

## Engineered **SOLUTIONS & SERVICES**

#### Spring Retraction Systems—Torsional and Linear







**SH Series** (3 bundle sizes)

- 36 mm\*
- 29 mm 23 mm

**TH Series** (1 bundle size)

48 mm\*

**UH Series** (2 bundle sizes)

- 70 mm\*
- 56 mm

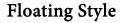
LH Series (1 bundle size)

95 mm\*

\* indicates most common size for each series

#### Floating Style, Short Travel and Basket Assemblies







**Short Stroke Retract** 



**Basket** Assembly

#### Services



**Engineering & Robot Dress Consultation** 



Integration

- On-site
- In- House



24205 Telegraph Rd. Southfield, MI 48033

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### Robot Dressings/ Cable Management & Power Distribution







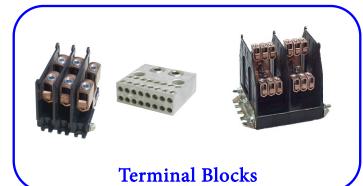






- Stability— over 50 years in business
- Experienced representation
- Timely response to customer requests/ requirements
- Deliveries
   – many stocked components to 15 day lead times
- Focused efforts—manufacturing

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## **Torsion Spring Retract Robot Dress Solution**

Easy and minimal adjustments to match configuration and robot path of highly articulating robots

#### **Features**

- Offers superior protection of utilities
- Minimal amount of labor required to match configuration and robot path
- Very close to robot arm to limit obstruction
- Best solution for very high articulating robots
- Easy replacement of hose or cable
- Allows flexibility to rearrange routing to match robot path and avoid fixtures
- Increased cable/ hose life
- Decreased downtime
- Robot Dress assistance readily available
- 'Value added' services available

#### SH Series Torsion Spring Retract

18 inches (457mm) of stored router



Step 1 **Choose Offset** Side

- Left
- Right

#### Step 2 **Choose Router** Diameter

- Less than 36mm
- Less than 29mm
- Less than 23mm

Step 3 Identify robot manufacturer and model

Identify utility bundle

Step 4

- Complete utilities
- Bundle diameter

#### H Series Torsion Spring Retract

23 inches (584mm) of stored router



- Step 1 **Choose Offset** Side
- Left
- Right

Step 2 **Choose Router** Diameter

- Less than 70mm
- Less than 56mm
- Less than 48mm

Step 3 Identify robot manufacturer and model

Step 4 Identify utility bundle

- Complete utilities
- Bundle diameter



#### LH Series Torsion Spring Retract

26 inches (660mm) of stored router

Step 1 **Choose Offset** Side

- Left
- Right

Step 2 **Choose Router** Diameter

Less than 95mm

Step 3 Identify robot manufacturer and

model

Step 4 Identify utility bundle

- Complete utilities
- Bundle diameter

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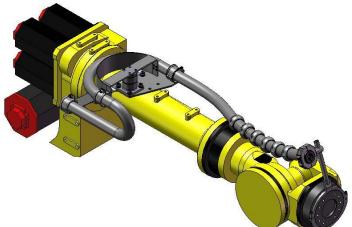


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## Torsion Spring Retract Robot Dress Solution

#### **Examples**



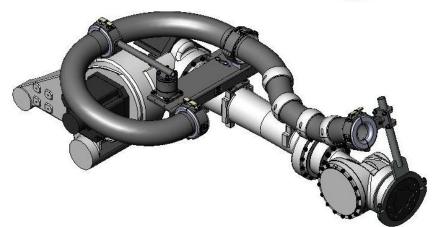
### SH Series Torsion Spring Retract (as shown)

- Right Hand
- Router—36mm
- Fanuc R2000iB-210 Robot

## UH Series Torsion Spring Retract (as shown)

- Right Hand
- Router—70mm
- Motoman MH180 Robot





### LH Series Torsion Spring Retract (as shown)

- Right Hand
- Router—95mm
- Kawasaki ZXE300S Robot

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## Linear Slide Retract Robot Dress Solution

Easy and minimal adjustments to match configuration and robot path of high articulating robots

