



ZERO KNOWS

C A R R Y I N G C A S E S



In practice, ZERO Manufacturing produces metal and plastic cases, containers and enclosures. But in truth, our products are **protection solutions**—ensuring the safe transport and viability of valuable equipment and electronics, without compromise.

Whether we meet your needs with one of our nearly 3,000 standard products, or with the infinite possibilities through a specialized custom design, ZERO has the engineering expertise and manufacturing experience to provide the perfect solution for your protection needs.

Please review the Carrying Case product data for specifications and information about how ZERO currently provides protection solutions for your industry.



ZERO
MANUFACTURING
PROTECTION

Quality Commitment

QUALITY

ZERO MANUFACTURING is committed to providing products and services that meet and exceed our customers' expectations. To that end, we have been ISO 9001 certified since 1994, are an SPC Certified Supplier and boast nearly a dozen Military Certifications. We have also received numerous awards and certifications from hundreds of customers and industries, both domestically and internationally.

ZERO MANUFACTURING, INC.

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ISO 9001:2008
AS9100 Rev. B
SPC Certified



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THE ZERO PROCESS

ZERO Manufacturing, Inc. is a world-class manufacturer of quality, deep-drawn and fabricated aluminum and molded plastic cases, enclosures and assemblies for the defense, aerospace, industrial, medical, electronics and telecommunications markets. ZERO's real product is protection—ensuring the safe transport and viability of valuable equipment and electronics—without compromise. ZERO can meet your needs with one of our standard products, or through a specialized custom design, we have the engineering and manufacturing expertise to see the job through to success. For Unparalleled Protection, choose ZERO Manufacturing, Inc.

EXCEPTIONAL FEATURES OF ZERO'S DEEP DRAWN ALUMINUM PRODUCTS

- **High Strength-to-Weight Ratio** – Lightweight aluminum alloys used in our cases are known for their excellent strength in protecting equipment from damage.
- **Extraordinary Resistance to Corrosion** – Aluminum is highly resistant to nearly all substances that cause corrosion and weathering.
- **Endurance Against Stress, Tearing and Cracking** – Aluminum offers much better fracture toughness than do most other materials used in cases, including resistance to both mechanical breakage and propagation of fractures.
- **Sustaining Cold Temperatures** – Instead of becoming more fragile and brittle in cold weather, the tensile strength of our aluminum cases actually increases with cold, without loss of ductility.
- **RFI/EMI Shielding and ESD/Grounding** – Aluminum has the highest electrical conductivity-to-weight ratio of any metal, making our cases excellent for RFI/EMI shielding and for ESD/grounding systems. Aluminum is also an efficient reflector for externally generated interference, including the electromagnetic wavelengths of radio and radar.
- **Heat Dissipation/Shielding** – Aluminum is widely used in “heat sinks” and heat exchangers because of its high thermal conductivity. In an enclosure it can efficiently transport heat away from electronics and other equipment. It also has high reflectance to encroaching radiated heat, such as sunlight. (Aluminum has a light reflectivity of over 80%.) Further, the low coefficient of thermal expansion of aluminum allows it to sustain higher temperatures without distortion.
- **Special Environments** – Aluminum is non-toxic, odorless, tasteless, non-absorbing, non-sparking, non-magnetic and resistant to fire. Aluminum cases can therefore be used in a wide variety of special environments, including sanitary or clean rooms, food service areas and certain volatile environments, as well as for more traditional environments requiring such provisions as watertight, splash proof, drip proof and salt exposure protection.
- **Customizing Through Secondary Operations** – Our aluminum products can be customized and modified without the cost of special molds, through such secondary operations as drilling, laser cutting, riveting, welding, brazing, soldering, etc., provided at ZERO. In addition, aluminum products by ZERO accommodate virtually every kind of finish, whether mechanical (such as brushing or polishing), chemical (such as anodizing) or any of an almost unlimited variety of coatings (such as paint and powder coatings).

ZERO MANUFACTURING'S CARRYING CASE SELECTION GUIDE

OPTIONS AVAILABLE

CENTURION® POLARIS CASES*	VAL AN® SERIES*	VAL AN® 900 SERIES*	PRE-ENGINEERED RUGGEDIZED CASES*	CENTURION® ELITE CASES	CENTURION® VALULINE CASES	STYLE-LITE™ CASES
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SPECIFICATIONS:

MIL-C-4150				X			
MIL-STD-108	X	X	X	X			
MIL-STD-810**			X	X			
MIL-T-28800			X	X			

CASE TYPE:

Instrument Case	X	X	X	X	X	X	X
Transit Case	X	X	X	X	X	X	X
Combination Case	X	X	X	X	X	X	X
Accepts 19" EIA Panel			X				

PERFORMANCE:

Watertight	X	X	X	X			
Splash Proof	X	X	X	X			
Drip Proof	X	X	X	X			
Salt Exposure	X	X	X	X			
Dust Proof	X	X	X	X			
EMI Shielded	X	X	X	X	X		

EXAMPLE ACCESSORIES:

Fork Lift Guides							
Hoisting Grapple			X	X			
Separable Hinges	X	X		X	X	X	X
Skid Rails				X			

An "X" indicates option is available, but not necessarily standard. As definitions may vary from customer to customer, consult this catalog or ZERO for more specific details.

*Not included in this catalog. See separate catalog published by ZERO Manufacturing, Inc. for information regarding these cases/containers.

**Tests as applicable to cases/containers.

NOTE: For a complete list of plastic cases, containers, enclosures and solutions, see separate catalogs and/or data sheets published by ZERO Manufacturing, or visit www.zerocases.com for more information.

ZERO MANUFACTURING, INC. U.S. GOVERNMENT PROCUREMENT VENDOR CODE/CAGE ID NUMBER: 98376. ZERO MANUFACTURING, INC. IS ALSO THE SOURCE FOR DEEP DRAWN OR CASE ASSEMBLIES WITH THE FOLLOWING ID NUMBERS (COMPANY): 19178 (ZERO EAST), 2J777 (ZERO HALLIBURTON), 53031 (TA CASE COMPANY), 11357 (M&M) ELECTRONICS ENCLOSURES), 94637 (HALLIBURTON ENTERPRISES), 76561 (MOORLEE MANUFACTURING COMPANY).

EQUIPMENT AND CAPABILITIES

ZERO Manufacturing, Inc. is the leader in the manufacture of quality, deep drawn and fabricated cases and enclosures. Offering over 32,000 pre-tooled sizes of deep drawn enclosures, and virtually unlimited sizes and configurations, ZERO is the source for secondary operations and customization, whether commercial or military specification.



DEEP DRAW

Presses:

Thirty presses.

Capacity Range: Up to a 440 ton fully CNC controlled press with quick die change capability.

Maximum Bed Size: 60" x 98"

Maximum Drawn Depth: 18"

Sizes:

In addition to 32,000 pre-tooled sizes, ZERO can tool for any size, depth or material.

Shears:

Blanks are cut on automatic coil shears or conventional 12 foot shears for sheet stock.

Certified to meet MIL-H-6088 and customer specifications.



PROCESSES

Washer System:

Automatic titrating conveyor system 6' x 90'.

Etch:

For weld preparation and cleaning.

Chemical Film:

Certified to meet MIL-C-5541, Classes 1A and 3.



ALUMINUM & METAL LASER CUTTING

Five-Axis Laser: Computer controlled five-axis laser provides flexibility, speed and efficiency to design and manufacturing capabilities and the ability to custom cut and fabricate aluminum or other metals. Bypassing the entire tooling process eliminates costly setup and tooling fees. It's ideal for creating prototypes and for shorter runs.

Specifications:

Working Range (X, Y, Z, C, B):

X = 158, 118, 80, 50"

Y = 60"

C = 360 ° Endless

B ± 120 °

Speed (X, Y, Z, C, B):

X, Y = 2000 IPM

Z = 1200 IPM

C, B = 360 ° /sec



Smallest Programmable Increment: .000039"

Position Accuracy: .0039"

Repeatability: Ps .0012"

Working Height: 28"

SHEET METAL FABRICATION

Press Brakes:

Five press brakes up to 130 tons, equipped with back gauging.

Metal Fabricator:

Two turret fabricators with 58 stations.

Punch Presses:

Fifty-four mechanical punch presses up to 350 ton capacity, including a CNC metal fabricator.

Extrusion Forming:

Three heavy-duty and two light-duty benders for forming extrusions.

Shears:

Three shears, 12 feet wide, with 10 gauge capacity and digital back gauging.



ENVIRONMENTAL TESTING

Three test tanks to test for watertight integrity per MIL-STD-108.



WELDING

Welding performed IAW MIL-STD-2219 Class B & C (Class A by contract only) and certified to MIL-STD-1595.

Resistance: Twelve 3-phase spot welders with Class A solid state controls rated up to 250 KVA. This permits spot welding aluminum up to 5/16" thick. Certified to MIL-W-6858D.

Fusion: Eight 300 amp GTAW stations, 2 GMA welders, and longitudinal and peripheral seam welders.



ASSEMBLY

Equipment: A wide range of electrical and pneumatic hopper fed riveters and versatile presses for threaded insert and stud installation. Conventional pedestal and hand held riveters are used as well.



PAINTING

The ZERO Manufacturing, Inc. paint system was custom designed to accommodate all enclosure products and types of paint. The primary system is completely enclosed and supplied with a 100,000 cfm filtered, climate controlled air make-up system.

Layout: A 540 foot overhead conveyor runs through five alternatively opposed filter booths and a 60 foot long drying oven. (Oven is also equipped with a six foot wide lower conveyor to handle large and/or heavy objects).

Additional: Two off-line booths, and a third booth with two batch ovens for short runs.

Certification: Capable of painting to all specifications meeting safe environmental conditions. Enamel, water-base, and powder paints available and others as specified.



TOOL DEPARTMENT

ZERO Manufacturing, Inc. has a 9,600 square foot tool and die, and production machine shop with over 40 pieces of primary equipment. A foundry for casting sleeves for multiple draw jobs is also in-house. Production machining is performed on two CNC milling machines. Quality control is monitored by a coordinate measuring machine and a profile projector.

ZERO is an ISO 9001:2008 AS9100 certified company, and SPC certified supplier to major and key customers.

ADDITIONAL FACTS

Plant Size: 286,000 square feet
Manufacturing: 250,000 square feet
Sample Plan: Based on MIL-STD-105, Level II

Water Filtration System: All process lines are integrated with a reverse osmosis filtrations system. Over 80 percent of the industrial waste stream is recovered for purification and recycling.

Engineering Capabilities: Thirteen CAD-based design systems. Can custom design to meet all customer and military specifications. Manufacturing engineering is performed on the latest computer network system.

CENTURION® VALULINE CARRYING CASES

The ZERO Manufacturing, Inc. Centurion® Valuline series provides a variety of options in selecting a case that best satisfies your needs.

Constructed of deep drawn aluminum shells, the case shells are seamless. Three closure options, along with variations of internal panel mounting, give added versatility in the packaging of electronic, electro-mechanical, or instrumentation equipment.

In addition to the standard sizes listed on the following pages, you may design a special case from the large choice of standard sizes of deep drawn enclosures listed in the ZERO Manufacturing, Inc. Deep Drawn Products catalog. All of these sizes can be utilized without a tooling charge.



CASE SPECIFICATIONS

Material	Aluminum alloy.
Latches	Zamak #7—nickel plated. (See page 13 for dimensions.)
Hinges	Riveted-nickel plated steel. Separable on all styles. (See page 13 for dimensions.)
Handle	Black molded plastic with nickel plated hardware. (See page 13 for dimensions.)
Feet	ZIC & ZC Series: Integral dimpled; ZIP Series: Four, black rubber. (See page 13 for dimensions.)
Gasket	Black extruded synthetic rubber—ZC and ZIP Series.
Finish	Medium blue textured powder paint interior and exterior. Additional colors available on request.
Panels	Aluminum with chemical film finish (material thickness—.090").
Tolerances	±.06"

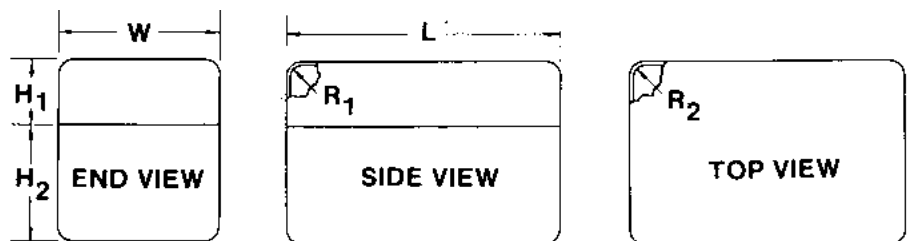
Case dimensions are always shown in the following order:

WIDTH—the narrowest measurement, looking down on the case.

LENGTH—the longest measurement, looking down on the case.

