



Avionics racking systems

 **HOMBERGER**

Aerospace & defense

HOMBERGER.COM

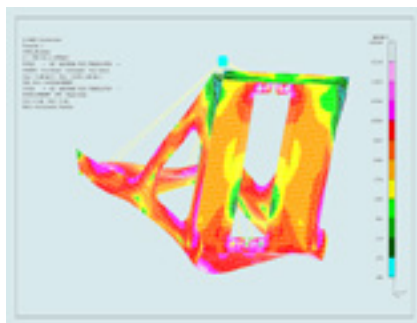
50 YEARS OF EXPERIENCE IN THE AEROSPACE INDUSTRY

For more than 50 years, HOMBERGER and Hutchinson have built a strong experience in the design and manufacture of avionics racking systems for very demanding industries such as Aerospace and Defense.

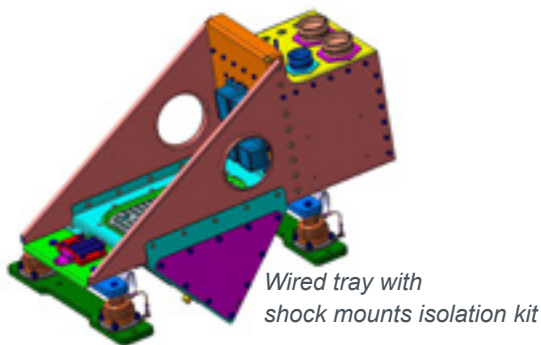
Mainly all the solutions we offer are custom designed and tailored to meet our customers requirements. With a human sized department, our goal is to offer flexibility, fast response, strong technical expertise and short lead times in order to match the markets expectations.

Our products are used in a wide range of platforms, including turboprops, commercial and business jets, helicopters, high performance defense aircrafts, fighting vehicles, submarines and surface ships.

Our racking systems may also integrate isolators, structural damping, thermal management, wiring, connectors and composite elements.



Calculs by finite elements



Wired tray with shock mounts isolation kit

PROJECT MANAGEMENT

The project management starts with the study of the customer specification through a compliance matrix and a dedicated planning.

We intend to co-operate very closely with our clients in order to provide complete satisfaction through the product performances, quality and lead time management. Our projects are run through the conventional milestones PDR, CDR and FAI. When required, we also supply literature packages such as risk management plan, structural analysis, weight analysis, FAI reports, Qualification Test Procedures, Qualification Test Reports, Maintenance documentation, etc.

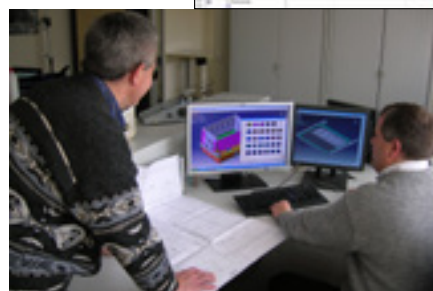
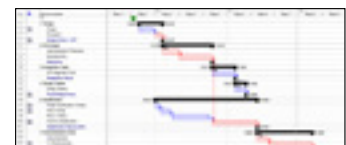
ENGINEERING

With a highly technical and innovative support from the Hutchinson Research Center, the activity benefits from an experienced team of engineers and designers in order to develop customized solutions for demanding environments.

- CAD Design
- Finite Element Stress Calculation
- Dynamic Testing Facilities
- Electrical Design and Testing
- Weight and Balance
- Complete package including engineering, tooling, documentation, qualification, industrialization review, prototypes and serial parts.



Vibrating table



Project planning

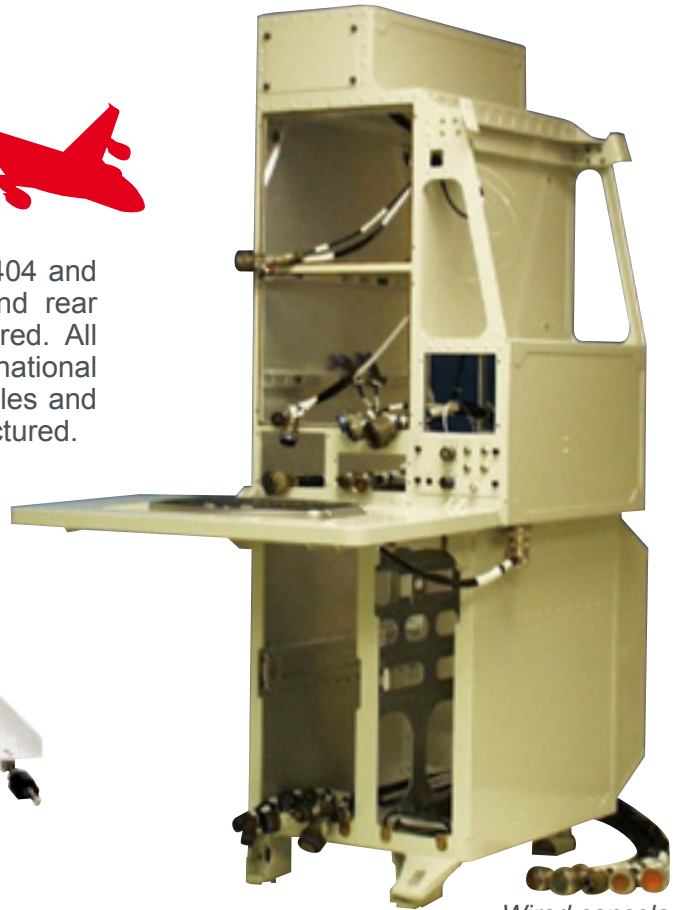
CIVIL AVIATION



A full range of commercial trays such as ARINC 404 and ARINC 600 trays can be supplied with front and rear retainers as well as shock isolators when required. All standard variations can be offered to meet international standards. More complex products such as consoles and integrated racking enclosures can also be manufactured.



2 to 6MCU trays



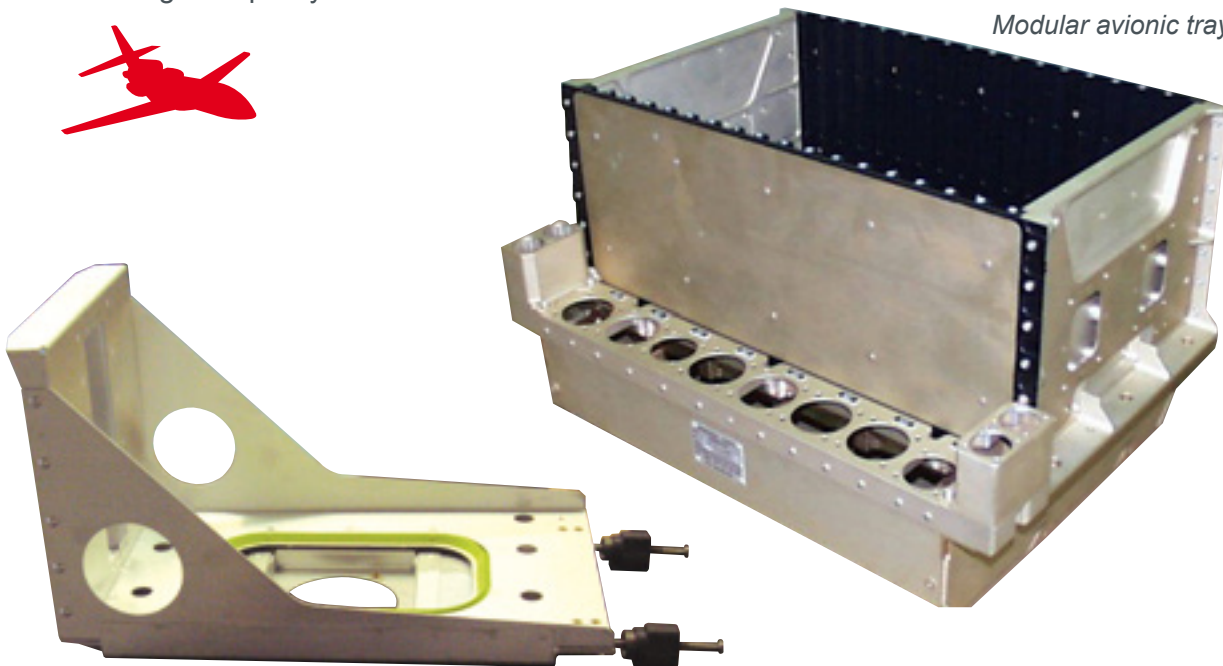
Wired console

BUSINESS JET

Complete range of Arinc 404, Arinc 600 trays, hardware and avionics enclosures fully designed and manufactured at the highest quality standards.



Modular avionic tray

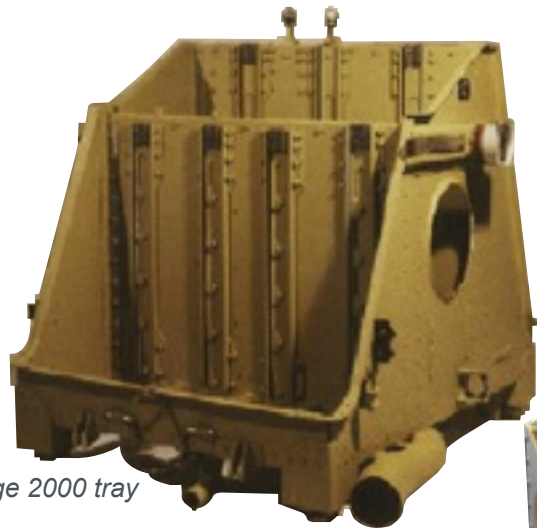


Falcon standard tray

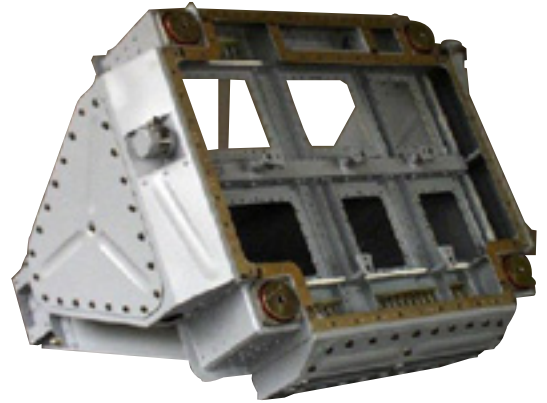


MILITARY AIRCRAFT

The experience on the military aircraft market includes supply of products equipped on the following platforms : Tornado, Eurofighter, Saab JAS 39, Harrier Series, Mirage 2000, Rafale, JSF, A400M, etc.



Mirage 2000 tray



Rafale tray

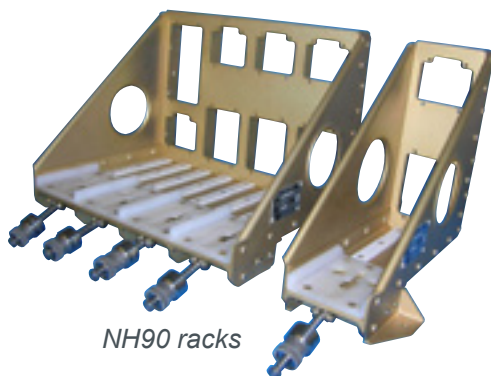


A400M tray

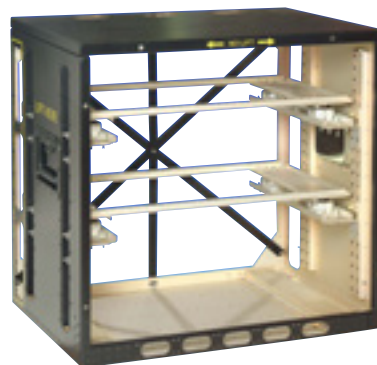


HELICOPTER

Equipments to be installed on board helicopters for civil or military purposes have to withstand a severe level of background vibration. The range of products include ARINC 404 trays, defense trays, cabinets and mission consoles.



