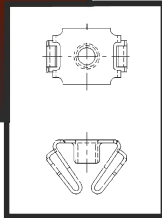
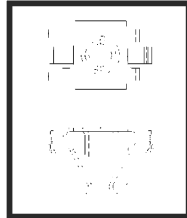


Mid Panel Threaded Fastener Guide

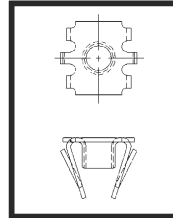
ENGINEERING SOLUTIONS PROVIDED BY ITW CIP



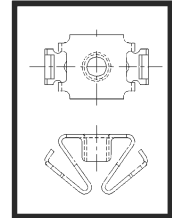
Type A



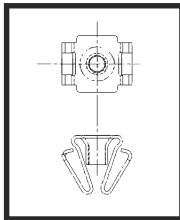
Type B



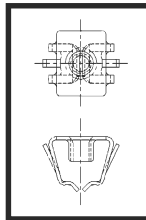
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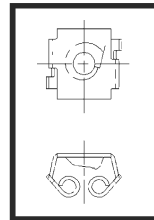
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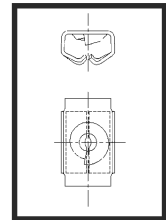
Type E



Type F



Type G



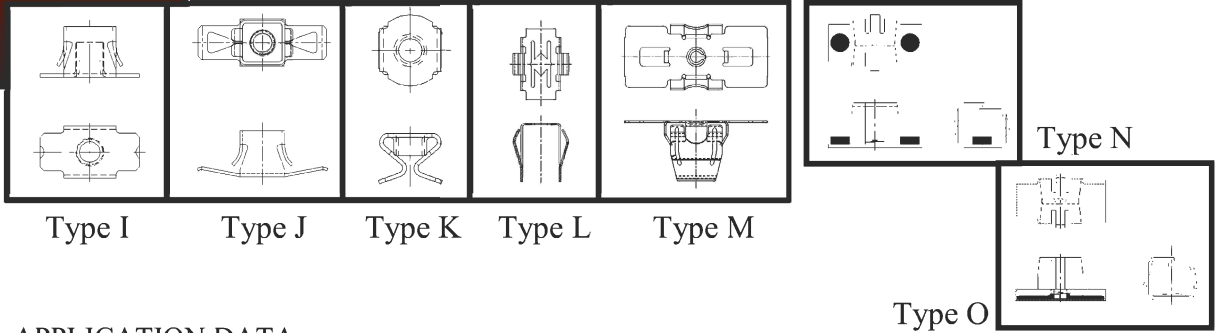
Type H

APPLICATION DATA

Part#	Type	Thread Size	Panel	Panel Opening	Push In (N)	Pull Out (N)	Prevailing Torque	Finish
31252	A	M6 X 1.0	0.7-1.2	12.7±.1 X 19.9±.1	***	***	N	F164
31253	A	M6 X 1.0	0.7	12.7±.1 X 19.9±.1	***	***	N	F169
31260	A	M6 X 1.0	0.7	12.75±.25 X 20.0±.25	195 MAX	1300 MIN	N	F194
31259	B	M6 X 1.0	0.7-1.5	12.6±.1 X 19.9±.1	150 MAX	800 MIN	N	F115
31249	C	M6 X 1.0	1.27	14.0 SQ.	***	890 MIN	N	F002
31250	C	M6 X 1.0	1.27	14.0 SQ.	***	890 MIN	N	F002
31251	C	M6 X 1.0	1.27	14.0 SQ.	***	890 MIN	Y	F102
31256	C	M6 X 1.0	1.27	14.0 SQ.	***	890 MIN	Y	F184
31257	C	M6 X 1.0	0.86	14.0 SQ.	***	890 MIN	N	F002
31254	D	M6 X 1.0	1.8-2.4	12.6±.1 X 19.9±.1	***	***	N	F196
31258	E	M4.2 X 1.4	2.3-2.8	9.1 X 11.1	111 MAX	444 MIN	Y	F019
31263	E	M4.2 X 1.4	1.7-2.0	10.5 SQ	***	444 MIN	Y	F019
31261	F	M8 X 1.25	0.9	14 X 20	***	***	N	F102
31262	F	M6 X 1.0	0.9	14 X 20	***	***	N	F102
26001	G	5.0 X 1.59	2.2-2.8	9 X 12	30 MAX	40 MIN	N	F002
26002	H	#10-16	1.45	11 X 14	***	***	N	F197

