

## The SIFCO Process®



## What is the SIFCO Process®?

### A Form of Electroplating

### That does not require:

Immersion Tanks • Special Fixtures • Extensive Masking

It is Used to Enhance the Performance of OEM Metal Parts

It is Used for Repair and Salvage of Metal Components

### That are:

Worn • Damaged • Corroded • Mis-machined

It offers a Wide Range of Deposit Characteristics

#### That provide:

- Wear Resistance
- Corrosion Resistance
- Electrical Conductivity
- Low Hydrogen Embrittlement
- Low Stress

### It is Portable

- Allows On-site Repairs
- Minimizes the Need for Disassembly
- Reduces Turn-around Time
- Eliminates Shipping Delays

### It is Fast

- 60 80 Times Faster Than Tank Plating
- Minimizes the Need for Post Machining or Grinding

### It is Easy to Learn

- Standard and Custom Training Programs
- Immediate In-house Plating Capabilities
- No Chemical Analysis Needed
- Need Only Basic Math Skills

#### It is Economical

- Reduces Down Time
- Plate to Specification
- Plate Only Where Needed



## Locations



### **World Headquarters**

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FAA Repair Station #SOXR680K

ISO 9001: 2015 / AS 9100D Registered Quality System Nadcap Chemical Processing Accredited AC7108

#### **US Regional Service Locations**

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T: 800.765.4131 P: 281.444.6500 F: 281.441.6501 E: info@sifcoasc.com

ISO 9001: 2015 / AS 9100D Registered Quality System

22 Thompson Road, Dock #4, E. Windsor, Connecticut 06088

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FAA Repair Station #SOX3680K

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ISO 9001: 2015/ AS 9100D Registered Quality System

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P: +44 (1527) 557740 F: +44 (1527) 832856 E: plating@sifco.co.uk

ISO 9001: 2015 / AS 9100D Registered Quality System

ISO 14001: 2015 Environmental Management System

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ISO 9001: 2015 / AS 9100D Registered Quality System





Chemical Processing







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## Freight Information



### **Air Freight Charges**

IATA regulations require certain solutions be packed in liter quantities for air shipment. Special packaging charges will be assessed for toxic-designated solutions. Charges will be quoted when order is placed or in formal quotation. These charges are imposed by the carriers and are subject to change.

UPS adds a \$40 per box charge for any hazardous material shipping by air plus normal shipping charges. Federal Express adds a \$40 (air inaccessible) or \$80 (air accessible) per box charge, depending upon the hazard class being shipped, for any hazardous material shipping by air plus normal shipping charges. International charges are as follows: Inaccessible by air (flat fee of \$62.50 or \$0.34 per pound); Accessible by air (flat fee of \$127.00 or \$0.69 per pound).

All other air carriers levy their own dangerous goods fees that vary by transportation company. These costs will be passed along to the buyer.

### **Ground Freight Charges**

SIFCO Applied Surface Concepts (ASC) will make every effort to ship orders by ground freight within three business days of the receipt of an order.

Federal regulations require special containers for ground movement of toxic solutions. This includes UPS, FedEx and motor freight. Poison-pack containers and DOT-approved drums are required and will be quoted when the order is placed.

In some instances, a limited access or government fee will be added to your freight bill due to the carrier's consideration of extra service or time. If this fee is applicable to your shipment, you will be quoted when the order is placed.

Please note, most carriers add a charge of up to \$32.00 per box for any hazardous material in addition to normal shipping charges. These costs will be passed along to the buyer. When placing an order, the buyer should consider the most economical method of transportation, that is, UPS, Fed Ex Ground, or other motor freight.

### Rush Orders (same day shipping)

The shipping of hazardous and/or toxic materials is heavily regulated. The special packaging and labeling that is required for some of these materials is expensive and time consuming. The later the order is placed, the more difficult the ability to secure a suitable carrier and get the order out. Because of these factors, same day shipping is subject to the SIFCO ASC Shipping department's approval, even after the following conditions are met.

Rush orders that can be shipped by air, where permitted under regulations, are accepted at our Cleveland facility under the following conditions:

- The order must be placed no later than 11:30 am EST.
- Orders for air shipment placed after 11:30 am EST time will ship on the next working day.
- A minimum expediting fee of \$175.00 will be assessed at the time of the order, based on the requirements of the order.

Rush orders for ground shipments are accepted at our Cleveland facility under the following conditions:

- The order must be placed no later than 11:30 am EST for truck and UPS/FedEx ground.
- The ability to ship same day depends on truck availability.
- A minimum expediting fee of \$175.00 will be assessed at the time of the order, based on the requirements of the order.

Additional charges that may be imposed by the carriers can include, but are not limited to, are: \$65 for delivery to any location on a military base, and a minimum of \$45 for freeze protection in the winter months. Freight charges are subject to change without notice unless SIFCO ASC has expressly agreed in writing to price protection for a stated time period.

## **Abbreviations**



C Cotton, as in Jacket ID-13C

F Flow, as in Anode, Graphite, FT-65F

Ft. Foot

FT Flat or Flat Tool as in FT-115

HB Heavy Build, as in Rhodium HB

ID Inside Diameter or Internal Diameter tool as in ID-5.

In. Inch

LHE® Low Hydrogen Embrittlement, as in Cadmium LHE®

m Meter

mm Millimeter

OD Outside Diameter or Outside Diameter plating tool, as in OD-50

P Polyester, as in P Jacket

PT Platinum or Platinum clad plating tool: PT-13

XHB Extra Heavy Build, as in Copper XHB

μm Microns

ppm Parts per million

gpm Gallons per minute

Ipm Liters per minute



### TechnoPlate® Power Packs

Part Number	Model	DC Amps Output	DC Volts Output	Weight Lb. (Kg)	Phase Current
6015A20V	TechnoPlate 15-20-115/230	15	20	29	3/1.5
6030A20V	TechnoPlate 30-20-115/230	30	20	32	6.5/3
Dimensions: 33 cm W x 19.7 cm H x 33 cm D (13" W x 7.75" H x 13" D)					
6015A50V	TechnoPlate Anodizing Unit 15-50-115/230	15	50	36	8/4
6060A20V	TechnoPlate 60-20-115/230	60	20	40	13/7
Dimensions: 31.75 cm W x 33 cm H x 38 cm D (12.5" W x 13" H x 15" D)					

- Dual input voltage
- Fully digital controls
- Constant voltage & current regulation
- Forward/Reverse polarity switching
- ▶ Reverse & ampere hour alarms
- ▶ Switch Mode technology: maximum regulation accuracy
  - < 1% ripple & high efficiency</p>
- Adjustable front cover
- ▶ CE and RoHS compliant
- 2-year manufacturer's warranty
- Meets multiple specifications:
  - Mil-Std 865
  - Mil-Std 2197
  - A-A-59460



60 amp TechnoPlate®



Output Leads

\*one set provided upon first purchase



15 amp TechnoPlate®



## SIFCO Process® High Capacity Power Packs

Part Number	Model	DC Amps Output	DC Volts Output	Weight Lb. (Kg)	Line Amps
61150244	SP 150-24-380V-460V-3	150	24	64 (29)	12
Dimensions: 48 cm W x 13 cm H x 52 cm D (19" W x 5" H x 20.5" D)					
61300203	*SP 300-20-230-3 (230VAC)	300	20	93 (42)	20
Dimensions: 53 cm W x 25 cm H x 58 cm D (21" W x 10" H x 23" D)					
61300205	*SP 300-20-380V-460V-3	300	20	264 (120)	20
60500183	*SP 500-18-230-3	500	18	264 (120)	29
60500185	*SP 500-18-380V-460V-3	500	18	264 (120)	29
Dimensions: 80 cm W x 100 cm H x 40 cm D (32" W x 40" H x 16" D)					

<sup>\*</sup>Special order item: Quoted upon request. Custom units also available. One set of output leads are provided upon first purchase

- ▶ 100% constant voltage and current regulation
- ▶ Forward/reverse polarity switching
- ▶ CE compliant
- 2-year manufacturer warranty
- ▶ Output ripple < 2% at 100% of output current
- ▶ Camlock connections for plating leads
- Over-temperature protection
- ▶ Audible reverse alarm
- Polycarbonate keypad and multifunction LCD display
- LCD displays for amperage, voltage and ampere-hours
- Program options



SP 150 Power Pack







### **Power Pack Control Accessories**

Description	Part Number
Industrial Touchscreen Panel PC (including stand and keyboard with integrated trackball mouse)	61001125
Power Pack Control Software and License	61001126
Power Pack Control Converter (RS232/TCP/IP provides communication between the power pack and PC)	61001127
2-shelf AV Cart	61001128
TechnoPlate® 3-meter remote cable	60002262

## **Electrical Accessories**



## **Output Leads**

Description	Part Number
15 Amp Positive Lead, Red, 3m (9.8 ft.), incl. fork terminal, 75 amp female connector, and 15 amp adpt.	60352020
15 Amp Negative Lead, Black, 3m (9.8 ft.), incl. fork terminal, alligator clamp, and 15 amp adapter	60352025
75 Amp Positive Lead, Red, 3m (9.8 ft.), incl. #8 modified ring, Cam-Loc F Series, and 75 amp female connector	60352030
75 Amp Negative Lead, Black, 3m (9.8 ft.), incl. #8 modified ring, Cam-Loc F Series, and alligator clamp	60352035
150 Amp Positive Lead, Red, 3m (9.8 ft.) incl. Cam-Loc F Series and 150 amp female connector	60352050
150 Amp Negative Lead, Black, 3m (9.8 ft.), incl. Cam-Loc F Series, and alligator clamp	60352055
300 Amp Positive Lead, Red, 3m (9.8 ft.) incl. Cam-Loc F Series and 300 amp female connector	60352070
300 Amp Negative Lead, Black, 3m (9.8 ft.), incl. Cam-Loc F Series and lug terminal	60352075