NH90 racks

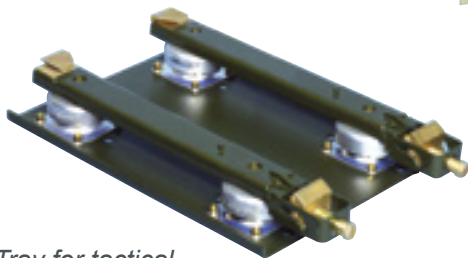


Fully integrated cabinet

NAVAL AND GROUND DEFENSE



Racks and shelves for naval applications are designed to withstand high levels of vibration and shock. Front self-locking retainers and rear location pins are used to securely retain the equipment.



Tray for tactical radio system equipment



Shelf for communication equipment



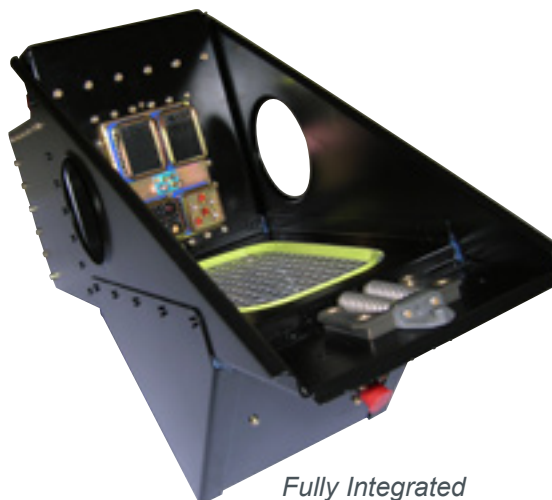
MILITARY UPGRADE



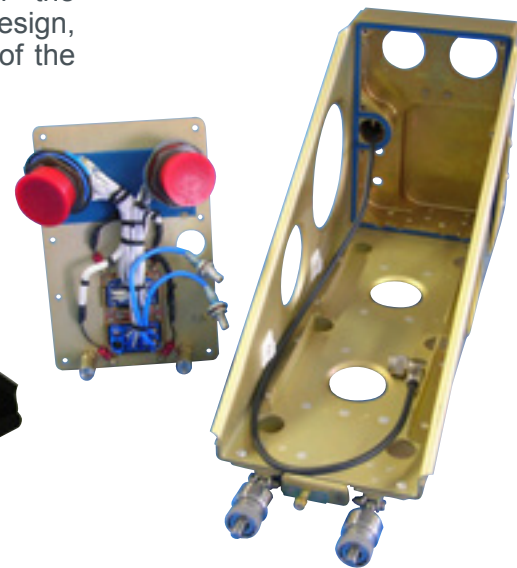
Working on military upgrade programs leads to the fabrication of custom engineered solutions to meet the aircraft environmental requirements. We offer the complete solution including engineering package - design, development, qualification, production - and wiring of the integrated units.



Wired tray with connectors and fan



Fully Integrated rack



Tray equipped with shock mounts

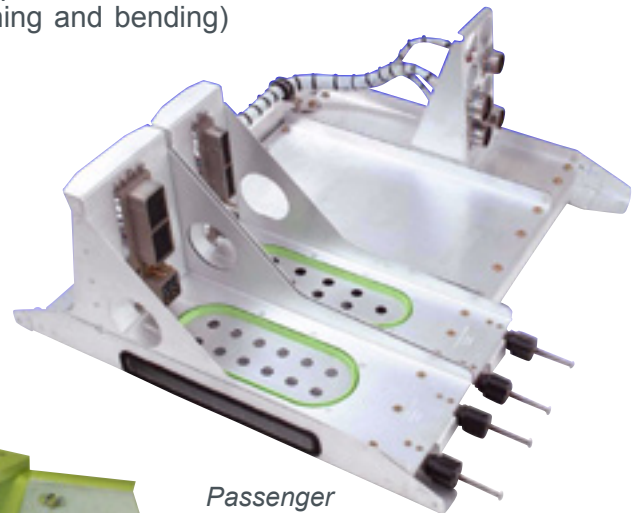
AIRCRAFT MODIFICATION KITS



The kit is fully designed and manufactured internally. The design work include Catia drawing, finite element calculation, qualification and documentation. The complete manufacturing process is carried out in house for mecanical assembling (machining and bending) as well as wiring.



*SATCOM
instalation kit*



*Passenger
aircraft
modification kit*

HARDWARE



The offer consists of an extensive line of front and rear hold downs, hooks, insertion/extraction devices manufactured to industry standards.



Airbus hold down



Bending equipment



MANUFACTURING

The manufacturing process is carried out in house and through a qualified network of subcontractors with a very experienced staff and specific equipment for :

- CNC machining
- material folding
- spot and seam welding equipment
- CNC punch press
- drilling equipment
- metal treatment



Military tray assembly line



Metal treatment

QUALITY

Hutchinson is ISO 9001 and EN 9100 dedicated to customer satisfaction, with the highest standards regarding quality management.

Certifications :

- ISO 9001-2000
- EN 9100
- Part 21-G
- Part 145





Slitte Avioniche

Civil A/C
Military A/C
ARINC 404

 **HOMBERGER**

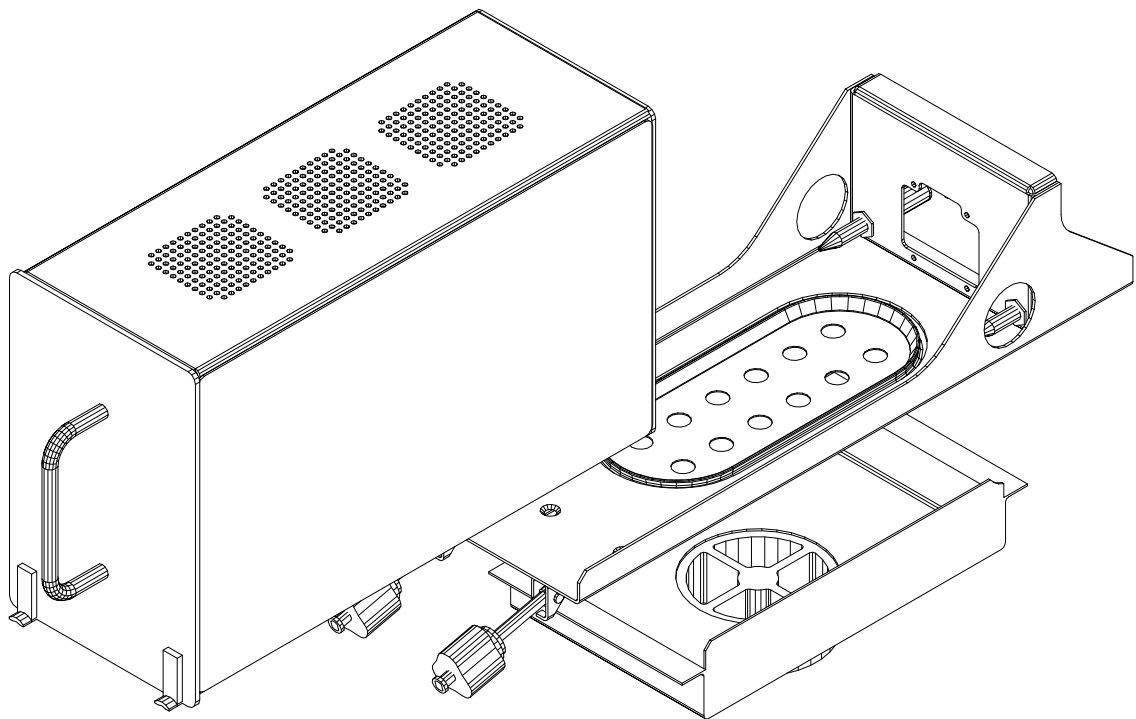
Catalogo

CIVIL
A/C

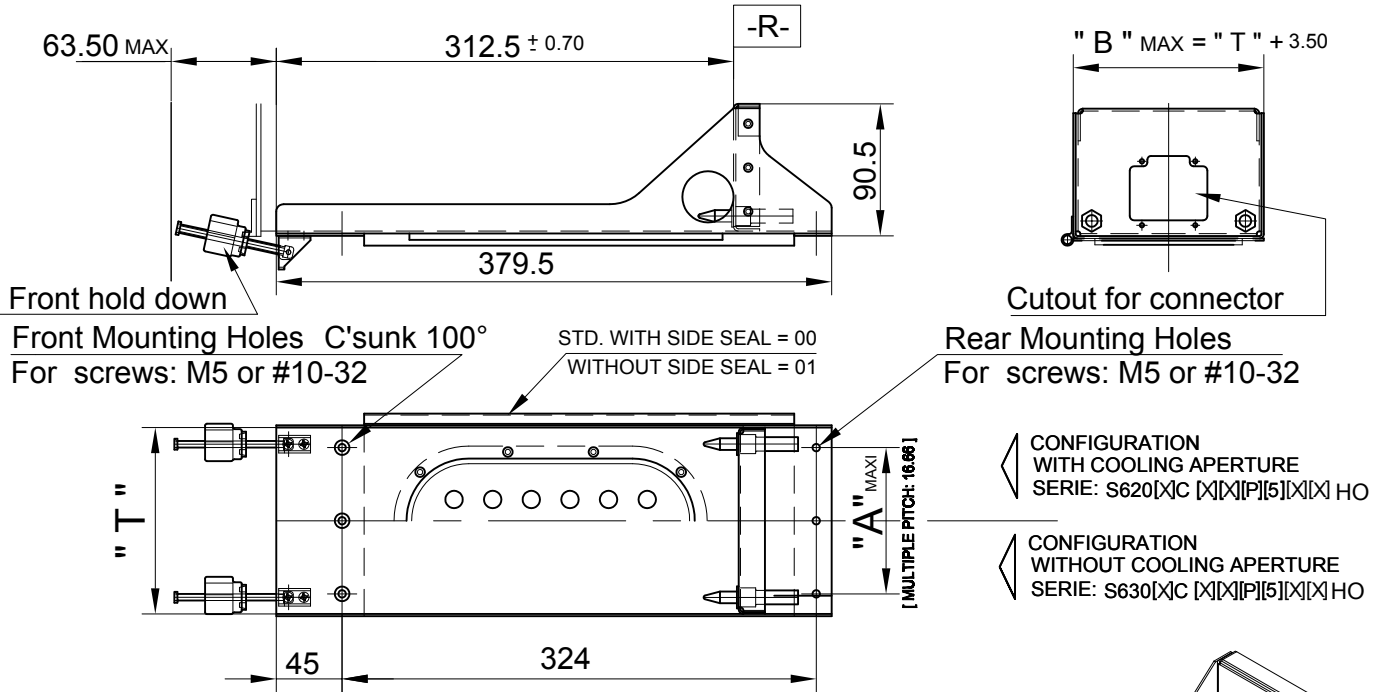
CIVIL A/C

MILITARY A/C

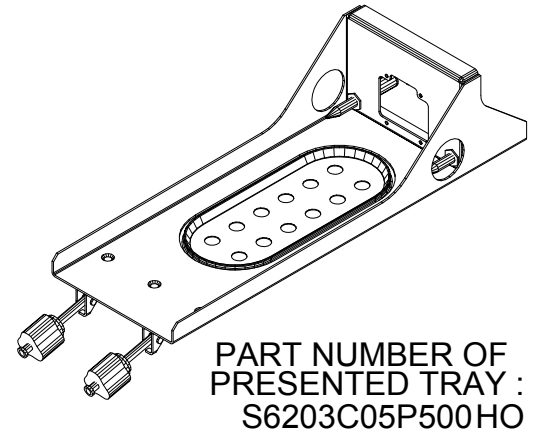
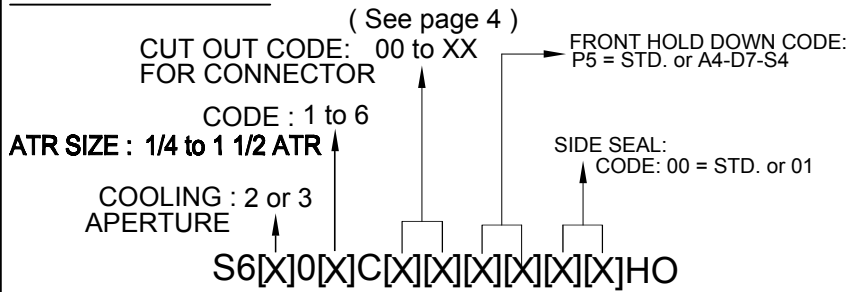
ARINC 404A