Mid Panel Threaded Fastener Guide

ENGINEERING SOLUTIONS PROVIDED BY ITW CIP

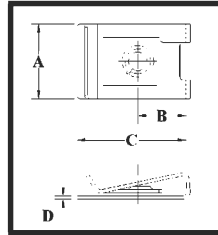


APPLICATION DATA

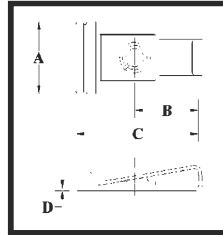
Part#	Type	Thread Size	Panel	Panel Opening	Push In (N)	Pull Out (N)	Prevailing Torque	Finish
31300	I	M4.2 X 1.4	0.81	8.6±.1 SQ	89 MAX	***	Y	F002
31301	I	M4.2 X 1.4	0.81	8.6±.1 SQ	89 MAX	***	Y	F003
31302	I	M4.2 X 1.4	0.81	8.6±.1 SQ	89 MAX	***	Y	F014
31303	I	M4.2 X 1.4	0.81	8.6±.1 SQ	89 MAX	***	N	F014
31304	I	M4.2 X 1.4	0.81	8.6±.1 SQ	89 MAX	***	Y	F003
31305	I	M4.2 X 1.4	0.81	8.6±.1 SQ	133 MAX	***	Y	F169
31307	I	M4.2 X 1.4	1.4	8.6±.1 SQ	89 MAX	***	Y	F169
31308	I	M4.2 X 1.4	0.7-0.9	8.6±.1 SQ	89 MAX	***	Y	F169
31311	I	M4.2 X 1.4	0.81	8.6±.1 SQ	89 MAX	***	Y	F169
32800	I	M4.2 X 1.4	2.0	8.6±.1 SQ	133 MAX	***	Y	F115
32801	I	M4.2 X 1.4	2.2	8.6±.1 SQ	133 MAX	***	Y	F003
32803	I	M4.2 X 1.4	0.8-1.2	8.6±.1 SQ	133 MAX	***	Y	F189
32000	J	M4.2 X 1.4	0.8	9.0 SQ.	133 MAX	445 MIN	Y	F102
32001	J	M4.2 X 1.4	0.8	9.0 SQ.	133 MAX	445 MIN	Y	F014
32002	J	M4.2 X 1.4	1.5	9.0 SQ.	222 MAX	667 MIN	N	F003
32003	J	M4.2 X 1.4	1.5	9.0 SQ.	222 MAX	667 MIN	N	F069
02190	K	M4.2 X 1.4	3.3-4.5	8.4±.1 SQ	***	***	N	F098
02805	L	Ø5.4 STUD	0.8	14 X 17.5	***	***	N	F007
02808	L	Ø5.4 STUD	0.8	14 X 17.5	***	***	N	F142
32200	M	M4.2 X 1.4	2.0	12.2 X 17.5	***	890 MIN	N	F091
32900	N	4.2 X 1.4	0.7-1.2	8.6±.1 SQ.	89 MAX	***	N	F115
32901	O	M4.2 X 1.4	0.7-1.0	8.6±.1 SQ	89 MAX	***	N	F189
32902	O	M4.2 X 1.4	1.4-1.6	8.6±.1 SQ	89 MAX	***	N	F201
32903	O	M4.2 X 1.4	1.4-1.6	8.6±.1 SQ	89 MAX	***	N	F115

Single Threaded "U" Nut Fasteners

ENGINEERING SOLUTIONS PROVIDED BY ITW CIP



SHORT

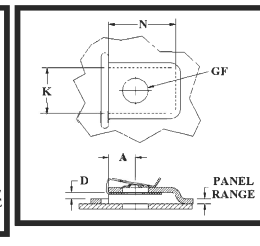
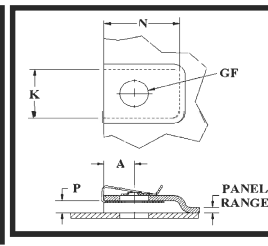
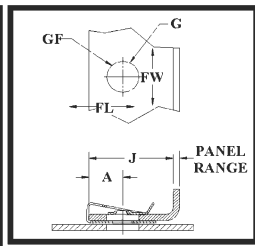
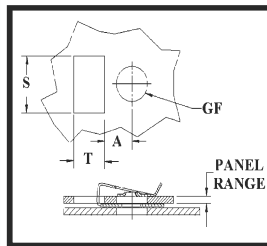


LONG

ITWCIP provides a broad range of sheet metal "U" nuts for use in applications which do not require the strength of a multiple threaded fastener, but do require the adjustability of a "U" nut.

