

Tower Internals Hardware and Services



AHOP® Automated Hardware Ordering Program

A KOCH ENGINEERED SOLUTIONS COMPANY

KOCH-GLITSCH

YOU CAN RELY ON US.

AHOP® Automated Hardware Ordering Program

Is it difficult to find old drawings to confirm what you have in your towers? Our AHOP® Automated Hardware Ordering Program can help eliminate tower hardware issues during turnaround service by taking the guesswork out of what is inside your towers.

Our innovative computerized program provides an audit of each of your towers to confirm and document all equipment and hardware. AHOP® automated hardware ordering program is a free research service for turnaround management tailored to each tower for both Koch-Glitsch and non-Koch-Glitsch equipment. Hardware is supplied for your plant turnaround in a secure Koch-Glitsch hardware locker.

AHOP® Automated Hardware Ordering Program:

- **R**educe inventory
- **E**xpedite equipment orders
- **S**implify planning of turnarounds
- **P**rovide exactly what is required
- **O**nly pay for what you use
- **N**o charge for research
- **D**elivered on time

To enroll in the program, contact your local Koch-Glitsch representative or emergency hotline.

Hardware Lockers and Trailers

For unexpected downtimes as well as planned plant turnarounds, Koch-Glitsch can provide a secure hardware locker or trailer filled with the specific hardware items you need for a specific tower. Koch-Glitsch hardware lockers and trailers can come to your site and stay with you during your plant maintenance turnarounds.

- Tailored to your plant turnaround needs
- Contains the specific hardware for a specific tower
- Ensures you pay only for what you use
- Available when you need it
- Reduces unnecessary hot-shot delivery charges



FIELD SERVICES

ONE-SOURCE SOLUTION and Field Installation Services

Correct installation is critical to achieve the maximum benefit from today's high-performance equipment. The ONE-SOURCE SOLUTION approach integrates the design and fabrication of Koch-Glitsch's unique technologies with value-driven installation solutions and turnaround management from Koch Specialty Plant Services LLC (KSPS). The end result is an optimized installation that is safer, faster and more cost effective for column revamps or new construction.

The project delivery system emphasizes pre-job planning and design and focuses on optimizing equipment performance, constructability and installation efficiency. This often results in shorter duration plant turnarounds, which can create cost savings for customers. Additionally, extensive experience combined with complementary engineering designs and construction technologies provides the flexibility needed to adjust quickly, efficiently and appropriately to project changes and challenging discovery work to avoid extending the schedule for construction turnaround services.

Koch-Glitsch knows it is critical that equipment be installed in a safe and proper manner to provide the customer with the maximum benefit possible for the application. There is no substitute for an experienced, safe, well-trained, and properly supervised installation crew during plant turnarounds, and KSPS offers unmatched capabilities in these areas.

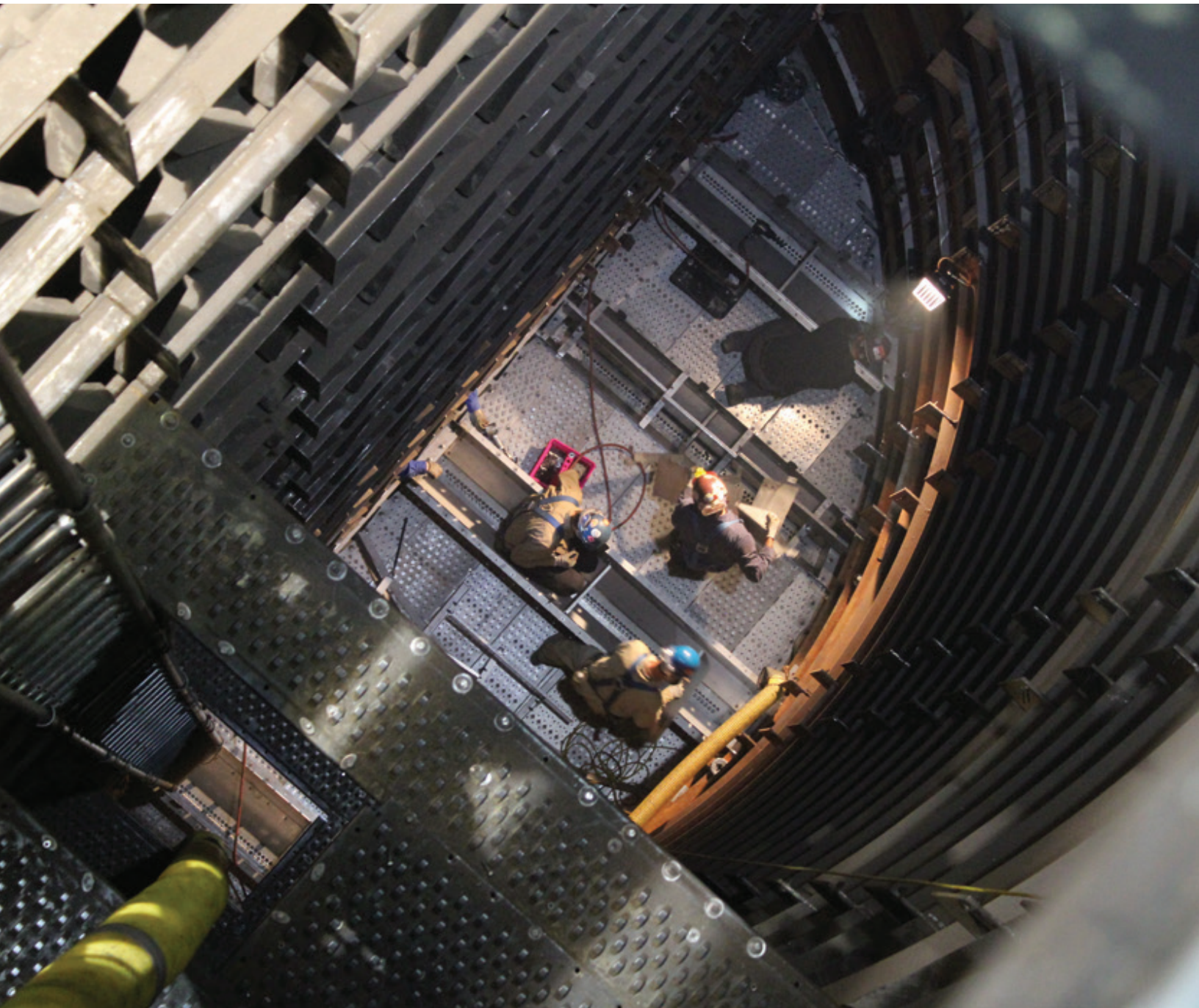
With over 40 years of experience in the refining and petrochemical industries, KSPS provides a comprehensive range of tower services that includes ASME and NBIC code repairs and alterations, specialty welding, vessel section replacement, field-erected vessels, project controls, project management and engineering. From pre-job planning and design through construction and installation, KSPS' focus on safety and efficiency can ensure your equipment is up and running quickly, efficiently and safely, resulting in less down time no matter where you are in the world. For more information on KSPS, please visit kochservices.com.



Certified Tower Specialist and Equipment Support Services

For specialized equipment inspection and/or installation expertise, our Certified Tower Specialist (CTS) consultants are available globally to observe and analyze installations from start to finish for added turnaround management.

At your work site, a Koch-Glitsch field technician can inventory equipment, observe and inspect new and replacement equipment installations, assist in evaluating and inspecting existing equipment during plant turnarounds or unplanned outages, be an onsite resource to resolve inquiries to assure equipment is installed to Koch-Glitsch's specifications, and expedite installation and field troubleshooting.





Replacement Equipment

While it is important to properly plan for scheduled maintenance and plant turnarounds, sometimes unplanned outages occur. That's where Koch-Glitsch's emergency services excel. Koch-Glitsch stocks common raw materials to allow for cost effective and expedited equipment delivery to get you back on line, regardless of original equipment manufacturer. Make Koch-Glitsch your first call for your planned plant turnarounds or emergency maintenance and repairs.

Rush replacement can be provided on full assemblies or on individual components whenever needed. Call the emergency hotline for any replacement or service needs.

FLEXILOCK® Tray Construction

This patented tray joint allows rapid installation of tray panels in vessel shops or in the field. FLEXILOCK® tray construction eliminates the requirement for hardware between adjacent tray panels and reduces the potential for errors during installation. FLEXILOCK® tray construction is the primary building block of the HORIZON® technology.

- Reduce hardware requirements
- Improve valve coverage
- Provide error-free deck installation
- Dramatically reduce installation time
- Strengthen joint and uplift tolerance
- Promote in-shop installations
- Eliminates vibration-induced panel shifting



MATERIAL SYMBOLS AND DESIGNATIONS

To avoid confusion in identifying and locating the proper material type, Koch-Glitsch die stamps its hardware with specific symbols indicating material analysis. To properly identify each item when ordering, we ask that you insert the proper material type numerical code for the material identification number (MMMM) and the abbreviated material name for the item description (Mat'l). In the example below for a Type 316L, 14 Ga. 1-3/4" Domed Washer, you would insert "361G" in the material identification number (MMMM) and "Ty-316L" into the Item Description (Mat'l).

Threaded items (Bolts, Nuts, Studs, & Rods) are normally supplied in AISI specification/materials. Items are available in ASTM specification/materials on request.

GENERIC METAL TYPE

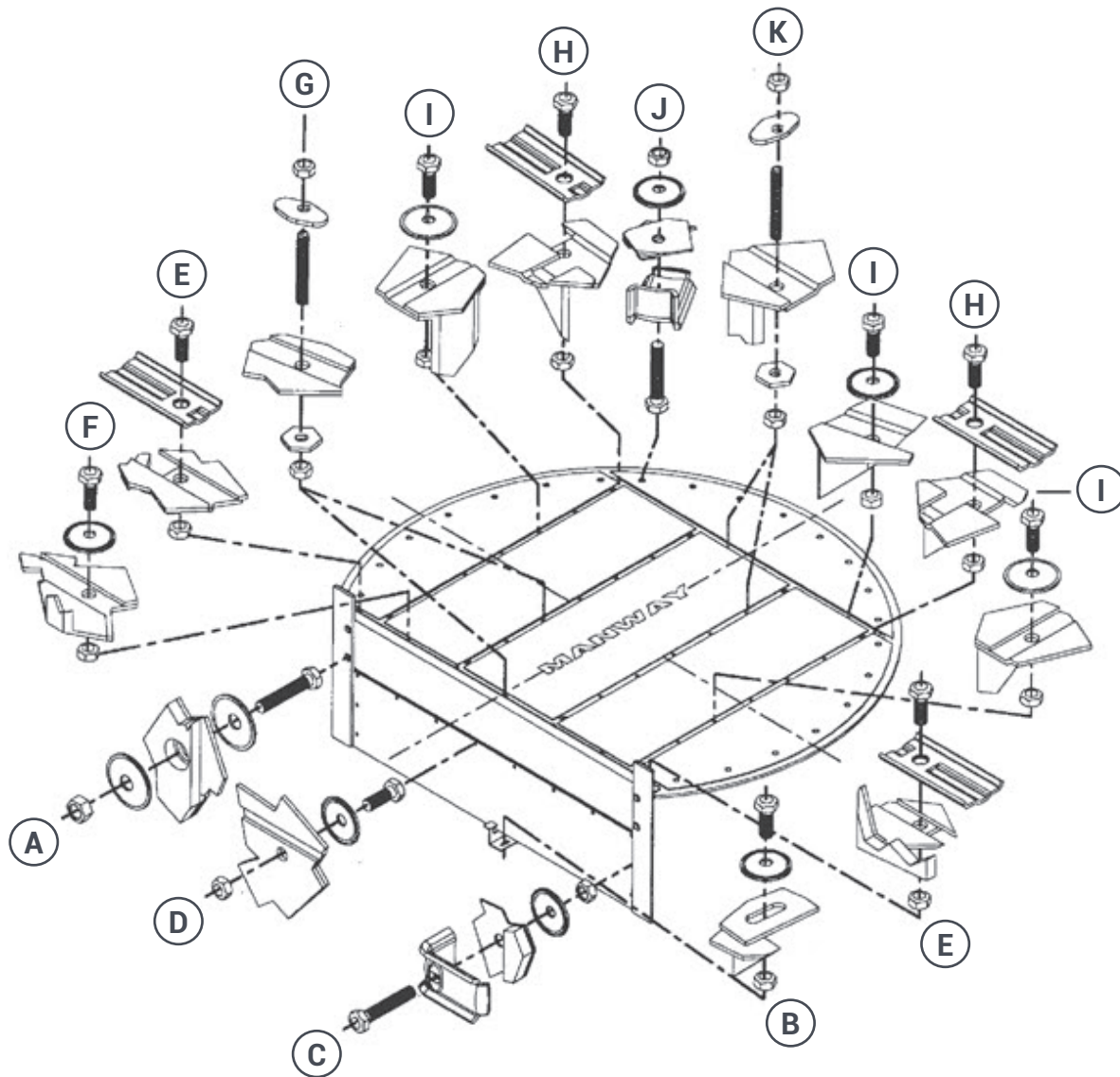
802-MMMM 102 Washer, Domed, Mat'l, 14 Ga, 7/16" id x 1-3/4" OD.

↑ Insert Material identification number from chart below. ↑ Insert abbreviated Material name from chart below.

Stamped Name	Material Ident. (MMMM)	Abbreviated Name (Mat'l)	Common Name	Stamped Name	Material Ident. (MMMM)	Abbreviated Name (Mat'l)	Common Name
	100G	C.S.	Carbon Steel*		117G	Copper Silicon	Copper Silicon
	410G	Ty-410S	Type 410S Stainless Steel*	EB	261G	E-Brite	E-Brite
	304G	Ty-304	Type 304 Stainless Steel	HB	864G	Hast. B	Hastelloy B-2
	340G	Ty-304L	Type 304L Stainless Steel*	HC	861G	Hast. C	Hastelloy C-276
	316G	Ty-316	Type 316 Stainless Steel	HF	868G	Hast. F	Hastelloy F
	361G	Ty-361L	Type 316L Stainless Steel*	HG	866G	Hast. G	Hastelloy G-30
	317G	Ty-317	Type 317 Stainless Steel		830G	Inconel 600	Inconel 600
	371G	Ty-317L	Type 317L Stainless Steel		625G	Inconel 625	Inconel 625
	321G	Ty-321	Type 321 Stainless Steel		820G	Incoloy 800	Incoloy 800
	347G	Ty-347	Type 347 Stainless Steel		870G	Incoloy 825	Incoloy 825
	904G	Ty-904L	Type 904L Stainless Steel		675G	Nickel	Nickel
	301G	AL-6XN	AL-6XN		600G	Monel	Monel*
	205G	2205	2205	T2	516G	Ti-Gr2	Titanium Grade 2
	840G	Alloy 20	Alloy 20 (Carpenter 20)	T7	520G	Ti-Gr7	Titanium Grade
A3	121G	Alum 3003	Aluminum 3003	Z2	502G	Zirc. 702	7 Zirconium 702
A6	119G	Alum 6061	Aluminum 6061	Z5	505G	Zirc. 705	Zirconium 705
	116G	Copr Deox	Copper Deoxide		860G	Hast.C22	Hastelloy C22
S	635G	254 SMO	254 SMO	A5	122G	Alum 5052	Aluminum 5052
	310G	Ty-310S	Type 310 Stainless Steel		118G	AL. Bronze	Aluminum Bronze
	430G	Ty-430	Type 430 Stainless Steel		115G	Everdur	Silicon Bronze
F	660G	Ferralium	Ferralium 255				

*These materials are routinely stocked in all regional warehouses.