### **Handles**

Description	Part Number
#75 Handle, for use up to 75 amps, incl. AC-M8 Adapter	12302075
Replacement Cap, for #75 Handle	21701060
Replacement Bushing, for #75 Handle	21700013
#150 Handle, for use up to 150 amps, with provisions for solution flow, includes plug and 2 flow fittings	12302150
#300 Handle, for use up to 300 amps	12302250

## Adapters

Description	Part Number
Adapter for 15 Amp Lead to SP Power Pack - Red	20506105
Adapter for 15 Amp Lead to SP Power Pack - Black	20506106
M8 Adapter for #75 Handle	12401250
M8 to M24 adapter for #75 Handle	12401702
FT 90 degree adapter for #75 Handle	12401252
ID/PT 90 degree adapter for #75 Handle	12401253







#75 Handle with M8 Adapter



## **PT Anodes**

\*For ID and Flat Surfaces Using a #75 Handle

Working Dimensions	Part Number
Anode, Platinum Clad, PT-1 1.2 mm OD x 60 mm L (3/64 in. OD x 2 3/8 in. L)	13250001
Anode, Platinum Clad, PT-2 2.3 mm OD x 60 mm L (3/32 in. OD x 2 3/8 in. L)	13250002
Anode, Platinum Clad, PT-5 4.8 mm OD x 61 mm L (3/16 in. OD x 2 3/8 in. L)	13250005
Anode, Platinum Clad, PT-6 6.4 mm OD x 61 mm L (1/4 in. OD x 2 3/8 in. L)	13250006
Anode, Platinum Clad, PT-8 7.9 mm OD x 61 mm L (5/16 in. OD x 2 3/8 in. L)	13250008
Anode, Platinum Clad, PT-10 9.5 mm OD x 83 mm L (3/8 in. OD x 3 ¼ in. L)	13250010
Anode, Platinum Clad, PT-13 12.7 mm OD x 83 mm L (1/2 in. OD x 3 ¼ in. L)	13250013

<sup>\*</sup>Pt cladding is 50 micro inches thick



## ID Anodes (small)

For ID and Flat Surfaces Using a #75 Handle

Working Dimensions	Part Number
Anode, Graphite, ID-5 4.8 mm OD x 66 mm L (3/16 in. OD x 2-5/8 in. L)	13001005
Anode, Graphite, ID-6 6.4 mm OD x 66 mm L (1/4 in. OD x 2-5/8 in. L)	13001006
Anode, Graphite, ID-8 7.9 mm OD x 66 mm L (5/16 in. OD x 2-5/8 in. L)	13001008
Anode, Graphite, ID-10 9.5 mm OD x 86 mm L (3/8 in. OD x 3 3/8 in. L)	13001010
Anode, Graphite, ID-13 12.7 mm OD x 86 mm L (1/2 in. OD x 3 3/8 in. L)	13001013





Anode dimensions are based upon usable area.



## ID Anodes (large)

For ID Surfaces Using a #150 Handle or #75 Handle with M8-M42 Adapter

Working Dimensions	Part Number
Anode, Graphite, ID-19 19 mm OD x 100 mm L (3/4 in. OD x 4 in. L)	13001019
Anode, Graphite, ID-25 25 mm OD x 100 mm L (1 in. OD x 4 in. L)	13001025
Anode, Graphite, ID-32 32 mm OD x 100 mm L (1 ¼ in. OD x 4 in. L)	13001032
Anode, Graphite, ID-38 38 mm OD x 100 mm L (1 ½ in. OD x 4 in. L	13001038
Anode, Graphite, ID-50 50 mm OD x 100 mm L (2 in. OD x 4 in. L)	13001050
Anode, Graphite, ID-63 63 mm OD x 100 mm L (2 ½ in. OD x 4 in. L)	13001063
Anode, Graphite, ID-75 75 mm OD x 100 mm L (3 in. OD x 4 in. L)	13001075
Anode, Graphite, ID-100 100 mm OD x 100 mm L (4 in. OD x 4 in. L)	13001100

Working Dimensions	Part Number
Anode, Graphite, ID-19F (flow) 19 mm OD x 100 mm L (3/4 in. OD x 4 in. L)	13002019
Anode, Graphite, ID-25F (flow) 25 mm OD x 100 mm L (1 in. OD x 4 in. L	13002025
Anode, Graphite, ID-32F (flow) 32 mm OD x 100 mm L (1 ¼ in. OD x 4 in. L)	13002032
Anode, Graphite, ID-38F (flow) 38 mm OD x 100 mm L (1 ½ in. OD x 4 in. L)	13002038
Anode, Graphite, ID-50F (flow) 50 mm OD x 100 mm L (2 in. OD x 4 in. L)	13002050
Anode, Graphite, ID-63F (flow) 63 mm OD x 100 mm L (2 ½ in. OD x 4 in. L)	13002063
Anode, Graphite, ID-75F (flow) 75 mm OD x 100 mm L (3 in. OD x 4 in. L)	13002075
Anode, Graphite, ID-100F (flow) 100 mm OD x 100 mm L (4 in. OD x 4 in. L)	13002100













ID Anodes (large)



## **FT Anodes**

For Flat and OD Surfaces using a #75 Handle

Description	Part Number
Anode, Graphite, FT-40 40 mm L x 25 mm W x 25 mm H (1 9/16 in. L x 1 in. W x 1 in. H)	13005040
Anode, Graphite, FT-60 60 mm L x 40 mm W x 25 mm H (2 3/8 in. L x 1 9/16 in. W x 1 in. H)	13005060
Anode, Graphite, FT-75 75 mm L x 50 mm W x 25 mm H (3 in. L x 2 in. W x 1 in. H)	13005075
Anode, Graphite, FT-125 125 mm L x 25 mm W x 25 mm H (4 15/16 in. L x 1 in. W x 1 in. H)	13005125



FT Anodes for #75 Handles

## **FT Anodes**

For Flat and OD Surfaces using a #150 Handle

Description	Part Number
Anode, Graphite, FT-65 65 mm L x 65 mm W x 25 mm H (2 9/16 in. L x 2 9/16 in. W x 1 in. H)	13005065
Anode, Graphite, FT-65F (flow) 65 mm L x 65 mm W x 50 mm H (2 9/16 in. L x 2 9/16 in. W x 2 in. H)	13006065
Anode, Graphite, FT-90 90 mm L x 90 mm W x 25 mm H (3 17/32 in. L x 3 17/32 in. W x 1 in. H)	13005090
Anode, Graphite, FT-90F (flow) 90 mm L x 90 mm W x 50 mm H (3 17/32 in. L x 3 17/32 in. W x 2 in. H)	13006090
Anode, Graphite, FT-115 115 mm L x 115 mm W x 25 mm H (4 17/32 in. L x 4 17/32 in. W x 1 in. H)	13005115
Anode, Graphite, FT-115F (flow) 115 mm L x 115 mm W x 50 mm H (4 17/32 in. L x 4 17/32 in. W x 2 in. H)	13006115



FT Anodes for #150 Handles



#### **OD** Anodes

For OD Surfaces using a #75 Handle

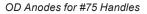
Description	Part Number
Anode, Graphite, OD-25 25 mm ID x 25 mm L (1 in. ID x 1 in. L)	13003025
Anode, Graphite, OD-30 30 mm ID x 25 mm L (1 3/16 in. ID x 1 in. L)	13003030
Anode, Graphite, OD-40 40 mm ID x 25 mm L (1 9/16 in. ID x 1 in. L)	13003040
Anode, Graphite, OD-50 50 mm ID x 25 mm L (2 in. ID x 1 in. L)	13003050

#### **OD** Anodes

For OD Surfaces using a #150 Handle

Description	Part Number
Anode, Graphite, OD-60 60 mm ID x 50 mm L (2 3/8 in. ID x 2 in. L)	13003060
Anode, Graphite, OD-70 70 mm ID x 50 mm L (2 ¾ in. ID x 2 in. L)	13003070
Anode, Graphite, OD-80 80 mm ID x 50 mm L (3 5/32 in. ID x 2 in. L)	13003080
Anode, Graphite, OD-90 90 mm ID x 50 mm L (3 17/32 in. ID x 2 in. L)	13003090
Anode, Graphite, OD-100 100 mm ID x 50 mm L (3 15/16 in. ID x 2 in. L)	13003100







OD Anodes for #150 Handles

### **Custom Anodes**

All graphite anodes are prepared from high-purity graphite having less than 20 ppm iron. A wide variety of graphite, titanium, and poly anodes with Dur-A-Form mesh or sheet or platinum-clad niobium mesh or sheet can be fabricated to meet your needs. Please contact us at 800-765-4131 for more information and pricing.