METRIC APPLICATIONS

Type	Thread Size	Part#	A	B	C	D	Panel Range
SHORT	M4.2 X 1.41 (#8-18)	23267	13.2-14.0	8.6-9.2	18.7-20.0	0.58-0.69	0.64-3.8
LONG	M4.2 X 1.41 (#8-18)	23340	13.2-14.0	14.2-15.3	24.6-25.9	0.58-0.69	0.64-3.8
	M6.3 X 1.81 (1/4"-14)	23333	15.4-16.4	14.3-15.3	23.9-24.9	0.83-0.94	0.64-3.8

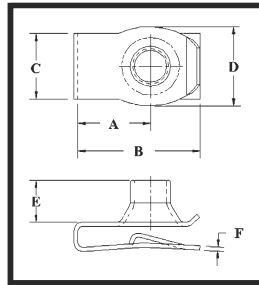


METRIC APPLICATIONS

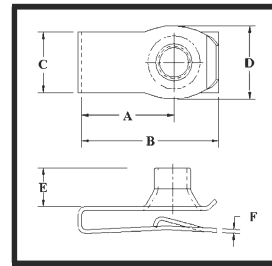
Type	Thread Size	A		J	N	K	D	GF	G	FLOAT		T	S	P	PNL
		MAX	MIN	MIN	MIN	MIN	MIN			FW	FL				
Short	M4.2 X 1.41 (#8-18)	5.8	6.9	19.8	19.8	16.0	1.65	7.11	5.6	2.03	2.30	8.64	16.0	.76	0.64-3.8
Long	M4.2 X 1.41 (#8-18)	11.7	12.7	25.6	25.6	16.0	1.65	7.11	5.6	2.03	2.30	8.64	16.0	.76	
	M6.3 X 1.81 (1/4"-14)	11.7	12.7	25.6	25.6	18.5	1.65	9.65	7.9	2.03	2.30	12.7	18.5	1.02	

Multi Threaded "U" Nut Fasteners

ENGINEERING SOLUTIONS PROVIDED BY ITW CIP



SHORT



LONG

Standard and customized "J" & "U" nuts are available with or without a locking feature. They provide high strength, low cost, panel retention and single wrench tightening of the threaded assembly.

METRIC APPLICATIONS

Type	Thread Size	Part#	A	B	C	D	E	F	Panel Range
SHORT	M6 X 1.0	12660	13.5	23.5	12.5	14.5	6.0	0.8-1.0	0.8-4.0
	M6.3 X 1.0	12101	13.5	23.5	12.5	14.5	6.0	0.8-0.9	
	M8 X 1.25	14300	14.5	25.0	14.2	17.0	7.5-9.0	1.0-1.1	
	M10 X 1.5	16110	18.5	32.5	17.5	24.0	9.7-10.2	1.35-1.45	1.5-5.5
LONG	M6 X 1.0	12662	19.5	29.5	12.5	14.5	6.0	0.8-1.0	0.8-4.0
	M8 X 1.25	14200	21.0	31.5	14.2	17.0	7.5-9.0	1.0-1.1	
	M10 X 1.5	16302	28.5	42.5	17.5	24.0	9.7-10.2	1.35-1.45	1.5-5.5

ENGLISH APPLICATIONS

Type	Thread Size	Part#	A	B	C	D	E	F	Panel Range
SHORT	1/4-20	13396	.54	.94	.52	.59	.27	.033-.037	.025-.15
	5/16-18	13666	.57	1.00	.58	.69	.35	.037-.042	
	3/8-16	13848	.73	1.31	.72	.96	.40	.048-.060	.05-.20
LONG	1/4-20	13465	.78	1.18	.52	.59	.27	.033-.037	.025-.15
	5/16-18	13758	.83	1.26	.58	.69	.35	.037-.042	
	3/8-16	13911	1.09	1.67	.72	.96	.40	.048-.060	.05-.20

Increase...
STRENGTH
PERFORMANCE
QUALITY

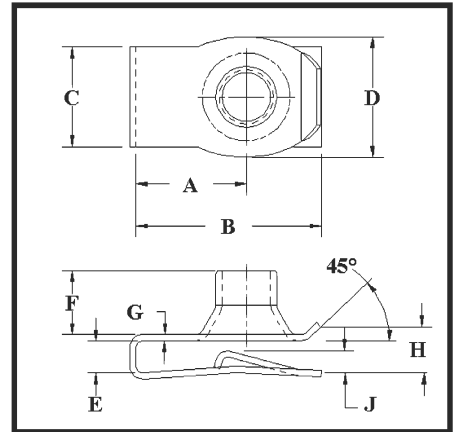
Multi Threaded "U" Nut Valued Fasteners

ENGINEERING SOLUTIONS PROVIDED BY ITW CIP

Reduce...