HEIGHT—measured from base to top. The “upper” shell is designated H¹. The “lower” shell is designated H².

RADIUS - R¹ = The radius at the bottom of drawn shells.
R² = The radius at the sides of drawn shells.



ZC 7000 SERIES

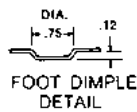
ZC 7000 SERIES ALUMINUM CARRYING CASES

Most economical of the Valuline cases, the ZC 7000 Series cases are available in 11 off-the-shelf sizes. All cases feature fully gasketed, bonded closures which fit over the edge of the lower shell. ZC 7000 cases have separable hinges.



CASE NUMBER	W	L	H ¹	H ²	T	ALLOY	R ¹	R ²	LATCHES		WT LBS
									FRONT	SIDE	
ZC 7010	4.00	7.00	1.25	2.91	.06	1100-0	.31	.31	2	-	1.3
ZC 7020	4.00	8.75	1.25	2.91	.06	1100-0	.19	.25	2	-	1.6
ZC 7030	5.00	7.00	1.25	3.66	.06	1100-0	.31	.31	2	-	1.7
ZC 7040	5.50	8.00	1.25	3.66	.06	1100-0	.25	.25	2	-	1.8
ZC 7050	5.69	10.00	1.25	4.66	.06	1100-0	.25	.25	2	-	2.3
ZC 7060	6.00	9.00	1.25	4.66	.06	1100-0	.31	.31	2	-	2.2
ZC 7070	6.00	14.50	1.38	4.53	.06	1100-0	.44	.50	2	-	2.9
ZC 7080	7.00	11.00	1.50	5.41	.06	6061-0	.50	.31	2	-	2.9
ZC 7090	8.00	14.00	1.88	6.03	.06	6061-0	.88	.88	2	-	3.8
ZC 7100	9.00	9.00	1.50	6.41	.06	6061-0	.50	.50	2	-	3.2
ZC 7110	9.18	13.25	1.63	7.28	.06	6061-0	.59	.59	2	1	4.6

Note: W, L and H are exterior dimensions: R¹ and R² are interior dimensions. Measurements shown in inches. T = Thickness. SEE PAGE 6 FOR VALULINE CASE SPECIFICATIONS.



ORDERING INFORMATION

Standard Sizes

Order by case number.

ZC _____

Special Sizes:

See **ZERO'S Deep Drawn Products Catalog** for additional sizes.

Order by Series Number and specify detail information.

Secondary operations available.

Please specify:

Width: _____

Length: _____

Cover Height (H¹): _____

Case Height (H²): _____



ZIP 800 SERIES

CASE NUMBER ^①	W	L	H ¹	H ²	T	ALLOY	R ¹	R ²	LATCHES		HINGES	PANEL NO ^②	STANDARD MOUNTING BRACKETS	WT LBS
									FRONT	SIDE				
ZIP 805-A	6.00	9.00	2.50	5.00	.06	1100-0	.31	.31	2	-	2	ZP 9178-05	4	2.9
ZIP 810-A	7.00	11.00	2.50	7.00	.06	6061-0	.50	.31	2	-	2	ZP 9178-10	4	3.9
ZIP 820-A	8.00	14.00	2.50	7.00	.06	6061-0	.88	.88	2	-	2	ZP 9178-20	6	4.8
ZIP 830-A	8.75	12.00	2.50	8.00	.06	6061-0	.50	.75	2	-	2	ZP 9178-30	6	4.8
ZIP 840-A	9.19	13.25	2.50	9.00	.06	6061-0	.59	.59	2	-	2	ZP 9178-40	6	5.6
ZIP 850-A	10.00	16.00	2.50	9.00	.09	6061-0	1.00	1.00	2	1	3	ZP 9178-50	8	8.8

Note: W, L and H are exterior dimensions, R¹ and R², are interior dimensions. T= Thickness. Measurements shown in inches.

SEE PAGE 6 FOR VALULINE CASE SPECIFICATIONS.

ZIP 800 SERIES ALUMINUM CARRYING CASES

Most versatile series of the Valuline cases, they feature a fully gasketed closure of extruded aluminum, spot-welded to the interior case shell, to permit installation of optional panel support brackets and full size primed panel (Order Separately). An O-ring gasket provides additional environmental protection.



ORDERING INFORMATION

STANDARD SIZES:

Order by Part Number for Each Item
(Case, Panel and/or Brackets)

EXAMPLE:

Order by Case Number
ZIP ^① - A
(see table above)

IF PANEL IS REQUIRED:

ZP9178 - ^②
(see table above)

IF BRACKETS ARE REQUIRED:

ZSP9-014-3
(specify quantity)

Special Sizes:

See **ZERO Manufacturing, Inc. Deep Drawn Products catalog** for additional sizes.

Order by Series Number and specify detail information.

Secondary operations available.

Please specify:

Width: _____

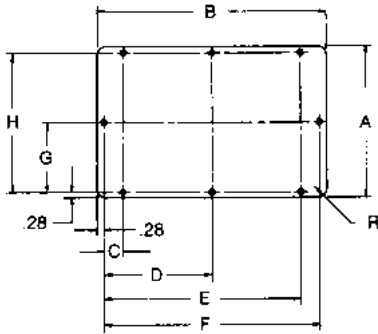
Length: _____

Cover Height (H¹): _____

Case Height (H²): _____

ZIP 800 SERIES

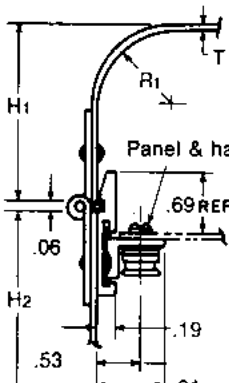
ZIP 800 Series Panel Dimensions



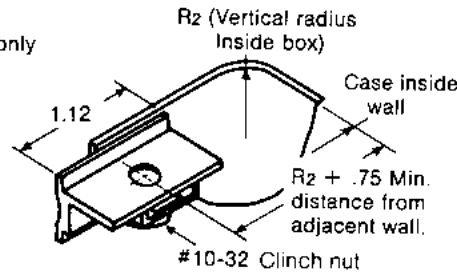
PANEL NUMBER	A	B	C	D	E	F	G	H	R	# OF HOLES
ZP 9178-05	5.37	8.37	1.50	-	6.31	-	-	4.81	.19	4
ZP 9178-10	6.37	10.37	2.00	-	7.81	-	-	5.81	.19	4
ZP 9178-20	7.37	13.37	2.88	-	9.94	12.81	3.41	6.81	.63	6
ZP 9178-30	8.12	11.37	2.00	-	8.81	10.81	3.78	7.56	.50	6
ZP 9178-40	8.56	12.62	2.50	-	9.56	12.06	4.00	8.00	.44	6
ZP 9178-50	9.31	15.31	2.50	7.37	12.25	14.75	4.38	8.75	.75	8

Measurements shown in inches.
 Material: 6061-T6 AL. Alloy. Thickness = .090"
 Finish: Epoxy primer per MIL-PRF-85582, Type I, CL. N.

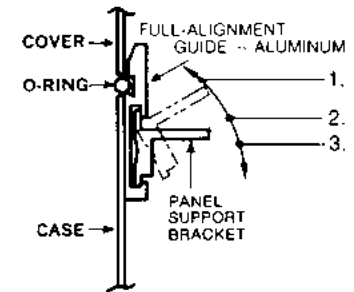
Measurements shown in inches



Panel & hardware supplied only when specified. (See ordering information.)



BRACKET INSTALLATION DIAGRAM



ADJUSTABLE PANEL SUPPORT BRACKET ZSP 9-014-3

The adjustable panel support bracket shown is an accessory. If required, specify quantity needed for interface with equipment panel. (See ordering information.) Install per instructions shown at right.

PANEL SUPPORT BRACKET INSTALLATION

1. Apply room temperature cure epoxy to contact surface of support bracket and insert bracket into extrusion slot as shown.
2. Rotate downward, as shown, until support bracket is seated.
3. Slide bracket laterally as required to align bracket with panel hole location.

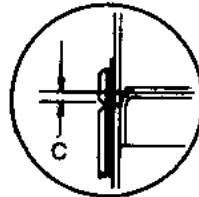
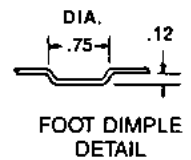
ZIC 600 SERIES

CASE NUMBER ^①	W	L	H ¹	H ²	T	ALLOY	R ¹	R ²	C	S	P	SIZE PANEL	WT LBS
ZIC 608	7.00	8.00	2.50	6.00	.06	1100-0	.31	.31	.25	5.38	6.38	6.50 x 7.50	3.3
ZIC 609	9.00	9.00	2.50	8.00	.06	6061-0	.50	.50	.25	7.38	7.38	8.50 x 8.50	4.7
ZIC 610	6.69	10.69	2.50	6.00	.09	6061-0	.50	.50	.22	5.00	9.00	6.19 x 10.19	4.8
ZIC 611	7.00	11.00	2.50	6.00	.06	6061-0	.50	.31	.34	5.38	9.38	6.31 x 10.31	4.3
ZIC 612	8.38	11.50	2.50	7.00	.06	6061-0	.50	.56	.25	6.75	9.87	7.88 x 11.00	4.9
ZIC 613	9.19	13.25	2.50	9.00	.09	6061-0	.56	.56	.28	7.50	11.56	8.69 x 12.63	8.2
ZIC 616	10.00	16.00	2.50	9.00	.09	6061-0	1.00	1.00	.28	8.31	14.31	9.50 x 15.50	9.8

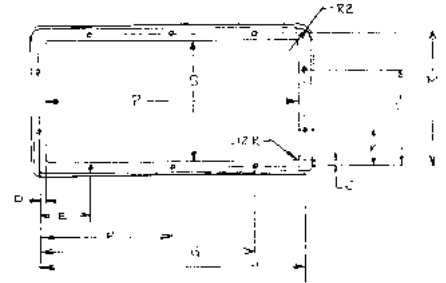
Note: W, L and H are exterior dimensions, R¹, R², P and S are interior dimensions. T = Thickness. Measurements shown in inches. SEE PAGE 6 FOR VALULINE CASE SPECIFICATIONS.

ZIC 600 SERIES ALUMINUM CARRYING CASES

This series features a spot-welded, pre-drilled panel flange, with threaded inserts installed to accept a full-sized, chemical film finished panel, included with the basic case.



LATCH ASSEMBLY
REFERENCE



HOLE PATTERN DIMENSIONS

CASE NUMBER	D	E	F	G	H	J	K	L	M
ZIC 608	.28	2.00	-	4.94	6.94	.28	1.47	4.47	5.94
ZIC 609	.28	2.00	-	5.94	7.94	.28	2.00	5.94	7.94
ZIC 610	.29	2.36	-	7.23	9.59	.29	1.36	4.23	5.59
ZIC 611	.23	3.00	-	6.84	9.84	.23	1.75	4.09	5.84
ZIC 612	.28	3.00	-	7.44	10.44	.28	2.00	5.31	7.31
ZIC 613	.26	3.05	6.05	9.05	12.09	.26	2.00	6.03	8.03
ZIC 616	.29	3.45	7.45	11.45	14.91	.29	2.50	6.41	8.91

ORDERING INFORMATION

STANDARD SIZES:

Order By Case Number

ZIC ^① _____

(see table above)

SPECIAL SIZES

See **ZERO's Deep Drawn Products Catalog** for additional sizes.

Order By Series Number and Specify Detail Information

Secondary Operations Available

PLEASE SPECIFY

Width: _____

Length: _____

Cover Height (H¹): _____

Case Height (H²): _____

INSTRUMENT CASES

ZIC 400 SERIES



• OFF-SHELF AVAILABILITY • NO TOOLING CHARGE

These distinctively designed deep drawn aluminum instrument cases give small instruments a sales-appealing custom appearance at off-the-shelf prices.

The seamless deep drawn body provides protection even under rugged conditions. An aluminum front panel, recessed for protection of dials, meters, knobs, etc., is attached with four slotted screws for quick access.