NOTE: The "G" represents sheet and plate material (fabricated items). In most cases, for threaded items the material code for bolts, studs, rods and nuts will have the letter "F" (340F).



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	Hex Head Bolt	9, 32
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891-MMMM 01 Nut, Hex, Mat'l, 3/8"-16 UNC-2B
 Insert Material identification number from chart on p. 6.
 Insert abbreviated Material name from p. 6.

Item No. Item Description HEX NUTS 891

891-MMMM 01 Nut, Hex, Mat'l, 3/8"-16 UNC-2B
 891-MMMM 02 Nut, Hex, Mat'l, 1/2"-13 UNC-2B



Commonly stocked in: C.S., Monel, Ty-304L, Ty-316L and Ty-410.
 Available in other materials and diameters upon request.

Item No. Item Description HEX HEAD BOLTS 896

896-MMMM 1104 Bolt, Hex. Head, Mat'l, 3/8"-16 UNC-2A x 1" LG
 896-MMMM 1106 Bolt, Hex. Head, Mat'l, 3/8"-16 UNC-2A x1-1/2" LG
 896-MMMM 1108 Bolt, Hex. Head, Mat'l, 3/8"-16 UNC-2A 2" LG
 896-MMMM 1112 Bolt, Hex. Head, Mat'l, 3/8"-16 UNC-2A x 3" LG
 896-MMMM 0106 * Bolt, Hex. Head, Mat'l, 1/2"-13 UNC-2A x 1-1/2" LG
 896-MMMM 0108 Bolt, Hex. Head, Mat'l, 1/2"-13 UNC-2A x 2" LG



Commonly stocked in: C.S., Monel, Ty-304L, Ty-316L and Ty-410.
 *Stocked in: C.S., Ty-304L, Ty-316L and Ty-410.
 Available in other materials and sizes upon request.

Item No. Item Description FRICTIONAL WASHERS 800

800-MMMM 010801 Washer, Frictional, Mat'l, 14 Ga, 7/16" id x 1" od
 * 800-MMMM 030801 Washer, Frictional, Mat'l, 10 Ga, 7/16" id x 1" od
 800-MMMM 020101 Washer, Frictional, Mat'l, 12 Ga, 7/16" id x 1-1/2" od
 * 800-MMMM 030101 Washer, Frictional, Mat'l, 10 Ga, 7/16" id x 1-1/2" od
 800-MMMM 020201 Washer, Frictional, Mat'l, 12 Ga, 7/16" id x 1-3/4" od
 * 800-MMMM 030201 Washer, Frictional, Mat'l, 10 Ga, 7/16" id x 1-3/4" od
 800-MMMM 020301 Washer, Frictional, Mat'l, 12 Ga, 7/16" id x 2-1/4" od
 * 800-MMMM 030301 Washer, Frictional, Mat'l, 10 Ga, 7/16" id x 2-1/4" od
 800-MMMM 020102 Washer, Frictional, Mat'l, 12 Ga, 9/16" id x 1-1/2" od
 * 800-MMMM 030102 Washer, Frictional, Mat'l, 10 Ga, 9/16" id x 1-1/2" od
 800-MMMM021402 Washer, Frictional, Mat'l, 10 Ga, 9/16" id x 1-3/8" od



Commonly stocked in: C.S., Monel, Ty-304L, Ty-316L and Ty-410.
 *Available in C.S. only.
 Available in other materials and sizes upon request.

Item No. Item Description DOMED WASHERS 802

802-MMMM 101 Washer, Domed, Mat'l, 14 Ga, 7/16" id x 1-1/2" od
 802-MMMM 102 Washer, Domed, Mat'l, 14 Ga, 7/16" id x 1-3/4" od
 802-MMMM 302 *Washer, Domed, Mat'l, 10 Ga, 7/16" id x 1-3/4" od
 802-MMMM 111 Washer, Domed, Mat'l, 14 Ga, 9/16" id x 1-1/2" od



Commonly stocked in: Monel, Ty-304L, Ty-316L and Ty-410.
 *Available in C.S. only.
 Available in other materials upon request.

Item No. Item Description SPLIT LOCK WASHERS 803

803-MMMM 02 * Washer, Split Lock, Mat'l, 3/8"
 803-MMMM 03 **Washer, Split Lock, Mat'l, 1/2"



*Commonly stocked in: C.S., Ty-304 and Ty-316.
 **Commonly stocked in: Ty-304 and Ty-316.
 Available in other materials and sizes upon request.

Item No. Item Description BOTTOM TRAY CLAMPS "Y" 902

902-MMMM 02 Clamp, Bottom Tray "Y", Mat'l, 1/2" Hole, 10 Ga

Commonly stocked in: CS, Monel, Ty-304L, Ty-316L and Ty-410.
 Bottom Tray Clamp "Y" designed for use with 1" maximum thickness supports.
 Available in other materials upon request.
 For exotic material such as Titanium and Zirconium, please substitute the EM Clamp (#404) for the Y-Clamp.
 See Non-Standard section for the EM clamps.



946-MMMM 201 MMMM

Clamp, Bottom Tray "YN", w/ Nut, Mat'l, 10 Ga, 3/8"-16 UNC-2A Nut, Mat'l

↑ Insert Material identification number from chart on p. 6.

↑ Insert abbreviated Material name from p. 6.

Item No.

Item Description

BOTTOM TRAY CLAMPS "YN"

946

946-MMMM 201 MMMM

Clamp, Bottom Tray "YN", w/ Nut, Mat'l, 10 Ga, 3/8"-16 UNC-2A Nut, Mat'l

Commonly stocked in: CS, Monel, Ty-304L, Ty-316L and Ty-410.

Bottom Tray Clamp "YN" designed for use with 1" maximum thickness supports.

Available in other materials upon request.



Item No.

Item Description

BOTTOM TRAY CLAMPS "YB"

932

932-MMMM 021 MMMM

Clamp, Bottom Tray "YB", w/ bolt, Mat'l, 10 Ga, 3/8"-16 UNC-2A x 2" Bolt, Mat'l

Commonly stocked in: CS, Monel, Ty-304L, Ty-316L and Ty-410.

Other material types and bolt lengths are available upon request.

Bottom Tray Clamp "YB" designed for use with 1" maximum thickness supports.

For exotic material such as Titanium and Zirconium, please substitute the EM Clamp (#406) for the YB-Clamp.

See Non-Standard section for the EM clamps.



Item No.

Item Description

BOTTOM TRAY CLAMPS #50

843

843-MMMM 20

* Clamp, Bottom Tray #50, Mat'l, 12 Ga, 7/16" Hole

843-MMMM 30

**Clamp, Bottom Tray #50, Mat'l, 10 Ga, 7/16" Hole

843-MMMM 40

Clamp, Bottom Tray #50, Mat'l, 11 Ga, 7/16" Hole

**Commonly stocked in CS, Monel, Ty-304L, Ty-316L and Ty-410.*

*** Available in C.S.*

Available in other materials upon request.

Bottom Tray Clamp #50, 51, and 52 are designed for use with 3/4" maximum thickness supports.



Item No.

Item Description

BOTTOM TRAY CLAMPS #51

844

844-MMMM 21 MMMM

Clamp, Bottom Tray #51, Mat'l, 12 Ga, w/ nut 3/8"-16 UNC-2B, Mat'l

844-MMMM 41 MMMM

Clamp, Bottom Tray #51, Mat'l, 11 Ga, w/ nut 3/8"-16 UNC-2B, Mat'l

844-MMMM 31 MMMM

* Clamp, Bottom Tray #51, Mat'l, 10 Ga, w/ nut 3/8"-16 UNC-2B, Mat'l

**Available in C.S.*



Item No.

Item Description

BOTTOM TRAY CLAMP #52

845

845-MMMM 21 MMMM

* Clamp, Bottom Tray #52, Mat'l, 12 Ga, w/ bolt 3/8"x 2" LG, Mat'l

845-MMMM 22 MMMM

Clamp, Bottom Tray #52, Mat'l, 12 Ga, w/ bolt 3/8"x 2-1/2" LG, Mat'l

845-MMMM 29 MMMM

Clamp, Bottom Tray #52, Mat'l, 12 Ga, w/ bolt 3/8"x 3" LG, Mat'l

845-MMMM 41 MMMM

Clamp, Bottom Tray #52, Mat'l, 11 Ga, w/ bolt 3/8"x 2" LG, Mat'l

845-MMMM 42 MMMM

Clamp, Bottom Tray #52, Mat'l, 11 Ga, w/ bolt 3/8"x 2-1/2" LG, Mat'l

845-MMMM 49 MMMM

Clamp, Bottom Tray #52, Mat'l, 11 Ga, w/ bolt 3/8"x 3" LG, Mat'l

845-MMMM 31 MMMM

**Clamp, Bottom Tray #52, Mat'l, 10 Ga, w/ bolt 3/8"x 2" LG, Mat'l

845-MMMM 32 MMMM

**Clamp, Bottom Tray #52, Mat'l, 10 Ga, w/ bolt 3/8"x 2-1/2" LG, Mat'l

845-MMMM 39 MMMM

**Clamp, Bottom Tray #52, Mat'l, 10 Ga, w/ bolt 3/8"x 3" LG, Mat'l

**Commonly stocked in CS, Monel, Ty-304L, Ty-316L and Ty-410.*

*** Available in C.S.*

Available in other materials and bolt lengths upon request.

Bottom Tray Clamp #50, 51, and 52 are designed for use with 3/4" maximum thickness supports.



316-MMMM 0 Clamp, Universal Lever #2, Mat'l, 14 Ga
 Insert Material identification number from chart on p. 6.
 Insert abbreviated Material name from p. 6.

Item No. **Item Description** **UNIVERSAL LEVER CLAMPS #2** **316**

316-MMMM 0 Clamp, Universal Lever #2, Mat'l, 14 Ga
 316-MMMM 1 * Clamp, Universal Lever #2, Mat'l, 12 Ga

Commonly stocked in: Monel, Ty-304L, Ty-316L and Ty-410.
 *Stocked in CS only.
 Available in other materials upon request.



Item No. **Item Description** **TRAY CLAMPS** **940**

940-MMMM0101 Clamp, Tray, Mat'l, (for use w/ max support thickness of 5/8"), 12 Ga

Commonly stocked in: Ty-304L, 316L and Ty-410.



Item No. **Item Description** **MANWAY LOCK CLAMPS #2 & 3** **860**

860-MMMM 4 Clamp, Manway Lock #3, Mat'l, 3/16"t
 860-MMMM 5 * Clamp, Manway Lock #2, Mat'l, 1/4"t

Commonly stocked in: C.S., Monel, TY-304L, 316L and Ty-410.
 *Available in C.S.
 Available in other materials upon request.



Item No. **Item Description** **MANWAY LOCK CLAMPS #20** **861**

861-MMMM 1 Clamp, Manway Lock #20, Mat'l, 3/16"t, for 3/8" Stud
 861-MMMM 3 * Clamp, Manway Lock #20, Mat'l, 1/4"t, for 3/8" Stud

Commonly stocked in: C.S., Monel, Ty304L, 316L and Ty-410.
 *Available in C.S.
 Available in other materials upon request.



Item No. **Item Description** **BOTTOM TRAY CLAMPS "YD" (MANWAY)** **903**

903-MMMM 02 Clamp, Bottom Tray "YD", Hole for 3/8" "D" shape Manway Stud, Mat'l, 10 Ga

Commonly stocked in: C.S., Monel, Ty-304L, Ty-316L and Ty-410.
 Bottom Tray Clamp "YD" designed for use with 1" maximum thickness supports.
 Available in other materials upon request.



Item No. **Item Description** **MANWAY LOCK CLAMPS** **584 | 951**

584-MMMM 3 Clamp, Manway Lock, Mat'l, 10 Ga
 951-MMMM 3 Clamp, Manway Lock, Mat'l, 10 Ga

Commonly stocked in: C.S., Ty-304L, Ty-316L and Ty-410.
 Available in other materials upon request.
 Manway Lock Clamp 584 has a "D" hole.
 Manway Lock Clamp 951 has a SQ hole.



Item No. **Item Description** **MANWAY LOCK CLAMPS #45** **863**

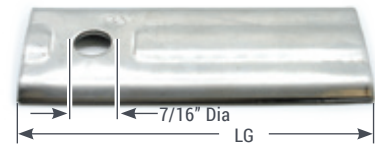
863-MMMM 2 Clamp, Manway Lock #45, Mat'l, 12 Ga, for 3/8" Stud

Commonly stocked in: Ty-304L, Ty-316L and Ty-410.
 Available in other materials upon request.



909-MMMM 001 Seal Plate #10, Mat'l, 14 Ga, 3" LG
 ↑ Insert Material identification number from chart on p. 6.
 ↑ Insert abbreviated Material name from p. 6.

Item No.	Item Description	SEAL PLATES	909
909-MMMM 001	Seal Plate #10, Mat'l, 14 Ga, 3" LG		
909-MMMM 002	Seal Plate #10A, Mat'l, 14 Ga, 3-1/2" LG		909 Replaced Item #848
909-MMMM 003	Seal Plate #10B, Mat'l, 14 Ga, 4" LG		
909-MMMM 004	Seal Plate #10C, Mat'l, 14 Ga, 4-1/2" LG		
909-MMMM 005	Seal Plate #10D, Mat'l, 14 Ga, 5" LG		
909-MMMM 000	Seal Plate #10X2, Mat'l, 14 Ga, 2" LG		
909-MMMM 006	Seal Plate, Mat'l, 14 Ga, 2-1/2" LG		
909-MMMM 007	Seal Plate, Mat'l, 14 Ga, 6" LG		
909-MMMM 008	Seal Plate, Mat'l, 14 Ga, 5-1/2" LG		



Seal plates supplied in C.S. are 10 Ga. The last three digits of the item No. are different. For example, 201 instead of 001 for Seal plate #10, 202 instead of 002 for Seal plate #10A.

Commonly stocked in: C.S., Monel, Ty-304L, Ty-316L and Ty-410.
 Available in other materials upon request.

Item No.	Item Description	SEAL PLATE	936
936-MMMM 01	Seal Plate, Mat'l, 16 Ga		

Commonly stocked in: Ty-304L, Ty-316L and Ty-410.



Item No.	Item Description	BEAM PLATE	935
935-MMMM 01	Beam Plate, Mat'l, 14 Ga		

Commonly stocked in: Ty-304L and Ty-410.



Item No.	Item Description	FRICTION PLATE	937
937-MMMM 01	Friction Plate, Mat'l, 12 Ga		

Commonly stocked in: Ty-304L, Ty-316L and Ty-410.



Item No.	Item Description	BOTTOM CLAMPS #5	841
841-MMMM 20	Clamp, Bottom #5, Mat'l, 12 Ga, 7/16" Hole		

Commonly stocked in: Ty-304L, Ty-316L and Ty-410.
 Available in other materials upon request.



Item No.	Item Description	CLIP ANGLES #8 & 10	826
826-MMMM 11	* Clip Angle # 8, Mat'l, 14 Ga		
826-MMMM 31	** Clip Angle #10, Mat'l, 10 Ga		

Commonly stocked in:
 * 14 Ga: Monel, Ty-304L, Ty-316L and Ty-410.
 ** 10 Ga: C.S.
 Available in other materials upon request.