## **Bulk Graphite**

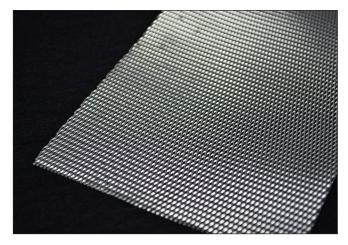
Description	Part Number
Graphite Rod, 25.4 mm dia. x 305 mm (1 in. dia. x 12 in.)	12900140
Graphite Rod, 50.8 mm dia. x 305 mm (2 in. dia. x 12 in.)	12900200
Graphite Rod, 101.6 mm dia. x 305 mm (4 in. dia. x 12 in.)	12900260
Graphite Rod, 152.4 mm dia. x 305 mm (6 in. dia. x 12 in.)	12900300
Graphite Flat, 25.4 mm x 305 mm x 305 mm (1 in. x 12 in. x 12 in.)	12900400
Graphite Flat, 50.8 mm x 254 mm x 305 mm (2 in. x 10 in. x 12 in.)	12900440
Graphite Flat, 101.6 mm x 254 mm x 305 mm (4 in. x 10 in. x 12 in.)	12900460

Custom sizes available upon request.

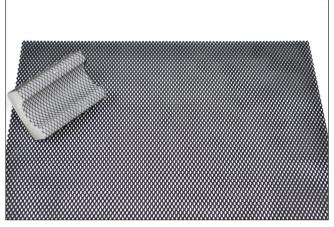
## Platinum-Clad Niobium and Dur-A-Form Material

Description	Part Number
Pt-Clad Mesh, 6 μm, (0.000250 in.), single face, 6" W, 584 μm (0.023") thick	25510100
Pt-Clad Mesh, 6 μm, (0.000250 in.), double face, 6" W, 584 μm (0.023") thick	25510130
Pt-Clad Sheet, 6 μm, (0.000250 in.), single face, 6" W, 250 μm (0.010") thick	25510250
Pt-Clad Sheet, 6 μm, (0.000250 in.), double face, 6" W, 250 μm (0.010") thick	25510300
Dur-A-Form Mesh, 762 μm (0.030") thick, (call for availability)	25510350
Dur-A-Form Mesh, 1524 μm (0.060") thick, (call for availability)	25510400
Dur-A-Form Sheet, 1016 μm (0.040") thick, (call for availability)	25510500

(Platinum mesh and sheet material is sold by the linear inch and is available only in a 6" width)



PT-Clad Mesh Material



Dur-A-Form Mesh Material

## **Cover Materials**



## Sleeving

Description	Part Number
Sleeving, Cotton, 000C 6.35 mm x 45 m (1/4 in. x 50 yd.)	11800020
Sleeving, Cotton, 00C 9.53 mm x 45 m (3/8 in. x 50 yd.)	11800010
Sleeving, Cotton, 01C 15.8 mm x 45 m (5/8 in. x 50 yd.)	11800000
Sleeving, Cotton, 12C 25.4 mm x 45 m (1 in. x 50 yd.)	11800050
Sleeving, Cotton, 34C 38.1 mm x 45 m (1 ½ in. x 50 yd.)	11800100
Sleeving, Cotton, 56C 66.8 mm x 45 m (2 5/8 in. x 50 yd.)	11800150
Sleeving, Polyester, 000P 6.35 mm x 45 m (1/4 in. x 50 yd.)	11801020
Sleeving, Polyester, 00P 9.53 mm x 45 m (3/8 in. x 50 yd.)	11801010
Sleeving, Polyester, 01P 15.8 mm x 45 m (5/8 in. x 50 yd.)	11801000
Sleeving, Polyester, 12P 25.4 mm x 45 m (1 in. x 50 yd.)	11801050
Sleeving, Polyester, 34P 38.1 mm x 45 m (1 ½ in. x 50 yd.)	11801100
Sleeving, Polyester, 56P 66.8 mm x 45 m (2 5/8 in. x 50 yd.)	11801150

Type of Sleeving	Recommended for the following Anodes:
Sleeving (000 C, P)	PT-1, PT-2 Anodes
Sleeving (00 C, P)	PT-5, PT-6, ID-5, ID-6 Anodes
Sleeving (01 C, P)	PT-8, ID-8 Anodes
Sleeving (12 C, P)	PT-10, PT-13, ID-10, ID-13 Anodes
Sleeving (34 C, P)	ID-19, ID-25, ID-32, ID-38, ID-50, OD-25, OD-30, OD-40, OD-50, FT-40, FT-65, FT-75, FT-125 Anodes
Sleeving (56 C, P)	ID-63, ID-75, ID-100, OD-60, OD-70, OD-80, OD-90, OD-100, FT-90, FT-115 Anodes



Cotton Sleeving

# **Cover Materials**



## **Batting & TuffWrap**

Description	Part Number
Cotton Batting, 30 cm x 2.7 m (12 in. x 9 ft.)	63000000
Polyester Pads, 10/pk, 15 cm x 41 cm (6 in. x 16 in.)	12000560
Polyester Batting, 114 cm x 152 cm (45 in. x 60 in.)	63000500
PermaWrap, 1.57 mm (1/16 in.) thick, 91 cm x 51 cm (36 in. x 20 in.)	12000400
PermaWrap, 3.18 mm (1/8 in.) thick, 58 cm x 81 cm (23 in. x 32 in.)	12000450
EP PermaWrap, 6.36 mm (1/4 in.) thick	12000460
Jacket Material, Cotton 35 cm x 1.3 m (14 in. x 52 in.)	12000150
Jacket Material, Polyester 35 cm x 1.3 m (14 in. x 52 in.)	12000200
White TuffWrap, 43 cm x 1.1 m (17 in. x 42.5 in.)	12000260
White TuffWrap, 43 cm x 9 m (17 in. x 30 ft.)	12000270
Red TuffWrap, Pads 6/pk, 2 cm x 15 cm (9 in. x 6 in.)	63000306
Red TuffWrap, 46 cm x 3 m (18 in. x 10 ft.)	63000300
Red TuffWrap, 46 cm x 9.2 m (18 in. x 30 ft.)	63000301
Purple TuffWrap, 46 cm x 91.5 cm (18 in. x 36 in.)	12000290
Canoe Clips (100/pk) to secure cover material to anodes (Requires 3.5 mm drill)	62602200





Cotton Batting PermaWrap®





Canoe Clips Red TuffWrap®

## **Cover Materials**



#### **Jackets**

PT Series anodes require ID Series jackets.

Cotton Jackets	Part Number
Jacket ID-13C (Cotton) 5/pk	11903013
Jacket ID-19C (Cotton) 5/pk	11903019
Jacket ID-25C (Cotton) 5/pk	11903025
Jacket ID-32C (Cotton) 5/pk	11903032
Jacket ID-38C (Cotton) 5/pk	11903038
Jacket ID-50C (Cotton) 5/pk	11903050
Jacket ID-63C (Cotton) 5/pk	11903063
Jacket ID-75C (Cotton) 5/pk	11903075
Jacket ID-100C (Cotton) 5/pk	11903100
Jacket FT-40C (Cotton) 5/pk	11905040
Jacket FT-60C (Cotton) 5/pk	11905060
Jacket FT-65C (Cotton) 5/pk	11905065
Jacket FT-75C (Cotton) 5/pk	11905075
Jacket FT-90C (Cotton) 5/pk	11905090
Jacket FT-115C (Cotton) 5/pk	11905115
Jacket FT-125C (Cotton) 5/pk	11905125

SERVEL!
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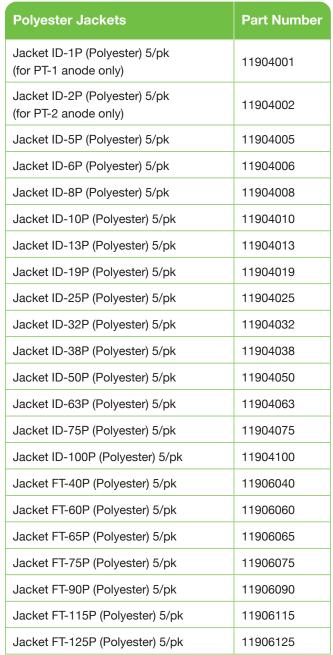
FT Cotton Jackets



ID Cotton Jackets



FT Polyester Jackets





ID Polyester Jackets

# **Masking Materials**



## **Tapes**

Description	Part Number
Aluminum Tape, 12.7 mm x 54.8 m (1/2 in. x 60 yds.)	63600050
Aluminum Tape, 25.4 mm x 54.8 m (1 in. x 60 yds.)	11600000
Aluminum Tape, 50.8 mm x 54.8 m (2 in. x 60 yds.)	11600050
Aluminum Tape, 76.2 mm x 54.8 m (3 in. x 60 yds.)	11600100
Vinyl Tape - Yellow, 25.4 mm x 33 m (1 in. x 36 yds.)	11601000
Vinyl Tape -Yellow, 50.8 mm x 33 m (2 in. x 36 yds.)	11601050
Vinyl Tape - Yellow, 102 mm x 33 m (4 in. x 36 yds.)	11601100
Vinyl Tape - Tan, 25.4 mm x 33 m (1 in. x 36 yds.)	63601100
Vinyl Tape -Tan, 50.8 mm x 33 m (2 in. x 36 yds.)	63601200
Polyester Tape - Green, 25.4 mm x 33 m (1 in. x 36 yds.)	11600010
Polyester Tape - Green, 50.8 mm x 33 m (2 in. x 36 yds.)	11600110
AeroNikl® Tape - Green, 25.4 mm x 54.8 m (1 in. x 60 yds.)	11601300
AeroNikl® Tape - Green, 50.8 mm x 54.8 m (2 in. x 60 yds.)	11601350
White Kapton® Tape, 50.8mm x 45.72m (2" x 50 yds)	63602200
Adhesion Test Tape, 3M Scotch 250, 25.4 mm x 54.8 m (1 in. x 60 yds.)	11603050

## **Other Materials**

Tapes

Description	Part Number
TuffMask Paint (Quart)	11700070
TuffMask Thinner (Quart)	11700060
PVC Sheet Material, .031" thick (sold 4' x 4')	25700050
PVC Sheet Material, .062" thick ( sold 4' x 4')	25700100
Closed Cell Neoprene, 1" thick (sold by sq. ft.)	12004580







Thinner and TuffMask

Closed Cell Neoprene



### **Instruction Manuals**

The SIFCO Process® Instruction Manual is a comprehensive, illustrated instruction manual covering the SIFCO Process® of Selective Electroplating and use of equipment, supplies, accessories, and plating solutions. Step-by-step procedures are provided for each solution and each base metal combination. Guidelines are given on the steps necessary to set up a job, evaluate the deposits, and troubleshoot.