SPECIFICATIONS

Material: ZIC 407 to 409: 1100-0 .063" Aluminum
 ZIC 411: 6061-0 .063" Aluminum

Handle: Cast Aluminum – Brushed Finish

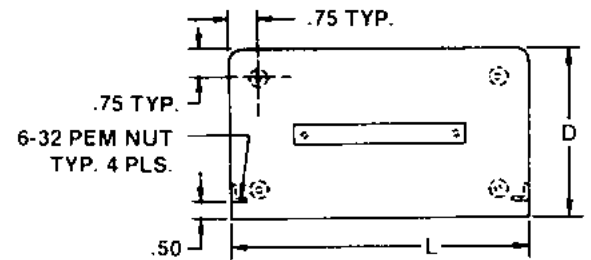
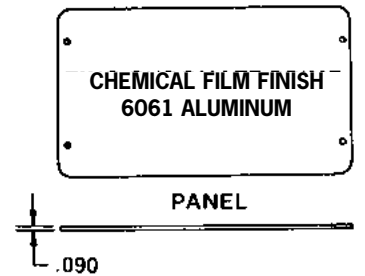
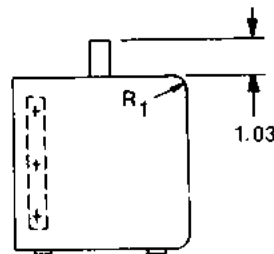
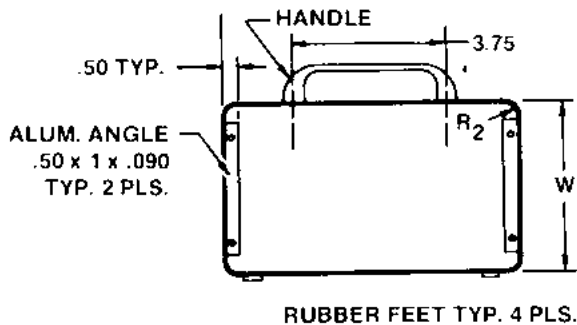
Feet: Rubber

Finish: Medium Blue Texture

CASE NUMBERS AND DIMENSIONS:

Case No.	Outside Width	Outside Length	Depth	Inside Radius1	Inside Radius 2	Approx. Net Wt.
ZIC 407	4.00	7.00	5.00	.31	.31	1.3
ZIC 408	4.50	7.75	7.00	.25	.25	1.8
ZIC 409	6.00	9.00	5.00	.31	.31	2.1
ZIC 411	7.00	11.00	7.00	.50	.31	2.9

Note: Measurements shown in inches. Weight shown in pounds.



ORDERING INFORMATION

STANDARD SIZES:

Order By Case Number

SPECIAL SIZES:

See **ZERO's Deep Drawn Products Catalog** for additional sizes.

Order by Series Number and specify detail information.

Secondary operations available.

Please specify:

Width: _____

Length: _____

Depth: _____

VALULINE III INSTRUMENT CASE



TABULATION CHART

CASE #	A	B	C	D
ZP20860-1	5.22	8.43	10.00	8.00
ZP20860-3	5.22	16.88	13.00	11.00
ZP20860-5	6.97	8.43	10.00	8.00
ZP20860-7	6.97	16.88	13.00	11.00
ZP20860-9	8.72	16.88	13.00	11.00
ZP20860-11	10.47	16.88	17.00	15.00

Measurements shown in inches.

A non-stock case available in six standard sizes with and without "EMI" shielding, this line of aluminum desk top enclosure features front and rear access.

The EMI models are supplied with EMI gaskets in a specially designed groove in the front and rear bezels of the enclosure. The bottom area of the unit has a perforated vent pattern located near the front.

Other standard features include side handles, rubber feet and front and rear panels.

Optional accessories also available:

- Tilt Stand
- Chassis Plate
- Fan in Rear Panel (30 CFM on 5-1/4" high model and 80 CFM on the 7", 8-3/4" and 10-1/2" high models)

SPECIFICATIONS

MATERIAL: .090 Aluminum Alloy (center section) and Extruded Aluminum (front and rear bezels).

HANDLES: Stainless Steel-Recessed Grip

FRONT & REAR PANELS: .125 Aluminum Alloy

FEET: Four (4)—Black Rubber

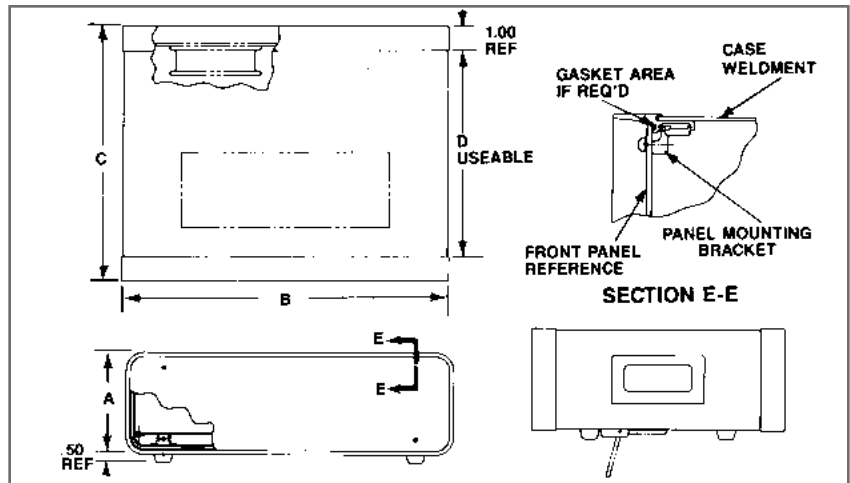
CHASSIS PLATE: (Optional) .090 Aluminum Alloy.

TILT STAND: Steel, Chrome Plated
Optional

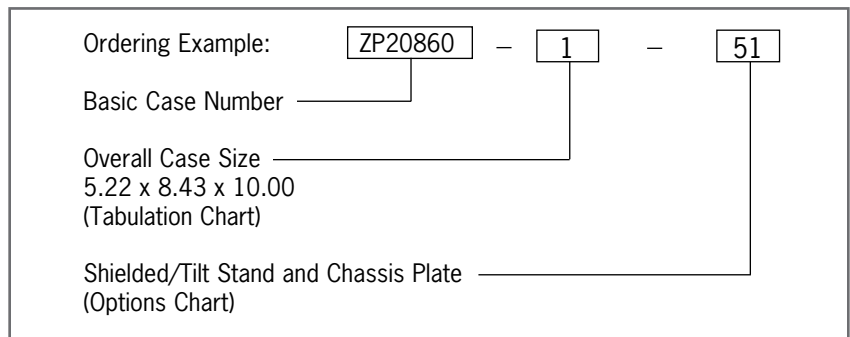
EMI GASKET: Knitted Wire Mesh
Optional

FINISH: Exterior—Light Blue Textured.
Interior—Light Blue Textured.

PANELS: Chemical Film
Front, Rear & Chassis Plate



ORDERING INFORMATION: Order by case number, size.



OPTIONS CHART

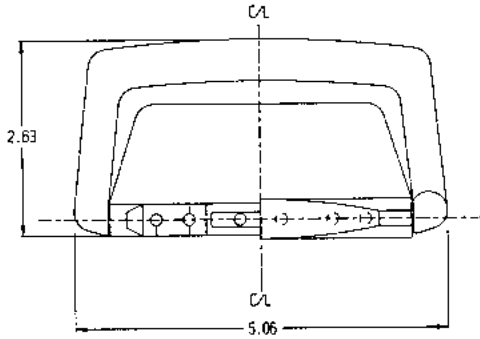
OPTION DESCRIPTION	NON SHIELDED	SHIELDED
NO OPTIONS	-21	-41
TILT STAND	-23	-43
REAR FAN PANEL	-25	-45
CHASSIS PLATE	-27	-47
TILT STAND AND FAN PANEL	-29	-49
TILT STAND AND CHASSIS PLATE	-31	-51
FAN PANEL AND CHASSIS PLATE	-33	-53
TILT STAND, FAN PANEL AND CHASSIS PLATE	-35	-55

CENTURION® VALULINE MODIFIED INSTRUMENT CASES

Standard Hardware Options

HANDLES ZP20085

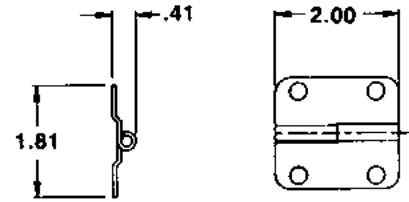
Used on ZIC600, ZIP800,
ZC5000 and ZC7000 Series.



HINGE

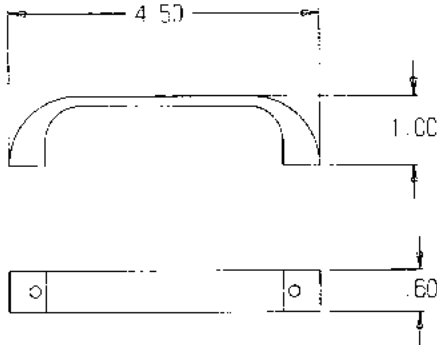
- ZP20282-1 Separable (long pin)
- ZP20282-2 Separable (short pin)
- ZP20282-3 Non Separable

MATERIAL: Stainless Steel, Nickel Plated
WEIGHT: 0.104 lbs.



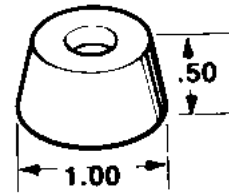
5207-28A

Used on ZIC400 Series
(instrument cases)

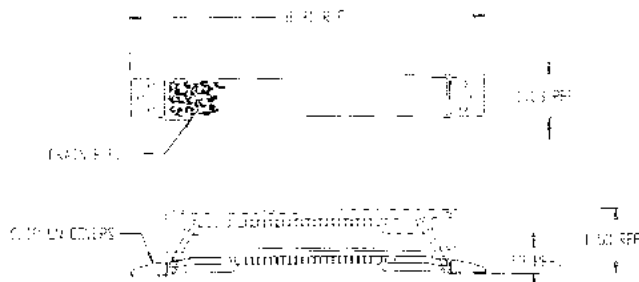


FEET

**RUBBER FOOT
ZSP7-718**

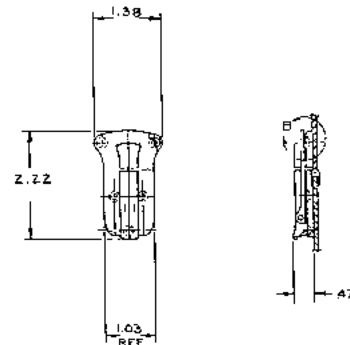


ZSP3-309 Optional



LATCHES

ZSP2-220-1



CENTURION® ELITE STANDARD ALUMINUM CASES

TOP-OF-THE-LINE QUALITY AND STYLE

High strength, light weight and clean, simple lines characterize these unique carrying cases.

The seamless, clean surfaces of the deep drawn aluminum case shells, accented by their distinctive styling beads, are now available in either a clear anodized finish which highlights the natural beauty of satin-anodized aluminum, or in a textured black powder paint finish.

The strength and durability of these cases has been proven in actual use around the world. They are dust and weather resistant, and every case is strong enough to stand on, thanks to specially heat-treated shells. Despite this, even the largest case weighs only 17 pounds.

OUTSTANDING PERFORMANCE

These cases offer the ultimate in appearance, reliability and versatility. Positive-locking latches assure secure closing, while complementing the clean styling of each case.

A fully-gasketed tongue-and-groove closure extrusion, mechanically formed and compressed onto the shells, offers better sealing and case integrity while permitting installation of adjustable panel support brackets (optional) at significant savings over other methods of attaching angles for panel-mounted equipment. Blank panels are available for all cases by special order.



SERIES	SPECIAL FEATURE
100X (pg. 16-17)	Standard Case
200X (pg. 18-19)	EMI/Environmental Protection
700X (pg. 20)	Separable Hinges
ZEROLLER (pg. 15)	Two Wheeled System

SPECIFICATIONS FOR CENTURION® ELITE CASES

CASE SHELL	Deep drawn aluminum alloy, heat treated.	HINGE	100X: Piano-type (continuous) aluminum with stainless steel pin riveted to case. 200X & 700X: Two (2) separable hinge assemblies, nickel plated stainless steel riveted to case.
CLOSURE	Interlocking tongue and groove extrusion of 6063-T5 aluminum alloy, mechanically formed and compressed to case shell. Lower closure accepts panel support brackets. 100X, 200X and 700X only	LOCK	Combination lock 100X and 700X Series only
SEAL	Elastomeric neoprene gasketed seal.	FEET	Aluminum—riveted to case.
LATCHES	100X & 700X: Two positive locking bail type; chrome plated, 200X: has one keyed latch, one bail type.	NAMEPLATE	ZERO nameplate mounted on upper case shell above lock.
HANDLE	Gray injection molded acrylic based multi-polymers. Maximum weight 60 lbs.	SILVER FINISH	Satin sulfuric acid anodized on all exposed surfaces.
		BLACK FINISH	Black powder paint interior and exterior. 100X and 700X Series only
		ZEROLLER WHEELED CASE	See Page 15
		TOLERANCE	±.06"



THE WHEELED INDUSTRIAL CASE

Tired of carrying that case filled with instruments, tools or sales samples? The answer is ZeRoller™.

It combines the ultimate carrying case with a rolling system engineered to make transport as easy as possible.

The roller system is mounted externally so there is very little intrusion on the inside of the case.