Item No.	Item Description	SINGLE BAR CLAMPS	321
321-MMMM 01	**Clamp, Single Bar, Mat'l, 10 Ga, 7/16" Hole		
321-MMMM 02	**Clamp, Single Bar, Mat'l, 10 Ga, 9/16" Hole		
321-MMMM 11	* Clamp, Single Bar, Mat'l, 14 Ga, 7/16" Hole		

*Commonly stocked in: Monel, Ty-304L, Ty-316L and Ty-410.
 **Commonly stocked in: C.S.
 Available in other materials upon request.



Item No.	Item Description	WEDGE #2	821
821-MMMM	Wedge #2, Mat'l, 16 Ga		

Commonly stocked in: Ty-304L, Ty-316L and Ty-410.
 Available in other materials upon request.



Item No.	Item Description	WEDGE	939
939-MMMM 01	Wedge, Mat'l, 16 Ga		

Commonly stocked in: Ty-304L and Ty-410.



700-MMMM 110

* Gasket, Washer, Mat'l, 1/16"t x 3/8" id x 1" od

Insert Material identification number from chart on p. 6. Insert abbreviated Material name from p. 6.

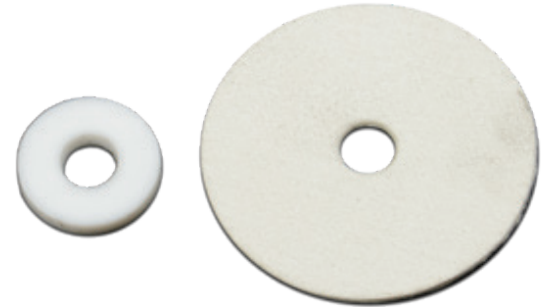
Item No.

Item Description

WASHER GASKETS

700

700-MMMM 110	* Gasket, Washer, Mat'l, 1/16"t x 3/8" id x 1" od
700-MMMM 120	* Gasket, Washer, Mat'l, 1/16"t x 3/8" id x 1-1/2" od
700-MMMM 130	* Gasket, Washer, Mat'l, 1/16"t x 3/8" id x 1-3/4" od
700-MMMM 140	Gasket, Washer, Mat'l, 1/16"t x 3/8" id x 2-1/4" od
700-MMMM 150	Gasket, Washer, Mat'l, 1/16"t x 3/8" id x 1-1/4" od
700-MMMM 210	Gasket, Washer, Mat'l, 1/8"t x 3/8" id x 1" od
700-MMMM 220	Gasket, Washer, Mat'l, 1/8"t x 3/8" id x 1-1/2" od
700-MMMM 230	Gasket, Washer, Mat'l, 1/8"t x 3/8" id x 1-3/4" od
700-MMMM 240	Gasket, Washer, Mat'l, 1/8"t x 3/8" id x 2-1/4" od
700-MMMM 250	Gasket, Washer, Mat'l, 1/8"t x 3/8" id x 1-1/4" od



*Commonly stocked in: D-8080.

Material Identification No: (775G) D-8080, (760G) Teflon, (797G) Neoprene, (780G)TN-9000.

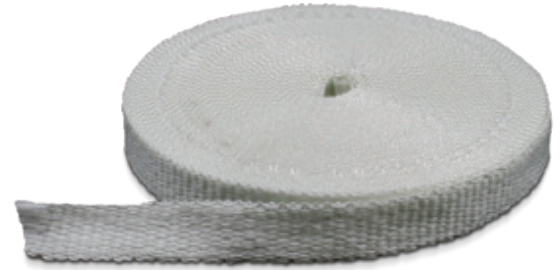
Item No.

Item Description

TAPE GASKETING

GKT

GKT-MMMM 0160251-I	* Gasket, Tape, Mat'l, 1/16"t x 1"w
GKT-MMMM 0160320-I	* Gasket, Tape, Mat'l, 1/16"t x 1-1/4"w
GKT-MMMM 0160380-I	* Gasket, Tape, Mat'l, 1/16"t x 1-1/2"w
GKT-MMMM 0160510-I	* Gasket, Tape, Mat'l, 1/16"t x 2"w
GKT-MMMM 0160640-I	* Gasket, Tape, Mat'l, 1/16"t x 2-1/2"w
GKT-MMMM 0160760-I	* Gasket, Tape, Mat'l, 1/16"t x 3"w
GKT-MMMM0320251-I	Gasket, Tape, Mat'l, 1/8"t x 1"w
GKT-MMMM0320320-I	Gasket, Tape, Mat'l, 1/8"t x 1-1/4"w
GKT-MMMM0320380-I	Gasket, Tape, Mat'l, 1/8"t x 1-1/2"w
GKT-MMMM0320510-I	Gasket, Tape, Mat'l, 1/8"t x 2"w



*Commonly stocked in: Fiberglass

Material Identification No: (770G) Fiberglass, (760G) Teflon, (797G) Neoprene and (750G) Ceramic Fiber.

Note: All types except 1" wide are available in both Drop Warp (DW) and Non-Drop Warp (NDW) styles.

Item No.

Item Description

GASKET ROPES (SQUARE & ROUND)

GKR

GKR-MMMM 20950-I	Rope, Gasket, Square, Mat'l, 3/8" x 3/8"
GKR-MMMM 21270-I	Rope, Gasket, Square, Mat'l, 1/2" x 1/2"
GKR-MMMM 21590-I	Rope, Gasket, Square, Mat'l, 5/8" x 5/8"
GKR-MMMM 21910-I	Rope, Gasket, Square, Mat'l, 3/4" x 3/4"
GKR-MMMM 22540-I	Rope, Gasket, Square, Mat'l, 1" x 1"
GKR-MMMM 10320-I	Rope, Gasket, Round, Mat'l, 1/8"
GKR-MMMM 10640-I	Rope, Gasket, Round, Mat'l, 1/4"
GKR-MMMM 10950-I	* Rope, Gasket, Round, Mat'l, 3/8"
GKR-MMMM 11270-I	* Rope, Gasket, Round, Mat'l, 1/2"
GKR-MMMM 11590-I	Rope, Gasket, Round, Mat'l, 5/8"
GKR-MMMM 11910-I	Rope, Gasket, Round, Mat'l, 3/4"
GKR-MMMM 12540-I	Rope, Gasket, Round, Mat'l, 1"



*Commonly stocked in Fiberglass.

Material Identification No: (770G) Fiberglass, (760G) Teflon, (797G) Neoprene, (750G) Ceramic Fiber and (798G) Gortex.

Specify Last # "0" = Standard, "1" = Braided" (Ex. GKR-MMMM 10950-I = Standard, GKR-MMMM 10951-I = Braided)

307-MMMM 121 Cap, Flexitray Type "AC-U", Mat'l, 12 Ga (2.5mm), 7/16" (11.11mm) leg length

Insert Material identification number from chart on p. 6.

Insert abbreviated Material name from p. 6.

Item No.	Item Description	FLEXITRAY® CAP TYPES AC-U - AE-U - AB-U	307
307-MMMM 121	Cap, Flexitray Type "AC-U", Mat'l, 12 Ga (2.5mm), 7/16" (11.11mm) leg length		
307-MMMM 122	Cap, Flexitray Type "AD-U", Mat'l, 12 Ga (2.5mm), 1/2" (12.7mm) leg length		
307-MMMM 123	Cap, Flexitray Type "AE-U", Mat'l, 12 Ga (2.5mm), 9/16" (14.29mm) leg length		
307-MMMM 141	* Cap, Flexitray Type "AC-U", Mat'l, 14 Ga (2mm), 7/16" (11.11mm) leg length		
307-MMMM 142	Cap, Flexitray Type "AD-U", Mat'l, 14 Ga (2mm), 1/2" (12.7mm) leg length		
307-MMMM 143	* Cap, Flexitray Type "AE-U", Mat'l, 14 Ga (2mm), 9/16" (14.29mm) leg length		
307-MMMM 161	* Cap, Flexitray Type "AC-U", Mat'l, 16 Ga (1.5mm), 7/16" (11.11mm) leg length		
307-MMMM 162	Cap, Flexitray Type "AD-U", Mat'l, 16 Ga (1.5mm), 1/2" (12.7mm) leg length		
307-MMMM 163	* Cap, Flexitray Type "AE-U", Mat'l, 16 Ga (1.5mm), 9/16" (14.29mm) leg length		
307-MMMM 181	Cap, Flexitray Type "AC-U", Mat'l, 18 Ga (1.2mm), 7/16" (11.11mm) leg length		
307-MMMM 182	Cap, Flexitray Type "AD-U", Mat'l, 18 Ga (1.2mm), 1/2" (12.7mm) leg length		
307-MMMM 183	Cap, Flexitray Type "AE-U", Mat'l, 18 Ga (1.2mm), 9/16" (14.29mm) leg length		
307-MMMM 120	Cap, Flexitray Type "AB-U", Mat'l, 12 Ga (2.5mm), 3/8" (9.53mm) leg length		
307-MMMM 140	* Cap, Flexitray Type "AB-U", Mat'l, 14 Ga (2mm), 3/8" (9.53mm) leg length		
307-MMMM 160	* Cap, Flexitray Type "AB-U", Mat'l, 16 Ga (1.5mm), 3/8" (9.53mm) leg length		
307-MMMM 180	Cap, Flexitray Type "AB-U", Mat'l, 18 Ga (1.2mm), 3/8" (9.53mm) leg length		



*Commonly stocked in: Ty-304L, Ty-316L and Ty-410.

Available in other materials upon request.

Item No.	Item Description	FLEXITRAY® CAP TYPES AC-Z - AE-Z - AB-Z	308
308-MMMM 121	Cap, Flexitray Type "AC-Z" (Flush Seat), Mat'l, 12 Ga (2.5mm), 7/16" (11.11mm) leg length		
308-MMMM 122	Cap, Flexitray Type "AD-Z" (Flush Seat), Mat'l, 12 Ga (2.5mm), 1/2" (12.7mm) leg length		
308-MMMM 123	Cap, Flexitray Type "AE-Z" (Flush Seat), Mat'l, 12 Ga (2.5mm), 9/16" (14.29mm) leg length		
308-MMMM 141	* Cap, Flexitray Type "AC-Z" (Flush Seat), Mat'l, 14 Ga (2mm), 7/16" (11.11mm) leg length		
308-MMMM 142	Cap, Flexitray Type "AD-Z" (Flush Seat), Mat'l, 14 Ga (2mm), 1/2" (12.7mm) leg length		
308-MMMM 143	Cap, Flexitray Type "AE-Z" (Flush Seat), Mat'l, 14 Ga (2mm), 9/16" (14.29mm) leg length		
308-MMMM 161	* Cap, Flexitray Type "AC-Z" (Flush Seat), Mat'l, 16 Ga (1.5mm), 7/16" (11.11mm) leg length		
308-MMMM 162	Cap, Flexitray Type "AD-Z" (Flush Seat), Mat'l, 16 Ga (1.5mm), 1/2" (12.7mm) leg length		
308-MMMM 163	Cap, Flexitray Type "AE-Z" (Flush Seat), Mat'l, 16 Ga (1.5mm), 9/16" (14.29mm) leg length		
308-MMMM 181	Cap, Flexitray Type "AC-Z" (Flush Seat), Mat'l, 18 Ga (1.2mm), 7/16" (11.11mm) leg length		
308-MMMM 182	Cap, Flexitray Type "AD-Z" (Flush Seat), Mat'l, 18 Ga (1.2mm), 1/2" (12.7mm) leg length		
308-MMMM 183	Cap, Flexitray Type "AE-Z" (Flush Seat), Mat'l, 18 Ga (1.2mm), 9/16" (14.29mm) leg length		
308-MMMM 120	Cap, Flexitray Type "AB-Z" (Flush Seat), Mat'l, 12 Ga (2.5mm), 3/8" (9.53mm) leg length		
308-MMMM 140	* Cap, Flexitray Type "AB-Z" (Flush Seat), Mat'l, 14 Ga (2mm), 3/8" (9.53mm) leg length		
308-MMMM 160	* Cap, Flexitray Type "AB-Z" (Flush Seat), Mat'l, 16 Ga (1.5mm), 3/8" (9.53mm) leg length		
308-MMMM 180	Cap, Flexitray Type "AB-Z" (Flush Seat), Mat'l, 18 Ga (1.2mm), 3/8" (9.53mm) leg length		



*Commonly stocked in: Ty-304L, Ty-316L and Ty-410.

Available in other materials upon request.

303-MMMM 11

Cap, Flexitray Type "U", Mat'l, 11 Ga (3mm)

Insert Material identification number from chart on p. 6. Insert abbreviated Material name from p. 6.

FLEXITRAY® CAPS TYPE U **303**
FLEXITRAY® CAPS HOLDDOWN TYPE M **311**

Item No.	Item Description
303-MMMM 11	Cap, Flexitray Type "U", Mat'l, 11 Ga (3mm)
303-MMMM 12	Cap, Flexitray Type "U", Mat'l, 12 Ga (2.5mm)
303-MMMM 14	* Cap, Flexitray Type "U", Mat'l, 14 Ga (2mm)
303-MMMM 16	* Cap, Flexitray Type "U", Mat'l, 16 Ga (1.5mm)
303-MMMM 18	Cap, Flexitray Type "U", Mat'l, 18 Ga (1.2mm)
311-MMMM 11	Cap Holddown, Flexitray Type "M", Mat'l, 11 Ga (3mm)
311-MMMM 12	Cap Holddown, Flexitray Type "M", Mat'l, 12 Ga (2.5mm)
311-MMMM 12	**Cap Holddown, Flexitray Type "M", Mat'l, 14 Ga (2mm)



* Commonly stocked in: Monel, Ty-304L, Ty-316L and Ty-410.
 ** Commonly Stocked in Monel.
 Available in other materials upon request.

FLEXITRAY® CAPS TYPE Z **304**
FLEXITRAY® CAPS HOLDDOWN TYPE MQ **313**

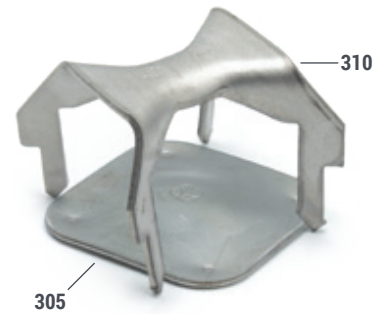
Item No.	Item Description
304-MMMM 11	Cap, Flexitray Type "Z", Mat'l, 11 Ga (3mm)
304-MMMM 12	Cap, Flexitray Type "Z", Mat'l, 12 Ga (2.5mm)
304-MMMM 14	* Cap, Flexitray Type "Z", Mat'l, 14 Ga (2mm)
304-MMMM 16	* Cap, Flexitray Type "Z", Mat'l, 16 Ga (1.5mm)
304-MMMM 18	Cap, Flexitray Type "Z", Mat'l, 18 Ga (1.2mm)
313-MMMM 11	Cap Holddown, Flexitray Type "M", Mat'l, 11 Ga (3mm)
313-MMMM 12	Cap Holddown, Flexitray Type "M", Mat'l, 12 Ga (2.5mm)
313-MMMM 14	Cap Holddown, Flexitray Type "M", Mat'l, 14 Ga (2mm)



*Commonly Stocked in Monel, Ty-304L, Ty-316L and Ty- 410.
 Available in other materials upon request.