LABOR
WEIGHT
COST

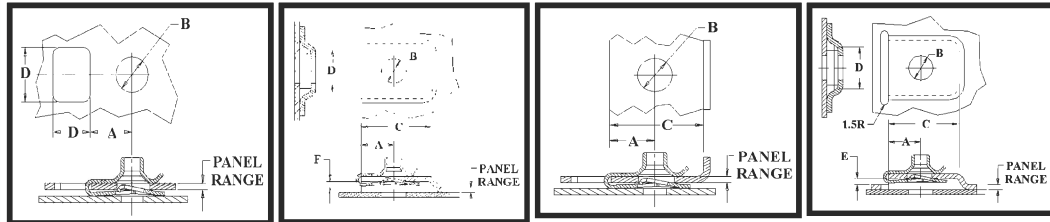
ITWCIP's "Valued Fasteners" have been created as standard components primarily for the automotive industry. These "Valued Fasteners" are produced in large quantities and are offered to our customers at significantly reduced rates based on quantities ordered. The "Valued Fasteners" are available in the four different popular finishes that will meet our customer's requirements.



Type	Thread Size	A	B	C	D	E	F	G	H	J	PNL	F003	F102	F115	F151
SHORT	M4 X 0.7	10	17	10.5	12.5	3.0 2.2	5.5	0.61	3.0 MIN	0.38 MAX.	0.6- 2.0	10410 V	10416 V	N/A	N/A
	M4.2 X 1.41	10.2	17.3	10.5	12.5	3.0 2.2	5.5	0.61	3.0 MIN	0.38 MAX.		10561 V	10568 V	10567 V	10564 V
	M6 X 1.0	13.5	23.5	12.5	14.5	3.0 2.2	6	0.89	3.0 MIN	0.38 MAX.		12551 V	12555 V	12557 V	12554 V
	M8 X 1.25	14.5	25	14.2	17	3.0 2.2	9 7.5	1.04	3.0 MIN	0.38 MAX.		14270 V	14278 V	14280 V	14273 V
	M6 X 1.0	13.5	23.5	12.5	14.5	5.2 4.7	6	0.89	6.0 MIN	1.7 MAX.	2.0- 4.0	12558 TNV	12563 TNV	12565T NV	12561 TNV
	M8 X 1.25	14.5	25	14.2	17	5.2 4.7	9 7.5	1.04	6.0 MIN	1.7 MAX.		14237 TNV	14269 TNV	14276T NV	14240 TNV
	M10 X 1.5	18.5	32.5	17.5	24	5.2 4.7	9.7	1.4	6.0 MIN	1.7 MAX.		16155 V	16152 V	16154 V	16150 V
	M10 X 1.5	18.5	32.5	17.5	24	7.2 6.7	9.7	1.4	8.0 MIN	3.5 2.0	4.0- 6.0	16412 V	16421 V	16425 V	16415 V
LONG	M4 X 0.7	14	21	10.5	12.5	3.0 2.2	5.5	0.61	3.0 MIN	0.38 MAX.	0.6- 2.0	10426 V	10434 V	10432 V	10429 V
	M4.2 X 1.41	13.2	20.2	10.5	12.5	3.0 2.2	5.5	0.61	3.0 MIN	0.38 MAX.		10616 V	10623 V	10621 V	10619 V
	M6 X 1.0	19.5	29.5	12.5	14.5	3.0 2.2	6	0.89	3.0 MIN	0.38 MAX.		12566 TNV	12575 V	12579 V	12569 TNV
	M8 X 1.25	21	31.5	14.2	17	3.0 2.2	9 7.5	1.04	3.0 MIN	0.38 MAX.		14241 TNV	14261 V	14269 V	14244 TNV
	M6 X 1.0	19.5	29.5	12.5	14.5	5.2 4.7	6	0.89	6.0 MIN	1.7 MAX.	2.0- 4.0	12570 V	12577 V	12146 V	12573 V
	M8 X 1.25	21	31.5	14.2	17	5.2 4.7	9 7.5	1.04	6.0 MIN	1.7 MAX.		14245 V	14263 V	14123 V	14248 V
	M10 X 1.5	28.5	42.5	17.5	24	5.2 4.7	9.7	1.4	6.0 MIN	1.7 MAX.		16157 V	16409 V	16411 V	16407 V
	M10 X 1.5	28.5	42.5	17.5	24	7.2 6.7	9.7	1.4	8.0 MIN	3.5 2.0		4.0- 6.0	16416 V	16423 V	16427 V

Multi Threaded "U" Nut Installation Data

ENGINEERING SOLUTIONS PROVIDED BY ITW CIP



Reduce...