#### **Features**

- Length of assembly is flexible and easy to adjust
- Multiple units can be mounted side by side in various orientations
- Custom linear slide sizes and lengths available
- Excellent solution for very high articulating robots
- Minimal amount of labor required to match configuration and robot path
- Very close to robot arm to limit obstruction
- Allows flexibility to rearrange routing to match robot path and avoid fixtures
- Increased cable/ hose life
- Decreased downtime
- Robot Dress assistance readily available



#### SH Series Linear Slide Retract

• Standard kit provides 16 inches of retraction

Step 1 Choose Router Diameter

- 36mm
- 29mm
- 23mm

Step 2 Identify robot manufacturer and model Step 3 Identify utility bundle

- Complete utilities or
- Bundle diameter



#### TH Series Linear Slide Retract

• Standard kit provides 16 inches of retraction

Step 1 Choose Router Diameter

• 48mm

Step 2 Identify robot manufacturer and model Step 3 Identify utility bundle

- Complete utilities or
- Bundle diameter



#### **UH Series Linear Slide Retract**

• Standard kit provides 22 inches of retraction

Step 1 Choose Router Diameter

- 70mm
- 56mm

Step 2 Identify robot manufacturer and model Step 3 Identify utility bundle

- Complete utilities or
- Bundle diameter

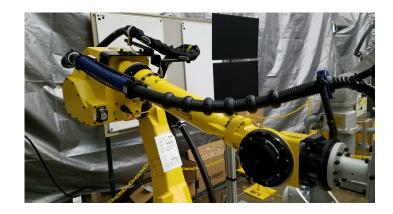
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### Linear Slide Retract **Robot Dress Solution**





#### Please see our other products for further design solutions



Corrugated Tube & Wear Bands



Cylinder Brackets





Clamps & Inserts









**Post Brackets** 



**Transition Brackets** 



Stand Assemblies

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## Offers protection of utilities. Flexible components allow dress to match configuration and robot path

Floating

**Robot Dress Solution** 

#### **Features**

- Protects utilities
- Moderate amount of labor to adjust to match configuration and robot path
- Close to robot arm to limit obstruction
- Easy replacement of hose or cable
- Allows flexibility to rearrange routing to match robot path and avoid fixtures
- Increased cable/ hose life
- Decreased downtime
- Cost effective
- Manufactured using standard components from the series- UH Clamps, SA Brackets, and SD Brackets
- Robot Dress assistance readily available
- Value added' services available



#### SH Series Floating Style

Step 1 Choose Router Diameter

- Less than 36mm
- Less than 29mm

Step 2 Identify robot manufacturer and model Step 3
Identify utility bundle

- Complete utilities or
- Bundle diameter



#### **UH Series Floating Style**

Step 1 Choose Router Diameter

- Less than 70mm
- Less than 56mm
- Less than 48mm

Step 2 Identify robot manufacturer and model Step 3 Identify utility bundle

- Complete utilities or
- Bundle diameter



#### LH Series Floating Style

Step 1 Choose Router Diameter

Less than 95mm

Step 2 Identify robot manufacturer and model Step 3 Identify utility bundle

- Complete utilities or
  - Bundle diameter

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## FS Floating Robot Dress Solution

#### **Installations**

#### **UH Series Floating Style**

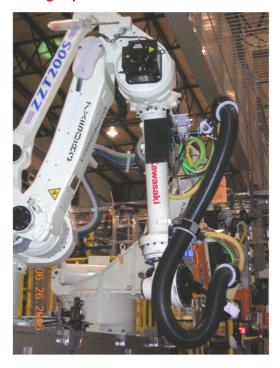


FS70C on a Motoman HP165

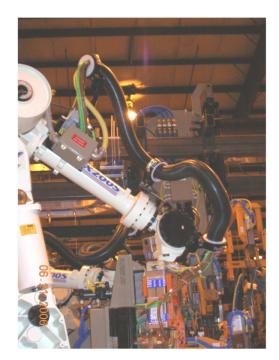


Modified FS dressout on KUKA KR210 with Axis 1 to Axis 3 additional dress

#### LH Series Floating Style



FS95C on a Kawasaki ZZT200S



FS95C on a Kawasaki ZX200S

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## **Short Stroke Robot Dress Solution**