Description	Part Number
*SIFCO Process® Brush Plating Instruction Manual	50410190
*SIFCO Process® Anodizing Instruction Manual	50410140
*SIFCO Process® Surface Defect Repair Manual	50410105

<sup>\*</sup>The SIFCO Process® Instruction Manuals are available, electronically, at no charge. Please contact your sales manager for more information or to receive your free copy.

### **Miscellaneous Accessories**

Description	Part Number
Disposable Gloves, 100/pk	62801100
Nitrile Gloves, 1 pair	12800090
Scissors, 8" Stainless (RH)	12600010
Scissors, 8" Stainless (LH)	12600020
Container for Used Solution, (DOT-34) 57 I (15 gal.)	40104000
Container for Used Solution, (DOT-17H) 208 I (55 gal.)	40104010

# **Solution Management**



## **Flow Systems**

The AeroNikl® Flow Systems are heated pumping systems designed to work with SIFCO Process® AeroNikl® solutions, as well as other solutions that are best plated at an elevated temperature.

Description	Part Number
AeroNikl® Flow System, Model 75, 6 liter (1.5 gal) 120 VAC, 1Ø, 50/60 Hz, 10.1 amp	10905000
AeroNikl® Flow System, Model 75, 6 liter (1.5 gal) 240 VAC, 1Ø, 50/60 Hz, 6.5 amp	10905020
AeroNikl® Flow System, Model 150, 11 liter (3.0 gal) 120 VAC, 1Ø, 50/60 Hz,13.5 amp	10905500
AeroNikl® Flow System, Model 150, 11 liter (3.0 gal) 240 VAC, 1Ø, 50/60 Hz, 8.2 amp	10905520
AeroNikl® Flow System, Model 250, 40 liter (10 gal) 240 VAC, 1Ø, 50/60 Hz, 15 amp	10906000

Operating Parameters	Model 75	Model 150	Model 250
Dimensions	33 cm L x 37 cm W x 44.5 cm H 13 in L x 14.5 in W x 17.5 in H	47 cm L x 42 cm W x 55 cm H 18.5 in L x 16.5 in W x 21.5 in H	82 cm L x 75 cm W x 84 cm H 32 in L x 29.5 in W x 33 in H
Weight	31 lbs.	50 lbs.	114 lbs.
Quantity of solution required to operate	4 to 6 liters	8 to 11 liters	23 to 38 liters
Recommended amperage range	Up to 75 amps	Up to 150 amps	Up to 500 amps
Filter provisions	One 254 mm (10" long)	One 254 mm (10" long)	Two 254 mm (10" long)
Flow System Outlet Size	1/2 in. FPT	1/2 in. FPT	3/4 in. FPT
Collection Trays with one 2.13 m (7 ft.) return line	One 279 mm x 356 mm (11 in. x 14 in.) Tray with corner drain 19mm dia. (¾ in) return line One 356mm x 432 mm (14in. x 17 in.) Tray	One 279 mm x 356 mm (11 in. x 14 in.) Tray with corner drain 19mm dia. (34 in) return line One 356 mm x 432 mm (14 in. x 17 in.) Tray	One 356 mm x 432 mm (14 in. x 17 in.) Tray with corner drain 25.4 mm dia. (1 in) return line One 508 mm x 610 mm (20 in. x 24 in.) Tray with corner drain 125.4 mm dia. (1 in) return line
Heater capacity	850 Watts	1.25 KW	3.0 KW
Temperature control	Digital indicating ±3°C (5°F)	Digital indicating ±3°C (5°F)	Digital indicating ±3°C (5°F)
Pump output LPM (GPM) at head without filter	32.2 @ 1.8 M (8.5 @ 6ft.)	47.3 @ 1.8 M (12.5 @ 6 ft.)	75.7 @ 1.8 M (20 @ 6 ft.)

# **Solution Management**



## **Replacement Parts**

Model 75 Flow Systems	Part Number
Heater/Pump Control Cover Model 75 (115V)	20701700
Heater/Pump Control Cover Model 75 (230V)	20701720
Flow Fittings Set Polypropylene	10905220
Clamp Set	10900260
Hose Set	10905240
Filter Elements (4 ea) 127mm (5 in.)	10901020
Filter Elements (4 ea) 254mm (10 in.)	10901040
Filter Gaskets (2 ea)	10901140
Valve Union Gasket Set M-75	10905560
Thermal Fuse (Model 75 only)	20709060

Model 150 Flow Systems	Part Number
Heater/Pump Control Cover Model 150 (115V)	20701750
Heater/Pump Control Cover Model 150 (230V)	20701770
Flow Fittings Set Polypropylene	10905720
Filter Elements (4 ea) 254mm (10 in.)	10901040
Filter Gaskets (2 ea)	10901140
Valve/Union Gasket Set M-150	10905760
Thermal Switch (Model 150 only)	20709120

Model 75 / Model 150 Flow Systems	Part Number
Hydrometer only (with range of 1.2 – 1.4)	12701002
Graduated Cylinder for Hydrometer	11402250









### **Small Submersible Pump Model 1U-MD**

A small submersible pump with totally encapsulated motor, magnetically coupled to a centrifugal pump with inlet screen and 1/4 in. MPT outlet. The pump delivers up to 10 LPM at 30 cm head (2.75 GPM at 1 foot head). The unit includes fittings and 1.82m (6ft.) of 6.35mm (0.25in.) internal diameter, clear vinyl tubing. Maximum recommended plating amperage is 60 amp.



### Large Submersible Pump Model LC-2CP-MD

The large submersible pump has a totally encapsulated motor, magnetically coupled to a centrifugal pump with 3/4 in. MPT inlet and 1/4 in. MPT outlet. The large pump delivers up to 20 LPM at 30 cm head (5.25 GPM at 1 foot head). Unit includes fittings and 1.8m (6ft.) of both 6.35mm (0.25in.) and 12.7 mm (0.50in.) ID, clear vinyl tubing. It also includes a bracket to mount the pump on the edge of the submersible pump pan. Maximum recommended plating amperage is 150 amp.



### **Peristaltic Pump**

A self-priming, positive displacement pump with variable speed drive of 30-600 RPM. Delivering up to 2.6 LPM (0.6 GPM) for special extended service applications, with one pump head. The unit includes 1.8m (6ft.) of 6.35mm (0.25in.) internal diameter, clear vinyl tubing and 610 mm (24 in.) of pump head tubing. Maximum recommended plating amperage is 30 amp.



Description	Part Number
Small Submersible Pump, Model 1U-MD, 115 VAC, 1Ø, 50/60 Hz, .45 amps	11000000
Small Submersible Pump Model 1U-MD, 230 VAC, 1Ø, 50/60 Hz, .23 amps	11002000
Large Submersible Pump, Model LC-2CP-MD, 115 VAC, 1Ø, 50/60 Hz, 1.1/.92 amps	11000300
Large Submersible Pump, Model LC-2CP-MD, 230 VAC, 1Ø, 50/60 Hz, .72/.53 amps	11002300
Peristaltic Pump, Uniflex, 115 VAC, 1Ø, 50/60 Hz, 2.2 amps	11001100
Peristaltic Pump, Uniflex, 230 VAC, 1Ø, 50/60 Hz, 1.1 amps	11002200

#### **Accessories for Peristaltic Pump**

Description	Part Number
Peristaltic Replacement Head	61005100
Peristaltic Head Mounting Hardware	61005200
Replacement Pump Head Tubing 8 mm ID x 11 mm OD (0.313 x 0.439 in.) A minimum of two (2) feet should be purchased.	21100050
Gear only	61005120

# **Solution Containers and Trays**



## **Containers**

Description	Part Number
Solution Caddy with Beakers (Holds six 500 ml Beakers, 83 mm diameter x 95 mm deep)	11300500
Replacement Beaker for Solution Caddy, 500 ml w/lid	21602050
Wash Bottle, 1000 ml	11500100
Beaker-Heavywall, 1000 ml	11200200