ARINC 404 TRAYS - FOR SHORT BOX
(1/4 to 1 1/2 ATR C) - MOUNTING PITCH: 324
SERIE: S6201C to S6206C - SERIE: S6301C to S6306C



CODES OPTIONS:

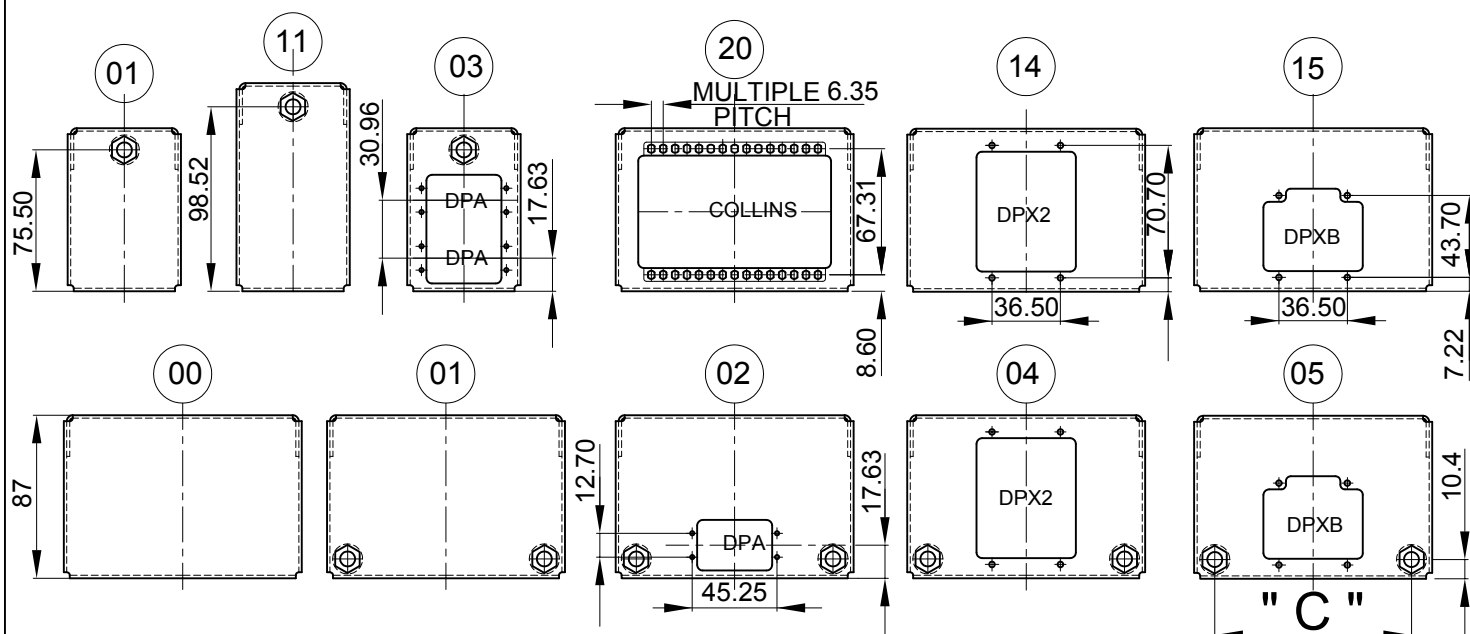


ATR SIZE	PART NUMBERS	Dim. " T "	Dim. " A "	Approx. Weight
		mm ^{+0.50} / _{0.00}	mm ^{+0.25} / _{-0.25}	g .
1/4	S6201C [X][X][P][5][X][X]HO	60.45	33.32	370
1/4	S6301C [X][X][P][5][X][X]HO	60.45	33.32	350
3/8	S6202C [X][X][P][5][X][X]HO	93.47	66.64	520
3/8	S6302C [X][X][P][5][X][X]HO	93.47	66.64	490
1/2	S6203C [X][X][P][5][X][X]HO	127.00	99.96	600
1/2	S6303C [X][X][P][5][X][X]HO	127.00	99.96	570
3/4	S6204C [X][X][P][5][X][X]HO	193.55	166.60	790
3/4	S6304C [X][X][P][5][X][X]HO	193.55	166.60	760
1	S6205C [X][X][P][5][X][X]HO	260.35	233.24	870
1	S6305C [X][X][P][5][X][X]HO	260.35	233.24	850
* 1 1/2	S6206C [X][X][P][5][X][X]HO	393.70	356.52	1260
1 1/2	S6306C [X][X][P][5][X][X]HO	393.70	356.52	1220

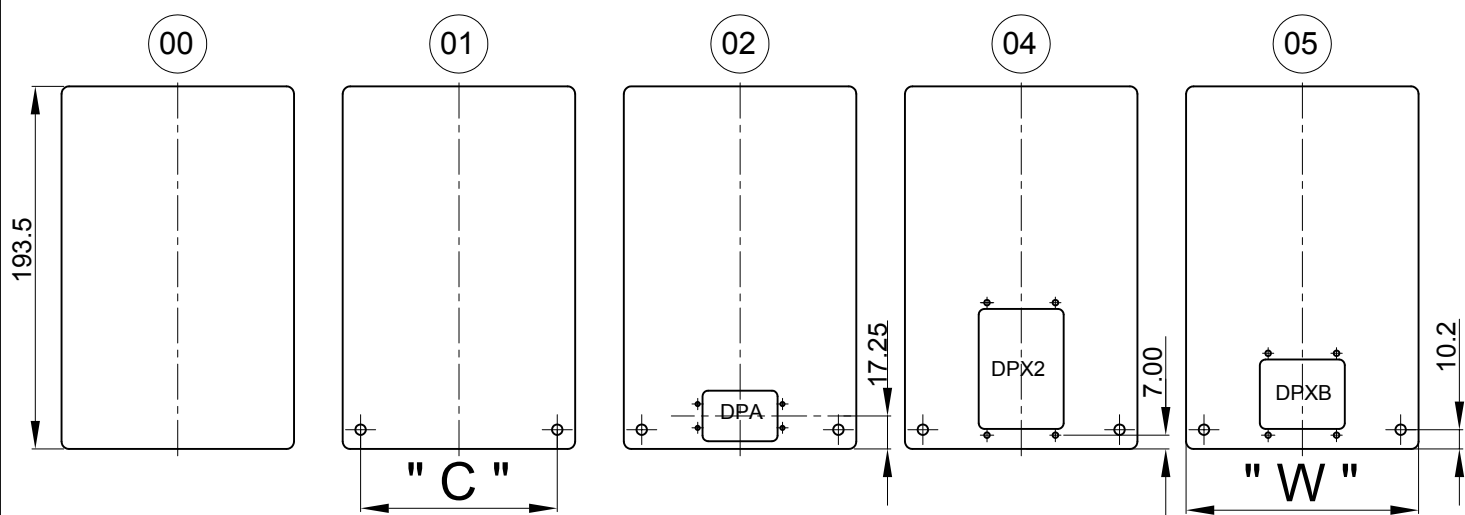
* NOT INDUSTRIALIZED PRODUCT

PLATES FOR ARINC 404 TRAYS AND BOX CUTOUTS FOR ARINC 404 CONNECTORS - CODES -

TRAYS CUTOUTS



BOX CUTOUTS



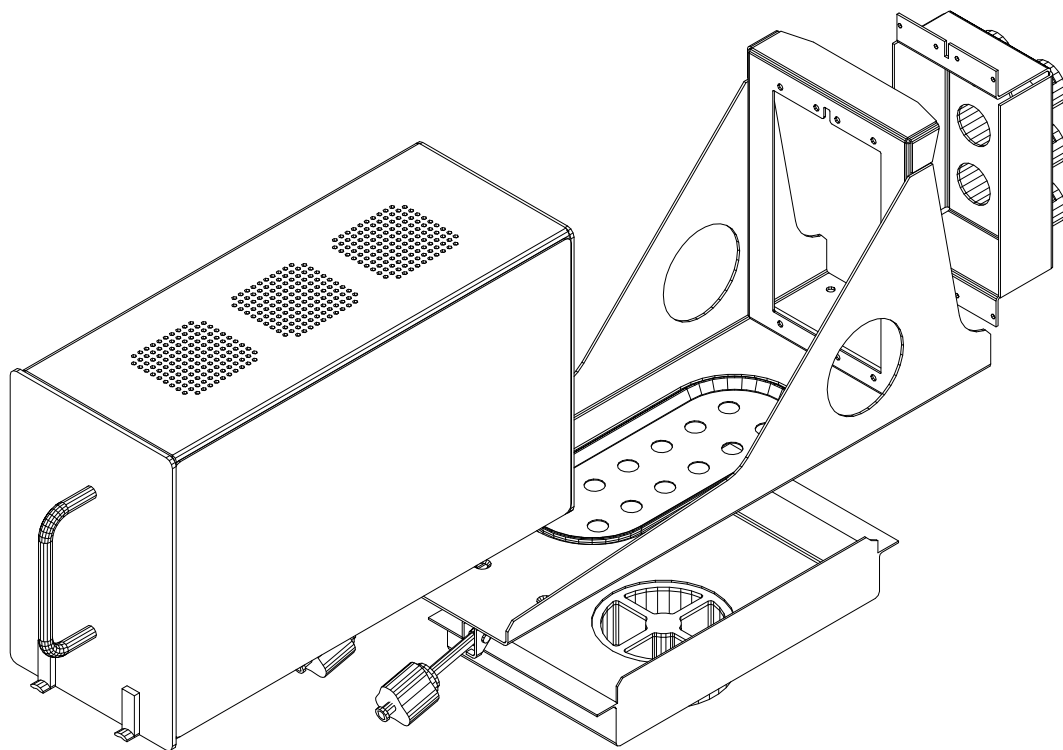
ATR SIZE	Dim. " C "	Dim. " T "	Dim. " W "
	mm ± 0.127	mm $\begin{smallmatrix} +0.50 \\ 0.00 \end{smallmatrix}$	mm ± 0.76
1/4	N.A.	60.45	57.15
3/8	71.45	93.47	90.41
1/2	104.78	127.00	123.95
3/4	171.45	193.55	190.50
1	238.13	260.35	257.05
1 1/2	371.48	393.70	390.65

THIS SHEET REPRESENTS ONLY SAMPLES OF THE AVAILABLE WIDE RANGE OF CUT OUT FOR CONNECTORS
CONSULT US FOR OTHERS VERSIONS.