Simple utility protection for small utilities. Approx 6 inches of utilities can be stored

#### **Features**

- Protects utilities
- Easily added to existing installations
- Approx 6 inches of utilities can be stored with the spring retract mechanism
- Controls bundle in a predictable manner
- Keeps bundle from catching on fixtures and work

Step 3

- Increased cable/ hose life
- Decreased downtime
- Robot Dress assistance readily available
- 'Value added' services available



#### **SH Series Short Stroke**

10 inches (254mm) of stored router

Step 1 **Choose Offset** 

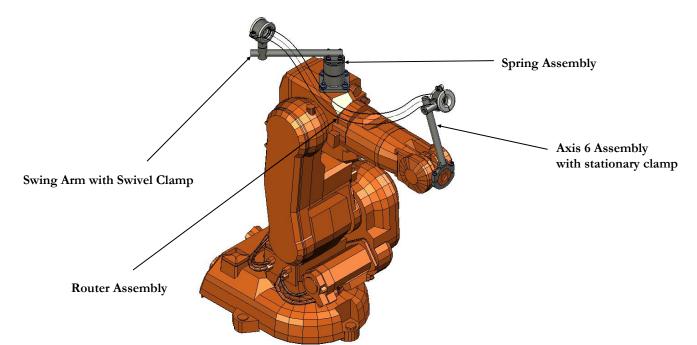
- Left
- Right

Step 2 **Choose Router** Diameter

- Less than 36mm
- Less than 29mm
- Less than 23mm

Step 4 Identify utility Identify robot manbundle ufacturer and model

- Complete utilities
- Bundle diameter



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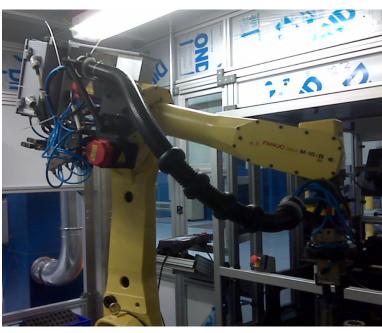


## Short Stroke Robot Dress Solution









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## Basket Assemblies

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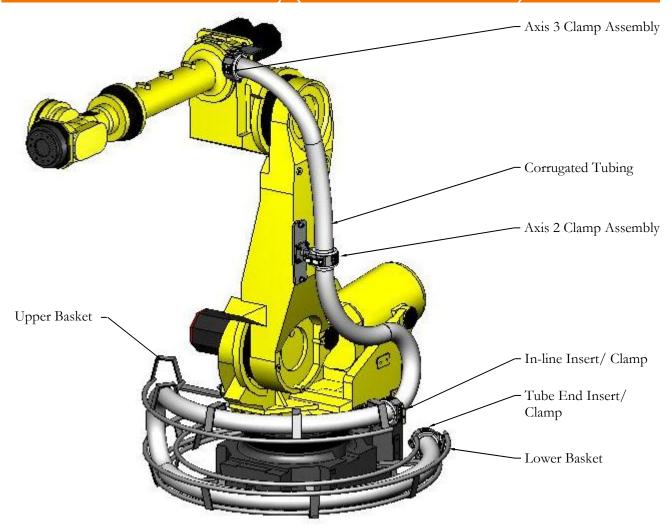
Rigid, light weight brackets to use with utility clamps to route utilities around the robot base (Axis-1)

#### **Features**

- Allows flexibility for 360 degree movement around the robot base
- Secures and protects utilities while robot rotates
- Maintains minimum bend radius
- Decrease downtime

- Use with SH, TH, UH and LH series utility clamps
- Robot Dress Assistance readily available
- 'Value added' services available
- Decrease downtime

#### **UH** Series Basket Assembly (with lower arm dress)



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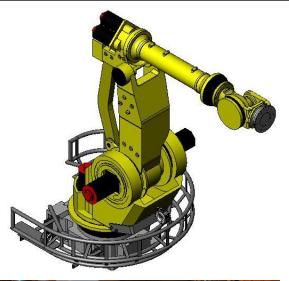