## **Trays**

Description	Part Number
Tray, 127 mm x 178 mm x 32 mm H (5 in. x 7 in. x 1 ¼ in .H), White	11400000
Tray, 203 mm x 254 mm x 52 mm H (8 in. x 10 in. x 2 in. H), White	11400050
Tray, 279 mm x 356 mm x 60 mm H (11 in. x 14in x 2 3/8 in. H), White	11400100
Tray, 356 mm x 432 mm x 89 mm H (14 in. x 17 in. x 3 ½ in. H), White	11400150
Tray, 508 mm x 610 mm x 92 mm H (20 in. x 24 in. x 3 5/8 in. H), White	11400200
Tray, with Corner Drain 203 mm x 254 mm x 52 mm H (8 in. x 10 in. x 2 in. H), White, with 2 m (7 ft.) return line spiraduct tubing 1.9 mm (¾ in. dia.)	11400060
Tray, with Corner Drain 279 mm x 356 mm x 70 mm H (11 in. x 14 in. x 2 ¾ in. H), White, with 2 m (7 ft.) return line spiraduct tubing 1.9 mm (¾ in. dia.)	11400110
Tray, with Corner Drain 356 mm x 432 mm x 89 mm H (14 in. x 17 in. x 3 ½ in H), White, with 2 m (7 ft.) return line spiraduct tubing 19 mm (¾ in. dia.)	11400160
Tray, with Corner Drain 356 mm x 432 mm x 89 mm H (14 in. x 17 in. x 3 ½ in H), White, with 2 m (7 ft.) return line spiraduct tubing 25.4 mm (1 in. dia.)	11400170
Tray, with Corner Drain 508 mm x 610 mm x 92 mm H (20 in. x 24 in. x 3 5/8 in. H), White, with 2 m (7 ft.) return line spiraduct tubing 25.4 mm (1 in. dia.)	11400210
Submersible Pump Pan, Small 371 mm x 318 mm x 140 mm H (12 ½ in. x 14 5/8 in. x 5 ½ in. H)	11401000
Splash Guard Netting (per sq. ft.)	26000050





# **Tubing and Fittings**



## **Tubing**

Description	Part Number
Spiraduct Tubing, 19 mm dia. (3/4 in.), Black PVC	21103050
Spiraduct Tubing, 25.4 mm dia. (1 in.), Black PVC	21103070
Spiraduct Straight Fitting, 19 mm dia (3/4 in.), Black PVC	21406160
Spiraduct Straight Fitting, 25.4 mm dia. (1 in.), Black PVC	21406170
Vinyl Tubing, 3.18 mm ID x 6.35 mm OD (0.125 in. x 0.250 in.)	21101050
Vinyl Tubing, 6.35 mm ID x 9.52 mm OD (0.250 in. x 0.375 in.)	21101100
Vinyl Tubing, 9.52 mm ID x 14.22 mm OD (0.375 in. x 0.560 in.)	21101150
Vinyl Tubing, 12.7 mm ID x 19 mm OD (0.500 in. x 0.750 in.)	21101200
Hose Clamps for Vinyl Tubing, 6.35 mm ID (0.250 in.) (6/pk)	22265206
Hose Clamps for Vinyl Tubing, 9.52 mm ID (0.375 in.) (6/pk)	22265211
Hose Clamps for Vinyl Tubing, 12.7 mm ID (0.500 in.) (6/pk)	22265216

## **Fittings**

Description	Part Number
Flow Fitting (Straight), 3/pk 1/8 in. MPT x 6.4 mm (fits OD 25-50 anodes, uses 1/4 in. ID tubing)	21401004
Flow Fitting (90 degree elbow), 3/pk 1/8 in. MPT x 6.4 mm	21400110
Flow Fitting (Straight), 3/pk I/8 in. MPT x 9.5 mm (for #150 Handles and OD 60-100 Anodes, uses 3/8 in. ID tubing)	21401005
Flow Fitting (Straight), 3/pk 3/8 in. MPT x 9.5 mm (uses 3/8 in. ID tubing)	21401008
Flow Fitting (90 degree elbow), 3/pk 3/8 in. MPT x 9.5 mm (uses 3/8 in. ID tubing)	21400121
Flow Fitting (Straight), 3/pk ½ in. MPT x 12.7 mm (uses ½ in. ID tubing)	21401033
Flow Fitting (90 degree elbow), 3/pk ½ in. MPT x 12.7 mm (uses ½ in. ID tubing)	21400130
Flow Fitting (Tee — Compression), 3/pk 3/8 in. MPT x 9.5mm (for I.D. Plater, uses 1/4 in. ID tubing)	21404030
Flow Fitting (Compression; 90 degree elbow), 3/pk 1/4 in. FPT x 9.5 mm (for S and L Submersible Pumps, uses 1/4 in. ID tubing )	21400230



### **Turning Head Model N**

The SIFCO Process® Model N Turning Head will provide years of trouble-free service as a light- to medium-duty rotating device. The turning head consists of a heavy-duty steel base, supporting a speed control and gear motor assembly with a drive bearing-mounted shaft, grounding bar, and chuck. The right angle gearbox is coupled to a shaft supported by two sealed, heavy-duty, self-aligning pillow block type bearings. A quality steel chuck is attached to a stainless steel backplate mounted on the shaft. This 3-jaw chuck comes complete with internal and external jaws, and a chuck wrench.

Description	Part Number
Turning Head Model N, 115 VAC, 50/60 Hz	10503000
Turning Head Model N, 230 VAC, 50/60 Hz 10503050	
Specifica	ations
Dimensions	55 cm L x 32 cm W x 30.5 cm H 21.5 in L x 12.5 in W x 12 in H
Weight	62 lbs.
Drive Unit	1/3 hp permanent magnet DC gearmotor with reversible, variable speed control box
Chuck Capacity	152 mm (6 in.) maximum diameter, with 610 mm (24 in.) maximum length. Internal and external jaws, for parts up to 23 kg (50 pounds)
Rotating Speed	Adjustable from 0 to 500 rpm
Power Requirements	115 VAC, 1Ø, 50/60 Hz, 6 amp 230 VAC, 1Ø, 50/60 Hz, 3 amp



Turning Head Model N



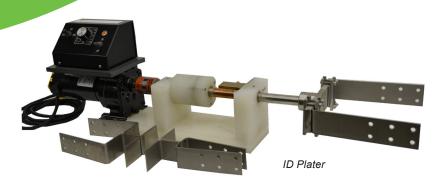
## **Traversing Arm**

The SIFCO Process® Traversing Arm provides mechanical oscillation or traversing motion for an otherwise manually-moved plating handle. Use of the SIFCO Process® Traversing Arm eliminates the need to have an operator move a plating tool, decreasing operator fatigue and freeing him or her to perform other tasks. The mechanical motion control supplied by the Traversing Arm will improve the efficiency of any plating or anodizing operation, help decrease plating cycle time, maximize deposit quality, and improve uniformity. The Traversing Arm will accommodate all standard SIFCO Process® plating tool handles, providing motion to virtually any size anode which can be attached to the plating tool handle. Speed control and effective length of movement are both easily adjustable for this unit.

Description	Part Number	
Traversing Arm, 115 VAC 50/60 Hz	61003120	
Traversing Arm, 230 VAC 50/60 Hz	61003200	
Speci	fications	
Dimensions	Base: 47 cm L x 19 cm W x 21.5 cm H, Extended Arm: 77 cm L Base: 18.5 in L x 7.5 in W x 8.5 in H, Extended Arm: 29 in L	
Weight	53 lbs.	
Drive Unit	248 watt (1/3 hp) permanent magnet dc gearmotor, with variable speed control	
Rotating Speed	Infinitely adjustable, 0-100 percent of motor speed (approximately 0 to 350 oscillations per minute [or rpm])	
Linear Speed (Tee Nut set at 25.4 mm (1 inch) radius	10 m/min at 100 rpm 33.3 ft/min at 100 rpm 58.3 ft/min at 175 rpm	
Oscillating Speed Tee Nut set at 25.4 mm (1 inch) radius Link Arm length 559 mm (22 inch) overall	28 m/min at 100 rpm 91.6 ft/min at 100 rpm 160.4 ft/min at 175 rpm	
Linear Speed Tee Nut set at 50.8 mm (2 inch) radius	20 m/min at 100 rpm 66.67 ft/min at 100 rpm 36 m/min at 175 rpm 116.67 ft/min at 175 rpm	
Oscillating Speed Tee Nut set at 50.8 mm (2 inch radius) Link Arm length 559 mm (22 inch) overall	56 m/min at 100 rpm 183.3 ft/min at 100 rpm 320.7 ft/min at 175 rpm	
Power Requirements	115 VAC, 1Ø, 50/60 Hz, 3 amp 230 VAC, 1Ø, 50/60 Hz, 3 amp	







### **ID Plater**

The SIFCO Process® Variable Speed ID Plater consists of a variable speed drive unit attached to a non-rotating, insulated, corrosion-resistant polypropylene base and flow chamber assembly. The flow chamber contains a high-quality pump shaft seal made from corrosion-resistant stainless steel, graphite and ceramic. A hollow stainless steel shaft is used to rotate the plating tools, with a copper-graphite brush contact to conduct a plating current up to 150 amps. Plating solution is pumped to the tools with vinyl tubing and nylon fittings. The plating anodes are secured to the shaft by using the hub and one of the three sets of included titanium spring arms. 24 stainless steel mounting screws are provided to mount the anode to the spring arms. Optionally, small-sized anodes may be secured by using an IDP Adapter (not included) to rotate tools such as the SIFCO ID Series anodes. A custom hub assembly or extension can be used to plate larger bore sizes.