LABOR
WEIGHT
COST

Benefits...

ANTI-WRENCHING
NO CROSS THREADING
OR STRIPPING
OUT PERFORMS WELD
NUTS
SUPERIOR JOINT
COMPLIANCE
MADE FROM HIGH
CARBON SPRING
STEEL

METRIC APPLICATIONS

Type	Thread Size	A		B		C	D		E	F
		MAX	MIN	MAX	MIN	MIN	MAX	MIN	MIN	MIN
SHORT	M6 X 1.0	12.5	11.5	10.7	9.9	25.0	16.5	15.5	2.5	1.2
	M6.3 X 1.0	12.5	11.5	10.7	9.9	25.0	16.5	15.5	2.5	1.2
	M8 X 1.25	13.5	12.5	12.1	11.3	26.5	20.0	19.0	2.5	1.4
	M10 X 1.5	17.5	16.5	15.5	14.7	35.0	26.0	25.0	3.0	2.0
LONG	M6 X 1.0	18.5	17.5	10.7	9.9	31.5	16.5	15.5	2.5	1.2
	M8 X 1.25	20.0	19.0	12.1	11.3	33.5	20.0	19.0	2.5	1.4
	M10 X 1.5	27.5	26.5	15.5	14.7	45.0	26.0	25.0	3.0	2.0

ENGLISH APPLICATIONS

Type	Thread Size	A		B		C	D		E	F
		MAX	MIN	MAX	MIN	MIN	MAX	MIN	MIN	MIN
SHORT	1/4"-20	.50	.44	.39	.36	.98	.64	.61	.10	.04
	5/16"-18	.53	.47	.45	.42	1.04	.77	.74	.12	.05
	3/8"-16	.69	.63	.58	.55	1.37	1.02	.99	.14	.06
LONG	1/4"-20	.75	.69	.39	.36	1.23	.64	.61	.10	.04
	5/16"-18	.81	.75	.45	.42	1.32	.77	.74	.12	.05
	3/8"-16	1.05	.99	.58	.55	1.73	1.02	.99	.14	.06

Increase...

STRENGTH
PERFORMANCE
QUALITY

Multi Threaded U-Nut Automation

ENGINEERING SOLUTIONS PROVIDED BY ITW CIP

Collated “U” Nut for Automated Installation Tool

- Eliminates ergonomic concerns with mechanical tool installation.

- Reduces part numbers.

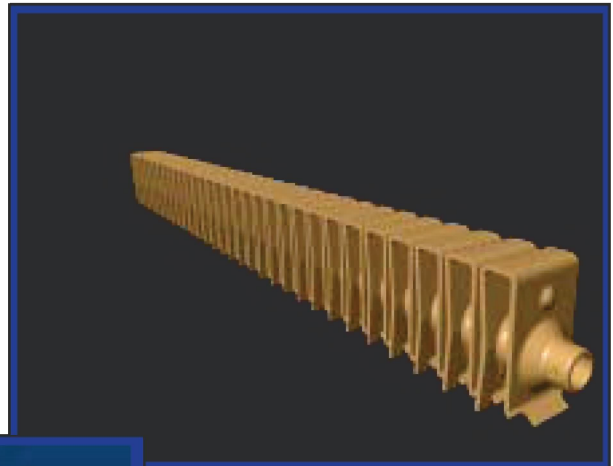
- Improves quality and assures that parts are correctly installed.

- Increases productivity up to 4 times.

- Improves material handling – no loose parts and no material scrap.

- Meets GM current standards.