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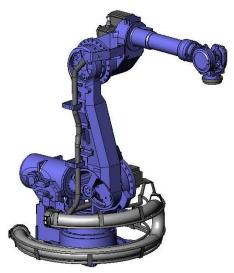
## **Basket Assemblies**















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Engineering & Dress Consultation

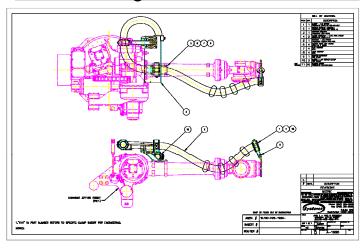
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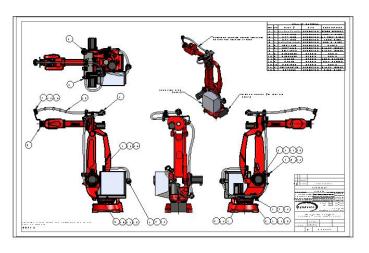
Customized dress solutions for new applications or solutions for existing installations

#### **Features**

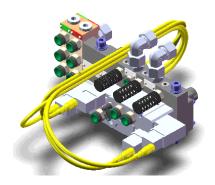
- 2D Drawings
- 3D Models
- Mechanical Design/Control Design
- BOM creation
- Michigan licensed Professional Engineers on staff
- Custom designs for dressouts from base of the robot to the tool (off-robot, base, all axis, tool changer and EOAT)
- Dress Consultation—On–Site
- Dress Consultation- Remote video

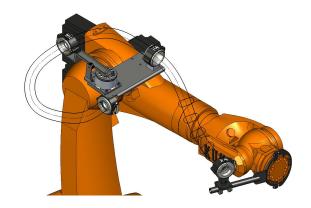
#### 2D Drawings





#### 3D Drawings





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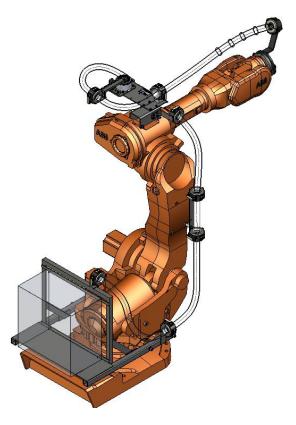
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## Engineering & Dress Consultation

#### **Custom Designs**



#### **Dressout Axis 1 to Axis 6**

- Spring Retract Dress solution
- Axis 1 to Axis 3 created for application
- Control Assembly mounted on Axis 1

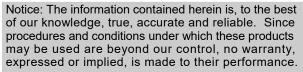
#### **Dress Consultation**

#### On-Site

- Quick visit to view robot path **Remote- Video Consultation**
- Video sent of robot with dress issues— excess wear/ downtime
- Dress is evaluated by Syndevco engineers- typically 2
   recommendations are given:
  - engineered solution
  - components to improve dress
- Saves time as video can be sent via e-mail at anytime

engineering@syndevco.com









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## Dress Integration On-Site & In-House

Robot Dress can be installed and adjusted on location or in-house for a turn key solution

#### On-Site

- End User locations
- Integrator locations
- Install dress packages
- Adjustment services
- Robot Dress Buy-off includes warranty
- Robot Dress Notes for quick evaluation and detailed information to complete when time permits
- Full commissioning
- Work accomplished anytime-holidays, shut downs, nights, weekends, etc.