FOR INFORMATION	RME3 P or R	DPX3-33 ^B _A or 34 ^B _A	DSX()3 P or R
04 14	RME2 P or R	DPX2-33 ^B _A or 34 ^B _A	DSX()2 P or R
05 15	RME1 P or R	DPXB-33 or 34	DSX()1 P or R
02 12 03		DPA-33 or 34	
	AMP	ITT CANNON	RADIALL
CODES	CONNECTORS CROSS REFERENCE ACCORDING TO MANUFACTUREURS		

CIVIL A/C

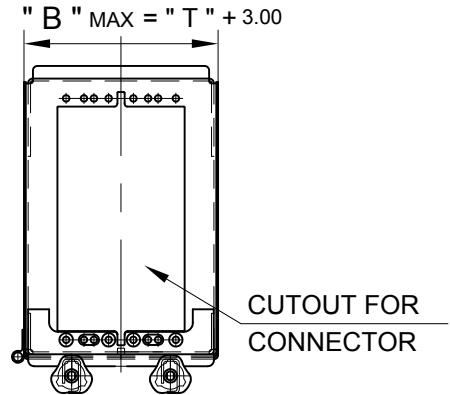
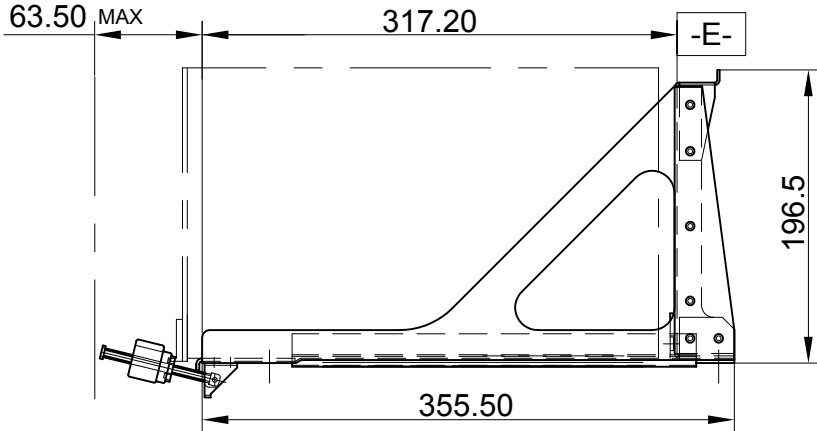
ARINC 600



ARINC 600 TRAYS - FOR SHORT BOX

INTENSIFIED LIGHT SERIE - MOUNTING PITCH: 300

SERIE S3651 to S3662 (1 to 12 MCU)
 SERIE S3672 to S3674 (2 to 4 MCU)



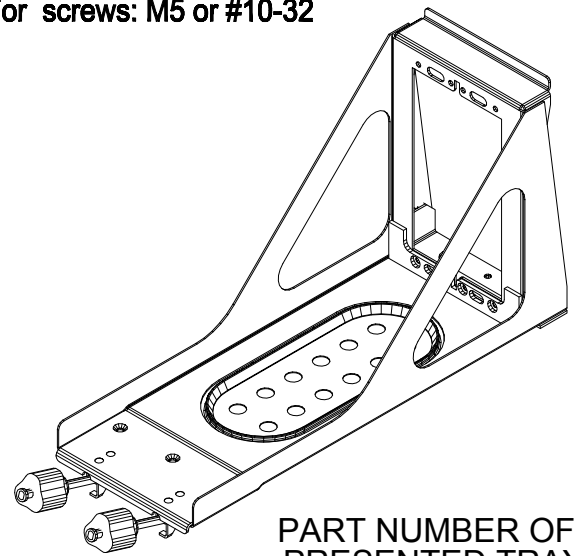
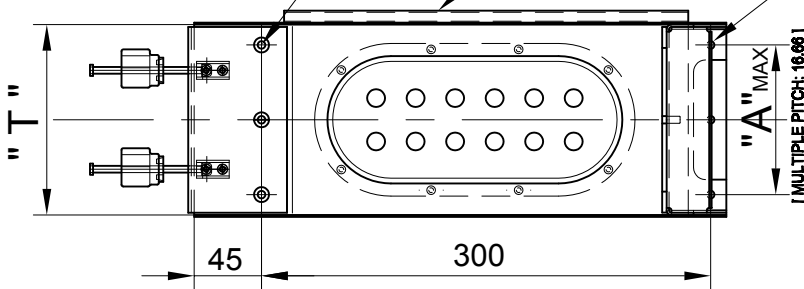
Front Mounting Holes C'sunk 100°

For screws: M5 or #10-32

STD. WITH SIDE SEAL = 00
 WITHOUT SIDE SEAL = 01

Rear Mounting Holes

For screws: M5 or #10-32



PART NUMBER OF PRESENTED TRAY :
 S3674C0100HO

CODES OPTIONS :

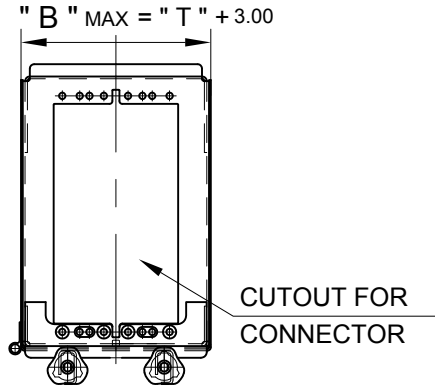
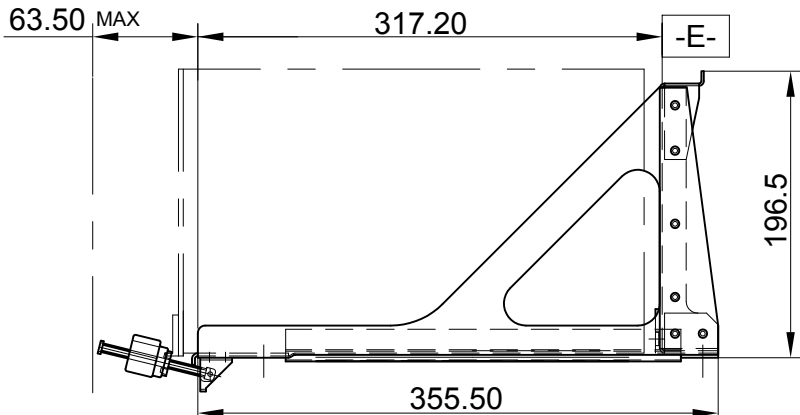
MCU SIZE : 1 to 8 MCU
 CODE : 51 to 58

SIDE SEAL:
 CODE: 00 = STD. or 01

S36[X][X]C01[X][X]HO

MCU SIZE	PART NUMBERS	Dim. " T "	Dim. " A "	Acceptable Connector Size	Approx. Weight
		mm ±0.30	mm ±0.25		g .
1	S3651C01[X][X]HO	27.9	0.00	1	225
2	S3672C01[X][X]HO	60.7	33.32	1 - (2)	375
3	S3673C01[X][X]HO	93.7	66.64	1 - (2)	520
4	S3674C01[X][X]HO	127.3	99.96	2 - 3	585
5	S3655C01[X][X]HO	160.3	133.28	2 - 3	585
6	S3656C01[X][X]HO	193.3	166.60	2 - 3	620
8	S3658C01[X][X]HO	259.3	233.24	2 - 3	950

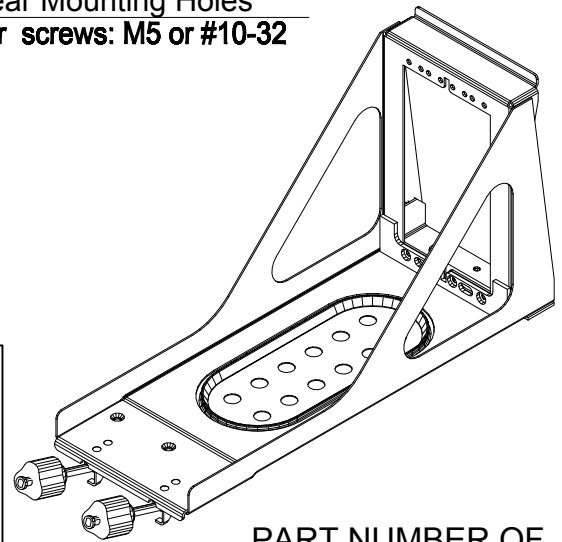
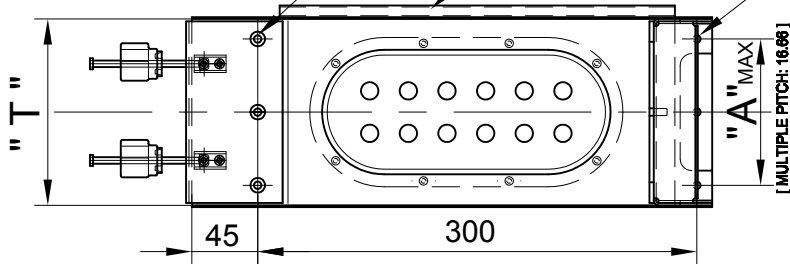
ARINC 600 TRAYS INTENSIFIED LIGHT SERIE - FOR SHORT BOX SERIE S3651 to S3662 (1 to 12 MCU) SERIE S3672 to S3674 (2 to 4 MCU)



Front Mounting Holes C'sunk 100°
For screws: M5 or #10-32

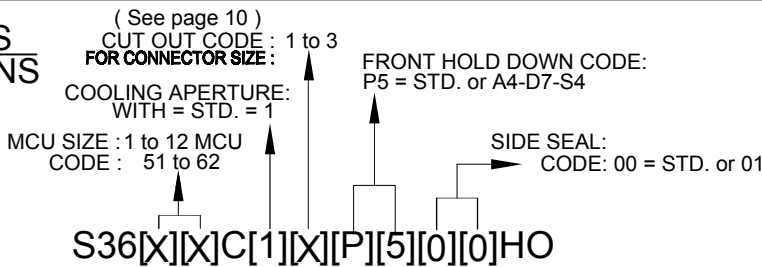
STD. WITH SIDE SEAL = 00
WITHOUT SIDE SEAL = 01

Rear Mounting Holes
For screws: M5 or #10-32



PART NUMBER OF
PRESENTED TRAY :
S3674C13P500HO

CODES OPTIONS



MCU SIZE	PART NUMBERS	Dim. " T "	Dim. " A "	Acceptable Connector Size	Approx. Weight
		mm ±0.30	mm ±0.25		g .
1	S3651C[1][1][P][5][X][X]HO	27.9	0.00	1	225
2	S3652C[1][2][P][5][X][X]HO	60.7	33.32	2	340
2	S3672C[1][2][P][5][X][X]HO	60.7	33.32	1 - (2)	375
3	S3653C[1][3][P][5][X][X]HO	93.7	66.64	2 - 3	435
3	S3673C[1][2][P][5][X][X]HO	93.7	66.64	1 - (2)	520
4	S3654C[1][3][P][5][X][X]HO	127.3	99.96	2 - 3	505
4	S3674C[1][3][P][5][X][X]HO	127.3	99.96	1 - (2) - (3)	585
5	S3655C[1][3][P][5][X][X]HO	160.3	133.28	2 - 3	585
6	S3656C[1][3][P][5][X][X]HO	193.3	166.60	2 - 3	620
* 7	S3657C[1][3][P][5][X][X]HO	226.3	199.92	2 - 3	875
8	S3658C[1][3][P][5][X][X]HO	259.3	233.24	2 - 3	950
* 9	S3659C[1][3][P][5][X][X]HO	292.4	266.56	2 - 3	1025
10	S3660C[1][3][P][5][X][X]HO	325.4	299.98	2 - 3	1095
* 11	S3661C[1][3][P][5][X][X]HO	358.4	333.20	2 - 3	1170
* 12	S3662C[1][3][P][5][X][X]HO	391.4	366.52	2 - 3	1240

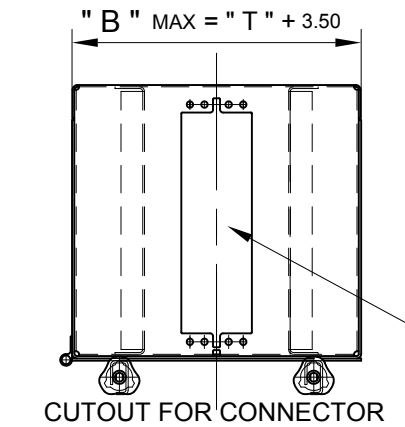
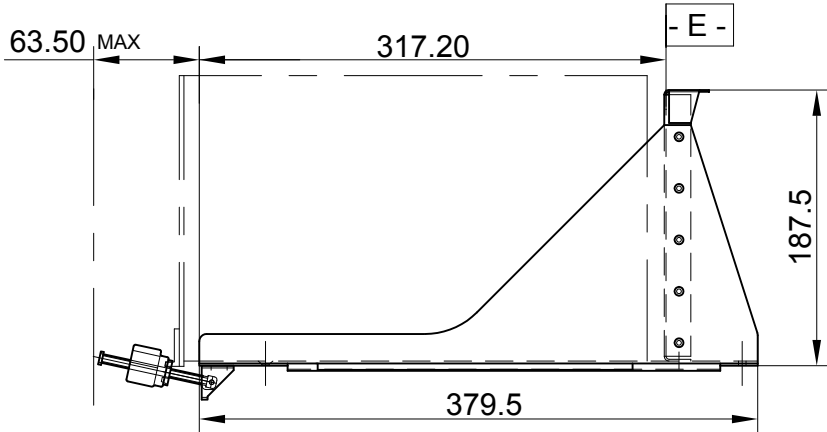
* NOT INDUSTRIALIZED PRODUCT