Description	Part Number		
ID Plater Variable Speed, 115 VAC or 230 VAC, 50/60 Hz	10600200		
IDP Adapter (ID Plater to ID Anode)	12401600		
	Specifications		
Dimensions	77.5 cm L x 18 cm W x 28 cm H 30.5 in L x 7 in W x 11 in H		
Weight	33 lbs.		
Drive Unit	1/8 hp variable speed, 9 to 94 rpm, full load torque 77 lb-in.	95 watt variable speed, 3 to 122 rpm, full load torque 5.2 N*m	
8 in. Spring Arms (total of six)	Set 1 - For 4 to 7 in. ID (Designated "S") Set 2 - For 7 to 10 in. ID (Designated "M") Set 3 - For 9 to 12 in. ID (Designated "L")	Set 1 - For 102 to 178 mm ID (Designated "S") Set 2 - For 178 to 254 mm ID (Designated "M") Set 3 - For 229 to 305 mm ID (Designated "L")	
Flow Chamber Inlet Fitting	1/2 in. MPT x 1/2 in. tubing	1/2 in. NPT x 12.7 mm tubing	
Shaft Outlet	3/8 in. FPT threaded	3/8 in. NPT threaded	
Bore Sizes Range	From approximately 4 in. to 12 in. (With optional adapters, sizes from 1.5 in. to 3 ft)	From approximately 102 to 305 mm (With optional adapters, sizes from 40 mm to 914 mm)	
Recommended plating amperage range	mended plating amperage range Up to 150 amp		
Power requirements	115 VAC, 1Ø, 50/60 Hz, 5 amp 230 VAC, 1Ø, 50/60 Hz, 3.15 amp		



Portable Ventilation Unit

### **Portable Ventilation Unit**

The SIFCO Process® Portable Ventilation System has been designed to capture and filter airborne contaminants. This portable fume extractor is suitable for use with all non-cyanide SIFCO Process® solutions.

Description		Part Number
Portable Ventilation System, Model 300, 50/60 Hz Includes one HEPA + one 10 lb Acid/Gas/Ammonia filter		110 VAC - 10907552 220 VAC - 10907553
Model 300 HEPA Filter – Up to 99.9 down to .3 microns in size	7% efficient on particles	10900120
Model 300 Heavy Duty 10 lb Blende	Model 300 Heavy Duty 10 lb Blended filter – Acid, Gas and Ammonia	
Hour Counter - Displays total hours	of operation for ventilation unit	10907002
Magnehelic Gauge - To maintain the	e capacity of the HEPA filter	10907003
	Specifications	
Cabinet Dimensions:	39 cm L x 33 cm W x 42 cm H 15.5 in L x 13 in W x 16.5 in H	
Arm Dimensions:	5 in Round x 68 in Long fire retardant flex hose	
Weight: 40 lbs.		
Cabinet Material:	Cabinet Material:  16 ga. carbon steel w/ polyester epoxy coating on all surfaces  Motor:  Fractional Horsepower  HEPA Filter - Up to 99.97% efficient on particles 0.3 microns and larger. ASHRAE Filter - Up to 95% efficient on particles 0.5 microns and larger. ULPA Filter - Up to 99.9995% efficient on particles 0.12 microns and larger. Activated Carbon & Specialty-Blended Filters - Efficiency varies per chemical.  Variable Speed Control Standard on 115V 350 CFM High, Down to 50 CFM Low On/Off Toggle Switch Standard on 220V	
Motor:		
Available Filter Efficiencies:		
Air Volume:		
Power Requirements:	115 VAC, 1Ø, 50/60 Hz, 2 amp 220 VAC, 1Ø, 50 Hz	
Electrical: 115/1/60, 2 amps 220/1/50, .75 amps  Sound Level: 61 to 66 dba (Blower Speed: Low to High)  Limited two-year manufacturer's warranty from date of shipment on defects due to materials or workmanship.		



### **Hard Coat Solution Cooler**

The Hard Coat Solution Cooler has been developed to cool and then maintain the SIFCO Process® Hard Coat Type III solution at the proper refrigerated operating temperature. The Model 100 unit has a refrigeration capacity of 2,600 watts at 25°F. Therefore, it has ample cooling capability for any hard coating job that can be done with an SP 15-50 Power Pack.

The Hard Coat Solution Cooler consists of an air-cooled portable chiller, a 20-liter solution tank with thermometer, lid, and dolly; a submersible pump and a 316 gauge stainless steel immersion-cooling coil. The immersion-cooling coil is made from ½ in. diameter, stainless steel tubing formed to make a helical coil.

Description	Part Number
Hard Coat Solution Cooler Model 100 (2,000 watts)	10931101
Specifications	
Chiller Dimensions	48 cm L x 63.5 cm W x 94 cm H 19 in L x 25 in W x 37 in H
Weight	345 lbs.
Quantity of anodizing solution required to operate	11-15 liters (3-4 gallons)
Lowest recommended anodizing temperature	25°F (-3.9°C)
Power Requirements	Chiller: 230v,1Ø, 60Hz, 22 FLA Pump: 115/230v,1Ø, 60Hz 1.1 FLA



Hard Coat Solution Cooler

## SIFCO Process® Workstation



### SIFCO Process® Workstation

The SIFCO Process® Workstation is constructed of a heavy duty, chemical resistant material. Outfitted with 2 electrical outlets and lighting, the workstations are designed with operator and application flexibility in mind. The unit has convenient eye level shelves for a power pack, pumps, and other accessories, and the main work surface will accommodate SIFCO Process® auxiliary equipment, including: Turning Head, Traversing Arm, and ID Plater (sold separately).

## **Optional Accessories**

**Electrical Outlets:** Outlets are conveniently located for use with the power pack and auxiliary equipment.

Output Lead Bus Connection: Provides a connection for each process step.

**Sink with Commercial Faucet:** Supplies hot and cold water from it's gooseneck faucet and retractable spray hose. **Ventilation**: An articulated vent provides maximum coverage for the work area and will connect to your facilities' exhaust system, or our optional ventilation system.

### **Workstation Advantages**

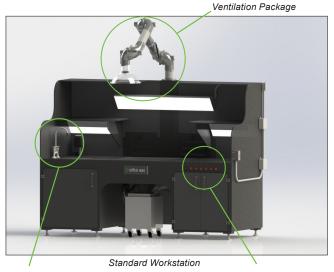
- In-house use.
- Operator safety and comfort.
- Durable and corrosion resistant.

• Operational efficiency.

Sink Package

• Custom built.

110v Standard Workstation	10902000
Option A - 230v Electrical Package Includes two 230v receptacles inside each cabinet.	10902000-00-A
Option B - Output Lead Bus Package 6 positive and 1 negative Cam-Loc F Series receptacles	10902000-00-B
Option C - Sink Package 12" x 12" x 8" black HDPE sink with strainer and 1 ½" NPT drain, plumbed with drain trap to single outlet at back of unit. Includes removable flush mounted cover for sink to provide extra workspace.	10902000-00-C
Option D - Ventilation Package Portable filtered exhaust system mounted under center of workstation provides ventilation via articulated vent arm and back wall vent slots.	10902000-00-D
230v Standard Workstation	10902001
Option B - Output Lead Bus Package See description above	10902001-00-B
Option C - Sink Package See description above	10902001-00-C
Option D - Ventilation Package See description above	10902001-00-D



Output Lead Bus

## SIFCO Process® Automation



#### **Initial Concept Development**

From a simple customized workbench to a fully automated brush plating workstation, SIFCO ASC will work with you from concept development through the design and build of equipment tailored to your specific needs. SIFCO ASC will first gather sufficient information about the project to determine feasibility and provide rough order of magnitude (ROM) pricing to determine if the project is within your budget.

### **Equipment Speci ication Development**

If the ROM pricing is within your budget and you agree to move forward, the next step is to provide SIFCO ASC with a design specification, clearly laying out project expectations and requirements. SIFCO ASC will work with you to ensure the specification is complete and achievable. Once the specification is agreed to by both parties, SIFCO ASC will provide the pricing and lead time for the design and build of the equipment.

#### Design

Upon receipt of a purchase order, the design phase begins. Based on the initial concept and following the equipment specification, a detailed equipment design is developed. This includes assembly and detail drawings, schematics, and initial programming layout.

#### **Build**

After approval of the design, the build phase begins. Parts and materials are ordered and the equipment is assembled. Following the completion of the build, the equipment is tested and runoffs are conducted in accordance with the specification. Upon your approval, the equipment is ready to ship.

#### Shipping

After your approval, the machine is packaged and shipped to your facility.

#### **Installation, Training & Acceptance**

Upon arrival at your facility, the machine will be installed, operators will be trained and testing will be conducted as agreed upon in the equipment specification.







The highly portable SIFCO Process® travel kits are specifically designed for applications where repair times are critical. Each kit features a TechnoPlate® power pack, the maximum amount of preparatory and plating solutions allowed for shipment via commercial and private ground carriers, and contain everything a technician needs to complete their repair anytime, anywhere.

### **Cadmium & Zinc-Nickel Touch-Up Travel Kits**

Description	Part Number
Cadmium No-Bake Touch-Up Kit	80202381
Cadmium LHE® Touch-Up Kit	80507081
Zinc-Nickel LHE® Touch-Up Kit	80401881

### **Silver Non-Cyanide Repair Travel Kits**

Description	Part Number
Silver Non-Cyanide Repair Travel Kit	80308481

### **Aluminum Bus Option Add-on Kits**

This add-on kit is designed to expand the capability of the Silver Non-Cyanide Repair Travel Kit to be able to plate non-cyanide silver onto aluminum bus connections on-site.

Description	Part Number	
Aluminum Bus Option Add-on Kit	80308490	





### Solutions for the SIFCO Process®

SIFCO Process® solutions include preparatory solutions for preparing base materials for plating, bonding solutions to improve adhesion of the final deposit, plating solutions for plating pure metals and alloys, and special solutions such as anodizing, electropolishing, and conversion coatings.