#### In-House

- Southfield, MI location
- Robot dress install
- EOAT Install
- Servo gun Tuning
- Robot controller software loads
- Weld controller integration
- Full commissioning
- Simulation runs
- Average 40 robots integrated per week
- Up to 150 robots integrated per week









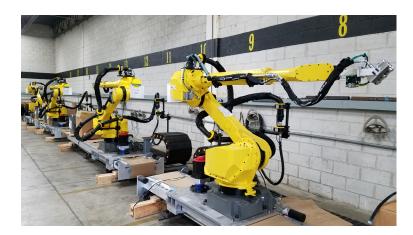
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## Dress Integration On-Site & In- House













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## **CLAMPS** AND **INSERTS**

#### **Utility Clamps**



#### **SH Series** Clamp

(54 mm ID)

- Stationary
- Swivel
- Stationary Post
- Swivel Post



#### **TH Series** Clamp

(70 mm ID)

- Stationary
- Swivel
- Stationary Post
- Swivel Post
- Stationary/ Swivel



#### **UH Series Clamp** (102 mm ID)

#### LH Series Clamp

(133 mm)

- Stationary
- Swivel Only
- Stationary/ Swivel
- Dual Stationary/ Swivel

#### **Clamp Inserts**



#### SH, TH, UH, and **LH Series**

#### **Plastic Inserts**

- Single Hole
- Dual Hole
- Corrugated Tube End
- Corrugated Tube In-line
- Corrugated Tube Slider



#### SH, TH, UH, and LH Series

#### Urethane Inserts

- Single Hole
- Dual Hole
- Multi– Hole

#### Multi-Clamp and Inserts



3 or 6 hole Configurations

- Each hole can be different size
- Max size 25.4 mm

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## Robot Dressings/ Cable Management & Power Distribution













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- Timely response to customer requests/ requirements
- Deliveries
   – many stocked components to 15 day lead times
- Focused efforts—manufacturing

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## Utility Clamps & Mounting Hardware

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Hinged Clamps in four sizes that all have a variety of mounting hardware designed to accommodate any situation

#### **Features**

- Quick release clasp
- Lightweight aluminum construction
- Anodized for long lasting service

#### SH Series Clamp - 54mm ID

• Use with SHI inserts and RD brackets



SHC-A00 Stationary



SHC-AS1 Swivel only



SHC-A0P
Post Mount/ Stationary



SHC-ASP
Post Mount/ Swivel

#### TH Series Clamp - 76mm ID

• Use with THI inserts and either RD, SA or SD brackets





THC-A00 Stationary



THC-AS1 Swivel only



THC-A0P
Post
Mount/
Stationary



THC-ASP Post Mount/ Swivel



**THC-AF-SB-F0**Swivel/ Stationary

#### UH Series Clamp - 102mm ID LH Series Clamp - 133mm ID

• Use with UHI, LHI, SA, and SD brackets





UHC-A00 LHC-A00 Stationary



UHC-AF-SB-F0-057 LHC-AF-SB-F0-057 Swivel/ Stationary



UHC-AF-DB-F0-057
Dual Swivel/ Stationary
\*available only with UH
Series clamps



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## Utility Clamps & Mounting Hardware

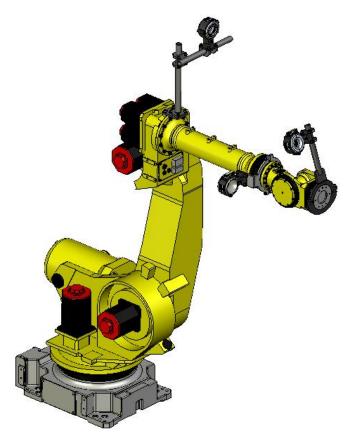
#### **Usage Examples**

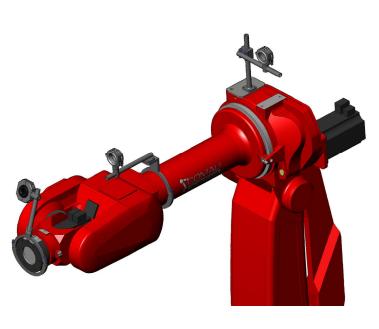
Fixtures – fence posts, rails, tooling, etc.