ZEROLLER SYSTEM FEATURES

Handle	<i>Pultruded fiberglass designed to deflect several hundred pounds of force and return to the original position.</i>
Wheels	<i>Rubber with ball bearings.</i>
Housing	<i>Constructed of high-impact resistant plastics.</i>
Interior Options	<i>Layered foam (order using part number ZP21745-1 for 105ZR or ZP21745-3 for 107ZR). Divider system.</i>

CASE NUMBERS & DIMENSIONS

Case No.	Outside Width	Outside Length	Inside Height	Upper Shell Inside Height	Lower Shell Inside Height	Material Thickness	Approx. Net Wt.
105ZR-SI / ON*	13.00	21.00	6.50	2.75	3.75	.040	8.7
107ZR-SI / ON	13.00	21.00	7.50	3.75	3.75	.040	8.9

Note: Measurements shown in inches. Weight shown in pounds. *Not a stock item. Price and delivery available by calling the ZERO Stock Sales Department.

100X SERIES

Fixed Hinges

THE 100X SERIES

This series is available in 26 standard sizes. Constructed of durable aluminum alloy, choose from either a clear silver anodized or a textured black powder paint finish.

Each style comes equipped with a triple digit combination lock, and fixed hinge. Just add your equipment and go.

For complete information on dimensions and weights, see page 17.

OPTIONAL ACCESSORIES

FOAM CUSHION SETS—Choose from a blank layered cushion set or a diced layered cushion set (available for case numbers 100X, 102X, 103X, 105x, 106X, 110X only). Each is made of a gray two pound density polyurethane foam. See page 26.

PANEL—See page 17 for panel dimensions and drawing specifications.

BRACKETS—See page 20 for drawing, part number and installation instructions.

CASTER KIT—available only on case numbers 109X, 110X and 129X.



Case shown with optional panel support brackets.

ORDERING INFORMATION

Order by part number for each item (case, panel and/or brackets)

Case _____ X- _____ Color/Finish-Options = SI (Silver/Clear Anodized)
 Ordering example: 101X-SI ON (Onyx/Black Powder Paint)

If panel needed: ZP108000- _____ (see part numbers in Table 2, page 19)

If brackets needed: ZP20653-1 (specify quantity)

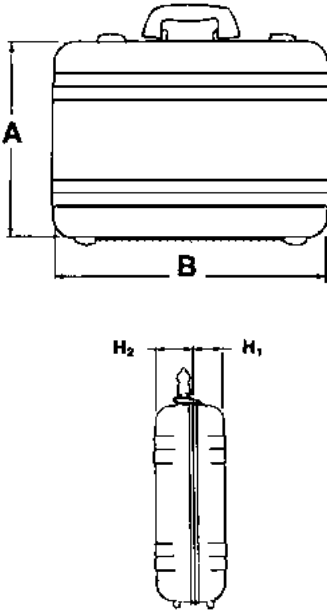
Note: See page 26 for ordering foam cushion sets.

100X SERIES

Fixed Hinges

TABLE 1: 100X SERIES ZERO Centurion® Elite Cases (standard configuration)

BASIC SHELL DIMENSIONS AND CASE SPECIFICATIONS



CASE NUMBER	EXTERIOR		H ¹ INTERIOR HEIGHT	H ² UPPER SHELL HEIGHT, I.D.	LOWER SHELL HEIGHT, I.D.	APPROX MATERIAL THICKNESS	NET WEIGHT LBS
	A WIDTH	B LENGTH					
*132X-SI ON	8.50	19.75	14.49	1.20	13.29	.051	8.1
100X-SI ON	9.00	12.00	5.00	2.00	3.00	.040	3.3
101X-SI ON	9.00	16.00	7.75	2.50	5.25	.051	5.0
116X-SI ON	9.00	16.00	14.50	2.50	12.00	.051	7.2
*128X-SI ON	10.00	36.00	4.00	2.00	2.00	.040	7.0
*130X-SI ON	10.00	48.50	4.00	2.00	2.00	.040	9.2
*138X-SI ON	11.25	16.50	3.25	1.50	1.75	.040	4.4
*140X-SI ON	12.00	32.50	4.50	1.50	3.00	.040	8.0
102X-SI ON	13.00	18.00	4.50	2.00	2.50	.040	5.0
103X-SI ON	13.00	18.00	6.00	2.50	3.50	.040	5.4
*104X-SI ON	13.00	18.00	3.50	1.50	2.00	.040	5.0
105X-SI ON	13.00	21.00	6.50	2.75	3.75	.040	6.1
107X-SI ON	13.00	21.00	7.50	3.75	3.75	.040	6.3
*134X-SI ON	13.00	26.50	7.00	3.00	4.00	.051	7.2
*136X-SI ON	13.58	18.58	7.00	3.00	4.00	.040	5.7
*122X-SI ON	14.12	49.37	4.44	2.00	2.44	.040	16.8
114X-SI ON	17.00	18.00	12.00	2.00	10.00	.040	8.6
106X-SI ON	17.00	21.00	7.50	3.00	4.50	.051	8.4
111X-SI ON	18.00	24.00	7.00	3.00	4.00	.051	9.5
112X-SI ON	18.00	24.00	8.00	3.50	4.50	.051	10.0
113X-SI ON	18.00	24.00	8.50	4.00	4.50	.051	10.0
109X-SI ON	18.00	26.00	8.44	3.75	4.69	.051	10.7
110X-SI ON	18.00	26.00	8.94	4.25	4.69	.051	10.8
*142X-SI ON	18.00	26.00	10.25	3.25	7.00	.063	14.3
*126X-SI ON	19.10	50.35	6.25	2.25	4.00	.051	17.3
129X-SI ON	20.00	29.00	9.82	4.91	4.91	.051	13.8

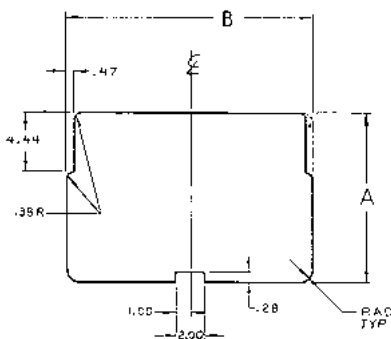
Measurements shown in inches.

*Bead configuration differs from illustration shown, contact ZERO for detailed information. NOTE: Width and length are exterior dimensions, height is an interior dimension. Lower shell of Model 114X, 116X and 132X complete with spot welded wrap-around riser section. IMPORTANT: If you are planning to install a panel in your case, please check dimensioning of closure extrusions illustrated above.

°Case numbers 109X, 110X, 111X, 112X, 113X, 114X, 122X, 126X, 128X, 130X, 132X, 134X, 136X and 140X in Onyx are non-stock items. Price and delivery available upon request. °° 142X available in Onyx only, non-stock.

TABLE 2: Standard 100X Series Instrument Panels (.090" 6061-T6 Aluminum Alloy)

Case Number	A	B	Radius	Part Number
100X	8.22	11.22	.62	ZP108000-100
101X	8.20	15.20	.84	ZP108000-101
102X	12.22	17.22	.84	ZP108000-102
103X	12.22	17.22	.84	ZP108000-103
104X	12.22	17.22	.84	ZP108000-104
105X / 107X	12.22	20.22	.84	ZP108000-105
106X	16.20	20.20	.84	ZP108000-106
109X	17.20	25.20	.84	ZP108000-109
110X	17.20	25.20	.84	ZP108000-110
111X	17.20	23.20	.84	ZP108000-111
112X	17.20	23.20	.84	ZP108000-112
113X	17.20	23.20	.84	ZP108000-113
114X	16.22	17.22	.84	ZP108000-114
116X	8.20	15.20	.84	ZP108000-116
122X	13.34	48.59	.84	ZP108000-122
126X	18.30	49.55	1.59	ZP108000-126
128X	9.22	35.22	.84	ZP108000-128
129X	19.20	28.20	.84	ZP108000-129
130X	9.22	47.72	.84	ZP108000-130
132X	7.70	18.95	.84	ZP108000-132
134X	12.20	25.70	.84	ZP108000-134
136X	12.80	17.80	.84	ZP108000-136
138X	10.47	15.72	.84	ZP108000-138
140X	11.22	31.72	.84	ZP108000-140
142X	17.17	25.17	.59	ZP108000-142



FOR BRACKET DRAWING, PART NUMBER AND INSTALLATION INSTRUCTIONS SEE PAGE 20.

200X SERIES EMI/ENVIRONMENTAL PROTECTION

ZERO takes a significant step forward with this line of EMI shielded carrying cases.

Designed to provide a minimum of 45 dB protection from 30MHz to 1GHz, these cases offer the case specifier a secure, yet economical solution to shielding problems often encountered in portable applications.

Available in many standard sizes, the Centurion® 200X Series is an ideal choice for a variety of applications.

The 200X Series cases are supplied with separable hinges.



200X Series Case shown with optional panel support brackets and EMI gasket.

Optional Environmental Seal

ZERO'S Design Engineers have developed a special, environmentally sealed mounting panel which utilizes the same closure system as that of the EMI version. This permits operation of an open case in field portable situations without damage to internal components and circuits.

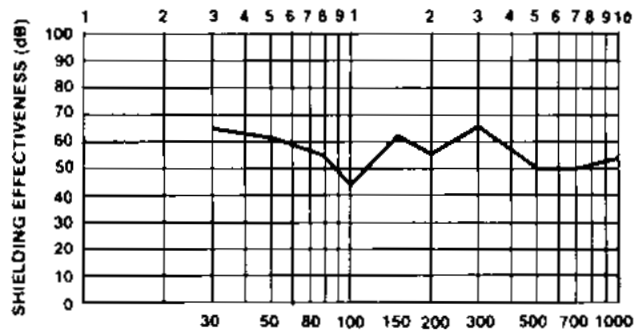


200X Series Case shown with optional panel support brackets installed.

CERTIFIED SHIELDING EFFECTIVENESS BY INDEPENDENT TESTING

ZERO's Centurion® Elite 200X Series have been tested by Chomerics, Inc., one of the nation's leading independent laboratories specializing in EMI/RFI emissions testing.

Every 200X carrying case provides a minimum of 45dB effectiveness to 1GHz. For additional information, please contact your nearest representative.



ORDERING INFORMATION 200X

Order by Part Number for Each Item (Case, Panel and/or Brackets)

Case _____ X- _____ (Gasket-Options = W (Weather Gasket)
Ordering Example: 201X-W = E (EMI Gasket)

If Panel Needed: ZP20568-_____ (see Table 2 on page 19 for correct number)
Ordering Example: ZP20568-3

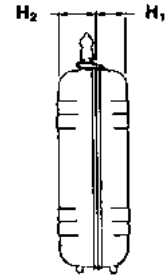
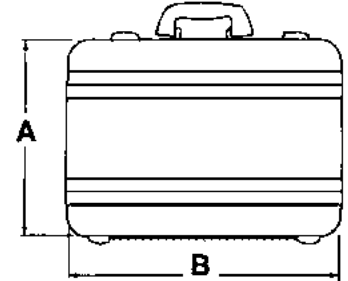
If Brackets Needed: ZP20654-1 (specify quantity)

200X SERIES EMI/ENVIRONMENTAL PROTECTION

See page 14 for case specifications.

CASE NUMBER	EXTERIOR		INTERIOR HEIGHT	H ¹ UPPER SHELL HEIGHT, I.D.	H ² LOWER SHELL HEIGHT, I.D.	MATERIAL THICKNESS	APPROX NET WEIGHT LBS
	A WIDTH	B LENGTH					
200X	9.00	12.00	5.00	2.00	3.00	.040	3.3
201X	9.00	16.00	7.75	2.50	5.25	.051	5.0
° 240X	12.00	32.50	4.50	1.50	3.00	.040	8.0
202X	13.00	18.00	4.50	2.00	2.50	.040	5.0
203X	13.00	18.00	6.00	2.50	3.50	.040	5.4
205X	13.00	21.00	6.50	2.75	3.75	.040	6.1
207X	13.00	21.00	7.50	3.75	3.75	.040	6.3
° 234X	13.00	26.50	7.00	3.00	4.00	.051	7.2
° 236X	13.58	18.58	7.00	3.00	4.00	.040	5.7
206X	17.00	21.00	7.50	3.00	4.50	.051	8.4
° 211X	18.00	24.00	7.00	3.00	4.00	.051	9.5
° 212X	18.00	24.00	8.00	3.50	4.50	.051	10.0
° 213X	18.00	24.00	8.50	4.00	4.50	.051	10.0
° 209X	18.00	26.00	8.44	3.75	4.69	.051	10.7
° 210X	18.00	26.00	8.94	4.25	4.69	.051	10.8
229X	20.00	29.00	9.82	4.91	4.69	.051	13.8

BASIC SHELL DIMENSIONS AND CASE SPECIFICATIONS



Measurements shown in inches.

NOTE: Width and length are exterior dimensions, height is an interior dimension. IMPORTANT: If you are planning to install a panel in your case, please check dimensioning of closure extrusions (see Section AA) for proper fit.

°Case numbers 209X, 210X, 211X, 212X, 213X, 234X, 236X and 240X are non-stock items. Price and delivery available upon request.