ARINC 600 TRAYS

- FOR SHORT BOX
- MOUNTING PITCH: 324



SERIE: S3601C to S3612C (1 to 12 MCU)



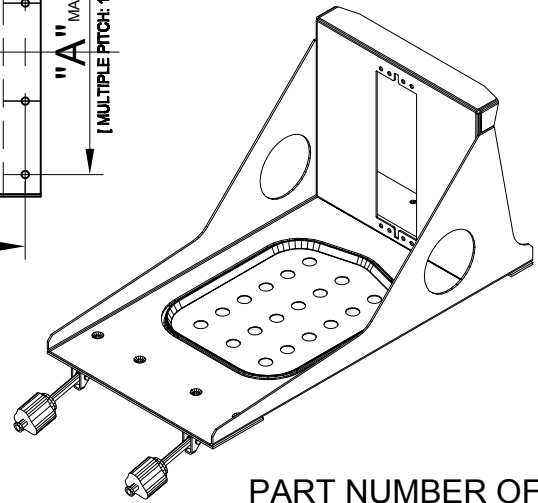
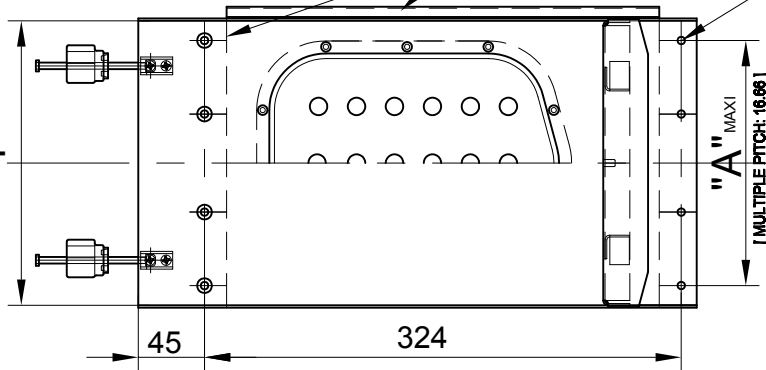
Front Mounting Holes C'sunk 100°
For screws: M5 or #10-32

STD. WITH SIDE SEAL = 00
WITHOUT SIDE SEAL = 01

Rear Mounting Holes
For screws: M5 or #10-32

CODE:1
CONFIGURATION
WITH COOLING
APERTURE

CODE:0
CONFIGURATION
WITHOUT COOLING
APERTURE



PART NUMBER OF
PRESENTED TRAY :
S3606C12P500HO

CODES OPTIONS :

CUT OUT CODE : 1 to 3
FOR CONNECTOR SIZE :

COOLING APERTURE:
CODE : 0 to 1

FRONT HOLD DOWN CODE:
P5 = STD. or A4-D7-S4

MCU SIZE : 1 to 12 MCU
CODE : 01 to 12

SIDE SEAL:
CODE: 00 = STD. or 01

S36[X][X]C[X][X][P][5][0][0]HO

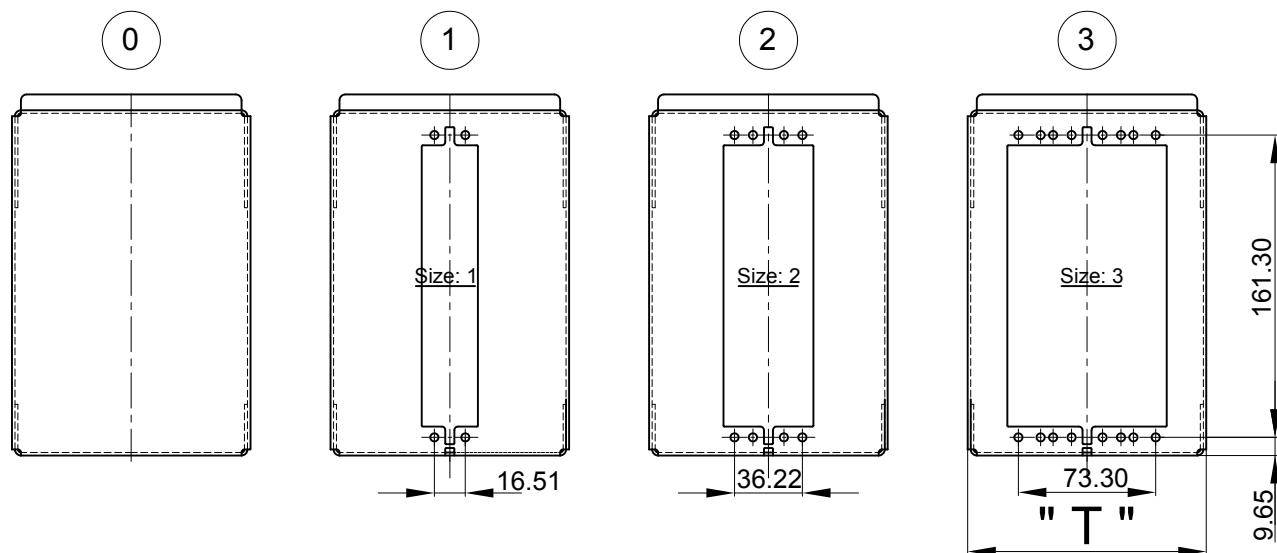
MCU SIZE	PART NUMBERS	Dim. " T "	Dim. " A "	Acceptable Connector Size	Approx. Weight
		mm ±0.30	mm ±0.25		g .
1	S3601C[X][X][P][5][X][X]HO	27.9	0.00	1	320
2	S3602C[X][X][P][5][X][X]HO	60.7	33.32	1 - 2	440
3	S3603C[X][X][P][5][X][X]HO	93.7	66.64	1 - 2 - 3	615
4	S3604C[X][X][P][5][X][X]HO	127.3	99.96	1 - 2 - 3	715
5	S3605C[X][X][P][5][X][X]HO	160.3	133.28	1 - 2 - 3	810
6	S3606C[X][X][P][5][X][X]HO	193.3	166.60	1 - 2 - 3	935
7	S3607C[X][X][P][5][X][X]HO	226.3	199.92	1 - 2 - 3	1025
8	S3608C[X][X][P][5][X][X]HO	259.3	233.24	1 - 2 - 3	1110
* 9	S3609C[X][X][P][5][X][X]HO	292.4	266.56	1 - 2 - 3	1225
10	S3610C[X][X][P][5][X][X]HO	325.4	299.98	1 - 2 - 3	1340
* 11	S3611C[X][X][P][5][X][X]HO	358.4	333.20	1 - 2 - 3	1455
* 12	S3612C[X][X][P][5][X][X]HO	391.4	366.52	1 - 2 - 3	1570

* NOT INDUSTRIALIZED PRODUCT(WITH COOLING APERTURE CODE 1)

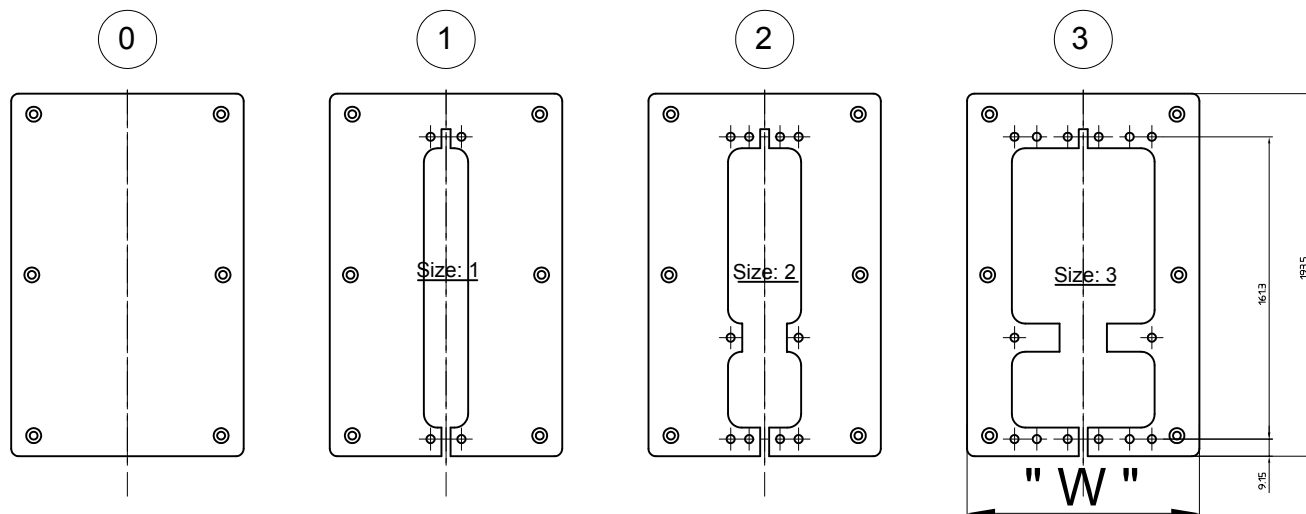
PLATES FOR ARINC 600 TRAYS AND BOX CUTOUTS FOR ARINC 600 CONNECTORS

- CODES -

TRAYS CUTOUTS



BOX CUTOUTS



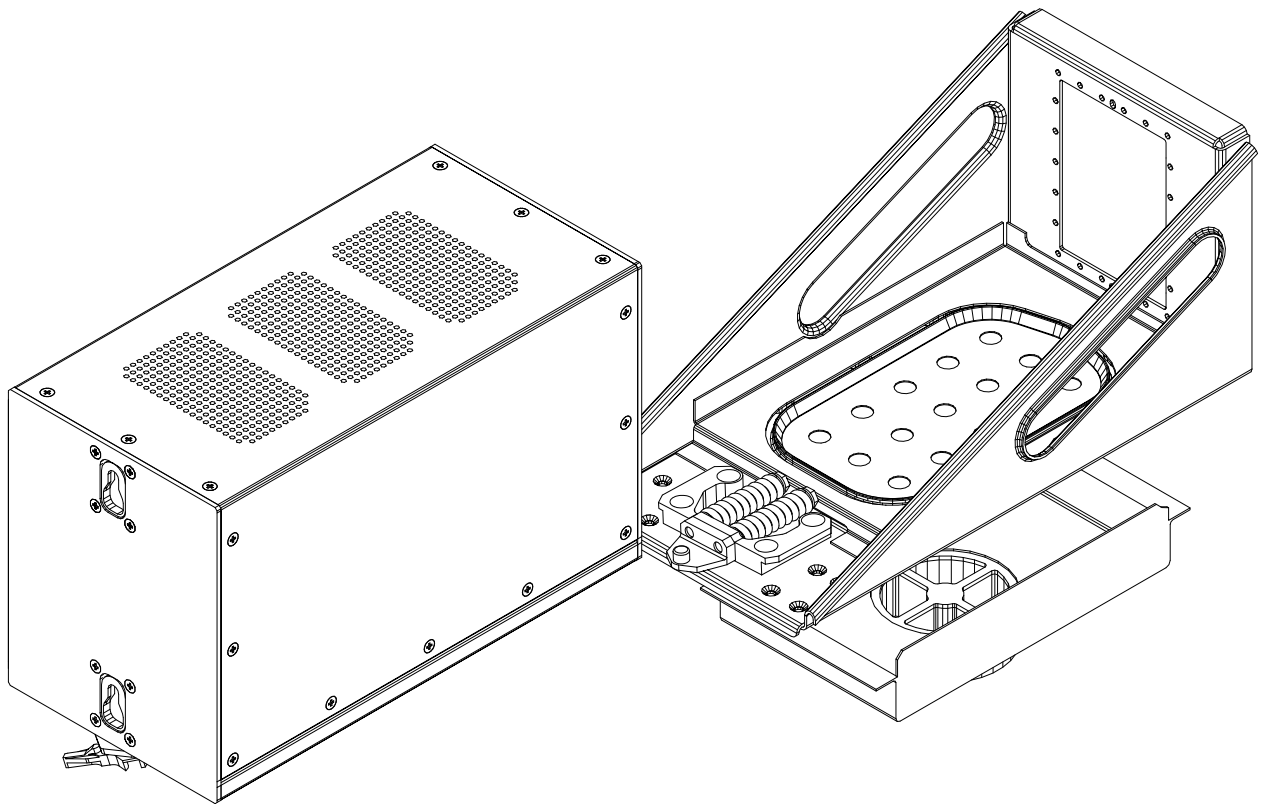
MCU SIZE	Dim. " T "	Dim. " W "
	mm ± 0.30	mm ± 0.50
1	27.9	25.4
2	60.7	57.2
3	93.7	90.4
4	127.3	124.0
5	160.3	157.2
6	193.3	190.5

