heat-up Time _____
14. Amps & Volts _____
15. Contact & Phone _____

TITAN®

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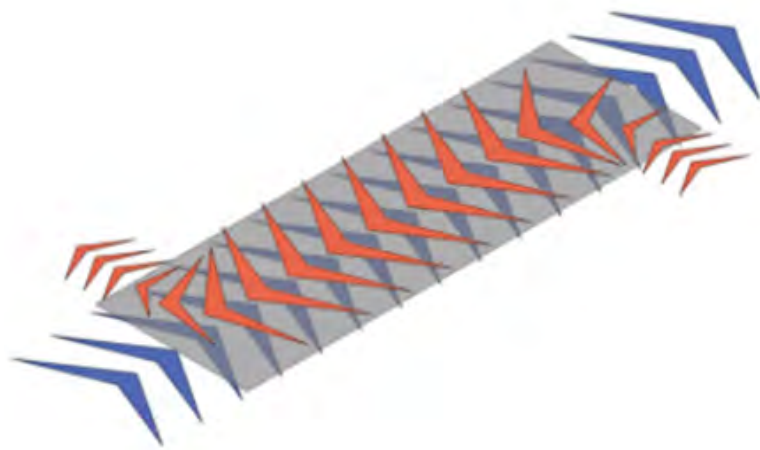
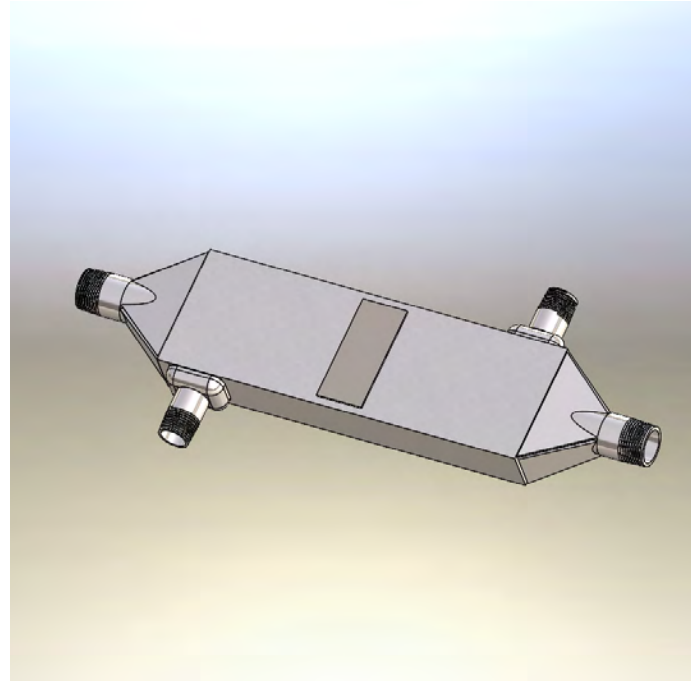
MAXIMIZER EXTERNAL HEAT EXCHANGERS

Benefits:

- Large Thermal Transfer
- Compact Design
- Additional Tank Capacity

Materials Available

- 316 Stainless Steel
- Titanium
- Hastelloy



Sizes available:

- 2.0 SQ FT
- 3.5 SQ FT
- 5.0 SQ FT
- 7.5 SQ FT
- 10.0 SQ FT
- 15.0 SQ FT
- 20.0 SQ FT
- 30.0 SQ FT

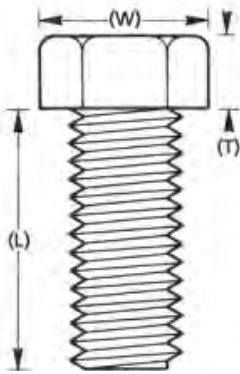
*Inline and steam units available on request.

Contact us today for a free consultation!

STANDARD FASTENERS

TITANIUM HEXAGON HEAD BOLTS NUTS

Select size, length and style from information presented below.
Bolt threads are 2A fit. Die point styles provided standard.