**Robots -** multiple configurations of clamps allow for proper application.







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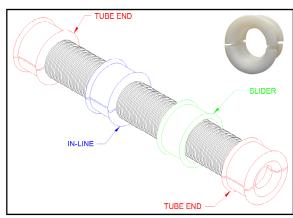
### Clamp Inserts - UHMW

For use with Corrugated Tubing

Inserts used in conjunction with SH, TH, UH, and LH Series Clamps, are available in variety of configurations

#### **Features**

- Use with Utility Clamps-SH, TH, UH and LH
- Color-White
- 2 pc Firm material design
- Many Configurations available
- Custom requirements easily met
- Robot Dress assistance readily available
- 'Value added' services available



#### Compatibility & Part Numbering

Corrugated Tube sizes compatible with each clamp series:

**SH** Series

TH Series

**UH** Series

LH Series

- 36 mm 48 mm
- 70 mm
- 95 mm

29 mm

56 mm

- 23 mm

#### **Tube End Inserts**

Terminates the Corrugated Tubing and has a custom sized through hole designed to fit the utility bundle.

#### Part Numbering:

(series)I- AC(tube size)- ID mm Examples:

SH Series

SHI-AC36-28

TH Series

THI-AC48-40

**UH** Series

UHI-AC70-50

LH Series

LHI-AC95-78

#### **Tube End Inserts with Grommets**

These inserts terminate Corrugated Tubing like our standard tube end inserts but these include a soft grommet to hold the utility bundle. These components are sold together as two separate part numbers. \*Only offered in TH and UH series

#### Part Numbering:

(series)I- AC(tube size)- (series)GI (series)GI- C(tube size)- ID mm Examples:

TH Series

THI-AC48-TGI - Insert only TGI-C48-40 - Grommet only

**UH** Series

UHI-AC70-UGI - Insert only UGI-C70-50 - Grommet only

#### **In-line Inserts**

Designed with a ridge to hold the Corrugated Tubing in place

#### Part Numbering:

(series)I– AI (tube size)

Examples:

SHI-AI36

THI-AI48

UHI-AI70

LHI-AI95

#### Slider Inserts

Designed with a smooth face to allow the Corrugated Tubing to pass through

#### Part Numbering:

(series)I– AS (tube size)

Examples:

SHI-AS36

THI-AS48

UHI-AS70

LHI-AS95

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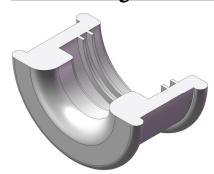
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### Clamp Inserts UHMW

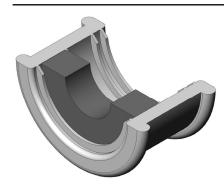
#### For use with Corrugated Tubing

#### **Insert Diagrams and Comparison**



#### **Tube End Inserts**

Terminates the Corrugated Tubing by utilizing two rings designed to fit into the corrugations and ensure the tubing cannot pull out. There is also a custom sized through hole designed to fit the utility bundle that has a rounded exit edge to minimize wear on the exposed utilities. This insert comes split in half for ease of installation and adjustment.



#### **Tube End Inserts with Grommet**

Terminates the Corrugated Tubing by utilizing two rings designed to fit into the corrugations and ensure the tubing cannot pull out. There is also a soft grommet with a custom sized through hole designed to fit the utility bundle to minimize wear on the exposed utilities. This insert comes split in half for ease of installation and adjustment.

These components are sold together as two separate part numbers. \*Only offered in TH and UH series



#### **Inline Inserts**

Holds the Corrugated Tubing in place and prevents it from passing through by utilizing a single ring designed to fit into the corrugations. This insert comes split in half for ease of installation and adjustment.



#### **Slider Inserts**

Allows the Corrugated Tubing to pass through, or slide, by utilizing a smooth surface. This insert comes as a solid piece to reduce the chance of catching or wear on the corrugated tubing.

\*Section view shown in diagram. Actual insert supplied as one solid piece

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Clamp Inserts - Urethane

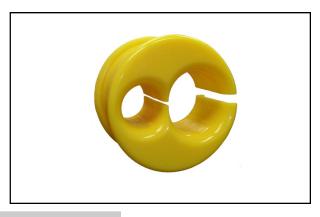
For use without Corrugated Tubing

Inserts used in conjunction with SH, TH, UH, and LH Series Clamps, are pliable to further protect utilities

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#### **Features**

- Use with Utility Clamps-SH, TH, UH and LH
- 1 pc- Slotted pliable design
- Many configurations available
- Custom designs available
- Robot Dress assistance available
- 'Value added' services available