MCU SIZE	Dim. " T "	Dim. " W "
	mm ± 0.30	mm ± 0.50
7	226.3	223.3
8	259.3	256.3
9	292.4	289.3
10	325.4	322.3
11	358.4	355.3
12	391.4	388.4

③	3	NIC 66 J or K	D600()3 E or A	SB603 M or F	BKA()3 3 or 4	NSX()3 R or P
②	2	NIC 66 G or H	D600()2 E or A	SB602 M or F	BKA()2 3 or 4	NSX()2 R or P
①	1	NIC 66 E or F	D600()1 E or A	SB601 M or F	BKA()1 3 or 4	NSX()1 R or P
	SIZE	AMP	DEUTSCH	FCI	ITT CANNON	RADIALL
CODES	PANEL CUTOUTS	CORRESPONDANCE DES REF. CONNECTEURS SUIVANT FABRICANTS				

RACKS

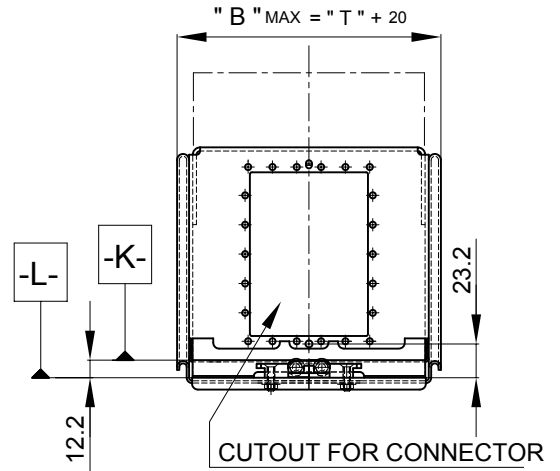
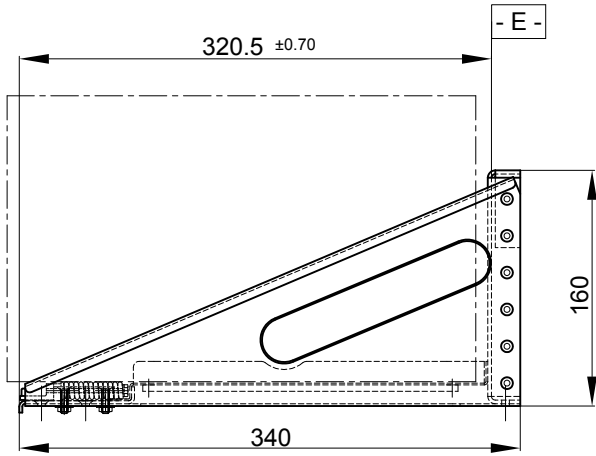
HELICOPTERS



AER/ARINC 600 TRAYS - MOUNTING PITCH: 285 / 315 AND CONNECTORS MIL-C 83527

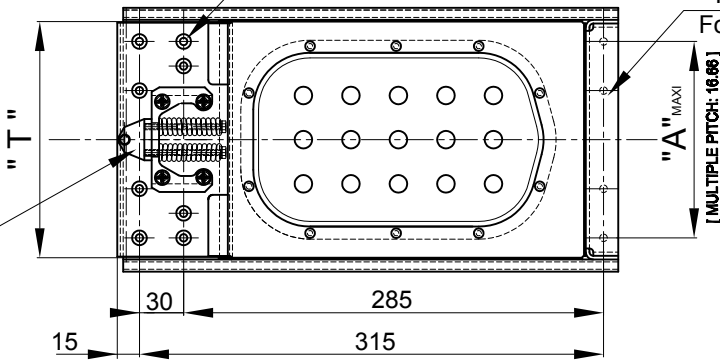


P/N SERIES : S5062 to 5072 (2 to 12 MCU)

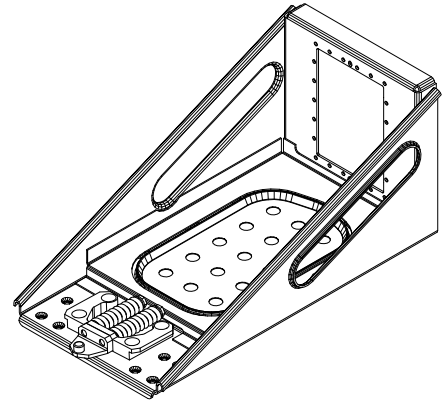


Front Mounting Holes C'sunk 100°
For screws: M5 or #10-32

Rear Mounting Holes
For screws: M5 or #10-32



Front Locking System
P/N: SEFCA 9920XXX



CODES OPTIONS:

(See page 14)
CUT OUT CODE : 2 to 4
FOR CONNECTOR SIZE :
MCU SIZE : 2 to 12 MCU
CODE : 62 to 72

FRONT LOCKING SYSTEM
CODE : 00 = WITHOUT FRONT LOCKING SYSTEM
11 = WITH FRONT LOCKING SYSTEM
[SUPPLIED AND MOUNTED BY VIBRACHOC]
12 = WITH FRONT LOCKING SYSTEM
[SUPPLIED BY CUSTOMER
AND MOUNTED BY VIBRACHOC]

S50[X][X]C1[X][X]XHO

PART NUMBER OF
PRESENTED TRAY :
S5065C1311HO

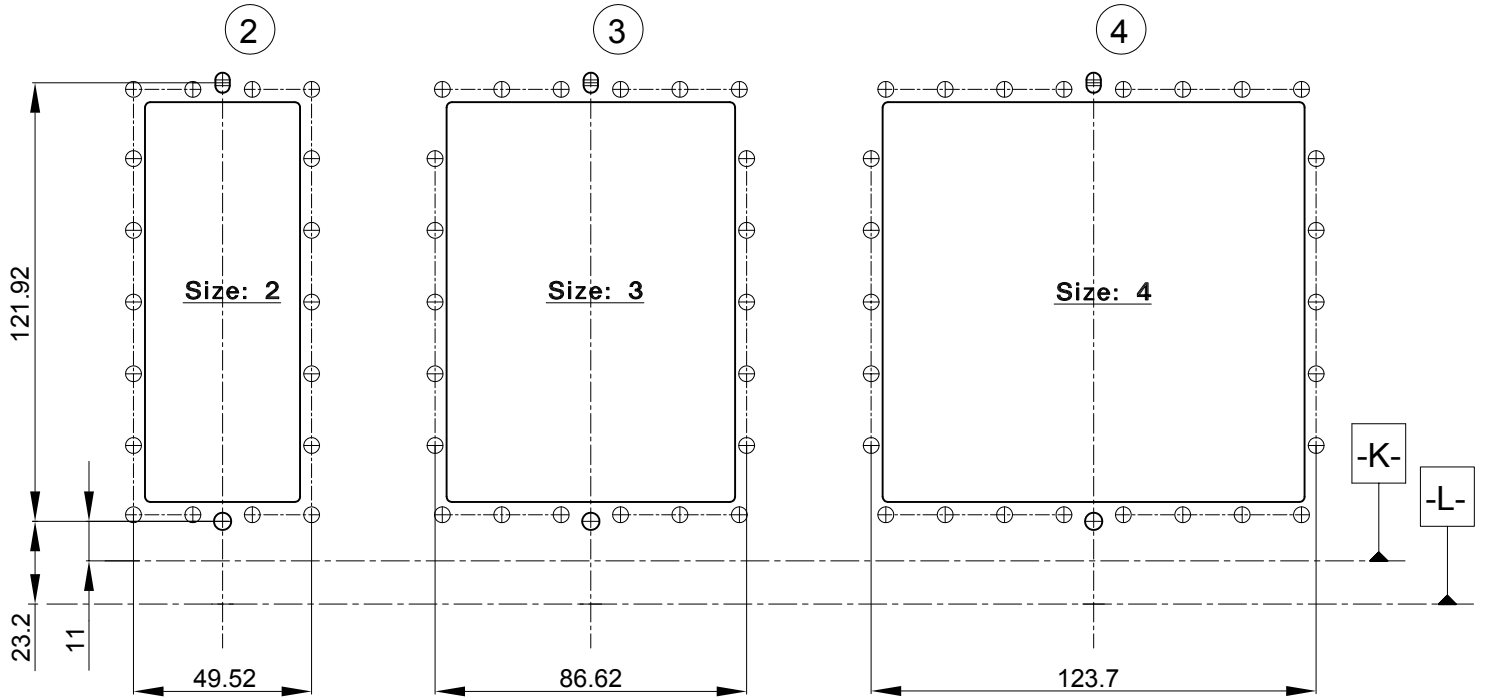
MCU SIZE	PART NUMBERS	Dim. " T "	Dim. " A "	Acceptable Connector Size	Approx. Weight
		mm ±0.30	mm ±0.25		g.
2	S5062C1[X][X]X[X]HO	60.7	33.32	2	705
3	S5063C1[X][X]X[X]HO	93.7	66.64	2	705
4	S5064C1[X][X]X[X]HO	127.3	99.96	2 - 3	740
5	S5065C1[X][X]X[X]HO	160.3	133.28	2 - 3 - 4	820
6	S5066C1[X][X]X[X]HO	193.3	166.60	2 - 3 - 4	900
7	S5067C1[X][X]X[X]HO	226.3	199.92	2 - 3 - 4	1020
8	S5068C1[X][X]X[X]HO	259.3	233.24	2 - 3 - 4	1140
* 9	S5069C1[X][X]X[X]HO	292.4	266.56	2 - 3 - 4	1260
10	S5070C1[X][X]X[X]HO	325.4	299.98	2 - 3 - 4	1380
* 11	S5071C1[X][X]X[X]HO	358.4	333.20	2 - 3 - 4	1500
* 12	S5072C1[X][X]X[X]HO	391.4	366.52	2 - 3 - 4	1620