FLEXITRAY® CAPS TYPE NRU & NRZ **305**
FLEXITRAY® CAPS HOLDDOWN TYPE Q & R **310**

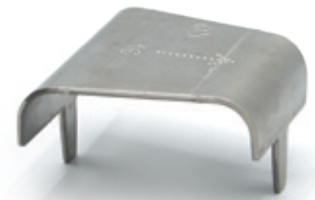
Item No.	Item Description
305-MMMM 121	Cap, Flexitray Type "NRU", Mat'l, 12 Ga (2.5mm), 1
305-MMMM 141	Cap, Flexitray Type "NRU", Mat'l, 14 Ga (2mm), 1
305-MMMM 161	Cap, Flexitray Type "NRU", Mat'l, 16 Ga (1.5mm), 1
305-MMMM 122	Cap, Flexitray Type "NRZ" (Flush Seat), Mat'l, 12 Ga (2.5mm), 2
305-MMMM 142	Cap, Flexitray Type "NRZ" (Flush Seat), Mat'l, 14 Ga (2mm), 2
305-MMMM 162	Cap, Flexitray Type "NRZ" (Flush Seat), Mat'l, 16 Ga (1.5mm), 2
310-MMMM 012	* Cap Holddown, Flexitray Type "Q", Mat'l, 12 Ga (2.5mm)
310-MMMM 014	** Cap Holddown, Flexitray Type "Q", Mat'l, 14 Ga (2mm)
310-MMMM 112	Cap Holddown, Flexitray Type "R", Mat'l, 12 Ga (2.5mm)
310-MMMM 114	***Cap Holddown, Flexitray Type "R", Mat'l, 14 Ga (2mm)



*Commonly stocked in CS.
 **Commonly stocked in Ty-304L, Ty-316L and Ty-410.
 ***Commonly stocked in Ty 304L and Ty-410.
 Available in other materials upon request.

PROVALVE® TYPE FV-2 & FV-3 **467**

Item No.	Item Description
467-MMMM 1020	Provalve Type "FV-2", Mat'l, 10 Ga (3.5mm), 1/2" (13mm) Lift, 1/4" (7mm) Tab Width
467-MMMM 1120	Provalve Type "FV-2", Mat'l, 11 Ga (3mm), 1/2" (13mm) Lift, 1/4" (7mm) Tab Width
467-MMMM 1220	Provalve Type "FV-2", Mat'l, 12 Ga (2.5mm), 1/2" (13mm) Lift, 1/4" (7mm) Tab Width
467-MMMM 1420	* Provalve Type "FV-2", Mat'l, 14 Ga (2mm), 1/2" (13mm) Lift, 1/4" (7mm) Tab Width
467-MMMM 1620	* Provalve Type "FV-2", Mat'l, 16 Ga (1.5mm), 1/2" (13mm) Lift, 1/4" (7mm) Tab Width
467-MMMM 1820	Provalve Type "FV-2", Mat'l, 18 Ga (1.2mm), 1/2" (13mm) Lift, 1/4" (7mm) Tab Width
467-MMMM 1030	Provalve Type "FV-3", Mat'l, 10 Ga (3.5mm), 11/16" (17mm) Lift, 1/4" (7mm) Tab Width
467-MMMM 1130	Provalve Type "FV-3", Mat'l, 11 Ga (3mm), 11/16" (17mm) Lift, 1/4" (7mm) Tab Width
467-MMMM 1230	Provalve Type "FV-3", Mat'l, 12 Ga (2.5mm), 11/16" (17mm) Lift, 1/4" (7mm) Tab Width
467-MMMM 1430	* Provalve Type "FV-3", Mat'l, 14 Ga (2mm), 11/16" (17mm) Lift, 1/4" (7mm) Tab Width
467-MMMM 1630	* Provalve Type "FV-3", Mat'l, 16 Ga (1.5mm), 11/16" (17mm) Lift, 1/4" (7mm) Tab Width
467-MMMM 1830	Provalve Type "FV-3", Mat'l, 18 Ga (1.2mm), 11/16" (17mm) Lift, 1/4" (7mm) Tab Width



*Commonly stocked in: Ty-304L, Ty-316L and Ty-410.
 Note: Provalves are available with 3/8" (10mm) tab width.
 Provalves Type "FV-3" are available with slot.
 Available in other materials upon request.

934-MMMM 01 Ballast (Valve SI) Unit, Mat'l, 16 Ga (1.5mm)
 Insert Material identification number from chart on p. 6.
 Insert abbreviated Material name from p. 6.

Item No.	Item Description	BALLAST (VALVE SI) UNITS	934
934-MMMM 01	Ballast (Valve SI) Unit, Mat'l, 16 Ga (1.5mm)		
934-MMMM 02	Ballast (Valve SI) Unit, Mat'l, 14 Ga (2mm)		

Commonly stocked in: Ty-304L and Ty-410.



Item No.	Item Description	MINI VALVES TYPES MV-1	620
620-MMMM 7518	Mini-Valve MV-1, Mat'l, 0.3375" (8.57mm) leg length, 18 Ga (1.2mm)		
620-MMMM 7516	Mini-Valve MV-1, Mat'l, 0.3375" (8.57mm) leg length, 16 Ga (1.5mm)		
620-MMMM 7514	Mini-Valve MV-1, Mat'l, 0.3375" (8.57mm) leg length, 14 Ga (2mm)		
620-MMMM 6518	* Mini-Valve MV-1, Mat'l, 0.3375" (8.57mm) leg length, 18 Ga (1.2mm)		
620-MMMM 6516	* Mini-Valve MV-1, Mat'l, 0.3375" (8.57mm) leg length, 16 Ga (1.5mm)		
620-MMMM 6514	* Mini-Valve MV-1, Mat'l, 0.3375" (8.57mm) leg length, 14 Ga (2mm)		
620-MMMM 7618	Mini-Valve MV-1, Mat'l, 0.3925" (9.97mm) leg length, 18 Ga (1.2mm)		
620-MMMM 7616	Mini-Valve MV-1, Mat'l, 0.3925" (9.97mm) leg length, 16 Ga (1.5mm)		
620-MMMM 7614	Mini-Valve MV-1, Mat'l, 0.3925" (9.97mm) leg length, 14 Ga (2mm)		
620-MMMM 6618	* Mini-Valve MV-1, Mat'l, 0.3925" (9.97mm) leg length, 18 Ga (1.2mm)		
620-MMMM 6616	* Mini-Valve MV-1, Mat'l, 0.3925" (9.97mm) leg length, 16 Ga (1.5mm)		
620-MMMM 6614	* Mini-Valve MV-1, Mat'l, 0.3925" (9.97mm) leg length, 14 Ga (2mm)		

*Flush Seat.



Item No.	Item Description	MINI VALVES TYPE MV-9	622
622-MMMM 9518	Mini-Valve MV-9, Mat'l, 5/16" (7.94mm) leg length, 18 Ga (1.2mm)		
622-MMMM 5518	* Mini-Valve MV-9, Mat'l, 5/16" (7.94mm) leg length, 18 Ga (1.2mm)		
622-MMMM 9318	Mini-Valve MV-9, Mat'l, 3/16" (4.76mm) leg length, 18 Ga (1.2mm)		
622-MMMM 5318	* Mini-Valve MV-9, Mat'l, 3/16" (4.76mm) leg length, 18 Ga (1.2mm)		
622-MMMM 9516	Mini-Valve MV-9, Mat'l, 5/16" (7.94mm) leg length, 16 Ga (1.5mm)		
622-MMMM 5516	* Mini-Valve MV-9, Mat'l, 5/16" (7.94mm) leg length, 16 Ga (1.5mm)		

*Flush Seat.



Item No.	Item Description	MINI VALVE TYPE VG-9	621
621-MMMM 8516	Mini-Valve VG-9, Mat'l, 16 Ga (1.5mm)		



630-MMMM 1614 * Rectangular Valve Unit , Mat'l, 3/8" leg length, 14 Ga (2mm)
 ↑ Insert Material identification number from chart on p. 6. ↑ Insert abbreviated Material name from p. 6.

Item No.	Item Description	RECTANGULAR VALVE UNITS	630 631
630-MMMM 1614	* Rectangular Valve Unit , Mat'l, 3/8" leg length, 14 Ga (2mm)		
630-MMMM 1616	* Rectangular Valve Unit , Mat'l, 3/8" leg length, 16 Ga (1.5mm)		
630-MMMM 1618	* Rectangular Valve Unit , Mat'l, 3/8" leg length, 18 Ga (1.2mm)		
630-MMMM 1714	* Rectangular Valve Unit , Mat'l, 7/16" leg length, 14 Ga (2mm)		
630-MMMM 1716	* Rectangular Valve Unit , Mat'l, 7/16" leg length, 16 Ga (1.5mm)		
630-MMMM 1718	* Rectangular Valve Unit , Mat'l, 7/16" leg length, 18 Ga (1.2mm)		
630-MMMM 1814	Rectangular Valve Unit , Mat'l, 1/2" leg length, 14 Ga (2mm)		
630-MMMM 1816	Rectangular Valve Unit , Mat'l, 1/2" leg length, 16 Ga (1.5mm)		
630-MMMM 1818	Rectangular Valve Unit , Mat'l, 1/2" leg length, 18 Ga (1.2mm)		
631-MMMM 1614	* Half-Rectangular Valve Unit , Mat'l, 3/8" leg length, 14 Ga (2mm)		
631-MMMM 1616	* Half-Rectangular Valve Unit , Mat'l, 3/8" leg length, 16 Ga (1.5mm)		
631-MMMM 1618	* Half-Rectangular Valve Unit , Mat'l, 3/8" leg length, 18 Ga (1.2mm)		
631-MMMM 1714	* Half-Rectangular Valve Unit , Mat'l, 7/16" leg length, 14 Ga (2mm)		
631-MMMM 1716	* Half-Rectangular Valve Unit , Mat'l, 7/16" leg length, 16 Ga (1.5mm)		
631-MMMM 1718	* Half-Rectangular Valve Unit , Mat'l, 7/16" leg length, 18 Ga (1.2mm)		
631-MMMM 1814	Half-Rectangular Valve Unit , Mat'l, 1/2" leg length, 14 Ga (2mm)		
631-MMMM 1816	Half-Rectangular Valve Unit , Mat'l, 1/2" leg length, 16 Ga (1.5mm)		
631-MMMM 1818	Half-Rectangular Valve Unit , Mat'l, 1/2" leg length, 18 Ga (1.2mm)		

*Commonly stocked in Ty-304L, Ty-316L and Ty-410.
 Available in other materials upon request.

Item No.	Item Description	CAPS FTC, FTD & FTE UNITS	397
397-MMMM 0116	Cap FTC, Mat'l, 16 Ga (1.5mm), 0.47" (12mm) leg length		
397-MMMM 0216	Cap FTD, Mat'l, 16 Ga (1.5mm), 0.53" (13.5mm) leg length		
397-MMMM 0316	Cap FTE, Mat'l, 16 Ga (1.5mm), 0.59" (15mm) leg length		
397-MMMM 0114	Cap FTC, Mat'l, 14 Ga (2mm), 0.47" (12mm) leg length		
397-MMMM 0214	Cap FTD, Mat'l, 14 Ga (2mm), 0.53" (13.5mm) leg length		
397-MMMM 0314	Cap FTE, Mat'l, 14 Ga (2mm), 0.59" (15mm) leg length		

892-MMMM 01

Nut, Heavy Hex. Mat'l, 3/8"-16 UNC-2B

Insert Material identification number from chart on p. 6.

Insert abbreviated Material name from p. 6.

Item No.

Item Description

HEAVY HEX NUTS

892

892-MMMM 01

Nut, Heavy Hex. Mat'l, 3/8"-16 UNC-2B

892-MMMM 02

Nut, Heavy Hex. Mat'l, 1/2"-13 UNC-2B

Available in other diameters.



Item No.

Item Description

HEAVY HEX HEAD BOLTS

885

885-MMMM 1204

Bolt, Heavy Hex. Head Mat'l, 3/8"-16 UNC-2A x 1" LG

885-MMMM 1208

Bolt, Heavy Hex. Head, Mat'l, 3/8"-16 UNC-2A x 2" LG

885-MMMM 0108

Bolt, Heavy Hex. Head, Mat'l, 1/2"-13 UNC-2A x 2" LG

885-MMMM 0112

Bolt, Heavy Hex. Head, Mat'l, 1/2"-13 UNC-2A x 3" LG

Available in other diameters and lengths.



Item No.

Item Description

CARRIAGE BOLT

881

881-MMMM 0210

Bolt, Carriage, Mat'l, 3/8"-16 UNC-2A*

* Represents the length of Bolt in 1/4" increments (10 x 1/4" = 2-1/2")

Available in other diameters and lengths.



Item No.

Item Description

ECCENTRIC WASHERS

804

804-MMMM 1

Washer, Eccentric (1-1/2" od), Mat'l, 14 Ga

804-MMMM 2

Washer, Eccentric (1-1/2" od), Mat'l, 12 Ga

804-MMMM 3

Washer, Eccentric (1-1/2" od), Mat'l, 10 Ga

804-MMMM 4

Washer, Eccentric (1-1/2" od), Mat'l, 3/16"t

804-MMMM 5

Washer, Eccentric (1-1/2" od), Mat'l, 1/4"t

804-MMMM 6

Washer, Eccentric (1-1/2" od), Mat'l, 11 Ga



837-MMMM 235

Clamp, Bottom Tray #53, Mat'l, 12 Ga, Tab length

Insert Material identification number from chart on p. 6. Insert abbreviated Material name from p. 6.

Item No.

Item Description

BOTTOM TRAY CLAMPS #53

837

- 837-MMMM 235
- 837-MMMM 435
- 837-MMMM 335

- Clamp, Bottom Tray #53, Mat'l, 12 Ga, Tab length
- Clamp, Bottom Tray #53, Mat'l, 11 Ga, Tab length
- * Clamp, Bottom Tray #53, Mat'l, 10 Ga, Tab length

*Available in C.S.



Item No.

Item Description

BOTTOM TRAY CLAMPS #54

838

- 838-MMMM 21 MMMM
- 838-MMMM 31 MMMM
- 838-MMMM 41 MMMM

- Clamp, Bottom Tray #54, Mat'l, 12 Ga, w/ nut, 3/8"-16 UNC-2B, Mat'l
- * Clamp, Bottom Tray #54, Mat'l, 10 Ga, w/ nut, 3/8"-16 UNC-2B, Mat'l
- Clamp, Bottom Tray #54, Mat'l, 11 Ga, w/ nut, 3/8"-16 UNC-2B, Mat'l

*Available in C.S.



Item No.

Item Description

BOTTOM TRAY CLAMP #55

847

- 847-MMMM 21 MMMM
- 847-MMMM 22 MMMM
- 847-MMMM 29 MMMM
- 847-MMMM 41 MMMM
- 847-MMMM 42 MMMM
- 847-MMMM 49 MMMM
- 847-MMMM 31 MMMM
- 847-MMMM 32 MMMM
- 847-MMMM 39 MMMM

- Clamp, Bottom Tray #55, Mat'l, 12 Ga, w/ bolt 3/8"x 2" LG, Mat'l
- Clamp, Bottom Tray #55, Mat'l, 12 Ga, w/ bolt 3/8"x 2-1/2" LG, Mat'l
- Clamp, Bottom Tray #55, Mat'l, 12 Ga, w/ bolt 3/8"x 3" LG, Mat'l
- Clamp, Bottom Tray #55, Mat'l, 11 Ga, w/ bolt 3/8"x 2" LG, Mat'l
- Clamp, Bottom Tray #55, Mat'l, 11 Ga, w/ bolt 3/8"x 2-1/2" LG, Mat'l
- Clamp, Bottom Tray #55, Mat'l, 11 Ga, w/ bolt 3/8"x 3" LG, Mat'l
- * Clamp, Bottom Tray #55, Mat'l, 10 Ga, w/ bolt 3/8"x 2" LG, Mat'l
- * Clamp, Bottom Tray #55, Mat'l, 10 Ga, w/ bolt 3/8"x 2-1/2" LG, Mat'l
- * Clamp, Bottom Tray #55, Mat'l, 10 Ga, w/ bolt 3/8"x 3" LG, Mat'l

*Available in C.S.