#### Single and Multi-hole Configurations



Blank Insert Shown



Single-Hole **Insert Shown** 



Dual-Hole Insert Shown

#### **SH Series Inserts**

#### Single Hole

xx = diameter in mm

Example: SHI-B25

**Dual Hole** 

Example:

SHI-B10/13

Blank Insert: SHI-B00-1

xx = diameter in mm

yy = diameter in mm

listed first

Smallest hole diameter

#### TH Series Inserts

#### Single Hole

xx = diameter in mm

Example: THI-B35

Blank Insert: THI-B00-1

#### Example:

#### Dual Hole

xx = diameter in mmyy = diameter in mm

Smallest hole diameter listed first

Example: THI-B18/25

#### **UH Series Inserts**

#### Single Hole

xx = diameter in mm

UHI-B45

Blank Insert: UHI-B00-1

#### **Dual Hole**

xx = diameter in mmyy = diameter in mm

Small hole diameter listed first

Example: UHI-B34/36

#### LH Series Inserts

#### Single Hole

xx = diameter in mm

Example:

LHI-B100

Blank Insert: LHI-B00-1

#### Dual Hole

xx = diameter in mmyy = diameter in mm

Small hole diameter listed first

Example: LHI-B34/60

Inserts can be configured to have more than two holes. We can custom design a hole pattern to fit your needs

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## Clamp Inserts - Urethane

For use without Corrugated Tubing













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Gimbal Assembly

(248) 356-2839

Gimbals used in conjunction with SH, TH and UH Series Clamps offer strain relief for corrugated tubing

#### **Features**

- Use with Utility Clamps SH, TH, and UH Series
- Color-Black
- Provides additional strain relief for corrugated tubing at joint 6 connection point
- Approximately 20° orbital pivot capability
- Allows corrugated tube 360° of rotation
- Reduces torsional stress
- Many configurations available
- Custom requirements easily met
- Robot Dress assistance readily available
- 'Value added' services available



#### SH Series Gimbal Assembly



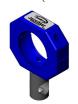
Corrugated Tube Sizes:

36 mm, 29 mm

SH Gimbal Assembly

SHG-C (tube size)- ID mm Example:

SHG-C36-30-B0P SHG-C29-20-B0P Gimbal Clamp only SHG-B0P-A (Post Mount)



Gimbal Ball SHG-C36-30 SHG-C29-20



#### H Series Gimbal Assembly

Corrugated Tube Sizes:

**TH Gimbal Assembly** THG-C (tube size)- ID mm

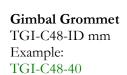
48 mm

Example:

Gimbal Clamp only THG-B0P-A (Post Mount) THG-C48-BALL



Gimbal Ball (Trumpet)





#### JH Series Gimbal Assembly



Corrugated Tube Size:

70 mm, 56 mm

THG-C48-40-B0P

**Gimbal Receiver** UHG-C70-REC



Gimbal Grommet only

xx = diameter in mm

Example: UGI-C70-50

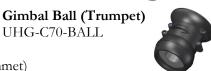


**UH Gimbal Assembly** 

UHG-C (tube size)- ID mm Example:

UHG-C70-50

(Includes 50mm diameter grommet)



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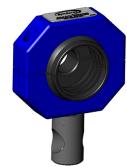


### Gimbal Assembly

#### **Gimbal Assembly Configurations**

#### SH Series Gimbal SHG-C36-30-B0P shown

1pc SHG-B0P 1pc SHG-C36-30

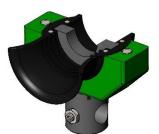




#### TH Series Gimbal THG-C48-40-B0P shown

1pc THG-B0P 1pc THG-C48-40





#### **UH Series Gimbal**

UHG-C70-50 shown

with 1pc UHC-AF-SB-F0-057 Clamp Assembly (2" wide clamp) Clamp sold separately





#### **UH Series Gimbal Examples**







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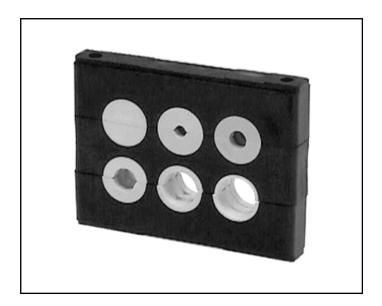
## 9950 Series Clamping System