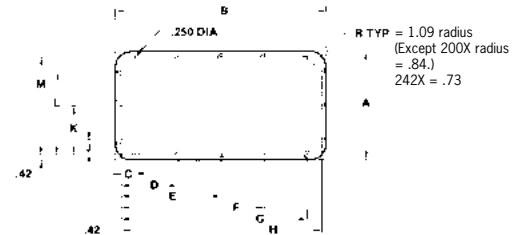


Table 2: Standard 200X Series Instrument Panels
(.125" 6061-T6 Aluminum Alloy. Furnished with a chemical film finish.)

CASE NUMBER	PART NUMBER	A	B	C	D	E	F	G	H	J	K	L	M	# OF HOLES
200X	- 1	8.520	11.520	2.340	-	-	-	8.340	10.680	1.580	-	6.080	7.660	8
201X	- 3	8.500	15.500	3.580	-	-	-	11.080	14.660	1.580	-	6.080	7.660	8
202X, 203X	- 5	12.520	17.520	3.590	-	8.340	-	13.090	16.680	1.840	-	9.840	11.680	10
205X, 207X	- 7	12.520	20.520	3.715	-	9.840	-	15.965	19.680	1.840	-	9.840	11.680	10
206X	- 9	16.500	20.500	3.715	-	9.840	-	15.965	19.680	1.830	7.830	13.830	15.660	12
209X, 210X	- 11	17.500	25.500	1.580	8.705	-	15.955	23.080	24.660	1.580	8.330	15.080	16.660	14
211X, 212X, 213X	- 13	17.500	23.500	1.580	8.080	-	14.580	21.080	22.660	1.580	8.330	15.080	16.660	14
228X	- 17	9.520	35.520	1.590	9.465	17.340	25.215	33.090	34.680	1.590	-	7.090	8.680	14
229X	- 19	19.500	28.500	1.580	7.705	13.830	19.355	26.080	27.660	1.580	9.330	17.080	18.660	16
234X	- 29	12.500	26.000	1.625	8.928	-	16.231	23.535	25.160	1.830	-	9.830	11.660	12
236X	- 31	13.100	18.100	3.590	-	8.629	-	13.668	17.258	1.838	-	10.424	12.258	10
240X	- 33	11.520	32.020	1.590	8.840	15.590	22.340	29.590	31.180	1.715	-	8.965	10.680	14
242X	- 35	17.460	25.460	1.560	8.726	-	15.896	23.060	24.620	1.580	8.310	15.040	16.620	14

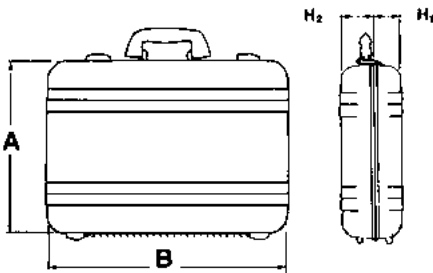
FOR BRACKET DRAWING, PART NUMBER AND INSTALLATION INSTRUCTIONS SEE PAGE 20

700X SERIES

Separable Hinge Cases



BASIC SHELL DIMENSIONS AND CASE SPECIFICATIONS



MODEL	EXTERIOR		INTERIOR HEIGHT	H ¹ UPPER SHELL HEIGHT, I.D.	H ² LOWER SHELL HEIGHT, I.D.	MATERIAL THICKNESS	APPROX. NET WEIGHT LBS
	A WIDTH	B LENGTH					
700X- SI	9.00	12.00	5.00	2.00	3.00	.040	3.3
701X- SI	9.00	16.00	7.75	2.50	5.25	.051	5.0
°716X- SI	9.00	16.00	14.50	2.50	12.00	.051	7.2
738X- SI	11.25	16.50	3.25	1.50	1.75	.040	4.4
°740X- SI	12.00	32.50	4.50	1.50	3.00	.040	8.0
702X- SI	13.00	18.00	4.50	2.00	2.50	.040	5.0
703X- SI	13.00	18.00	6.00	2.50	3.50	.040	5.4
704X- SI	13.00	18.00	3.00	1.50	2.00	.040	10.8
705X- SI	13.00	21.00	6.50	2.75	3.75	.040	5.0
707X- SI	13.00	21.00	7.50	3.75	3.75	.040	6.3
°734X- SI	13.00	26.50	7.00	3.00	4.00	.051	7.2
°736X- SI	13.58	18.58	7.00	3.00	4.00	.040	5.7
°714X- SI	17.00	18.00	12.00	2.00	10.00	.040	8.6
706X- SI	17.00	21.00	7.50	3.00	4.50	.051	8.4
°713X- SI	18.00	24.00	8.50	4.00	4.50	.051	10.0
°709X- SI	18.00	26.00	8.50	3.75	4.69	.051	10.7
°710X- SI	18.00	26.00	9.00	4.25	4.69	.051	10.8
°°742X- ON	18.00	26.00	10.25	3.25	7.00	.063	14.3
°729X- SI	20.00	29.00	9.82	4.91	4.91	.051	13.8

For Standard 700X Series Instrument Panels Use Table 2 On Page 17.

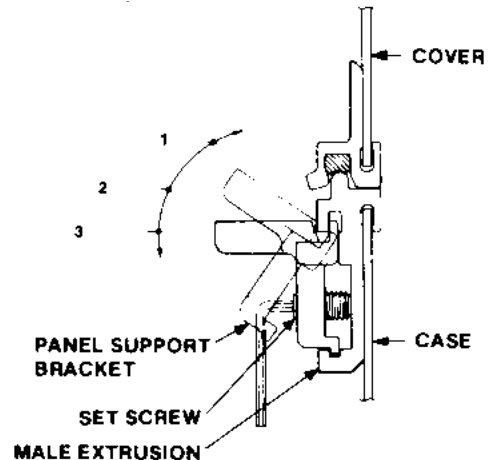
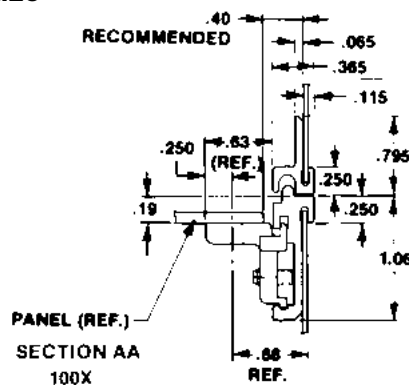
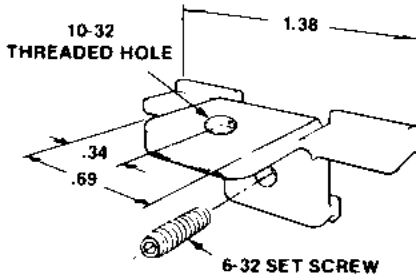
NOTE: Width and length are exterior dimensions, height is an interior dimension. IMPORTANT: If you are planning to install a panel in your case, please check dimensioning of closure extrusions illustrated above.

°Case numbers 713X, 714X, 716X, 729X, 734X, 736X, 738X and 740X are non-stock items. Price and delivery available upon request. °° 742X available in Onyx only, non-stock.

* Onyx finish is available for all sizes. Call for price and delivery. *

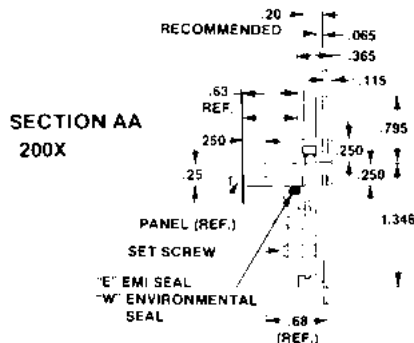
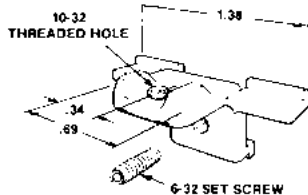
BRACKET FOR 100X AND 700X SERIES

PANEL SUPPORT BRACKET ZP20653 (OPTIONAL)



BRACKET FOR 200X SERIES

PANEL SUPPORT BRACKET ZP20654 (OPTIONAL)



BRACKET INSTALLATION INSTRUCTIONS

1. Insert bracket into extrusion as shown.
2. Rotate downward, as shown, until support bracket is seated.
3. Slide bracket laterally as required to align bracket with panel.
4. Caution: Do not over tighten.

CENTURION® ELITE

MODIFIED ALUMINUM CASES

Fast, Efficient Turnaround on Simple Modifications

ZERO has the internal capability for virtually any type of modification to standard cases. These include custom cutouts, special hole patterns, accessory brackets and related operations.

These services are available with longer lead times. Costs will vary depending on the complexity of the task. Please consult ZERO for estimates or design assistance.

In addition, ZERO offers a variety of standard hardware options, which are offered on the following pages as a fast and efficient means to customize your case.



KEYED LATCH OPTION

Available for use with standard case locks on the 100X Series for added security. The 200X Series is equipped with one keyed latch as standard equipment, additional latches may be added on special order.

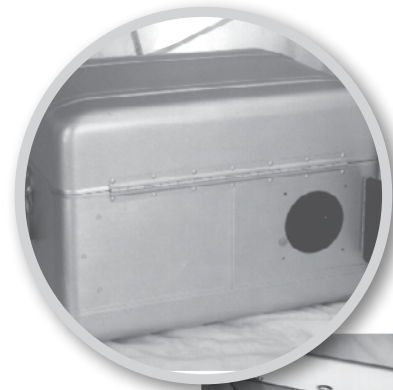


KEY-ALIKE LOCK OPTION

Specify a common key for your multiple case orders, using keyed alike locks. Combination locks require special set-up and longer lead times.

CENTURION® ELITE MODIFIED ALUMINUM CASES

Fast, Efficient Turnaround on Simple Modifications



EXTERIOR OPTIONS

In designing a modified Centurion Elite case, the following will need to be specified:

Basic Case Number _____

Upper Shell Height, Interior _____

Lower Shell Height, Interior _____

FINISH Required _____

- Options: Anodize (Specify Color)
- Black Powder Paint (Std.)
- Custom Paint Color (Specify FED-STD-595 Color)
- Other (Please Specify)

HINGE _____

- Options: Fixed Piano/Continuous
- Separable-two Assemblies (See page 25).

LOCK _____

- Options: Combination
- Keylock (assorted)
- Keylock (keyed alike)
- None

LATCH _____

- Options: Std. Drawbolt (See page 14)
- Keyed Latch (See page 24)
- ZSP2-204 (See page 24)
- ZSP2-210 (See page 24)
- ZSP2-230 (See page 24)

HANDLE _____

- Options: Std. Tennite (See page 14)
- ZSP20136 (See page 24)
- ZSP20137 (See page 24)

FOOT _____

- Options: Aluminum
- Rubber ZSP7-718 (See page 25)
- Casters HP25060 (See page 25)

INTERIOR OPTIONS

ZERO can equip your case with internal support brackets and panels to meet special equipment mounting requirements. Storage compartments and foam cushioning in sheet, convoluted or die cut foam are also available (see pages 26 and 27).

Substitutions, additions and deletions in latches, hinges, handles, strap loops, staybolts, locks, type of finish or color can be handled, without delay, from ZERO's extensive inventory of accessory items (see pages 24 and 25).

A complete range of secondary operations are readily available from ZERO's skilled, special fabrication departments. ZERO will quote any such requirements on request, and will build your case to your prints, or offer complete design assistance.

INTERIOR REQUIREMENTS

FOAM _____

- Options: Blank Layered Cushion Set (See page 26)
- Diced Layered Cushion Set (See page 26)
- Custom (provide drawings/material specifications)

PANEL(S) _____

- Options: Std. Inner Lid Assembly (See page 25)
- Std. 100X Series Panel (See page 17)
- Std. 200X Series Panel (See page 19)
- Custom panel (please specify) - silkscreening is available—contact ZERO Manufacturing, Inc..

PANEL BRACKETS _____

- Options: Std. 100X Series (ZP20653—see page 20)
- 100X Series (ZP9183—not shown)
- Std. 200X Series (ZP20654—see page 20)

GASKET _____

- Options: Std. Neoprene (See page 14)
- EMI Shielded (E) (See page 18)
- Weather/Environmental (W) (See page 18)

Additional Requirements _____

CENTURION® ELITE MODIFIED ALUMINUM CASES

TABLE 3 Basic Shelf-half Sizes and Dimensions. Refer to drawings below.

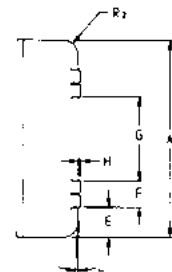
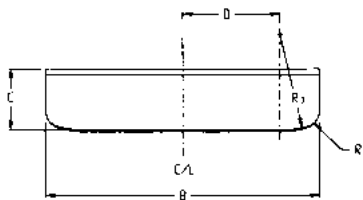
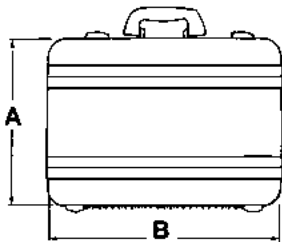
Measurements shown in inches.