Bottom Tray Clamp #53, 54 and 55 are designed for use with supports thicker than 3/4".



822-MMMM 30

Clamp, Bottom Tray #50SWN, Mat'l, 10 Ga, 7/16" Hole

Insert Material identification number from chart on p. 6.

Insert abbreviated Material name from p. 6.

Item No.	Item Description	BOTTOM TRAY CLAMP 50SWN	822
822-MMMM 30	Clamp, Bottom Tray #50SWN, Mat'l, 10 Ga, 7/16" Hole		
822-MMMM 31	Clamp, Bottom Tray #50SWN, Mat'l, 10 Ga, 9/16" Hole		
822-MMMM 301 MMMM	Clamp, Bottom Tray #50SWN, Mat'l, 10 Ga, 7/16" Hole w/ 3/8" welded nut, Mat'l		



Replaces the old Bottom Tray Clamps #10 & 12 Series.

Item No.	Item Description	BOTTOM TRAY CLAMP 50SWB	819
819-MMMM 31 MMMM	Clamp, Bottom Tray #50SWB, Mat'l, 10 Ga, w/ 3/8" X 2" welded bolt, Mat'l		
819-MMMM 311 MMMM	Clamp, Bottom Tray #50SWB, Mat'l, 10 Ga, w/ 1/2" X 2" welded bolt, Mat'l		



Replaces the old Bottom Tray Clamps #13 Series.
Available with other bolt lengths upon request.

Item No.	Item Description	BOTTOM TRAY CLAMP #EM	404 406
404-MMMM 10	Clamp, Bottom Tray #EM, Mat'l, 14 Ga, 7/16" Hole		
406-MMMM 10 MMMM	* Clamp, Bottom Tray #EM, Mat'l, 14 Ga, w/ 3/8" X 2" welded bolt, MMMM		



Clamps EM are for use with exotic materials (specifically Titanium and Zirconium) and replace the Y-Clamp and YB-Clamp.
* Available with other bolt lengths upon request.

850-MMMM 2050

Clamp, Bottom Tray #20-E, Mat'l, 12 Ga, 1/2" Tab, 7/16" Hole

↑ Insert Material identification number from chart on p. 6.
 ↑ Insert abbreviated Material name from p. 6.

Item No.	Item Description	BOTTOM TRAY CLAMPS #20 SERIES	850 852 853 854 855 856
850-MMMM 2050	Clamp, Bottom Tray #20-E, Mat'l, 12 Ga, 1/2" Tab, 7/16" Hole		
852-MMMM 051 MMMM	Clamp, Bottom Tray #22-E, Mat'l, 12 Ga, 1/2" Tab, 3/8" Nut, Mat'l		
853-MMMM 051 MMMM	Clamp, Bottom Tray #23-E, Mat'l, 12 Ga, 1/2" Tab, 3/8 x 2" Bolt, Mat'l		
854-MMMM 2050	Clamp, Bottom Tray #24-E, Mat'l, 12 Ga, 1/2" Tab, 7/16" Hole		
855-MMMM 051 MMMM	Clamp, Bottom Tray #26-E, Mat'l, 12 Ga, 1/2" Tab, 3/8" Nut, Mat'l		
856-MMMM 051 MMMM	Clamp, Bottom Tray #27-E, Mat'l, 12 Ga, 1/2" Tab, 3/8 x 2" Bolt, Mat'l		



Note: All Bottom Tray Clamps in the #20 series are available as a special order item.
 Please specify part #, Ex. 20-E, 22-E, 23-E or tab height.

Our new Bottom Tray Clamps "Y" series replaces the old Bottom Tray Clamps #20 Series.
 * 902 BTC "Y" replaces BTC #20 series with open Hole.
 * 946 BTC "YN" replaces BTC #20 series with welded nut.
 * 932 BTC "YB" replaces BTC #20 series with welded bolt.
 BTC "Y" series are shown in the standard section.

Item No.	Item Description	BOTTOM TRAY CLAMPS #10A-10P	857
857-MMMM 010	Clamp, Bottom Tray #10A, Mat'l, 3/8" Tab length, 7/16" Hole		
857-MMMM 020	Clamp, Bottom Tray #10B, Mat'l, 7/16" Tab length, 7/16" Hole		
857-MMMM 030	Clamp, Bottom Tray #10C, Mat'l, 1/2" Tab length, 7/16" Hole		
857-MMMM 040	Clamp, Bottom Tray #10D, Mat'l, 5/8" Tab length, 7/16" Hole		
857-MMMM 050	Clamp, Bottom Tray #10E, Mat'l, 3/4" Tab length, 7/16" Hole		
857-MMMM 060	Clamp, Bottom Tray #10F, Mat'l, 7/8" Tab length, 7/16" Hole		
857-MMMM 070	Clamp, Bottom Tray #10G, Mat'l, 1" Tab length, 7/16" Hole		
857-MMMM 080	Clamp, Bottom Tray #10H, Mat'l, 1-1/8" Tab length, 7/16" Hole		
857-MMMM 090	Clamp, Bottom Tray #10J, Mat'l, 1-1/4" Tab length, 7/16" Hole		
857-MMMM 100	Clamp, Bottom Tray #10K, Mat'l, 1-3/8" Tab length, 7/16" Hole		
857-MMMM 110	Clamp, Bottom Tray #10L, Mat'l, 1-1/2" Tab length, 7/16" Hole		
857-MMMM 120	Clamp, Bottom Tray #10M, Mat'l, 1-5/8" Tab length, 7/16" Hole		
858-MMMM 130	Clamp, Bottom Tray #10N, Mat'l, 1-3/4" Tab length, 7/16" Hole		
857-MMMM 140	Clamp, Bottom Tray #10O, Mat'l, 1-7/8" Tab length, 7/16" Hole		
857-MMMM 150	Clamp, Bottom Tray #10P, Mat'l, 2" Tab length, 7/16" Hole		



Bottom Tray Clamp #10 is also available with 9/16" Hole.
 *Our new Bottom Tray Clamps "50SWN" series replaces the old Bottom Tray Clamps #10A-10P Series.
 50SWN Clamps are shown in the Non-Standard Section.

Item No.	Item Description	BOTTOM TRAY CLAMPS #12A-12N	858
858-MMMM 011 MMMM	Clamp, Bottom Tray #12A, Mat'l, 3/8" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 021 MMMM	Clamp, Bottom Tray #12B, Mat'l, 7/16" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 031 MMMM	Clamp, Bottom Tray #12C, Mat'l, 1/2" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 041 MMMM	Clamp, Bottom Tray #12D, Mat'l, 5/8" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 051 MMMM	Clamp, Bottom Tray #12E, Mat'l, 3/4" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 061 MMMM	Clamp, Bottom Tray #12F, Mat'l, 7/8" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 071 MMMM	Clamp, Bottom Tray #12G, Mat'l, 1" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 081 MMMM	Clamp, Bottom Tray #12H, Mat'l, 1-1/8" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 091 MMMM	Clamp, Bottom Tray #12J, Mat'l, 1-1/4" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 101 MMMM	Clamp, Bottom Tray #12K, Mat'l, 1-3/8" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 111 MMMM	Clamp, Bottom Tray #12L, Mat'l, 1-1/2" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 121 MMMM	Clamp, Bottom Tray #12M, Mat'l, 1-5/8" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		
858-MMMM 131 MMMM	Clamp, Bottom Tray #12N, Mat'l, 1-3/4" Tab length, 3/8"x 16 UNC-2B Nut, Mat'l		



Bottom Tray Clamp #12 is also available with other size welded nuts.
 *Our new Bottom Tray Clamps "50SWN" series replaces the old Bottom Tray Clamps #12A-12N Series.
 50SWN Clamps are shown in the Non-Standard Section.

859-MMMM 011 MMMM

Clamp, Bottom Tray #13A, Mat'l, 3/8" Tab length, 3/8"-16 UNC-2A x 2" Bolt, Mat'l

Insert Material identification number from chart on p. 6.

Insert abbreviated Material name from p. 6.

Item No.	Item Description	BOTTOM TRAY CLAMPS #13A-13P	859
859-MMMM 011 MMMM	Clamp, Bottom Tray #13A, Mat'l, 3/8" Tab length, 3/8"-16 UNC-2A x 2" Bolt, Mat'l		
859-MMMM 021 MMMM	Clamp, Bottom Tray #13B, Mat'l, 7/16" Tab length, 3/8"-16 UNC-2A x 2" Bolt, Mat'l		
859-MMMM 031 MMMM	Clamp, Bottom Tray #13C, Mat'l, 1/2" Tab length, 3/8"-16 UNC-2A x 2" Bolt, Mat'l		
859-MMMM 041 MMMM	Clamp, Bottom Tray #13D, Mat'l, 5/8" Tab length, 3/8"-16 UNC-2A x 2-1/2" Bolt, Mat'l		
859-MMMM 051 MMMM	Clamp, Bottom Tray #13E, Mat'l, 3/4" Tab length, 3/8"-16 UNC-2A x 2-1/2" Bolt, Mat'l		
859-MMMM 061 MMMM	Clamp, Bottom Tray #13F, Mat'l, 7/8" Tab length, 3/8"-16 UNC-2A x 2-1/2" Bolt, Mat'l		
859-MMMM 071 MMMM	Clamp, Bottom Tray #13G, Mat'l, 1" Tab length, 3/8"-16 UNC-2A x 2-1/2" Bolt, Mat'l		
859-MMMM 081 MMMM	Clamp, Bottom Tray #13H, Mat'l, 1-1/8" Tab length, 3/8"-16 UNC-2A x 3" Bolt, Mat'l		
859-MMMM 091 MMMM	Clamp, Bottom Tray #13J, Mat'l, 1-1/4" Tab length, 3/8"-16 UNC-2A x 3" Bolt, Mat'l		
859-MMMM 101 MMMM	Clamp, Bottom Tray #13K, Mat'l, 1-3/8" Tab length, 3/8"-16 UNC-2A x 3" Bolt, Mat'l		
859-MMMM 111 MMMM	Clamp, Bottom Tray #13L, Mat'l, 1-1/2" Tab length, 3/8"-16 UNC-2A x 3" Bolt, Mat'l		
859-MMMM 121 MMMM	Clamp, Bottom Tray #13M, Mat'l, 1-5/8" Tab length, 3/8"-16 UNC-2A x 3-1/2" Bolt, Mat'l		
859-MMMM 131 MMMM	Clamp, Bottom Tray #13N, Mat'l, 1-3/4" Tab length, 3/8"-16 UNC-2A x 3-1/2" Bolt, Mat'l		
859-MMMM 141 MMMM	Clamp, Bottom Tray #13O, Mat'l, 1-7/8" Tab length, 3/8"-16 UNC-2A x 3-1/2" Bolt, Mat'l		
859-MMMM 151 MMMM	Clamp, Bottom Tray #13P, Mat'l, 2" Tab length, 3/8"-16 UNC-2A x 3-1/2" Bolt, Mat'l		

Bottom Tray Clamp #13 is also available with other size bolts.
 *Our new Bottom Tray Clamps "50SWB" series replaces the old Bottom Tray Clamps #13A-13P Series.
 50SWB Clamps are shown in the Non-Standard Section



Item No.	Item Description	BOTTOM TRAY CLAMP #7	849
849-MMMM 1 MMMM	Clamp, Bottom Tray #7, Mat'l, 1/4"t, 3/8"-16 UNC-2A Stud, Mat'l		



Item No.	Item Description	UNIVERSAL LEVER CLAMPS # 1	315 331
315-MMMM 0	Clamp, Universal Lever #1, Mat'l, 14 Ga, 13/32" Hole		
315-MMMM 1	Clamp, Universal Lever #1, Mat'l, 12 Ga, 13/32" Hole		
315-MMMM 2	Clamp, Universal Lever #1, Mat'l, 11 Ga, 13/32" Hole		



ITEM #331
 Single Lever Clamp #1 is available with welded bolt. Specify bolt diameter and length when ordering.

Our new Bottom Tray Clamp "Y" series replaces the old Single Lever Clamp #1.
 *902 BTC "Y" replaces the Single Lever Clamp #1 with open Hole (See Standard Section).
 *932 BTC "YB" replaces the Single Lever Clamp #1 with bolt (See Standard Section).

Item No.	Item Description	UNIVERSAL LEVER CLAMPS #3	317 333
317-MMMM	Clamp, Universal Lever #3, Mat'l, 14 Ga, 13/32" Hole		



ITEM #333
 Single Lever Clamp #3 is available with welded bolt. Specify bolt diameter and length when ordering.

Our new Bottom Tray Clamp "Y" series replaces the old Single Lever Clamp #3.
 *902 BTC "Y" replaces the Single Lever Clamp #3 with open Hole (See Standard Section).
 *932 BTC "YB" replaces the Single Lever Clamp #3 with bolt (See Standard Section).

Item No.	Item Description	SINGLE LEVER CLAMPS	322
322-MMMM 011	Clamp, Single Lever, Mat'l, 10 Ga, 5/16" Tab length, 3/8"-16 UNC-2B Tapped Hole		
322-MMMM 012	Clamp, Single Lever, Mat'l, 10 Ga, 5/16" Tab length, 7/16" Hole		
322-MMMM 031	Clamp, Single Lever, Mat'l, 12 Ga, 9/16" Tab length, 3/8"-16 UNC-2B Tapped Hole		
322-MMMM 132	Clamp, Single Lever, Mat'l, 12 Ga, 9/16" Tab length, 7/16" Hole		
322-MMMM 251	Clamp, Single Lever, Mat'l, 11 Ga, 13/16" Tab length, 3/8"-16 UNC-2B Tapped Hole		
322-MMMM 252	Clamp, Single Lever, Mat'l, 11 Ga, 13/16" Tab length, 7/16" Hole		



Single Lever Clamp is available with additional tab lengths and hole sizes upon request.

Our new Bottom Tray Clamp "Y" series replaces the old Single Lever Clamp.
 *902 BTC "Y" replaces the Single Lever Clamp with open Hole (See Standard Section).
 *946 BTC "YN" replaces the Single Lever Clamp with tapped Hole (See Standard Section).

871-MMMM 210 Clamp, Top Tray #1, Mat'l, 12 Ga, 2-3/8" LG, w/ 7/16" Hole

↑ Insert Material identification number from chart on p. 6.

↑ Insert abbreviated Material name from p. 6.

Item No.	Item Description	TOP TRAY CLAMPS #1 & 2	871
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- 871-MMMM 210 Clamp, Top Tray #1, Mat'l, 12 Ga, 2-3/8" LG, w/ 7/16" Hole
- 871-MMMM 220 Clamp, Top Tray #2, Mat'l, 12 Ga, 2-7/8" LG, w/ 7/16" Hole
- 871-MMMM 310 * Clamp, Top Tray #1, Mat'l, 10 Ga, 2-3/8" LG, w/ 7/16" Hole
- 871-MMMM 320 * Clamp, Top Tray #2, Mat'l, 10 Ga, 2-7/8" LG, w/ 7/16" Hole

*Available in C.S.