### **Solutions Quick Reference Guide**

Deposit Purpose	Solution		
Anti-Galling	Copper Acid 2050 Copper Alkaline, High-Speed 2056 Copper Alkaline, Heavy-Build 5280	Silver 3083 Silver Non-Cyanide 3084 Tin Alkaline 2090	Tin Alkaline 2092 Tin Acid 2093 Tin Alkaline 5951
Conductivity	Copper Acid 2050 Gold Alkaline 3023 Gold 5350 Gold Non-Cyanide 5355	Gold 5360 Gold Production 5391 Rhodium 5800 Platinum 3052	Silver 3083 Silver Non-Cyanide 3084 Tin Alkaline 2090 Tin Alkaline 2092 Tin Acid 2093
Corrosion Protection	AeroNikl® 250 7280 Cadmium No-Bake 2023 Cadmium LHE® 5070 Gold Alkaline 3020 Gold Alkaline 3023	Gold 5350 Gold Non-Cyanide 5355 Gold 5360 Gold Production 5391 Tin Alkaline 2090	Tin Alkaline 2092 Tin Alkaline 5951 Zinc Alkaline 2103 Zinc-Nickel LHE® 4018 Tin-Zinc LHE® 4019
Defect Repair	Cobalt 2043 Copper Acid 2050	Nickel Acid 2080 AeroNikl® 250 7280	
Dimensional Restoration	AeroNikl® 250 7280 AeroNikl® 400 7281	AeroNikl® 575 7282 Cobalt 2043	Nickel Acid 2080 Nickel Neutral 2085 Nickel-Tungsten 5711
EMI/RFI	Tin Alkaline 2090 Tin Alkaline 2092	Tin Alkaline 5951	
Hardness	AeroNikl® 575 7282 Cobalt-Nickel Semi-Bright 5720 Chromium Dense, Trivalent 2030	Nickel Neutral 2085 Nickel High-Speed, LHE® 5644 Nickel Phosphorous 5709	Nickel-Tungsten D 5710 Nickel-Tungsten 5711
Prebraze	AeroNikl® 250 7280	Nickel Acid 2080	
Wear Resistance	AeroNikl® 575 7282 AeroShield® 4025	Chromium Dense, Trivalent 2030 Nickel-Tungsten D 5710	Nickel-Tungsten 5711



## **Prepatory Solutions**

Solution Name	Code	Part No. 1 Liter	Part No. 4 Liter	Part No. 20 Liter	Part No. 60 Liter	Part No. 200 Liter
Electrocleaning	1010/4100	80101015*	80101020*	80101036*	80101040	80101050
No. 1 Etching and Activating	1021/4200	80102115*	80102120*	80102136*	80102140	80102150
No. 2 Etching	1022/4300	80102215*	80102220*	80102236*	80102240	80102250
No. 3 Etching and Desmutting	1023	80102315*	80102320*	80102336*	80102340*	80102350
No. 3 Etching and Desmutting	4350	80435015*	80435020*	80435036*	80435040*	80435050
No. 4 Etching and Activating	1024/4250	80102415*	80102420*	80102436*	80102440	80102450
No. 6 Etching	1026/4260	80102615*	80102620*			
No. 10 Activating	1031/4450	80103115*	80103120	80103136*	80103140	80103150
Aluminum Activator & Preplate	1078/4460	80107815*	80107820			









Electrocleaning 1010

No. 1 Etching and Activating 1021

No. 2 Etching 1022

No. 10 Activating 1031

 $<sup>\</sup>mathbf{Y} = \text{air freight eligible.} \Delta = \text{for air shipment special packaging is required.} * = \text{special order solutions.} Please call for minimum order sizes and deliveries.} $\mathbf{I} = \text{non-restricted liquid per DOT, IATA, and IMO regulations.}$ 



## **Plating Solutions**

Solution Name	Code	Part No. 1 Liter	Part No. 4 Liter	Part No. 20 Liter	Part No. 60 Liter	Part No. 200 Liter
AeroNikl® 250	7280/5725	80728015*	80728020*	80728036*	80728040	80728050
AeroNikl® 400	7281/5726	80728115*	80728120*			
AeroNikl® 575	7282/5727	80728215*	80728220*			
Cadmium Acid	2020/5050	80202015* <sup>*</sup>	80202020			
Cadmium LHE®	5070	80507015¾△	80507020	80507036*	80507040	80507050
Cadmium No-Bake	2023	80202315**	80202320	80202336*	80202340	80202350
Chromium Dense, Trivalent®	2030	80203015*	80203020*			
Chromium Hard, Trivalent	2403	80240315*	80240320*	80240336*		
Cobalt	2043	80204315*	80204320*	80204336*	80204340*	80204350
Cobalt	2701	80270115*	80270120*	80270136*	80270140	
Cobalt	5200	80520015*	80520020*	80520036*	80520040*	
Cobalt Semi-Bright, Heavy-Build	5204	80520415	80520420*			







AeroNikl® 250 7280

Cadmium LHE® 5070

Cadmium No-Bake 2023

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• = non-restricted liquid per DOT, IATA, and IMO regulations.



## **Plating Solutions**

Solution Name	Code	Part No. 1 Liter	Part No. 4 Liter	Part No. 20 Liter	Part No. 60 Liter	Part No. 200 Liter
Copper Acid	2050	80205015*	80205020	80205036*	80205040*	80205050
Copper Acid, High-Speed	2055	80205515*	80205520	80205536*		
Copper Acid, High-Speed	5260	80526015	80526020*	80526036	80526040*	80526050
Copper Acid, High-Speed	2903	80290315*	80290320	80290336*	80290340	
Copper Alkaline, Heavy-Build	5280	80528015	80528020*	80528036*	80528040*	80528050
Copper Alkaline, High-Speed	2056	80205615*	80205620	80205636*		
Copper Alkaline, High-Speed	2904	80290415*	80290420	80290436*		80290450
Copper Strike	9250/5240	80925015 <sup>*</sup> ∆	80925020			
Copper XHB	5305	80530515*	80530520	80530536*		
Iron*	2062/5502	80206215*	80206220*	80206236*		
Nickel	2801	80280115*	80280120*	80280136*		80280150
Nickel Acid	2080/5600	80208015*	80208020*	80208036*	80208040*	80208050
Nickel Acid	2807	80280715*	80280720*	80280736*	80280740*	80280750



Copper Acid 2050/5250



Nickel Neutral 2085 (pg. 38)



## **Plating Solutions**

Solution Name	Code	Part No. 1 Liter	Part No. 4 Liter	Part No. 20 Liter	Part No. 60 Liter	Part No. 200 Liter
Nickel Ductile	2086	80208615*	80208620*	80208636*		
Nickel Ductile*	2088	80208815*	80208820*			
Nickel Ex	2808	80280815*	80280820*			80280850
Nickel High-Speed	2803	80280315*	80280320*	80280336*	80280340*	80280350
Nickel High-Speed, LHE®	5644	80564415*	80564420*	80564436*	80564440*	80564450
Nickel Neutral	2085	80208515*	80208520*	80208536*	80208540*	80208550
Nickel Neutral	5650	80565015*	80565020*	80565036*		
Nickel Neutral	2815	80281515*	80281520*	80281536*		80281550
Nickel Semi-Bright, High Leveling	5642	80564215*	80564220*	80564236*		
Nickel Special	5630	80563015*	80563020*	80563036*	80563040*	80563050
Nickel XHB	5646	80564615*	80564620*	80564636*	80564640*	80564650
Tin Acid	2093	80209315*	80209320*	80209336*		
Tin Acid	5900	80590015*	80590020	80590036*		
Tin Alkaline	2090	80209015*	80209020*	80209036*	80209040*	80209050
Tin Alkaline	2092	80209215*	80209220	80209236*	80209240	80209250
Tin Alkaline	5001	80500115*	80500120	80500136*	80500140	80500150
Tin Alkaline	5951	80595115*	80595120	80595136*		
Zinc Alkaline	2100	80210015*	80210020	80210036*		
Zinc	2103	80210315*	80210320*	80210336*	80210340*	80210350

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## **Alloy Plating Solutions**

Solution Name	Code	Part No. 1 Liter	Part No. 4 Liter	Part No. 20 Liter	Part No. 60 Liter	Part No. 200 Liter
Babbitt*	5029		80502920*			
Babbitt Grade 2*	4011	80401115*	80401120*			
Bronze	5945	80594515*	80594520			
Cobalt-Nickel	5708	80570815*	80570820*	80570836*	80570840*	
Cobalt-Nickel Semi-Bright	5720	80572015*	80572020*			
Cobalt-Tungsten*	5230	80523015*	80523020*			
AeroShield® Cobalt Chromium Carbide	4025	Please consu	It with our Sale	s Department		
Nickel-Cobalt	5705	80570515*	80570520*			
Nickel-Cobalt	2827	80282715*	80282720*	80282736*		
Nickel-Phosphorous	5709	80570915*	80570920*			
Nickel-Tungsten D	5710	80571015*	80571020*			
Nickel-Tungsten	5711	80571115*	80571120*			
Tin-Lead*	4016	80401615*	80401620*			
Tin-Zinc	5034	80503415*	80503420*	80503436*		
Tin-Zinc LHE®	4019	80401915*	80401920*			
Zinc-Nickel	4021	80402115*	80402120*			
Zinc-Nickel LHE®	4018/5970	80401815*	80401820*			



## **Special Purpose Solutions**

Solution Name	Code	Part No. 1 Liter	Part No. 4 Liter	Part No. 20 Liter	Part No. 60 Liter	Part No. 200 Liter
Chromate Conversion Coating	3002	80300215 <sup>*</sup> ∆	80300220	80300236*	80300240	80300250
Chromate Conversion Coating	3004	80300415 <sup>*</sup> <sup>∆</sup>	80300420			
Chromate Conversion Coating	5005	80500515 <sup>*</sup> ∕ <sub>△</sub>	80500520			
Chromate Conversion Coating	5030	80503015 <sup>*</sup> ∆	80503020			
Chromate Conversion Coating Olive Drab*	5026	80502615*				
Chromium Conversion Coating Trivalent	3007	80300715*	80300720*			
Chromium Conversion Coating Trivalent	3008	80300815*	80300820*			
Dichromate Conversion Coating	1720	80172015 <sup>*</sup> ∆	80172020	80172036*		
Electropolishing Stainless Steel	9001	80900115*	80900120			
Electropolishing Stainless Steel	1620	80162015*	80162020*	80162036*		
Cleaner Grinder Burn	EE01		80EE0120*			
Etch Grinder Burn	EE02		80EE0220*			
Desmut Grinder Burn	EE03		80EE0320*			







Chromate Conversion Coating 5005

Electropolishing Stainless Steel 9001

Cleaner Grinder Burn EE01

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• = non-restricted liquid per DOT, IATA, and IMO regulations.