* NOT INDUSTRIALIZED PRODUCT

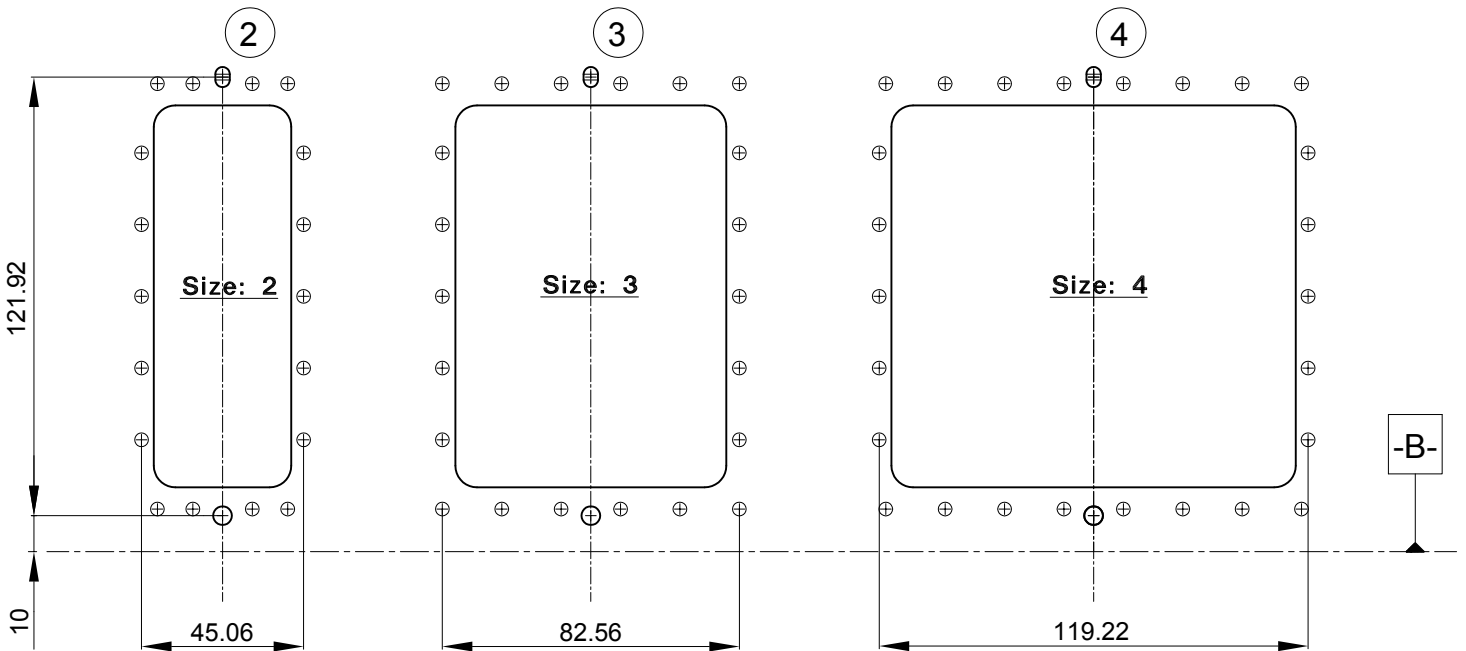
**PLATES FOR AER/ARINC 600 TRAYS -CODES-
TRAYS AND BOX FOR CONNECTORS MIL-C 83527
FOR P/N SERIES : S5062 to 5072 (2 to 12 MCU)**



TRAYS CUTOUTS



BOX CUTOUTS



④	4	M6 [] 4[*] *P or R	S7C[][*]4 *P or R	BKW 4[*] *P or R	MPX()4[*] *P or R
③	3	M6 [] 3[*] *P or R	S7C[][*]3 *P or R	BKW 3[*] *P or R	MPX()3[*] *P or R
②	2	M6 [] 2[*] *P or R	S7C[][*]2 *P or R	BKW 2[*] *P or R	MPX()2[*] *P or R
	SIZE	AMP	FCI	ITT CANNON	RADIALL
CODES	PANEL CUTOUTS	CONNECTORS CROSS REFERENCE ACCORDING TO MANUFACTURERS			

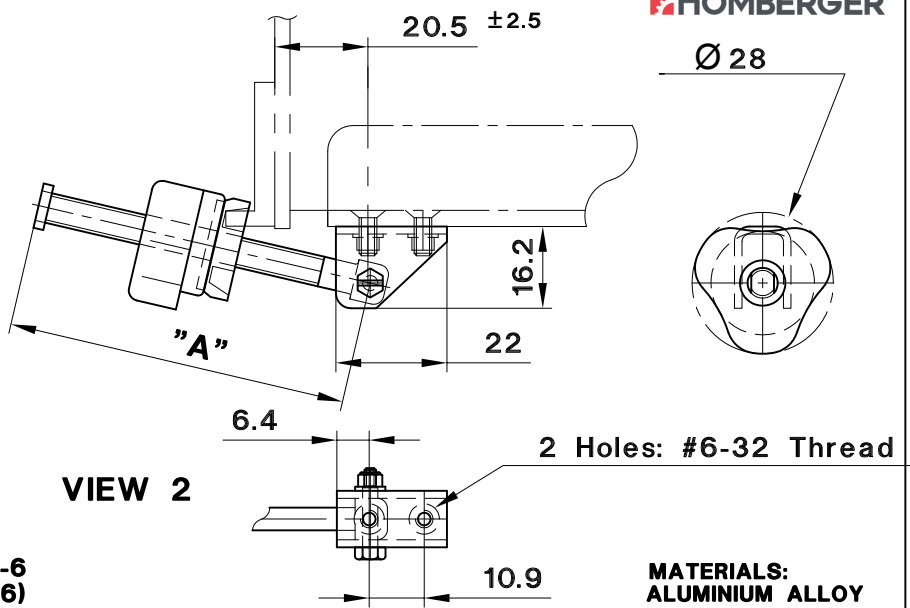
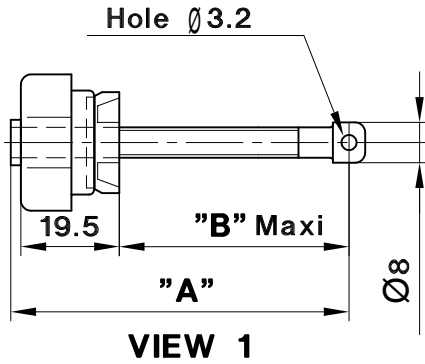
FRONT HOLD DOWN

FRONT HOOKS

REAR HOLD DOWN PIN

FRONT HOLD DOWN SELF-LOCKING

SERIE: S3SD18125- () ()
 SERIE: S3SD18128- () ()



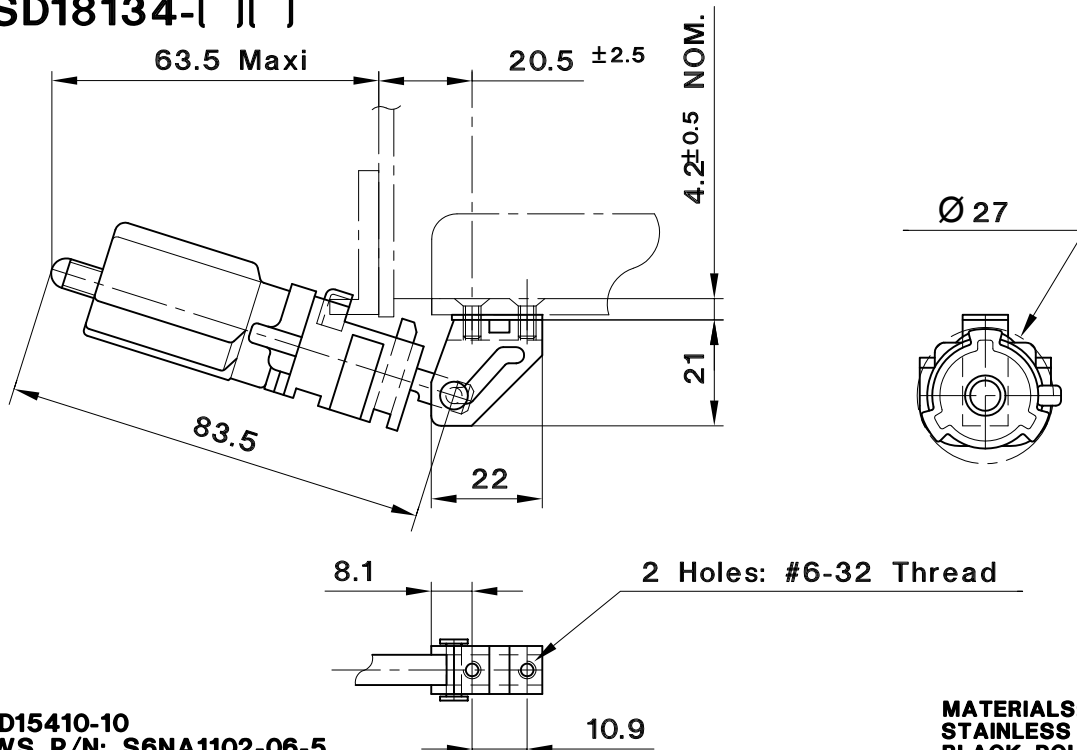
MOUNTING SCREWS P/N: S6NA1102-06-6
 (ORDERED SEPARATELY) (NAS1102-06-6)
 NORMAL AXIAL FORCE APPLIED 28 daN

MATERIALS:
 ALUMINIUM ALLOY
 STAINLESS STEEL

	S3SD18128-05	78	57	49
S3SD18125-05		78	57	39
	S3SD18128-04	67	46	48
S3SD18125-04		67	46	38
	S3SD18128-03	58	37	47
S3SD18125-03		58	37	37
VIEW 1 HOLD-DOWN ONLY	VIEW 2 HOLD-DOWN WITH BRACKET	mm	mm	g.
PART NUMBERS		Dim."A"	Dim."B" Maxi	Weight

FRONT HOLD DOWN INSERTER-EXTRACTOR WITH A LOAD-LIMITING CLUTCH

SERIE: S3SD18134- () ()

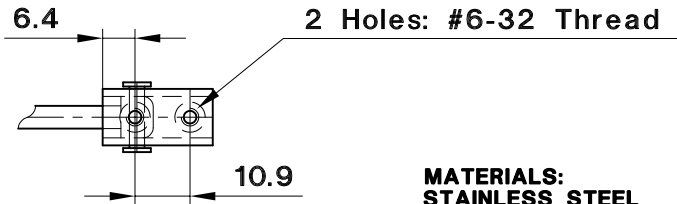
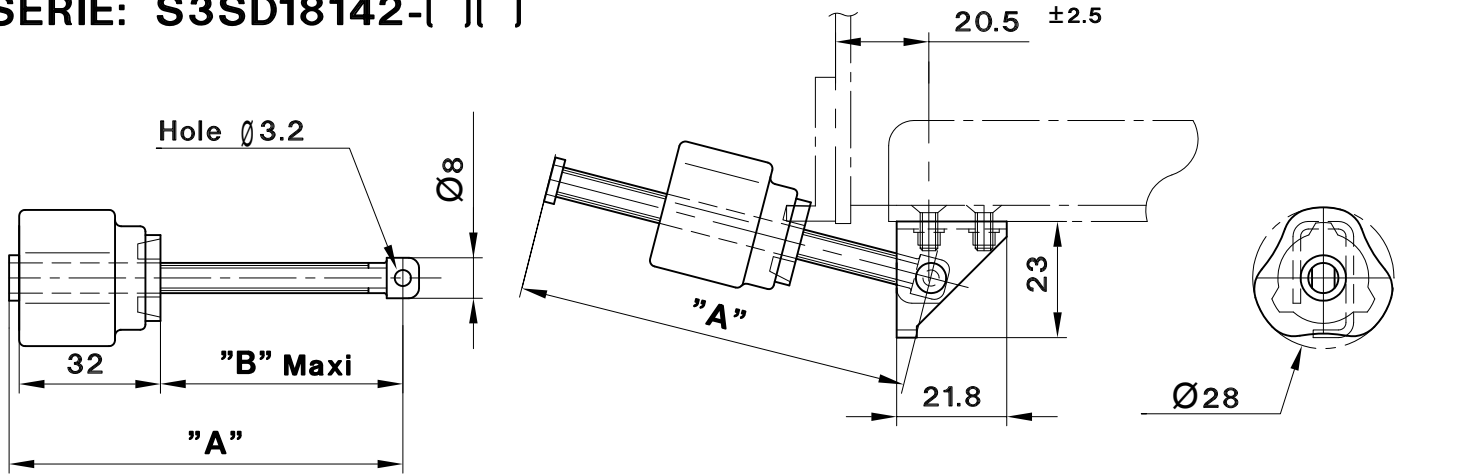