Item No.	Item Description	TRAY FLOOR CLAMPS #L-2 & L-4	870
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- 870-MMMM 1 Clamp, Tray Floor #L-2, Mat'l, 14 Ga
- 870-MMMM 2 Clamp, Tray Floor #L-4, Mat'l, 12 Ga



Item No.	Item Description	BOTTOM CLAMPS #4	846
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- 846-MMMM 21 Clamp, Bottom #4, Mat'l, 12 Ga, 5/16" Lip
- 846-MMMM 22 Clamp, Bottom #4-1, Mat'l, 12 Ga, 7/16" Lip
- 846-MMMM 23 Clamp, Bottom #4-2, Mat'l, 12 Ga, 9/16" Lip
- 846-MMMM 31 * Clamp, Bottom #4, Mat'l, 10 Ga, 5/16" Lip
- 846-MMMM 32 * Clamp, Bottom #4-1, Mat'l, 10 Ga, 7/16" Lip
- 846-MMMM 33 * Clamp, Bottom #4-2, Mat'l, 10 Ga, 9/16" Lip

*Available in C.S.



Item No.	Item Description	BOTTOM CLAMPS #6, 7 & 8	836
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- 836-MMMM 21 Clamp, Bottom #6, Mat'l, 12 Ga, 1/8" Lip
- 836-MMMM 22 Clamp, Bottom #7, Mat'l, 12 Ga, 3/16" Lip
- 836-MMMM 23 Clamp, Bottom #8, Mat'l, 12 Ga, 5/16" Lip
- 836-MMMM 31 * Clamp, Bottom #6, Mat'l, 10 Ga, 1/8" Lip
- 836-MMMM 32 * Clamp, Bottom #7, Mat'l, 10 Ga, 3/16" Lip
- 836-MMMM 33 * Clamp, Bottom #8, Mat'l, 10 Ga, 5/16" Lip

*Available in C.S.



Item No.	Item Description	BOTTOM CLAMPS #9	842
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- 842-MMMM 202 Clamp, Bottom #9, Mat'l, 12 Ga, 1/2" Tab length
- 842-MMMM 302 * Clamp, Bottom #9, Mat'l, 10 Ga, 1/2" Tab length

*Available in C.S.



Item No.	Item Description	BOTTOM CLAMPS #12	872
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- 872-MMMM 51 Clamp, Bottom #12, Mat'l, 1/4"t, 30 deg. Angle (SBC-1)
- 872-MMMM 52 Clamp, Bottom #12, Mat'l, 1/4"t, 45 deg. Angle (SBC-2)

Available in other thicknesses.



Item No.	Item Description	DOUBLE BAR CLAMPS	341
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- 341-MMMM 001 Clamp, Double Bar, Mat'l, 10 Ga, 3-1/2" Hole spacing, 3/8"-16 UNC-2B Tapped Hole
- 341-MMMM 101 Clamp, Double Bar, Mat'l, 12 Ga, 3-1/2" Hole spacing, 3/8"-16 UNC-2B Tapped Hole
- 341-MMMM 011 Clamp, Double Bar, Mat'l, 10 Ga, 4" Hole spacing, 3/8"-16 UNC-2B Tapped Hole
- 341-MMMM 111 Clamp, Double Bar, Mat'l, 12 Ga, 4" Hole spacing, 3/8"-16 UNC-2B Tapped Hole
- 341-MMMM 021 Clamp, Double Bar, Mat'l, 10 Ga, 4-1/2" Hole spacing, 3/8"-16 UNC-2B Tapped Hole
- 341-MMMM 121 Clamp, Double Bar, Mat'l, 12 Ga, 4-1/2" Hole spacing, 3/8"-16 UNC-2B Tapped Hole

Double Bar Clamps are available with additional hole spacings (please specify) and with open holes.



343-MMMM 0011 Clamp, Double Lever, Mat'l, 10 Ga, 3-1/2" Hole spacing, 5/16" Tab length, 3/8"-16 UNC-2B Tapped Hole

↑ Insert Material identification number from chart on p. 6.
 ↑ Insert abbreviated Material name from p. 6.

Item No.	Item Description	DOUBLE LEVER CLAMPS	343
343-MMMM 0011	Clamp, Double Lever, Mat'l, 10 Ga, 3-1/2" Hole spacing, 5/16" Tab length, 3/8"-16 UNC-2B Tapped Hole		
343-MMMM 1011	Clamp, Double Lever, Mat'l, 12 Ga, 3-1/2" Hole spacing, 5/16" Tab length, 3/8"-16 UNC-2B Tapped Hole		
343-MMMM 0121	Clamp, Double Lever, Mat'l, 10 Ga, 4" Hole spacing, 7/16" Tab length, 3/8"-16 UNC-2B Tapped Hole		
343-MMMM 1121	Clamp, Double Lever, Mat'l, 12 Ga, 4" Hole spacing, 7/16" Tab length, 3/8"-16 UNC-2B Tapped Hole		

Double Lever Clamps are available with other hole spacings, tab lengths, and with 7/16" holes. Please specify when ordering.



Item No.	Item Description	MANWAY LOCK CLAMP #65	861
861-MMMM 2	Clamp, Manway Lock #65, Mat'l, 1/4"t, for 1/2" Stud		



Item No.	Item Description	MANWAY LOCK CLAMPS #30	862
862-MMMM 4	Clamp, Manway Lock #30, Mat'l, 3/16"t, for 3/8" Stud		
862-MMMM 5	* Clamp, Manway Lock #30, Mat'l, 1/4"t, for 3/8" Stud		

*Available in C.S.



Item No.	Item Description	MANWAY LOCK CLAMPS #40A-P	864
864-MMMM 201	Clamp, Manway Lock #40A, Mat'l, 12 Ga, 3/16" Lip		
864-MMMM 204	Clamp, Manway Lock #40D, Mat'l, 12 Ga, 3/8" Lip		
864-MMMM 209	Clamp, Manway Lock #40J, Mat'l, 12 Ga, 1" Lip		
864-MMMM 215	Clamp, Manway Lock #40P, Mat'l, 12 Ga, 1-3/4" Lip		
864-MMMM 301	* Clamp, Manway Lock #40A, Mat'l, 10 Ga, 3/16" Lip		
864-MMMM 304	* Clamp, Manway Lock #40D, Mat'l, 10 Ga, 3/8" Lip		
864-MMMM 309	* Clamp, Manway Lock #40J, Mat'l, 10 Ga, 1" Lip		
864-MMMM 315	* Clamp, Manway Lock #40P, Mat'l, 10 Ga, 1-3/4" Lip		

*Available in C.S.

Other sizes available in lip lengths with 1/16" increments.

903 BTC "YD" Replaces Manway Lock Clamp #40.

BTC "YD" is shown in the Standard Section.



Item No.	Item Description	MANWAY LOCK CLAMPS #50A-50N	828
828-MMMM 012	Clamp, Manway Lock #50A, Mat'l, 3/8" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 022	Clamp, Manway Lock #50B, Mat'l, 7/16" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 032	Clamp, Manway Lock #50C, Mat'l, 1/2" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 042	Clamp, Manway Lock #50D, Mat'l, 5/8" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 052	Clamp, Manway Lock #50E, Mat'l, 3/4" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 062	Clamp, Manway Lock #50F, Mat'l, 7/8" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 072	Clamp, Manway Lock #50G, Mat'l, 1" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 082	Clamp, Manway Lock #50H, Mat'l, 1-1/8" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 092	Clamp, Manway Lock #50J, Mat'l, 1-1/4" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 102	Clamp, Manway Lock #50K, Mat'l, 1-3/8" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 112	Clamp, Manway Lock #50L, Mat'l, 1-1/2" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 122	Clamp, Manway Lock #50M, Mat'l, 1-5/8" Tab length, Hole for 3/8" "D" shape Manway Stud		
828-MMMM 132	Clamp, Manway Lock #50N, Mat'l, 1-3/4" Tab length, Hole for 3/8" "D" shape Manway Stud		

Available with other size holes.



829-MMMM 2

Clamp, Manway Lock #55, Mat'l, for 3/8" Stud

Insert Material identification number from chart on p. 6. Insert abbreviated Material name from p. 6.

Item No.	Item Description	MANWAY LOCK CLAMP #55	829
829-MMMM 2	Clamp, Manway Lock #55, Mat'l, for 3/8" Stud		



Item No.	Item Description	MANWAY LOCK CLAMPS #60	868
868-MMMM 4	Clamp, Manway Lock #60, Mat'l, 3/16"t, for 1/2" Stud		
868-MMMM 5	* Clamp, Manway Lock #60, Mat'l, 1/4"t, for 1/2" Stud		

*Available in C.S.



Item No.	Item Description	MANWAY LOCK CLAMPS #2-K THRU 2-V & 3-K THRU 3-V	869
869-MMMM 012	Clamp, Manway Lock #2-K, Mat'l, 1/4"t, w/ 1/16" Dimple		
869-MMMM 013	Clamp, Manway Lock #3-K, Mat'l, 3/16"t, w/ 1/16" Dimple		
869-MMMM 042	Clamp, Manway Lock #2-N, Mat'l, 1/4"t, w/ 1/4" Tab		
869-MMMM 043	Clamp, Manway Lock #3-N, Mat'l, 3/16"t, w/ 1/4" Tab		
869-MMMM 062	Clamp, Manway Lock #2-P, Mat'l, 1/4"t, w/ 3/8" Tab		
869-MMMM 063	Clamp, Manway Lock #3-P, Mat'l, 3/16"t, w/ 3/8" Tab		
869-MMMM 082	Clamp, Manway Lock #2-R, Mat'l, 1/4"t, w/ 1/2" Tab		
869-MMMM 083	Clamp, Manway Lock #3-R, Mat'l, 3/16"t, w/ 1/2" Tab		
869-MMMM 122	Clamp, Manway Lock #2-V, Mat'l, 1/4"t, w/ 3/4" Tab		
869-MMMM 123	Clamp, Manway Lock #3-V, Mat'l, 3/16"t, w/ 3/4" Tab		

Other material types, Hole dimensions and tab length (in 1/16" increments) available upon request.
C.S. available in 1/4" thickness.



Item No.	Item Description	MANWAY LOCK CLAMPS #4	873
873-MMMM 4	Clamp, Manway Lock #4, Mat'l, 3/16"t		
873-MMMM 5	Clamp, Manway Lock #4, Mat'l, 1/4"t		




Item No.	Item Description	MANWAY WASHER	301
301-MMMM 306	Washer, Manway, Mat'l, 12 Ga, 2" od w/ hole for 3/8" "D" shape Manway Stud		

Available with other outside diameters, hole sizes and thicknesses.



840-MMMM 011 MMMM Clamp, Support Grid #2, Mat'l, 3/16" Tab length, 4" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l

↑ Insert Material identification number from chart on p. 6.
 ↑ Insert abbreviated Material name from p. 6.


Item No.	Item Description	SUPPORT GRID CLAMPS #2	840
840-MMMM 011 MMMM	Clamp, Support Grid #2, Mat'l, 3/16" Tab length, 4" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 021 MMMM	Clamp, Support Grid #2, Mat'l, 1/4" Tab length, 4" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 031 MMMM	Clamp, Support Grid #2, Mat'l, 5/16" Tab length, 4" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 041 MMMM	Clamp, Support Grid #2, Mat'l, 3/8" Tab length, 4" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 051 MMMM	Clamp, Support Grid #2, Mat'l, 1/2" Tab length, 4" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 061 MMMM	Clamp, Support Grid #2, Mat'l, 5/8" Tab length, 4-1/2" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 071 MMMM	Clamp, Support Grid #2, Mat'l, 3/4" Tab length, 4-1/2" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 081 MMMM	Clamp, Support Grid #2, Mat'l, 7/8" Tab length, 4-1/2" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 091 MMMM	Clamp, Support Grid #2, Mat'l, 1" Tab length, 4-1/2" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 101 MMMM	Clamp, Support Grid #2, Mat'l, 1-1/8" Tab length, 5" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 111 MMMM	Clamp, Support Grid #2, Mat'l, 1-1/4" Tab length, 5" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 121 MMMM	Clamp, Support Grid #2, Mat'l, 1-3/8" Tab length, 5" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		
840-MMMM 131 MMMM	Clamp, Support Grid #2, Mat'l, 1-1/2" Tab length, 5" LG Stud, 12 Ga, 3/8"-16 UNC-2A, Stud Mat'l		

Available in other thicknesses and stud diameters.

Item No.	Item Description	GRID HOLDDOWN CLIP #3	878
878-MMMM	Clip, Grid Holddown #3, Mat'l		

Item No.	Item Description	HOOK BOLT #1	888
888-MMMM 14016	Hook Bolt #1, Mat'l, 3/8"-16UNC-2A x 10" length (4" thread length)		

Available in other bolt / thread lengths upon request.


Item No.	Item Description	HOLDDOWN PLATES #1 & 2	887
887-MMMM 11	Plate, Holddown #1, Mat'l, 14 Ga, 4" wide plate		
887-MMMM 21	Plate, Holddown #1, Mat'l, 12 Ga, 4" wide plate		
887-MMMM 31	Plate, Holddown #1, Mat'l, 10 Ga, 4" wide plate		
887-MMMM 41	Plate, Holddown #1, Mat'l, 3/16"t, 4" wide plate		
887-MMMM 51	Plate, Holddown #1, Mat'l, 1/4"t, 4" wide plate		
887-MMMM 12	Plate, Holddown #2, Mat'l, 14 Ga, 2" wide plate		
887-MMMM 22	Plate, Holddown #2, Mat'l, 12 Ga, 2" wide plate		
887-MMMM 32	Plate, Holddown #2, Mat'l, 10 Ga, 2" wide plate		
887-MMMM 42	Plate, Holddown #2, Mat'l, 3/16"t, 2" wide plate		
887-MMMM 52	Plate, Holddown #2, Mat'l, 1/4"t, 2" wide plate		

Item No.	Item Description	ANGLE HANGERS #10, 10S, 20 & 20S	815 816
815-MMMM 21	Hanger, Angle #10, Mat'l, 12 Ga, 7/16" Hole, 5" LG		
815-MMMM 22	Hanger, Angle #20, Mat'l, 12 Ga, 7/16" Hole, 6" LG		
815-MMMM 31	* Hanger, Angle #10, Mat'l, 10 Ga, 7/16" Hole, 5" LG		
815-MMMM 32	* Hanger, Angle #20, Mat'l, 10 Ga, 7/16" Hole, 6" LG		
816-MMMM 21	Hanger, Angle #10S, Mat'l, 12 Ga, 7/16" Hole, 4-1/4" LG		
816-MMMM 22	Hanger, Angle #20S, Mat'l, 12 Ga, 7/16" Hole, 5-1/4" LG		
816-MMMM 31	* Hanger, Angle #10S, Mat'l, 10 Ga, 7/16" Hole, 4-1/4" LG		
816-MMMM 32	* Hanger, Angle #20S, Mat'l, 10 Ga, 7/16" Hole, 5-1/4" LG		

*Available in C.S.


Note: the #10S and #20S has a 3/4" modification to accommodate design requirements. (See photo for details).


833-MMMM 206 MMMM Hanger, Top Truss #6, Mat'l, 12 Ga, 3/8" Tab with Stud, Mat'l
 ↑ Insert Material identification number from chart on p. 6. ↑ Insert abbreviated Material name from p. 6.