### **Precious Metal Solutions**

Solution Name	Code	Metal Content (g/l)	Part No. 125 mL	Part No. 250 mL	Part No. 500 mL	Part No. 1 Liter	Part No. 4 Liter
Gold	5350	100	80535000* <sup>A</sup>	80535005* <sup>A</sup>	80535010*	80535015* <sup>A</sup>	
Gold	5360	25	80536000* <sup>Δ</sup>	80536005**△	80536010* <sup>Δ</sup>	80536015™	
Gold Acid	3022	90	80302200* <sup>Δ</sup>	80302205**△	80302210* <sup>Δ</sup>	80302215* <sup>*</sup>	
Gold Alkaline	3020	100	80302000* <sup>Δ</sup>	80302005* <sup>A</sup>	80302010* <sup>A</sup>	80302015* <sup>A</sup>	
Gold Alkaline	3023	25	80302300* <sup>Δ</sup>	80302305* <sup>Δ</sup>	80302310* <sup>A</sup>	80302315* <sup>A</sup>	
Gold Alkaline	3024	50	80302400* <sup>Δ</sup>	80302405* <sup>±</sup>	80302410* <sup>A</sup>	80302415* <sup>A</sup>	
Gold Hard-Alloy*	5370	100	80537000 <sup>*</sup> ∆	80537005* <sup>±</sup>	80537010* <sup>Δ</sup>	80537015** <sup>Δ</sup>	
Gold Non-Cyanide®	5355	31	80535500*	80535505*	80535510*	80535515*	
Gold Production	5391	50	80539100 <sup>*</sup> ∆	80539105* <sup>Δ</sup>	80539110* <sub>\(\Delta\)</sub>	80539115* <sup>*</sup>	
Indium*	4901	60	80490100*	80490105*	80490110*	80490115*	80490120
Palladium	3040					80304015	
Palladium	5730	30				80573015*	
Palladium*	5735	15	80573500*	80573505*	80573510*	80573515*	
Palladium Strike	9340	10				80934115*	
Palladium Strike-L®	9341	6				80934115*	80934120*
Platinum	3052/5750	50	80305200*	80305205*	80305210*	80305215*	
Rhodium	5800	20	80580000*	80580005*	80580010*	80580015*	
Rhodium Low-Stress*	5810	50	80581000*	80581005*	80581010*	80581015*	
Silver	3083	100			80308310* <sup>A</sup>	80308315* <sup>A</sup>	
Silver	4704	25				80470415* <sup>Δ</sup>	80470420
Silver Heavy-Build	5860	61			80586010* <sup>A</sup>	80586015* <sup>*</sup>	
Silver Non-Cyanide	3084/5870	100			80308410*	80308415*	80308420
Silver Production Non-Cyanide	5871	50				80587115*	80587120
Silver Strike	9150/5856	N/A				80915015 <sup>*</sup> ∆	
Silver Tank	9385	30				80938515* <sup>±</sup>	80938520
Silver Tank	4707	37					80470720



## **Anodizing Solutions**

Solution Name	Code	Part No. 1 Liter	Part No. 4 Liter	Part No. 8 Liter
Chromic Type I	5010	80501015*	80501020	80501030*
Chromic Gel Type I	5027	80502715*		
Sulfuric Type II	5011	80501115*	80501120	
Hard Coat Type III	5025	80502515*	80502520	
Hard Coat Anodizing, Type III	4730	80473015*	80473020	
Phosphoric	5023	80502315*	80502320*	
Phosphoric Gel	5024	80502415*		
Boric-Sulfuric Type 1C	5031	80503115*	80503120*	
Boric-Sulfuric Gel Type 1 C	5032	80503215*		
Chromic/Sulfuric	4710	80471015*	80471020	80471030*
Alorode	4750	80475015*	80475020*	
Trivalent Chromium Anodizing Seal 9	5020	80502015*	80502020*	
Anodizing Seal	5021	80502115*	80502120*	
Anodizing Dichromate Seal	3003	80300315* <sup>A</sup>	80300320	
Anodize and Hard Coat Stripping	1046	80104615*	80104620	
Anodizing Dye, Black	5101	80510115*		







Chromic Type I 5010

Phosphoric 5023

Anodizing Seal 5021

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## **Services and Programs**



### **Contract Plating Services**

Whether you have an occasional need for engineered coatings or your operation involves a high volume of parts that require localized plating, SIFCO Applied Surface Concepts (ASC) provides flexible alternatives for your metal finishing needs around the world. Certified technicians can do the work at your facility or at one of our full-service facilities worldwide. They are available to meet unexpected problems, responding to your need with fast and expert service.

The portability of the SIFCO Process® enables Contract Service Technicians to be on site and working within a short period of time. SIFCO ASC technicians are adept at improvising tooling and fixturing to suit unusual conditions.

Our contract service capabilities range from unique, oneoff applications to higher volume production. We will work with you to evaluate your application and determine a path forward depending on your volume requirements.

If volumes and economies warrant, we can design a customized system, automated to meet your production needs, that can be located at one of our convenient service facilities, or within your own facility.

To find out more, contact our Technical Service Dept. by calling SIFCO ASC headquarters at 800-765-4131.

FAA Repair Station #SOXR680K (Independence, OH), #SOX3680K (East Windsor, CT)
Nadcap, AC7108 Chemical Processing (Independence, OH and East Windsor, CT)

### **Training**

The SIFCO Process® is an advanced electroplating technology. A formal, structured study of the process and equipment to be used is essential for success. SIFCO Applied Surface Concepts has created a series of training programs designed to meet specific customer needs. Effective training provides the knowledge and instills the confidence required by all operators. The prospective operator should be able to thoroughly carry out instructions, complete simple formulas, and have the desire to learn new techniques. Experience in evaluating electroplated deposits' quality and adhesion are a plus.

Hands-on experience under the guidance of a SIFCO ASC Certified Instructor will prove to be invaluable when returning to the workplace. The operator will be able to recognize the signals of potential problems and learn the necessary actions to correct them. In each training class, operators will have the opportunity to discuss company specific applications and exchange information with fellow classmates.

SIFCO Process® training is beneficial for operators, engineers, machinists, mechanics, welders and supervisory staff. Technicians and machinists typically have the attributes for becoming a successful SIFCO Process® operator. Supervisors taking the course will develop a working knowledge of the process and will be able to manage operators and assist as necessary. Additionally, engineers will benefit from the technical aspects of the course. Training programs are offered throughout the year at our headquarters in Independence, Ohio, USA. SIFCO ASC Certified Instructors are also available for on-site training programs. To find out more, contact our Training Department at 800-765-4131.

#### Copper Select® Program

SIFCO ASC has received approved vendor status from Tenaris and VAM, the leading licensors for oil field thread design. This approved status qualifies SIFCO ASC to train operators, worldwide, to selectively apply copper onto premium threaded connections. SIFCO ASC certified operators are also available to plate your connections.

The Copper Select® license agreement is a 3-year term. The licensee must either have the necessary SIFCO ASC equipment or agree to purchase from SIFCO ASC the equipment and supplies required to carry out selective plating of premium threaded connections using Copper Select® technology and meet the requirements of the specification. The licensee must complete a one-week training program and submit qualification samples as required.

SIFCO ASC will provide technical support and will periodically audit the Copper Select® licensee's plating process. Operators will be required to re-qualify prior to the end of the 3 year period to ensure the highest quality standards are maintained. To find out more, contact our Training Department at 800-765-4131.

## **Services and Programs**



### **Environmental Support Services**

The SIFCO Process® of selective electroplating provides superior electroplated deposits and anodized coatings with minimal waste. Utilization of the SIFCO Process® enables companies to meet or exceed most industrial requirements while remaining sensitive to environmental regulations.

There is no question that environmental regulatory enforcement is significantly different today than years ago. The terminology alone can be baffling until studied and understood. SIFCO ASC has a thorough knowledge of the regulations which are mainly promulgated by OSHA and the EPA. Our Environmental Services Department is charged with staying current with environmental regulations and assisting our staff and customers. These environmental support services are available to all SIFCO Process® customers by calling SIFCO Applied Surface Concepts headquarters at 800-765-4131.

### **Quality Control**

When you use the SIFCO Process® you can be assured of quality at every step. Great care is taken in the manufacture of products used in the SIFCO Process®. From the receipt of raw materials to the packaging of final products, a comprehensive quality assurance program is utilized. SIFCO Applied Surface Concept's Quality Management System is registered to:





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