WEDGE P/N: S3SD15410-10
 MOUNTING SCREWS P/N: S6NA1102-06-5
 (ORDERED SEPARATELY) (NAS1102-06-5)

MATERIALS:
 STAINLESS STEEL
 BLACK POLYAMID 6
 ALUMINIUM ALLOY

S3SD18134-07	53 ± 6 daN	80
PART NUMBER	daN	g.
	NOMINAL AXIAL FORCE	Weight

**FRONT HOLD DOWN
SELF-LOCKING
SERIE: S3SD18142-() ()**

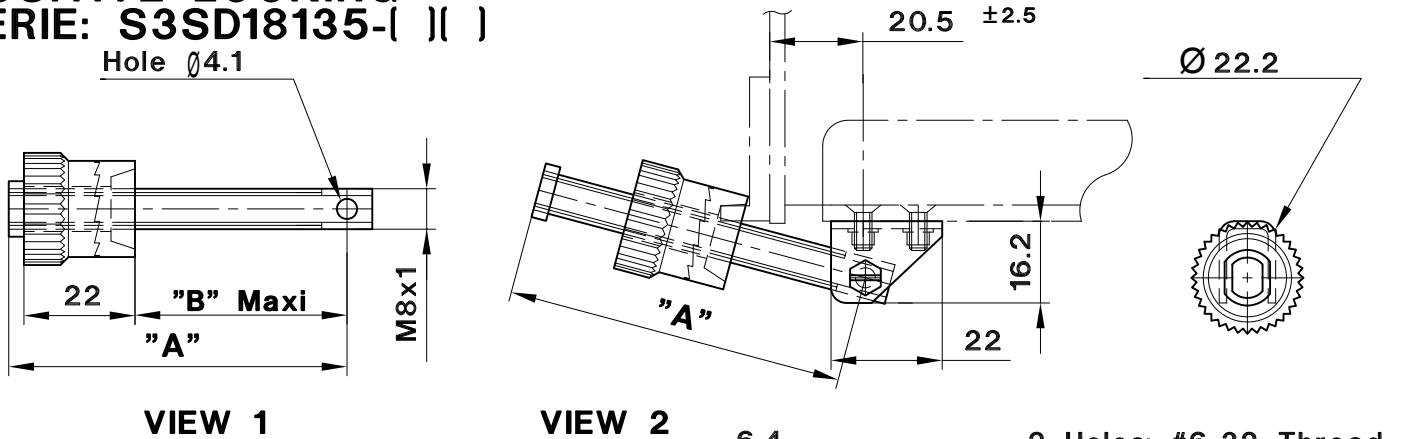


**MOUNTING SCREWS P/N: S6NA1102-06-6
(ORDERED SEPARATELY) (NAS1102-06-6)
NORMAL AXIAL FORCE APPLIED 56 daN**

**MATERIALS:
STAINLESS STEEL
BLACK POLYAMID 6**

	VR528	78	43	55
		mm	mm	g.
PART NUMBERS	Dim."A"	Dim."B" Maxi	Weight	

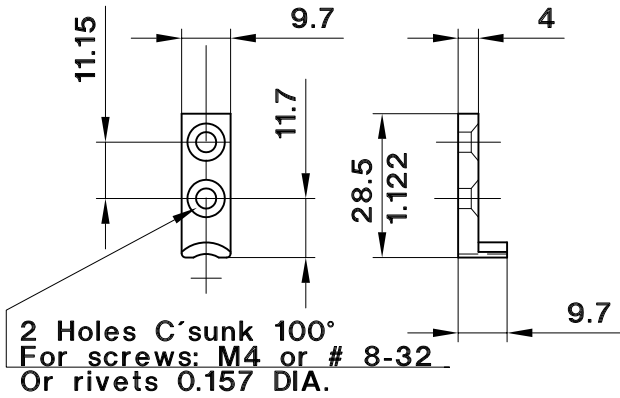
**FRONT HOLD DOWN
POSITIVE LOCKING
SERIE: S3SD18135-() ()**



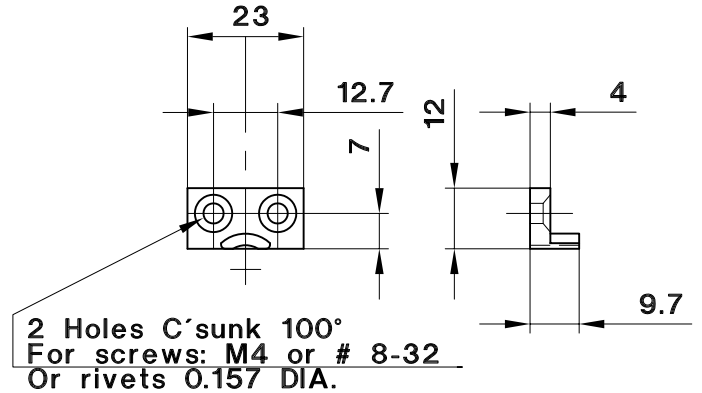
**MOUNTING SCREWS P/N: S6NA1102-06-6
(ORDERED SEPARATELY) (NAS1102-06-6)
NORMAL AXIAL FORCE APPLIED 28 daN**

**MATERIALS:
STAINLESS STEEL**

	VR514	67	41	66
VR513		67	41	55
	VR504	58	32	51
VR507		58	32	40
VIEW 1 HOLD-DOWN ONLY	VIEW 2 HOLD-DOWN WITH BRACKET	mm	mm	g.
PART NUMBERS	Dim."A"	Dim."B" Maxi	Weight	



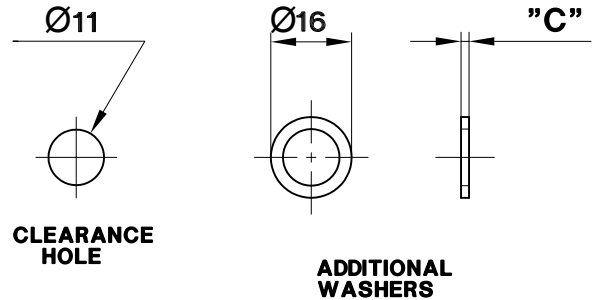
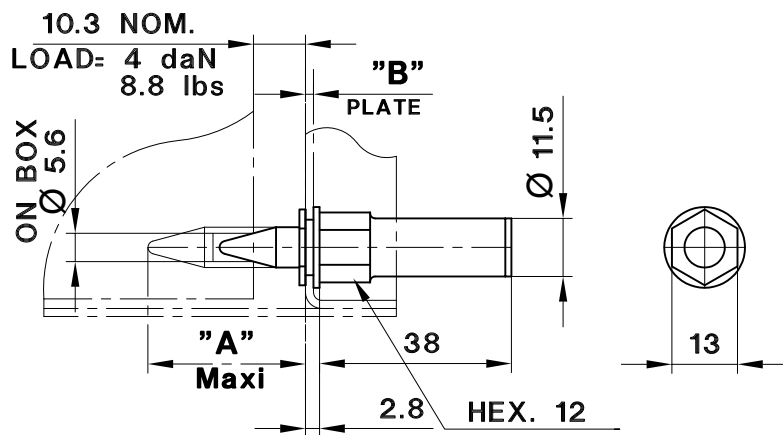
MODELE STANDARD
P/N: VR099
Weight: 8 g.



MODELE A HAUTEUR REDUITE
P/N: VR103
Weight: 8 g.

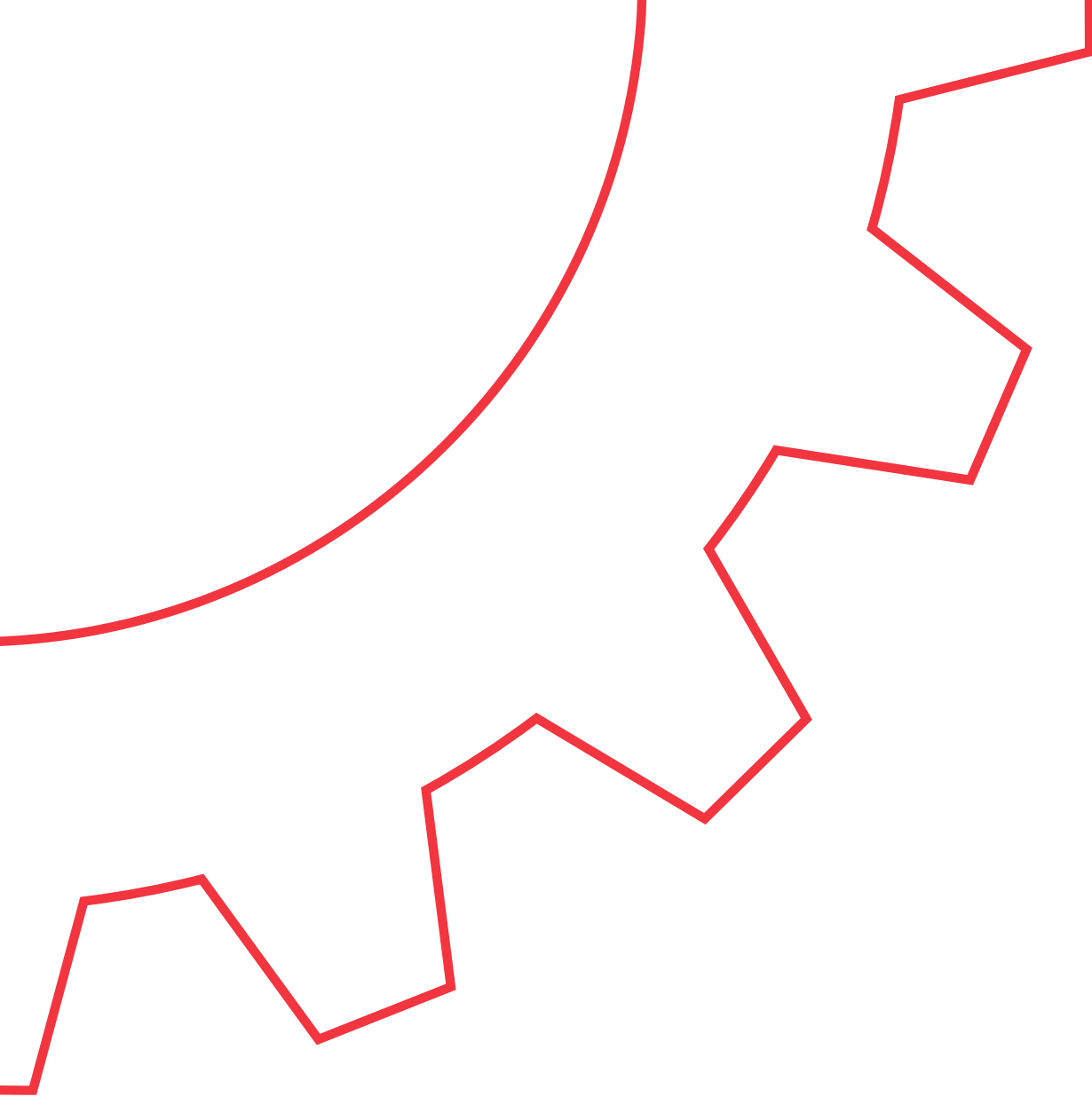
MATERIAL:
STAINLESS STEEL

REAR HOLD DOWN PIN TELESCOPIC SERIE: S3SD18530-()



MATERIALS: ALUMINIUM ALLOY
STAINLESS STEEL

VR515	31	22
VR525	24	19
PART NUMBERS	mm	g.
	Dim. "A" Maxi	Weight



HOMBERGER Catalogo

Homberger S.p.A.

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