Item No.	Item Description	TOP TRUSS HANGERS #6 THRU 10	833
833-MMMM 206 MMMM	Hanger, Top Truss #6, Mat'l, 12 Ga, 3/8" Tab with Stud, Mat'l		
833-MMMM 207 MMMM	Hanger, Top Truss #7, Mat'l, 12 Ga, 1/2" Tab with Stud, Mat'l		
833-MMMM 208 MMMM	Hanger, Top Truss #8, Mat'l, 12 Ga, 5/8" Tab with Stud, Mat'l		
833-MMMM 209 MMMM	Hanger, Top Truss #9, Mat'l, 12 Ga, 3/4" Tab with Stud, Mat'l		
833-MMMM 210 MMMM	Hanger, Top Truss #10, Mat'l, 12 Ga, 7/8" Tab with Stud, Mat'l		
833-MMMM 306 MMMM	Hanger, Top Truss #6, Mat'l, 10 Ga, 3/8" Tab with Stud, Mat'l		
833-MMMM 307 MMMM	Hanger, Top Truss #7, Mat'l, 10 Ga, 1/2" Tab with Stud, Mat'l		
833-MMMM 308 MMMM	Hanger, Top Truss #8, Mat'l, 10 Ga, 5/8" Tab with Stud, Mat'l		
833-MMMM 309 MMMM	Hanger, Top Truss #9, Mat'l, 10 Ga, 3/4" Tab with Stud, Mat'l		
833-MMMM 310 MMMM	Hanger, Top Truss #10, Mat'l, 10 Ga, 7/8" Tab with Stud, Mat'l		

Note: Top Truss Hanger # 5 with an item 833-MMMM 205 or 833-MMMM 305 are without Studs.

Item No.	Item Description	TOP TRUSS HANGER #12	834
834-MMMM	Hanger, Top Truss #12, Mat'l		

Item No.	Item Description	"C" CLAMPS #1 THRU 7	875
875-MMMM 1	Clamp, "C", #1, Mat'l, 16 Ga, 11/16" Opening		
875-MMMM 2	Clamp, "C", #2, Mat'l, 16 Ga, 17/32" Opening		
875-MMMM 3	Clamp, "C", #3, Mat'l, 16 Ga, 1-5/16" Opening		
875-MMMM 4	Clamp, "C", #4, Mat'l, 16 Ga, 1-3/8" Opening		
875-MMMM 5	Clamp, "C", #5, Mat'l, 16 Ga, 27/32" Opening		
875-MMMM 6	Clamp, "C", #6, Mat'l, 16 Ga, 1-1/16" Opening		
875-MMMM 7	Clamp, "C", #7, Mat'l, 16 Ga, 1-7/32" Opening		

Item No.	Item Description	TYPE "A" WASHERS	807
807-MMMM 21	Washer, Type A, Mat'l, 12 Ga, 1" Slot		
807-MMMM 22	Washer, Type A-1, Mat'l, 12 Ga, 1-1/4" Slot		
807-MMMM 31	Washer, Type A, Mat'l, 10 Ga, 1" Slot		
807-MMMM 32	Washer, Type A-1, Mat'l 10 Ga, 1-1/4" Slot		

Item No.	Item Description	TYPE "B" WASHERS	808
808-MMMM 2	Washer, Type B, Mat'l, 12 Ga		
808-MMMM 3	Washer, Type B, Mat'l, 10 Ga		

Item No.	Item Description	WEDGE #6	823
823-MMMM	Wedge #6, Mat'l		

Item No.	Item Description	WEDGE #10	824
824-MMMM	Wedge #10, Mat'l		

600-MMMM 1620 Ballast Unit V-1 & GV-1, Mat'l, 3/8" (9.53mm) leg length, 20 Ga (1mm)
 ↑ Insert Material identification number from chart on p. 6. ↑ Insert abbreviated Material name from p. 6.

Item No.	Item Description	BALLAST® UNITS V-1, GV-1, V-1H, GV-1H, V-4 & V-4H	600
600-MMMM 1620	Ballast Unit V-1 & GV-1, Mat'l, 3/8" (9.53mm) leg length, 20 Ga (1mm)		
600-MMMM 1618	Ballast Unit V-1 & GV-1, Mat'l, 3/8" (9.53mm) leg length, 18 Ga (1.2mm)		
600-MMMM 1616	Ballast Unit V-1 & GV-1, Mat'l, 3/8" (9.53mm) leg length, 16 Ga (1.5mm)		
600-MMMM 1614	Ballast Unit V-1 & GV-1, Mat'l, 3/8" (9.53mm) leg length, 14 Ga (2mm)		
600-MMMM 1612	Ballast Unit V-1H & GV-1H, Mat'l, 3/8" (9.53mm) leg length, 12 Ga (2.5mm)		
600-MMMM 1720	Ballast Unit V-1 & GV-1, Mat'l, 7/16" (11.11mm) leg length, 20 Ga (1mm)		
600-MMMM 1718	Ballast Unit V-1 & GV-1, Mat'l, 7/16" (11.11mm) leg length, 18 Ga (1.2mm)		
600-MMMM 1716	Ballast Unit V-1 & GV-1, Mat'l, 7/16" (11.11mm) leg length, 16 Ga (1.5mm)		
600-MMMM 1714	Ballast Unit V-1 & GV-1, Mat'l, 7/16" (11.11mm) leg length, 14 Ga (2mm)		
600-MMMM 1712	Ballast Unit V-1H & GV-1H, Mat'l, 7/16" (11.11mm) leg length, 12 Ga (2.5mm)		
600-MMMM 1820	Ballast Unit V-1 & GV-1, Mat'l, 1/2" (12.7mm) leg length, 20 Ga (1mm)		
600-MMMM 1818	Ballast Unit V-1 & GV-1, Mat'l, 1/2" (12.7mm) leg length, 18 Ga (1.2mm)		
600-MMMM 1816	Ballast Unit V-1 & GV-1, Mat'l, 1/2" (12.7mm) leg length, 16 Ga (1.5mm)		
600-MMMM 1814	Ballast Unit V-1 & GV-1, Mat'l, 1/2" (12.7mm) leg length, 14 Ga (2mm)		
600-MMMM 1812	Ballast Unit V-1H & GV-1H, Mat'l, 1/2" (12.7mm) leg length, 12 Ga (2.5mm)		
600-MMMM 1920	Ballast Unit V- 4 or V-1, Mat'l, 9/16" (14.29mm) leg length, 20 Ga (1mm)		
600-MMMM 1918	Ballast Unit V- 4 or V-1, Mat'l, 9/16" (14.29mm) leg length, 18 Ga (1.2mm)		
600-MMMM 1916	Ballast Unit V- 4 or V-1, Mat'l, 9/16" (14.29mm) leg length, 16 Ga (1.5mm)		
600-MMMM 1914	Ballast Unit V- 4 or V-1, Mat'l, 9/16" (14.29mm) leg length, 14 Ga (2mm)		
600-MMMM 1912	Ballast Unit V- 4H or V-1H, Mat'l, 9/16" (14.29mm) leg length, 12 Ga (2.5mm)*		
600-MMMM 1020	***Ballast Unit V-1 & GV-1, Mat'l, 5/8" (15.88mm) leg length, 20 Ga (1mm)		
600-MMMM 1018	***Ballast Unit V-1 & GV-1, Mat'l, 5/8" (15.88mm) leg length, 18 Ga (1.2mm)		
600-MMMM 1016	***Ballast Unit V-1 & GV-1, Mat'l, 5/8" (15.88mm) leg length, 16 Ga (1.5mm)		
600-MMMM 1014	***Ballast Unit V-1 & GV-1, Mat'l, 5/8" (15.88mm) leg length, 14 Ga (2mm)		
600-MMMM 1012	***Ballast Unit V-1H & GV-1H, Mat'l, 5/8" (15.88mm) leg length, 12 Ga (2.5mm)*		



***Europe Only.

Note: Our Part #307 A-Valves have replaced the 600 series Ballast Units. See Part 307 in the Standard section.

Item No.	Item Description	BALLAST® UNITS V-1X, GV-1X, V-1XH, GV-1XH, V-4X & V-4XH	601
601-MMMM 2620	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 3/8" (9.53mm) leg length, 20 Ga (1mm)		
601-MMMM 2618	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 3/8" (9.53mm) leg length, 18 Ga (1.2mm)		
601-MMMM 2616	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 3/8" (9.53mm) leg length, 16 Ga (1.5mm)		
601-MMMM 2614	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 3/8" (9.53mm) leg length, 14 Ga (2mm)		
601-MMMM 2612	Ballast Unit V-1XH & GV-1XH (Flush Seat), Mat'l, 3/8" (9.53mm) leg length, 12 Ga (2.5mm)*		
601-MMMM 2720	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 7/16" (11.11mm) leg length, 20 Ga (1mm)		
601-MMMM 2718	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 7/16" (11.11mm) leg length, 18 Ga (1.2mm)		
601-MMMM 2716	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 7/16" (11.11mm) leg length, 16 Ga (1.5mm)		
601-MMMM 2714	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 7/16" (11.11mm) leg length, 14 Ga (2mm)		
601-MMMM 2712	Ballast Unit V-1XH & GV-1XH (Flush Seat), Mat'l, 7/16" (11.11mm) leg length, 12 Ga (2.5mm)*		
601-MMMM 2820	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 1/2" (12.7mm) leg length, 20 Ga (1mm)		
601-MMMM 2818	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 1/2" (12.7mm) leg length, 18 Ga (1.2mm)		
601-MMMM 2816	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 1/2" (12.7mm) leg length, 16 Ga (1.5mm)		
601-MMMM 2814	Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 1/2" (12.7mm) leg length, 14 Ga (2mm)		
601-MMMM 2812	Ballast Unit V-1XH & GV-1XH (Flush Seat), Mat'l, 1/2" (12.7mm) leg length, 12 Ga (2.5mm)*		
601-MMMM 2920	Ballast Unit V-4X or V-1X (Flush Seat), Mat'l, 9/16" (14.29mm) leg length, 20 Ga (1mm)		
601-MMMM 2918	Ballast Unit V-4X or V-1X (Flush Seat), Mat'l, 9/16" (14.29mm) leg length, 18 Ga (1.2mm)		
601-MMMM 2916	Ballast Unit V-4X or V-1X (Flush Seat), Mat'l, 9/16" (14.29mm) leg length, 16 Ga (1.5mm)		
601-MMMM 2914	Ballast Unit V-4X or V-1X (Flush Seat), Mat'l, 9/16" (14.29mm) leg length, 14 Ga (2mm)		
601-MMMM 2912	Ballast Unit V-4XH or V-1XH (Flush Seat), Mat'l, 9/16" (14.29mm) leg length, 12 Ga (2.5mm)*		
601-MMMM 2020	***Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 5/8" (15.88mm) leg length, 20 Ga (1mm)		
601-MMMM 2018	***Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 5/8" (15.88mm) leg length, 18 Ga (1.2mm)		
601-MMMM 2016	***Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 5/8" (15.88mm) leg length, 16 Ga (1.5mm)		
601-MMMM 2014	***Ballast Unit V-1X & GV-1X (Flush Seat), Mat'l, 5/8" (15.88mm) leg length, 14 Ga (2mm)		
601-MMMM 2012	***Ballast Unit V-1XH & GV-1XH (FlushSeat), Mat'l, 5/8" (15.88mm) leg length, 12 Ga (2.5mm)*		



***Europe Only.

Note: Our Part #308 A-Valves have replaced the 601 series Ballast Units. See Part 308 in the Standard section.

610-MMMM 2118

Ballast Plate A-1, A-4, Mat'l, 18 Ga (1.2mm)

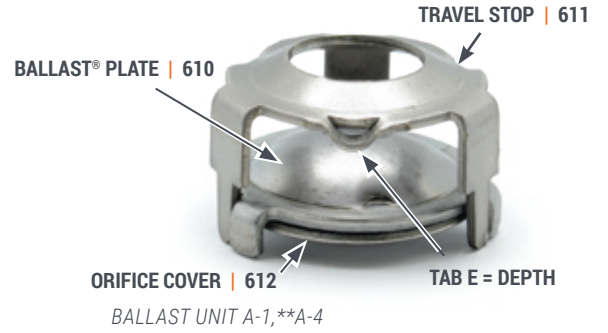
↑ Insert Material identification number from chart on p. 6. ↑ Insert abbreviated Material name from p. 6.

TRAVEL STOP

611

		A-1 E = .074 1.9mm	A-2 E = .160 4mm	A-2X E = .160 4mm
	GAGE			
16	1.5mm	1116	1216	1216
14	2mm	1114	1214	1214
12	2.5mm	1112	1212	1212

E = "Tab" Depth (limits Ballast Plate rise)



BALLAST® PLATE

610

		A-1 A = 7/32" 5.5mm	A-2 A = 3/32" 2.4mm	A-2X A = 0
	GAGE			
18	1.2mm	2118	2218	2218
16	1.5mm	2116	2216	2216
14	2mm	2114	2214	2214
12	2.5mm	2112	2212	2212

A = Ballast Plate Leg Length



ORIFICE COVER (A-1 Units Only)

612

		FLAT	CORRUGATED	DIMPLED
	GAGE			
16	1.5mm	1116	1216	1216
14	2mm	1114	1214	1214
12	2.5mm	1112	1212	1212

** A-4, A-5, & A-5X are used with tray decks with extruded orifice.



Item No. Item Description

BALLAST® PLATE

610

610-MMMM 2118 * Ballast Plate A-1, A-4, Mat'l, 18 Ga (1.2mm)

* Specify from Ballast Plate (610) Chart.



Item No. Item Description

TRAVEL STOP

611

611-MMMM 1116 * Travel Stop A-1, A-4, Mat'l, 16 Ga (1.5mm)

* Specify from Travel Stop (611) Chart.



Item No. Item Description

ORIFICE COVER

612

612-MMMM 3118 * Orifice Cover A-1, Mat'l, 18 Ga (1.2mm)

* Specify from Orifice Cover (612) Chart.



893-MMMM 21 Nut, Caged, Mat'l, for 14 Ga Tray Deck Thickness, 3/8"-16 UNC-2B

Insert Material identification number from chart on p. 6. Insert abbreviated Material name from p. 6.

Item No.	Item Description	CAGED NUTS	893
893-MMMM 21	Nut, Caged, Mat'l, for 14 Ga Tray Deck Thickness, 3/8"-16 UNC-2B		
893-MMMM 31	Nut, Caged, Mat'l, for 12 Ga or 10 Ga Tray Deck Thickness, 3/8"-16 UNC-2B		
893-MMMM 41	Nut, Caged, Mat'l, for 7 Ga or 3/16" Tray Deck Thickness, 3/8"-16 UNC-2B		



Item No.	Item Description	MANWAY LOCK CLAMPS 2-WAY	979
979-MMMM 201	Clamp, Manway Lock 2-Way, Mat'l, 12 Ga, 3/16" Lip		
979-MMMM 204	Clamp, Manway Lock 2-Way, Mat'l, 12 Ga, 3/8" Lip		
979-MMMM 209	Clamp, Manway Lock 2-Way, Mat'l, 12 Ga, 1" Lip		
979-MMMM 215	Clamp, Manway Lock 2-Way, Mat'l, 12 Ga, 1-3/4" Lip		
979-MMMM 301	* Clamp, Manway Lock 2-Way, Mat'l, 10 Ga, 3/16" Lip		
979-MMMM 304	* Clamp, Manway Lock 2-Way, Mat'l, 10 Ga, 3/8" Lip		
979-MMMM 309	* Clamp, Manway Lock 2-Way, Mat'l, 10 Ga, 1" Lip		
979-MMMM 315	* Clamp, Manway Lock 2-Way, Mat'l, 10 Ga, 1-3/4" Lip		



*Available in C.S.