CASE NUMBER		EXTERIOR		C INTERIOR**												MAT'L
DIE MODEL	DIE MODEL	A WIDTH ±.06	B LENGTH ±.06	MIN	MAX	D	E	F	G	H	R ¹	R ²	R ³	R ⁴	L	THICKNESS
*132	232	8.50	19.75	1.20	2.75	-	-	-	-	-	1.25	0.50	-	.50	2.5°	.051
100	200	9.00	12.00	2.00	2.91	3.50	1.75	1.34	2.81	.09	1.00	1.00	6.00	1.00	2.5°	.040
101	201	9.00	16.00	2.00	5.16	5.50	1.75	1.34	2.81	.09	1.25	1.00	6.00	1.00	2.5°	.051
*128	-	10.00	36.00	2.00	2.91	-	2.25	1.50	2.50	.12	1.25	1.00	-	1.00	-	.040
*130	-	10.00	48.50	2.00	1.91	-	2.25	1.50	2.50	.12	1.25	1.00	-	1.00	-	.040
*138	-	11.25	16.50	1.50	2.00	-	1.75	1.44	4.88	.12	1.25	.50	-	.50	-	.040
*140	240	12.00	32.50	1.50	2.91	-	2.25	1.44	4.63	.12	1.25	.50	-	.50	-	.040
103	203	13.00	18.00	2.00	5.50	6.40	2.00	1.75	5.12	.12	1.25	1.00	6.25	1.00	2.5°	.040
*104	-	13.00	18.00	1.50	1.91	-	2.25	1.50	5.50	.09	1.25	.50	-	.50	-	.040
105	205	13.00	21.00	2.00	3.66	7.90	2.00	2.00	5.00	.12	1.25	1.00	6.25	1.00	2.5°	.040
*134	234	13.00	26.50	2.00	3.91	-	2.25	1.50	5.50	.12	1.25	.75	-	.75	-	.051
*136	236	13.58	18.58	2.00	4.29	-	2.25	1.50	6.08	.12	1.25	.50	-	.50	-	.040
*122	-	14.12	49.37	1.87	2.35	22.09	2.18	1.62	6.50	.12	1.25	1.00	6.25	1.00	2.5°	.040
114	214	17.00	18.00	2.00	3.96	6.40	2.68	2.25	7.14	.12	1.25	1.00	6.25	1.00	2.5°	.040
106	206	17.00	21.00	2.25	4.41	7.46	2.68	2.25	7.13	.12	1.25	1.25	6.50	1.25	2.5°	.051
112	212	18.00	24.00	2.25	4.41	8.87	2.93	2.25	7.64	.12	1.25	1.25	6.50	1.25	2.5°	.051
109	209	18.00	26.00	2.37	4.60	9.81	2.93	2.25	7.64	.12	1.25	1.25	6.50	1.25	2.5°	.051
*142	-	18.00	26.00	2.00	6.91	-	3.15	1.63	8.43	.12	1.00	1.00	-	1.00	-	.063
*126	-	19.10	50.35	2.00	3.91	22.53	2.93	2.00	9.12	.12	2.00	1.00	6.25	1.00	2.5°	.051
129	229	20.00	29.00	2.25	4.82	11.31	2.94	2.25	9.62	.12	1.25	1.25	6.50	1.25	2.5°	.051

* Bead configuration differs from illustration shown below. Contact ZERO for detailed information.

**2" minimum H² depth with standard hardware.

BASIC SHELL DIMENSIONS AND CASE SPECIFICATIONS



EXTRA HEIGHT CASES WITH RISERS

Cases in the standard Elite line can each be modified into an almost infinite combination of case heights, if required.

Table 3 (C Columns) shows the minimum/maximum height range of each shell.

Any combination of dimensions, in .25" increments, may be ordered within the limits shown. If additional height is required, a riser section(s) can be added to the basic shells.

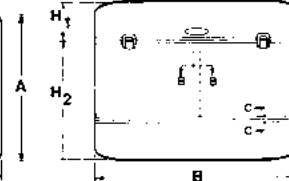
ZERO reserves the right to provide a riser section in either configuration (Section CC).

EXTRA HEIGHT CASES WITH RISERS (TYP.)

TOP VIEW

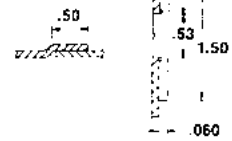


SIDE VIEW



SECTION CC

SECTION BB



100X SERIES ONLY

Extra height is the combination of extrusion and sheet metal wrap. (Splice located at maximum draw depth)

Silver Finish: Risered models (122X, 128X, 129X and 130X) are fine sanded and sulfuric acid anodized on all exposed surfaces.

CENTURION® ELITE MODIFIED ALUMINUM CASES

Standard Hardware Options

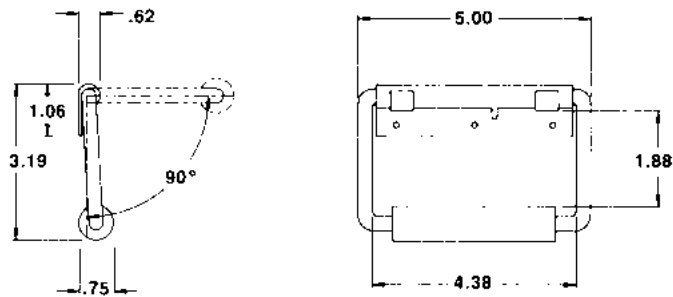
HANDLES

ZP 20136

MATERIAL: Steel Plate and Bail. Grip, Non-Rigid Synthetic Resin Composition.

WEIGHT: 0.43 lbs.

PERFORMANCE DATA: Design load, 100 lbs. Bail stops at



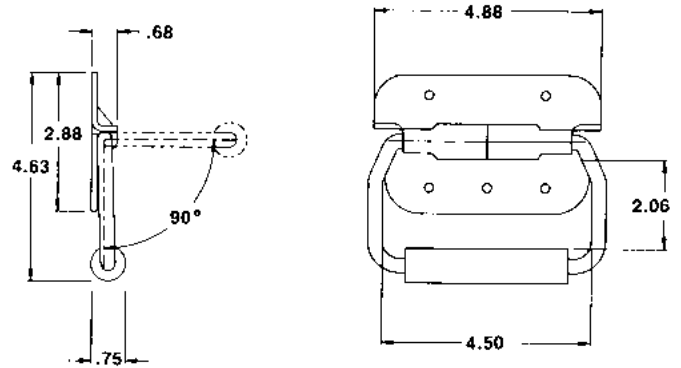
ZP 20137-1 (without holes)

ZP 20137-2 (with holes)

MATERIAL: Aluminum Plate, Steel Bail with Rubber Grip

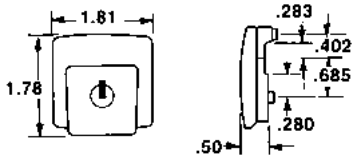
WEIGHT: 0.50 lbs.

PERFORMANCE DATA: Spring loaded, rattle proof, carries at 90° and is designed to lift 150 lbs.



LATCHES

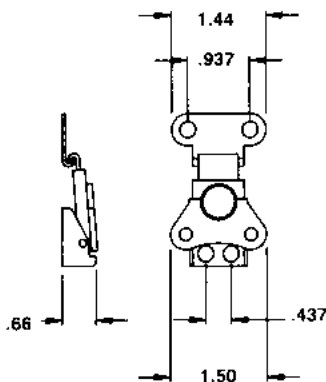
HP25051-1 Keyed Latch



ZSP2-210-1

MATERIAL: Steel

PERFORMANCE DATA: Preloaded to 90 lbs. Withstands 300 lbs. pull

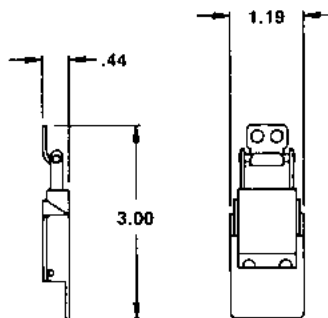


ZSP2-204-1

MATERIAL: Steel

WEIGHT: .10 lbs.

PERFORMANCE DATA: Preloaded to 70 lbs. Withstands 400 lbs. pull

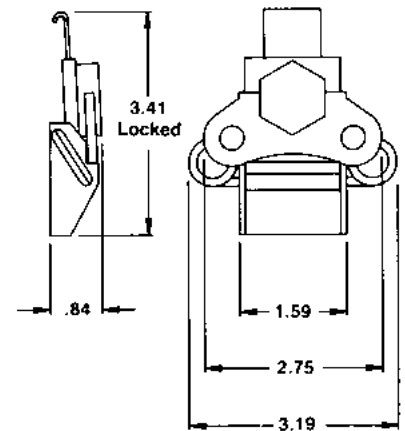


ZSP2-230-1

MATERIAL: Steel

WEIGHT: .312 lbs. (Body Only)

PERFORMANCE DATA: Cam Action, Positive Locking.



CENTURION® ELITE MODIFIED ALUMINUM CASES

Standard Hardware Options

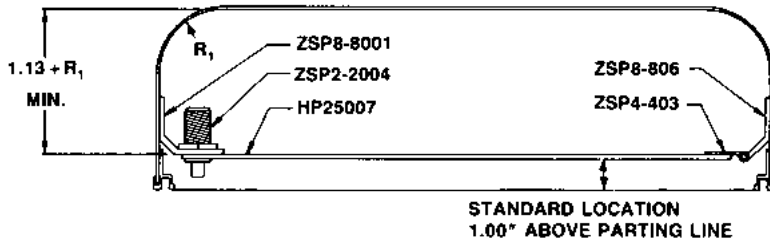
INNER LID ASSEMBLY

HP 25013

MATERIAL: 6061-T6 Aluminum per QQ-A250/11 0.060" thick

PERFORMANCE DATA: Push button latch is specially designed for use with arctic mittens. Card or book clips may be attached directly to lid. Lid is contoured to match radius of lid with reliefs cut in hinged edge to permit opening over 90°.

Note: Lowest possible position of lid is 0.69" above parting line. Minimum stowage height is $R^1 + 1.13"$. Minimum H^1 (height of cover) when inner lid assembly is required is $2.19" + R^1 + \text{stock thickness}$.



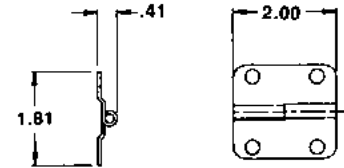
HINGE

ZP20282 Separable

ZP20282-3 Non-Separable

MATERIAL: Stainless Steel, Nickel Plated

WEIGHT: 0.104 lbs.



FEET

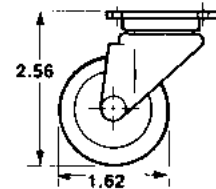
HEAVY DUTY CASTER

HP25060

MATERIAL: Zinc Plated Steel, Cushion Polyurethane Rubber Wheel

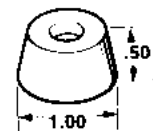
WEIGHT: 0.375 lbs.

PERFORMANCE: 60 lbs. capacity ea.



RUBBER FOOT

ZSP7-718



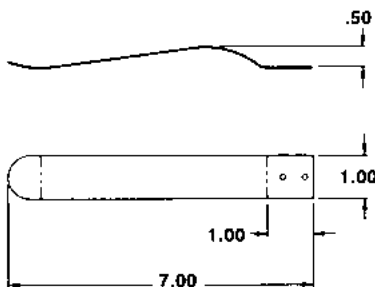
CARD CLIPS

ZSP 9-902

MATERIAL: Spring Tempered Steel

WEIGHT: .09 lbs.

PERFORMANCE DATA: 0.27 lbs. clamping force when deflected 0.06 inches.

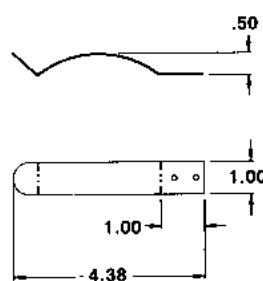


ZSP 9-903

MATERIAL: Spring Tempered Steel

WEIGHT: 0.04 lbs.

PERFORMANCE DATA: 0.27 lbs. clamping force when deflected 0.06 inches.



CENTURION® ELITE STANDARD FOAM CUSHION SETS

Shock and Vibration Protection

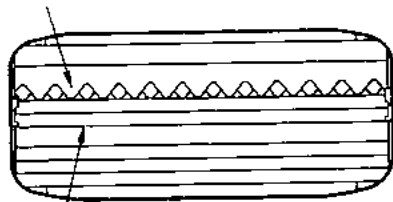
Blank layered foam cushion sets are available for every Centurion® Elite carrying case.