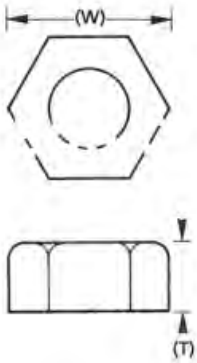


Bolt Size	Width (W) Across Flats	Thickness (T)	1/2"	3/4"	1-1/4"	1"	1-1/2"	1-3/4"	2"	3.0"	3-1/2"
8-32	0.375"	0.125"		*							
10-24	0.375"	0.170"	*	*	*	*	*		*		
1/4-20	0.437"	0.220"	*	*	*	*	*	*	*		
5/16-18	0.500"	0.265"		*	*	*	*	*	*	*	
3/8-16	0.563"	0.325"	*	*	*	*	*	*	*		*
1/2-13	0.750"	0.350"							*	*	

Larger sizes available. Threaded rod and studs available in all sizes.

TITANIUM HEXAGON NUTS

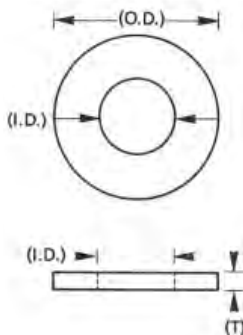
Select nut size from information presented below. Nut threads tapped to a 2A fit.



Bolt Size	Width (W) Across Flats	Thickness (T)
6-32	0.306	0.105"
8-32	0.375	0.125"
10-24	0.375	0.170"
1/4-20	0.437	0.220"
5/16-18	0.500	0.265"
3/8-16	0.563	0.325"

TITANIUM WASHERS

Washers are produced from commercially pure titanium.
Custom sizes are available upon request.

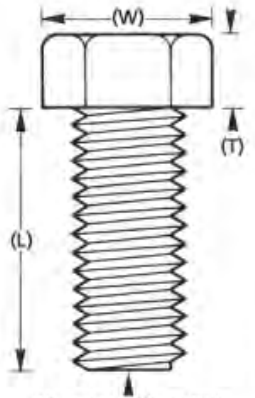


Bolt Size	Outside DIA (O.D.)	Inside DIA (I.D.)	Thickness (T)
#6	0.500"	0.144"	0.040"
#8	0.625"	0.188"	0.040"
#10	0.750"	0.203"	0.040"
1/4	0.750"	0.265"	0.040"
5/16	1.000"	0.343"	0.050"
3/8	1.000"	0.406"	0.050"

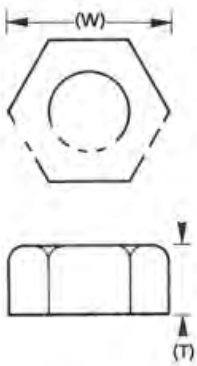
METRIC FASTENERS

TITANIUM HEXAGON HEAD BOLTS NUTS

Select size, length and style from information presented below.



Bolt Size	Width (W) Across Flats	Thickness (T)	20	25	35	40	50	63.5
M4	7	3						
M5	8	3.5	*			*	*	
M6	10	4		*	*			
M8	13	5		*		*	*	*
M10	17	6		*		*	*	



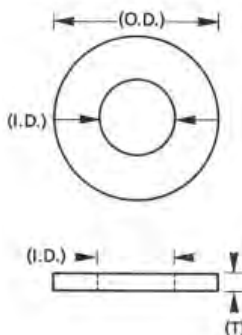
TITANIUM HEXAGON NUTS

Select nut size from information presented below.

Bolt Size	Width (W) Across Flats	Thickness (T)
M4	7	3.25
M5	8	4
M6	10	5
M8	13	6
M10	17	8

TITANIUM WASHERS

Washers are produced from commercially pure titanium. Custom sizes are available upon request.



Bolt Size	Outside DIA (O.D.)	Inside DIA (I.D.)	Thickness (T)
M4	9	4	1
M5	10	5.2	1
M6	12	6.4	1.5
M8	16	8.4	1.5
M10	20	10.4	2



CATALOG