Other sizes available in lip lengths with 1/16" increments.

Manway Lock Clamps 2-Way have a square hole for use with a square Manway Lock Stud #950.

891-MMMM 03 Nut, Hex. Mat'l, M10 x 1.5-6H
 ↑ Insert Material identification number from chart on p. 6. ↑ Insert abbreviated Material name from p. 6.

Item No. Item Description HEX NUTS 891

891-MMMM 03 Nut, Hex. Mat'l, M10 x 1.5-6H
 891-MMMM 04 Nut, Hex. Mat'l, M12 x 1.75-6H

Available in other diameters upon request.



Item No. Item Description CAGED NUTS 893

893-MMMM 22 Nut, Caged, Mat'l, for 2mm Tray Deck Thickness, M10 x 1.5-6H
 893-MMMM 32 Nut, Caged, Mat'l, for 2.5 or 3.5mm Tray Deck Thickness, M10 x 1.5-6H
 893-MMMM 42 Nut, Caged, Mat'l, for 4.5 or 5.0mm Tray Deck Thickness, M10 x 1.5-6H



Item No. Item Description HEX HEAD BOLTS 896

896-MMMM 1305 Bolt, Hex. Head, Mat'l, M10 x 1.5-6g 25mm LG
 896-MMMM 1307 Bolt, Hex. Head, Mat'l, M10 x 1.5-6g 35mm LG
 896-MMMM 1310 Bolt, Hex. Head, Mat'l, M10 x 1.5-6g 50mm LG
 896-MMMM 1407 Bolt, Hex. Head, Mat'l, M12 x 1.75-6g 35mm LG
 896-MMMM 1410 Bolt, Hex. Head, Mat'l, M12 x 1.75-6g 50mm LG
 896-MMMM 1413 Bolt, Hex. Head, Mat'l, M12 x 1.75-6g 65mm LG

Available in other diameters and lengths upon request.



Item No. Item Description CARRIAGE BOLT 881

881-MMMM 0810 Bolt, Carriage, Mat'l, M10 x 1.5-6g

The last two digits of the part number represents the length of the Bolt in 5mm increments (10 x 5mm = 50mm).
Available in other diameters and lengths upon request.



Item No. Item Description MANWAY LOCK CLAMPS #2 & 3 860

860-MMMM 4 Clamp, Manway Lock #3, Mat'l, 5mm t for M10 Stud
 860-MMMM 5 * Clamp, Manway Lock #2, Mat'l, 6mm t for M10 Stud

**Available in C.S.*



Item No. Item Description MANWAY LOCK CLAMPS #20 & 65 861

861-MMMM 1 Clamp, Manway Lock #20, Mat'l, 5mm t for M10 Stud
 861-MMMM 2 Clamp, Manway Lock #65, Mat'l, 5mm t for M12 Stud
 861-MMMM 3 * Clamp, Manway Lock #20, Mat'l, 6mm t for M10 Stud
 861-MMMM 5 * Clamp, Manway Lock #65, Mat'l, 6mm t for M12 Stud

**Available in C.S.*



Item No. Item Description MANWAY CLAMP 938


938-MMMM 02 MMMM Clamp, Manway, Mat'l, M10 x 1.5-6H Nut, Mat'l



386-MMMM 0

Washer, Bent Manway, Mat'l, 2mm t

↑ Insert Material identification number from chart on p. 6.
↑ Insert abbreviated Material name from p. 6.


Item No.	Item Description	BENT MANWAY WASHERS	386
386-MMMM 0	Washer, Bent Manway, Mat'l, 2mm t		
386-MMMM 1	Washer, Bent Manway, Mat'l, 2.5mm t		
386-MMMM 2	Washer, Bent Manway, Mat'l, 3mm t		
386-MMMM 3	Washer, Bent Manway, Mat'l, 3.5mm t		
386-MMMM 4	Washer, Bent Manway, Mat'l, 4mm t		
386-MMMM 5	Washer, Bent Manway, Mat'l, 4.5mm t		
386-MMMM 6	Washer, Bent Manway, Mat'l, 5mm t		

Item No.	Item Description	MANWAY LOCK STUDS #5, 7, 10 & 11	865
865-MMMM 21	Stud, Manway Lock #5M, Mat'l, M10 x 1.5-6g x 50mm LG		
865-MMMM 22	Stud, Manway Lock #7M, Mat'l, M10 x 1.5-6g x 65mm LG		
865-MMMM 42	* Stud, Manway Lock #10M, Mat'l, M12 x 1.75-6g x 65mm LG		
865-MMMM 43	Stud, Manway Lock #11M, Mat'l, M12 x 1.75-6g x 75mm LG		

*For use with Manway Lock Clamp #70 and Manway Pointer #75 (Replaced MWL stud #9M, Part No. 587).

Item No.	Item Description	BOTTOM TRAY CLAMPS "Y"	902
902-MMMM 01	Clamp, Bottom Tray "Y", Mat'l, 13mm Hole, 3mm t		
902-MMMM 02	Clamp, Bottom Tray "Y", Mat'l, 13mm Hole, 3.5mm t		

Bottom Tray Clamp "Y" designed for use with 25mm maximum thickness supports.

Item No.	Item Description	BOTTOM TRAY CLAMPS "YD" (MANWAY)	903
903-MMMM 01	Clamp, Bottom Tray "YD", for M10 "D" shape Manway Stud, Mat'l, 3mm t		
903-MMMM 02	Clamp, Bottom Tray "YD", for M10 "D" shape Manway Stud, Mat'l, 3.5mm t		

Note: Other material types available on request for all BTC's.

Bottom Tray Clamp "YD" designed for use with 25mm maximum thickness supports

932-MMMM 013 MMMM Clamp, Bottom Tray "YB", w/ bolt, Mat'l, 3mm t, M10 x 1.5-6g x 50mm Bolt, Mat'l
 ↑ Insert Material identification number from chart on p. 6. ↑ Insert abbreviated Material name from p. 6.

Item No. **Item Description** **BOTTOM TRAY CLAMPS "YB"** **932**

932-MMMM 013 MMMM	Clamp, Bottom Tray "YB", w/ bolt, Mat'l, 3mm t, M10 x 1.5-6g x 50mm Bolt, Mat'l
932-MMMM 014 MMMM	Clamp, Bottom Tray "YB", w/ bolt, Mat'l, 3mm t, M10 x 1.5-6g x 65mm Bolt, Mat'l
932-MMMM 018 MMMM	Clamp, Bottom Tray "YB", w/ bolt, Mat'l, 3mm t, M10 x 1.5-6g x 75mm Bolt, Mat'l
932-MMMM 023 MMMM	Clamp, Bottom Tray "YB", w/ bolt, Mat'l, 3.5mm t, M10 x 1.5-6g x 50mm Bolt, Mat'l
932-MMMM 024 MMMM	Clamp, Bottom Tray "YB", w/ bolt, Mat'l, 3.5mm t, M10 x 1.5-6g x 65mm Bolt, Mat'l
932-MMMM 028 MMMM	Clamp, Bottom Tray "YB", w/ bolt, Mat'l, 3.5mm t, M10 x 1.5-6g x 75mm Bolt, Mat'l



Other material types and bolt lengths are available upon request.
 Bottom Tray Clamp "YB" designed for use with 25mm maximum thickness supports.

Item No. **Item Description** **BOTTOM TRAY CLAMPS "YN"** **946**

946-MMMM 102 MMMM	Clamp, Bottom Tray "YN", w/ Nut, Mat'l, 3mm t, M10 x 1.5-6g Nut, Mat'l
946-MMMM 202 MMMM	Clamp, Bottom Tray "YN", w/ Nut, Mat'l, 3.5mm t, M10 x 1.5-6g Nut, Mat'l



Bottom Tray Clamp "YN" designed for use with 25mm maximum thickness supports.

Item No. **Item Description** **UNIVERSAL LEVER CLAMPS #1** **315 | 331**

315-MMMM 0	Clamp, Universal Lever #1, Mat'l, 2mm t, 11mm Hole
315-MMMM 1	Clamp, Universal Lever #1, Mat'l, 2.5mm t, 11mm Hole
315-MMMM 2	Clamp, Universal Lever #1, Mat'l, 3mm t, 11mm Hole



ITEM #331
 Single Lever Clamp # 1 is available with welded bolt. Specify bolt diameter and length when ordering.

Our new Bottom Tray Clamp "Y" series replaces the old Single Lever Clamp #1.
 902 BTC "Y" replaces the Single Lever Clamp #1 with open hole.
 932 BTC "YB" replaces the Single Lever Clamp #1 with bolt.

Item No. **Item Description** **UNIVERSAL LEVER CLAMPS #3** **317 | 333**

317-MMMM	Clamp, Universal Lever #3, Mat'l, 2mm t, 11mm Hole
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ITEM #333
 Single Lever Clamp #3 is available with welded bolt. Specify bolt diameter and length when ordering.

Our new Bottom Tray Clamp "Y" series replaces the old Single Lever Clamp #3.
 902 BTC "Y" replaces the Single Lever Clamp #3 with open hole.
 932 BTC "YB" replaces the Single Lever Clamp #3 with bolt.

Item No. **Item Description** **SINGLE LEVER CLAMPS** **322**

322-MMMM 014	Clamp, Single Lever, Mat'l, 3.5mm t, 8mm Tab length, M10 x 1.5-6g Tapped Hole
322-MMMM 012	Clamp, Single Lever, Mat'l, 3.5mm t, 8mm Tab length, 11mm Hole
322-MMMM 134	Clamp, Single Lever, Mat'l, 2.5mm t, 14mm Tab length, M10 x 1.5-6g Tapped Hole
322-MMMM 132	Clamp, Single Lever, Mat'l, 2.5mm t, 14mm Tab length, 11mm Hole
322-MMMM 254	Clamp, Single Lever, Mat'l, 3mm t, 20mm Tab length, M10 x 1.5-6g Tapped Hole
322-MMMM 252	Clamp, Single Lever, Mat'l, 3mm t, 20mm Tab length, 11mm Hole



Single Lever Clamp is available with additional tab lengths and hole sizes upon request.
 Our new Bottom Tray Clamp "Y" series replaces the old Single Lever Clamp.
 902 BTC "Y" replaces the Single Lever Clamp with open hole.
 946 BTC "YN" replaces the Single Lever Clamp with tapped hole.

909-MMMM 001 Seal Plate #10, Mat'l, 2mm t, 76mm LG
 ↑ Insert Material identification number from chart on p. 6.
 ↑ Insert abbreviated Material name from p. 6.


Item No.	Item Description	SEAL PLATES	909
909-MMMM 001	Seal Plate #10, Mat'l, 2mm t, 76mm LG		
909-MMMM 002	Seal Plate #10A, Mat'l, 2mm t, 89mm LG		
909-MMMM 003	Seal Plate #10B, Mat'l, 2mm t, 102mm LG		
909-MMMM 004	Seal Plate #10C, Mat'l, 2mm t, 115mm LG		
909-MMMM 005	Seal Plate #10D, Mat'l, 2mm t, 127mm LG		
909-MMMM 000	Seal Plate #10X2, Mat'l, 2mm t, 51mm LG		
909-MMMM 006	Seal Plate, Mat'l, 2mm t, 64mm LG		
909-MMMM 007	Seal Plate, Mat'l, 2mm t, 152mm LG		
909-MMMM 008	Seal Plate, Mat'l, 2mm t, 140mm LG		

Seal Plates supplied in C.S. are 3.5mm t., the last three digits of the item no. is different for example, 201 instead of 001 for seal plate #10, 202 instead of 002 for seal plate #10A.

909 Replaced Item #848


Item No.	Item Description	DOMED WASHERS	802
802-MMMM 101	Washer, Domed, Mat'l, 2mm t, 11mm id x 38mm od		
802-MMMM 301	* Washer, Domed, Mat'l, 3.5mm t, 11mm id x 38mm od		
802-MMMM 102	Washer, Domed, Mat'l, 2mm t, 11mm id x 44mm od		
802-MMMM 302	* Washer, Domed, Mat'l, 3.5mm t, 11mm id x 44mm od		
802-MMMM 103	Washer, Domed, Mat'l, 2mm t, 11mm id x 50mm od		
802-MMMM 303	* Washer, Domed, Mat'l, 3.5mm t, 11mm id x 50mm od		
802-MMMM 111	Washer, Domed, Mat'l, 2mm t, 14mm id x 38mm od		

*Available in C.S.

Item No.	Item Description	FRICTIONAL WASHERS	800
800-MMMM 010801	Washer, Frictional, Mat'l, 2mm t, 11mm id x 25mm od		
800-MMMM 030801	* Washer, Frictional, Mat'l, 3.5mm t, 11mm id x 25mm od		
800-MMMM 020802	Washer, Frictional, Mat'l, 2.5mm t, 14mm id x 25mm od		
800-MMMM 030802	* Washer, Frictional, Mat'l, 3.5mm t, 14mm id x 25mm od		

Available in other diameters and thicknesses upon request.

*Available in C.S.

Item No.	Item Description	HOOK BOLT #1	888
888-MMMM 24016	Hook Bolt #1, Mat'l, M10 x 1.5-6g x 200mm length (80mm thread length)		
Available in other bolt / thread lengths upon request.			

Item No.	Item Description	HOLDDOWN PLATES #1 & 2	887
887-MMMM 11	Plate, Holddown #1, Mat'l, 2mm t, 102mm wide		
887-MMMM 21	Plate, Holddown #1, Mat'l, 2.5mm t, 102mm wide		
887-MMMM 31	Plate, Holddown #1, Mat'l, 3.5mm t, 102mm wide		
887-MMMM 41	Plate, Holddown #1, Mat'l, 5mm t, 102mm wide		
887-MMMM 51	Plate, Holddown #1, Mat'l, 6mm t, 102mm wide		
887-MMMM 12	Plate, Holddown #2, Mat'l, 2mm t, 51mm wide		
887-MMMM 22	Plate, Holddown #2, Mat'l, 2.5mm t, 51mm wide		
887-MMMM 32	Plate, Holddown #2, Mat'l, 3.5mm t, 51mm wide		
887-MMMM 42	Plate, Holddown #2, Mat'l, 5mm t, 51mm wide		
887-MMMM 52	Plate, Holddown #2, Mat'l, 6mm t, 51mm wide		

Item No.	Item Description	ANGLE HANGERS #161 THRU 163	916 917 918
916-MMMM 1	Hanger, Angle #161-A (75mm LG), Mat'l, 2.5mm t		
916-MMMM 2	Hanger, Angle #162-A (75mm LG), Mat'l, 3 or 3.5mm t		
916-MMMM 3	Hanger, Angle #163-A (75mm LG), Mat'l, 5mm t		
917-MMMM 1	Hanger, Angle #161-B (150mm LG), Mat'l, 2.5mm t		
917-MMMM 2	Hanger, Angle #162-B (150mm LG), Mat'l, 3 or 2.5mm t		
917-MMMM 3	Hanger, Angle #163-B (150mm LG), Mat'l, 5mm t		
918-MMMM 1125	Hanger, Angle #161-C (125mm LG), Mat'l, 2.5mm t		
918-MMMM 2130	Hanger, Angle #162-C (130mm LG), Mat'l, 3 or 2.5mm t		
918-MMMM 3135	Hanger, Angle #163-C (135mm LG), Mat'l, 5mm t		

SEE STANDARD & NON-STANDARD SECTIONS FOR VALVES, VALVE CAPS AND BALLAST UNITS.

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