Diced layered foam packs and divider systems are also available for select sizes.

All systems are available from stock, and offer a fast, economical answer to your equipment packaging requirements.



BLANK LAYERED CUSHION SET

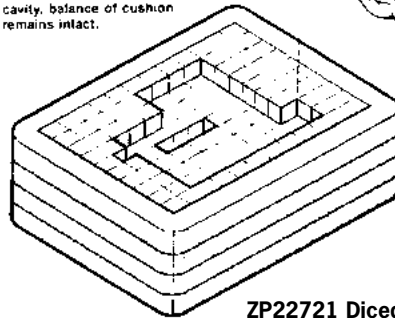
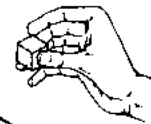


LAYERED FOAM
LAYER THICKNESSES WILL
VARY DEPENDING ON
MODEL NUMBER.

M44784 Blank Foam Pack

DICED LAYERED CUSHION SET

Remove blocks for desired
cavity, balance of cushion
remains intact.



ZP22721 Diced Layered
Foam Cushion Set

GET A SNUG FIT

Protect your most delicate equipment by specifying M44784 foam pack, made of gray two (2) lb. density, polyurethane foam, layered bottom and convoluted top.

Standard foam packs are available from stock to fit all standard Centurion® Elite cases.

Foam pack made of gray polyurethane foam two (2) lb. density layered bottom and convoluted top.

Two of the bottom layers are blank foam and two layers are pre-cut squares. Remove blocks for the desired equipment cavity, the rest of the cushion remains intact.

Available for case numbers: 100, 102, 103, 105, 106, 110.

ORDERING INFORMATION

Blank Layered
Cushion Set

M44784 —

Case Model Number _____

SAMPLE PART NUMBER
M44784-101

ORDERING INFORMATION

Diced Layered
Cushion Set

ZP22721 —

Case Model Number _____

SAMPLE PART NUMBER
ZP22721-101

CENTURION® ELITE CUSTOM FOAM CUSHION SETS

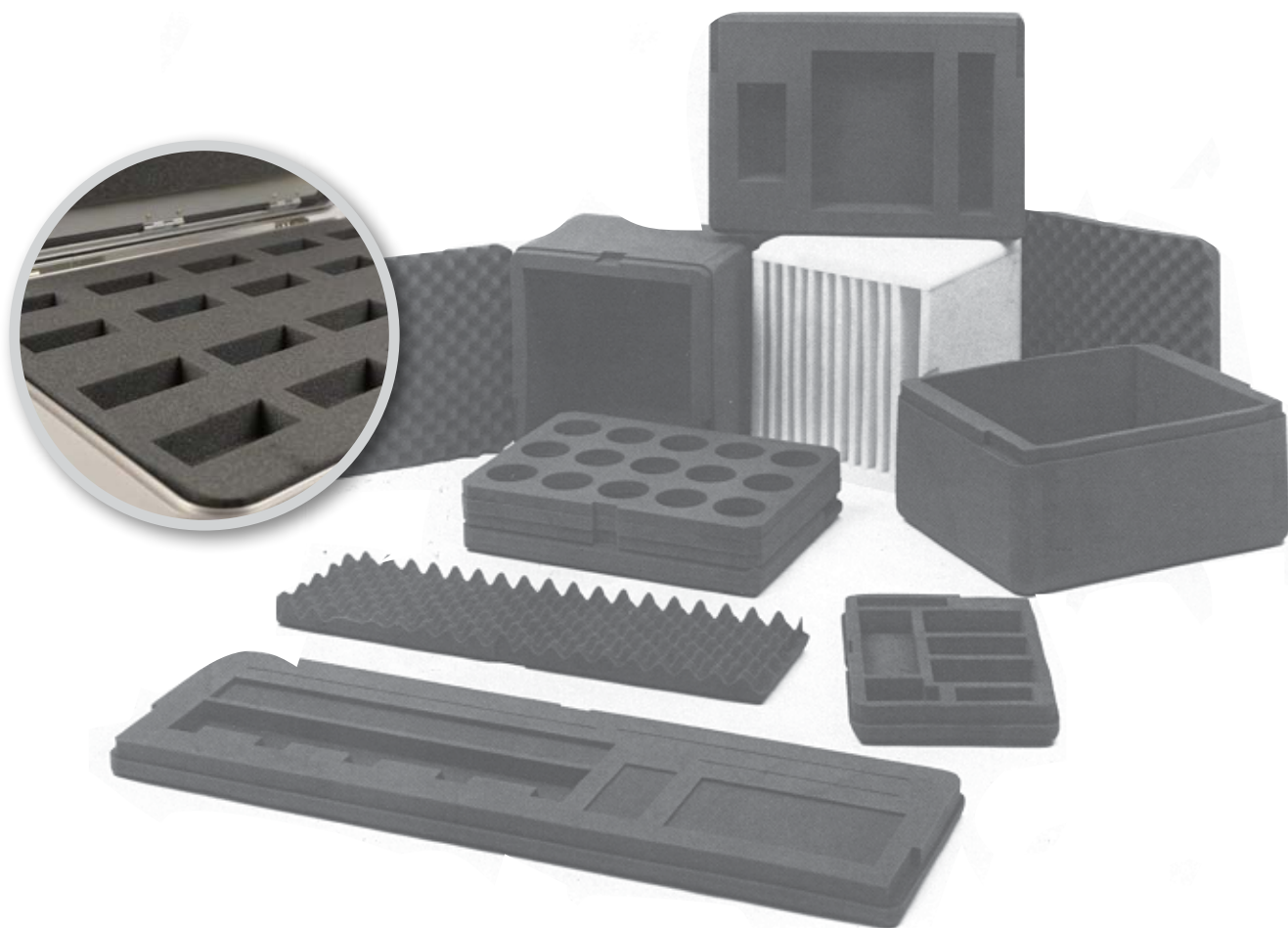
Shock and Vibration Protection

Shock and vibration can seriously damage an improperly packaged product. Dissipating the energy created by extreme shock or by continual vibration in-transit is a highly-specialized art which extends beyond traditional engineering calculations. Determining the best method for properly attenuating this potentially destructive energy is essential to extending product life.

We have designed and fabricated over one million specialized carrying cases with vibration and shock isolation systems.

We work with the most demanding customers in high technology business, the military and our national space program. This wealth of specialized engineering knowledge and practical experience is available to assist you on your next packaging requirement.

A free consultation with a ZERO engineer can save you time and money. Show us your packaging requirement and we will design and recommend a system which satisfies your needs.



Many types of foam are available. Several of the most widely used foams are listed below:

POLYURETHANE FOAM is a low-cost cellular packaging material with predictable and excellent performance characteristics in the broad temperature range (-10° to +185°F). This material can be coated for added moisture and abrasion resistance. The ease of fabrication into a variety of shapes makes polyurethane foam especially adaptable for use as a multi-cavity cushion material. It is available in flat sheet stock or it can be molded into any required shape.

Though various colors and densities are available, gray in densities of either 2 or 4 lbs./cu ft is the most common.

This is probably the most frequently used cushioning material in case packaging.

POLYETHYLENE FOAM is a low-cost cellular packaging material with predictable performance characteristics. The virtue of this material lies chiefly in its ability to withstand high bearing loads.

BOTH POLYURETHANE AND POLYETHYLENE FOAMS are available in anti-static versions. These foams minimize static charge generation so they contribute to the important objective of creating a static free environment. They also provide quick, but controlled, dissipation of electrostatic charges emitted from other materials.

STYLE-LITE CASES

Here is the ideal instrument, sample, service or parts case. ZERO's Style-Lite carrying cases are high style and low cost.

Strong, durable and lightweight, these cases are of thermoformed construction.

See the following pages for specifications, available options and accessories to customize the interior for your products.

APPLICATIONS

- Transport computers, electronic instrumentation, medical electronics, telecommunications, and sensitive electromechanical devices
- Portable unit for testing and diagnostic equipment
- Camera and video equipment transport
- Tool case, medium duty weight
- Naval /oceanic environments
- Product display and samples

BENEFITS

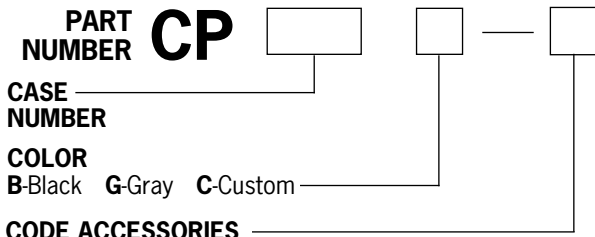
- Multiple sizes available in both standard and heavy duty styles
- Lightweight
- High impact plastic shells
- Extreme durability

FEATURES

- Constructed from textured ABS (Acrylonitrile Butadiene Styrene) high impact thermoformed plastic
- Haircell grain exterior, smooth finish interior. See page 14 for available colors.
- Interlocking tongue and groove closure of 6063-T52 aluminum alloy
- Two, positive-seating, bail type, chrome plated latches
- Piano type, clear anodized hinge
- Injection molded handle
- Molded plastic feet
- Available options include separable hinged cover, inner lid assembly, flanged closure, flange hole patterns with floating #10-32 threaded inserts and gaskets.
- Custom sizes, colors and foam cushions available on special orders.

All flange hole patterns must be supplied by customer.

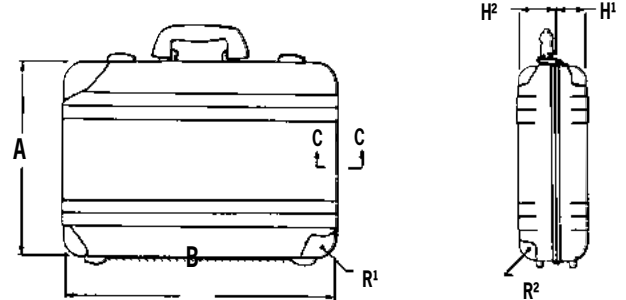




- P** Panel Mounting Bracket (Specify Quantity)
- BF** Blank Foam Pack
- DF** Diced Foam Pack
- HS** Hinge-Separable
- IL** Inner Lid Assembly
- LL** Locking Latches
- CL** Combination Lock
- CF** Closure-Flanged (*CP6000 Series Only*)
- C** Customer Flange Hole Pattern
(Customer to Furnish Drawing of Hole Pattern)
- HP** Customer Flange Hole Pattern & Gasket

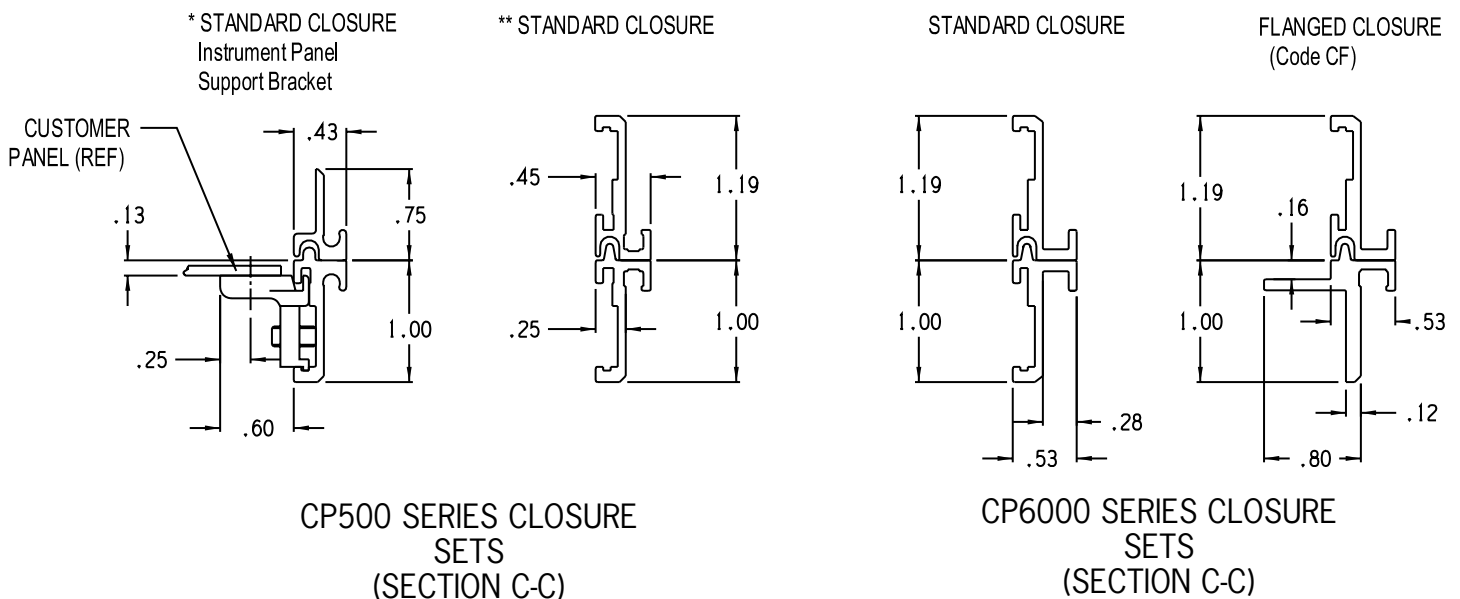
STYLE-LITE CASE SPECIFICATIONS

All dimensions are in inches: tolerance $\pm .06"$
 All dimensions are interior unless otherwise shown.