- Collated Strips
- Material Supplied in ¼ Keg Container
- Simple Operation
- Easy Loading
- Decrease Installation Time



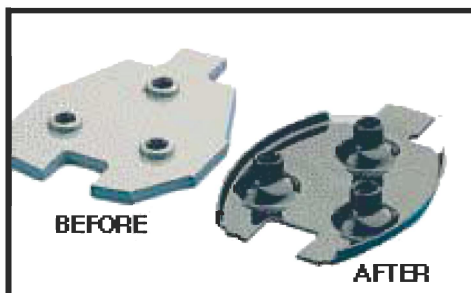
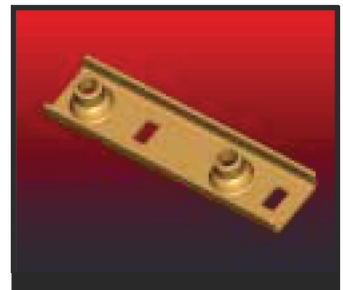
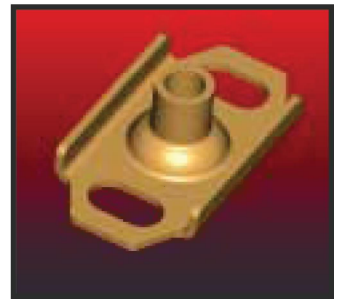
Nut Plate Threaded Fastener Guide

ENGINEERING SOLUTIONS PROVIDED BY ITW CIP

- No cross threading or stripping
- 1 / 3 The weight, 4 X the strength of alternate fasteners.
- Superior joint compliance compared to cold head fasteners.
- Can be used over larger holes.
- Retains better clamp load when subjected to shock or wear.
- Available in Metric and English threads.
- Available thread locking.
- Property Class 8 & 10 available.
- QS9000 Certified
- Internal A2L Accredited Lab
- Internal Metallurgical Lab
- Internal annealing & heat treating.

Over a 50 year period ITW CIP has developed a range of innovative fasteners which have provided such unique characteristics and benefits that they have virtually made obsolete many of the older versions and methods of fastening.

ITW CIP's nut plate offers a lightweight (one-third the weight of the others), high-strength fastener with one or more drawn threaded sleeves attached to the mating component with innovative features limited only by imagination. Our nut plates have evolved to where they offer three types of attachment: snap-in-place, tab-in-place and weld-in-place. Weld-in-place is used for fixed applications where no adjustability is required. Tab-in-place offers a low-cost, positive means of retaining the nut plate with tabs formed from the mating panel, allowing for float. Snap-in-place retainers take advantage of the hardened spring steel used for nut plates to create a retainer allowing for float and proper assembly retention.



ITW CIP Threaded Fastener Finish Guide

ENGINEERING SOLUTIONS PROVIDED BY ITW CIP

FINISH APPLICATION DATA

FINISH	DESCRIPTION	SALT HRS
F002	PHOSPHATE COAT	0
F003	PHOSPHATE COAT & RUST PREVENTATIVE OIL	72
F007	ZINC PLATE (MECH. PLATE .0002 MIN. THICK) WITH CLEAR CHROMATE DIP	32
F014	PHOSPHATE COAT & 2 COATS BLACK PAINT	96
F019	MECHANICALLY PLATED COPPER COATING (.0001 MIN THICK) FOR IDENTIFACATION ONLY	0
F069	DACROMET (THREE COATS) METALLIC GRAY APPEARANCE	400
F091	PHOSPHATE COAT & (1) COAT BLACK PAINT	72
F102	PHOSPHATE COAT (1500 MG/FT ² , MIN), ELECTRODEPOSITED BLACK ORGANIC COATING & OIL	240
F115	PHOSPHATE/ ZINC/ ORGANIC COATING .00059-.00098 THICK 13-16 G/M ²	240
F142	ZINC ORGANIC TYPE .00032 MIN THICK, COLOR SILVER/SILVER GRAY	480
F169	ZINC PHOSPHATE, ZINC PHOSPHATE INORGANIC RESIN COATING & ALUMINUM RICH ORGANIC TOPCOAT	400
F184	PHOS COAT (1500 MG/FT ² , MIN) ELECTRODEPOSITED BLACK ORGANIC COAT & OIL & BLACK PLASTISOL	240
F189	PHOSPHATE/ ZINC/ ORGANIC COATING .00059-.00098 THICK 13-16 G/M ² PLUS SEALING COMPOUND. (WHITE)	240
F194	ALUMINUM ORGANIC COATING SILVER/GRAY WITH SEALER	1000
F202	LIQUID SILICONE RUBBER-M2GE 303G11,Z1,Z2,Z3,Z4,Z5 Z1-LIQ. SIL. RUB. Z2-DHORE A 20+/-5 Z3-TENSILE 1.2MPA MIN. Z4-ELONGATION 150% Z5-COLOR WHITE	0