CP500 STANDARD CASES			CP6000 HEAVY DUTY	INTERIOR DIMENSIONS						NET WEIGHT/LBS APPROXIMATE	
CASE NO.	STOCK	CLOSURE	CASE NO.	A	B	H1	H2	R1	R2	STANDARD	HEAVY DUTY
CP500	X	*		8.92	11.92	2.00	3.00	0.71	1.00	2.6	-
CP501	X	**	CP6001	8.92	15.92	2.50	5.25	1.00	0.50	3.5	5.0
CP502	X	*	CP6002	12.92	17.92	2.00	2.50	1.00	1.00	4.4	6.4
CP503	X	**	CP6003	12.92	17.92	2.50	3.50	1.00	1.00	4.7	6.9
CP505	X	**	CP6005	12.92	20.92	2.75	3.75	1.00	1.00	5.2	7.6
CP506	X	**	CP6006	16.90	20.90	3.00	4.50	1.00	1.25	6.0	8.7
CP510	X	**	CP6010	17.90	25.90	4.25	4.75	1.00	1.25	7.3	10.8
CP511	X	**	CP6011	18.00	24.00	3.00	4.00	1.00	0.50	6.3	9.3
CP515	X	*		13.00	19.12	1.50	2.13	1.00	0.50	4.5	-
CP517	X	**		13.00	19.12	2.50	3.13	1.00	0.50	4.6	-
CP519	X	**		14.00	19.50	2.50	3.00	1.00	0.50	4.4	-
CP524		*		9.00	41.00	2.00	2.00	1.00	0.50	6.4	-
CP525		*		10.50	30.00	2.00	2.00	1.00	0.50	5.3	-
CP527		*		13.00	53.00	2.00	2.00	1.00	0.50	9.1	-
CP531		*		14.00	50.00	2.00	2.00	1.00	0.50	9.0	-

CUSTOM SIZES AND COLORS AVAILABLE ON SPECIAL ORDERS. CALL 800-500-ZERO (9376) FOR MORE INFORMATION.



STYLE-LITE CP500 AND CP6000 ACCESSORIES & FOAM OPTIONS

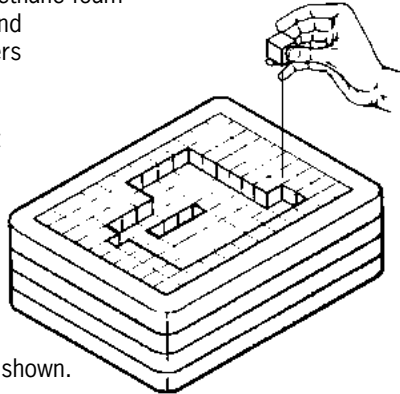
BLANK FOAM PACK CODE BF

Foam pack made of gray polyurethane foam 2 lbs. density, layered bottom and convoluted top. Add suffix BF to case part number to receive blank foam with your case order. To order blank foam pack separately, use catalog number shown.

DICED FOAM PACK CODE DF

Foam pack made of gray polyurethane foam 2 lbs. density, layered bottom and convoluted top. The bottom layers include pre-cut squares.

Pluck out the desired equipment cavity, the rest of the cushion remains intact. Add suffix DF to case part number to receive diced foam pack with your case order.

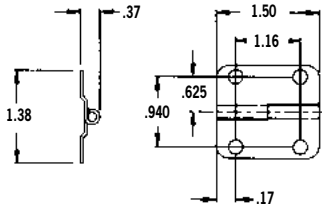


To order diced foam pack separately, use catalog number shown.

**Remove Blocks for Desired Cavity
Balance of Cushion Remains Intact**

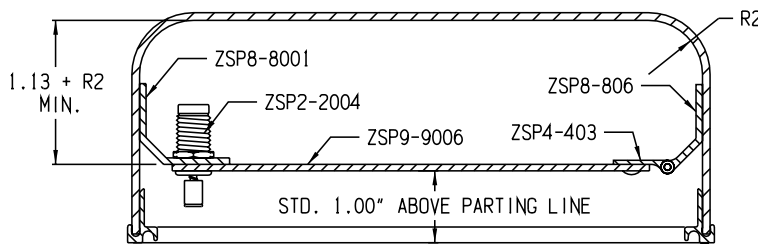
HINGE-SEPARABLE CODE HS

ZSP4-4002 Separable
Material: Steel,
Nickel Plated
Weight: 0.104 lbs.



INNER LID ASSEMBLY CODE LA HP25013

Material: Aluminum or Plastic
Push button latch is specially designed for use with arctic mittens. Card or book clips may be attached directly to lid. Lid is contoured to match radius of lid with reliefs cut in hinged edge to permit opening over 90°. Minimum stowage height is $R^2 + 1.13"$. Minimum H. (height of cover) when inner lid assembly is required is $2.00" + R^2 +$ stock thickness.

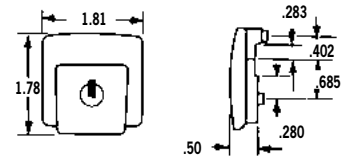


CASE NUMBER	CASE NUMBER	BLANK FOAM PACK	DICED FOAM PACK
CP500	-	ZP22135-500	ZP22141-500
CP501	CP6001	ZP22135-501	-
CP502	CP6002	ZP22135-502	ZP22141-502
CP503	CP6003	ZP22135-503	ZP22141-503
CP505	CP6005	ZP22135-505	ZP22141-505
CP506	CP6006	ZP22135-506	ZP22141-506
CP510	CP6010	ZP22135-510	ZP22141-510
CP511	CP6011	ZP22135-511	-
CP515	-	-	-
CP517	-	-	-
CP519	-	ZP22135-519	-
CP524	-	-	-
CP525	-	-	-
CP527	-	-	-
CP531	-	-	-

Keyed Latch

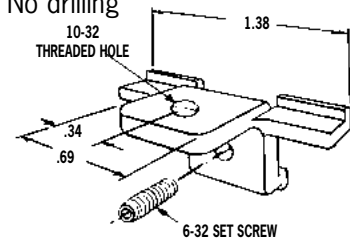
LATCH-LOCKING CODE LL

HP25051-1



PANEL MOUNTING CODE P

Standard panel mounting bracket allows the simple installation of panel mounted equipment in the Style-Lite series cases. No drilling required (see detail).



Add suffix P followed by the number of brackets required to the case part number to receive brackets with your case order. To order separately, use part number ZP20653-1.

Panel mounting brackets can be used in both case bottom and top halves in CP6000 series and selected CP500 series cases.

GLOSSARY OF TERMS

Alloy: An aluminum alloy is a metal that is a mixture of aluminum and one or more other elements.

1100: 99% pure aluminum.

3003: Aluminum/manganese alloy.

6061: Aluminum/manganese/silicon alloy.

Anodizing: Electrochemically converting the surface of aluminum from metallic aluminum to aluminum oxide (alumina) by making aluminum the anode in a plating-type electrochemical cell. It is used not only for added protection, but also in conjunction with dyeing and sealing to create decorative effects.

Artificial Aging: Speeding up the natural aging cycle by heating the metal for a short time.

CF: Flush fitting cover.

CI: Interior fitting cover.

COG: Exterior fitting cover with gasket clearance.

COL: Exterior fitting cover with loose fit.

COT: Exterior fitting cover with tight fit.

Cold Working: Applying a mechanical force (such as deep drawing) to metal at room temperature at such a rate that strain-hardening occurs.

Deep Drawing: Using a ram to force an aluminum sheet into a draw die to produce a shell. See also draw die. Deep drawing is also used to produce many cup-shaped products in other industries.

Die: See draw die.

Draw Die: Tooling used in the deep drawing process to produce shells.

EMI Gasket: A gasket used in closures and on panel flanges to keep EMI radiation from entering or escaping from an enclosure.

EMI Shielding: Shielding against radiated or conducted EMI/RFI.

Flange: A rim into which a panel can be mounted.

Hardening: Increasing the hardness of metal by suitable treatment such as by strain or heat. Associated with processes such as age hardening, strain or work hardening, precipitation hardening, or quench hardening.

Heat Treat: Temper produced by heating.

Heat-Treatable Alloy: An aluminum alloy that can be hardened by heat treatment. Generally includes those alloys in 2XXX, 6XXX, and 7XXX series.

Height: The depth of a shell.

Mu-metal: A metal with high nickel content (78% nickel, iron, plus other additions) providing high magnetic permeability. Mu-metal shells are used as enclosures or covers for shielding/magnetically isolating critical parts from magnetic interference. Mu-metal 'absorbs' magnetic lines in the vicinity rather than allowing them to pass through critical components.

Nutplate: A nut capable of receiving a screw for mounting a panel, etc.

O.D.: Outside diameter measured at tangency between bottom radius (R^1) and side.

Points of Tangency: The points at which the straight portions of the shell walls intersect the beginning of the radius corners.

Precipitation Hardening: A metal-treating process that increases the strength of aluminum by precipitation alloying material into the structure of aluminum. Natural aging is involved if the process occurs at room temperature, while artificial aging involves the application of heat.

Quenching: The quick chilling of aluminum to retain, at room temperature, the metallurgical structure produced by heat treatment at an elevated temperature.

R¹: The radius at the bottom of drawn shells.

R²: The radius at the sides of drawn shells.

Reflectivity: The ability of a surface to mirror or reflect radiant energy. The reflectance of aluminum is exceptionally high.

RFI: Radio frequency interference.

Seamless Construction: An exceptional attribute of deep drawn shells. Deep drawn shells have no seam.

Secondary Aluminum: Metal recovered aluminum scrap, segregated by alloy, and remelted to produce purified metal. One of its more important uses is in the foundry industry. A great advantage of aluminum is that it can be recycled indefinitely, as a secondary product. This not only preserves aluminum as a natural resource, but it also saves energy, since secondary aluminum is less costly to produce.

Solution Heat Treating: A strengthening thermal treatment in which certain aluminum alloys are heated to a relatively high temperature and then held (soaked) for varying times. A rapid quench or natural aging follows the heating period.

Strain Harden: Tempering through strain. Same as work harden.

Strength-to-Weight Ratio: The ratio of tensile strength to the weight of a material.

T: Material thickness.

Tangency: See points of tangency.

Temper Code: A letter-number code which designates heat treatment and cold work processes to create a temper.

Tensile Strength: The maximum pulling load that a material can sustain without failure.

Work Hardening: Hardening which occurs as the result of deforming metal crystals. Same as strain hardening. Results from deep drawing and other cold forming processes, including bending.

ZERO Method: The technologies and craft of ZERO Manufacturing, Inc. deep drawn products.

Products



DEEP DRAW COMPONENTS

- Precision Miniatures
- Stock Enclosures
- Value Added Enclosures
- In-Stock Deep Draw



CARRYING CASES

- Style-Lite™
- Valuline™
- Centurion® Elite™
- Centurion® Polaris™
- Centurion® On Demand



19" RACK MOUNTS

- Warrior™
- Scout™
- Val-An 700™ & 750™
- Val-An 900™



TRANSIT AND STORAGE CONTAINERS

- Transittainer™
- Val-An™
- Pre-Engineered Cases
- Modular Containers

Services

DESIGN

- Product Design
- Product Engineering
- Custom Foam
- Prototyping

FABRICATION

- Production/ Manufacturing
- Assembly
- Drop Testing
- Environmental Testing

- Heat Treating
- Perforating
- Sheet Metal Fabrication
- Tool and Die Creation
- Welding

FINISHING

- Anodizing
- Chemical Etching
- Painting
- Powder Coating
- Silkscreening

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- Aerospace

- Broadcast/Telecom
- Medical

- Electronics
- Industrial

- Homeland Defense

ZERO Knows

PLASTIC & METAL

ZERO is the premier manufacturer of both metal and plastic protective enclosures.

DEEP DRAW

ZERO perfected the deep draw process and has the largest range of tooling in the world. Whether large or small, we can handle virtually any deep draw requirement.

CUSTOM SOLUTIONS

ZERO's capabilities range from very small custom enclosures to very large and complex fabricated assemblies.

SPEED

ZERO's manufacturing philosophy accelerates production lead times, which means your product reaches you faster! Ask about our Quick-Ship, In-Stock and 'On-Demand' Programs.

SUCCESS

ZERO's custom solutions are time-tested and field proven. With over 100 years engineering experience and for more than 50 years, ZERO cases have been the benchmark for durability and longevity.

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