(248) 356-2839

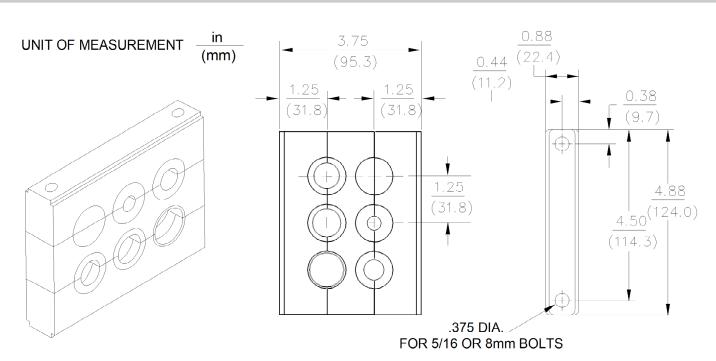
Non conductive, light weight clamping for air hoses, water hoses and electric cables.

#### **Features**

- "Split" type design
- Molded of 94VO flame retardant rated material
- Non conductive
- Light weight
- Inserts made of flexible Estane
- Keyed inserts securely lock to the body
- Hole diameter range 1/8" 1"
- Customized openings readily available
- Maximum customized opening of 1 1/2"
- Stackable for more flexibility
- Single part number for complete assemblies available
- Value Added service available



#### **Dimensions**



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## 9950 Series Clamping System

#### Part Numbering

BASE COMPONENTS						
Part Number	Description					
9953 <sup>+</sup>	-000-					
9956 <sup>†</sup>	-000-					

These assemblies w/o inserts have 1 inch diameter holes

HOLE INSERTS							
Part Number	Hole size (in)						
9950-IS-000	PLUG						
9950-IS-125	1/8						
9950-IS-250	1/4						
9950-IS-375	3/8						
9950-IS-500	1/2						
9950-IS-625	5/8						
9950-IS-750	3/4						
9950-IS-875	7/8						

#### **Order Samples**

CLAMP REQUIRED	REPRESENTATION	ORDERED COMPONENTS		
Need: 1 - 1 inch hole 2 - 3/4 inch holes		1 pc 9953 2 pcs 9950-IS-750 *		
Need: 1 - 7/8 inch hole 1 - 1/4 inch hole 1 - 1/2 inch hole 1 - plug 2 - 1 inch holes		1 pc 9956 1 pc 9950-IS-875 1 pc 9950-IS-250 1 pc 9950-IS-500 1 pc 9950-IS-000		

★ Complete assembly part numbers are available, please call a Syndevco Representative

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## **BRACKETS** CABLE MANAGEMENT

#### Brackets

#### **Post Brackets**

- RD Brackets
- SA & SD Brackets







Cylinder Brackets

- RD Brackets
- SA Brackets

#### **Transition Brackets**

- RD Brackets
- SA Brackets







**Robot Face Plate** Spacer-EOAT

#### Cable Management

#### Velcro Buckle Straps







#### Corrugated Tube & Wear Bands

- 11 sizes of corrugated tube
- 8 sizes of wear bands



Wear Sleeves

#### Stand Assemblies SE series

- Regular duty
- Heavy duty



- 1/3 moon
- 1/2 moon

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## Robot Dressings/ Cable Management & Power Distribution









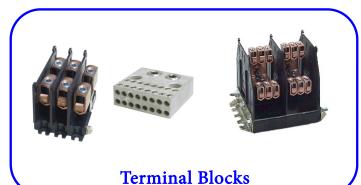




- Stability— over 50 years in business
- Experienced representation
- Timely response to customer requests/ requirements
- Deliveries
   – many stocked components to 15 day lead times
- Focused efforts

   manufacturing

**Syndevco** 



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Robot Dress Brackets

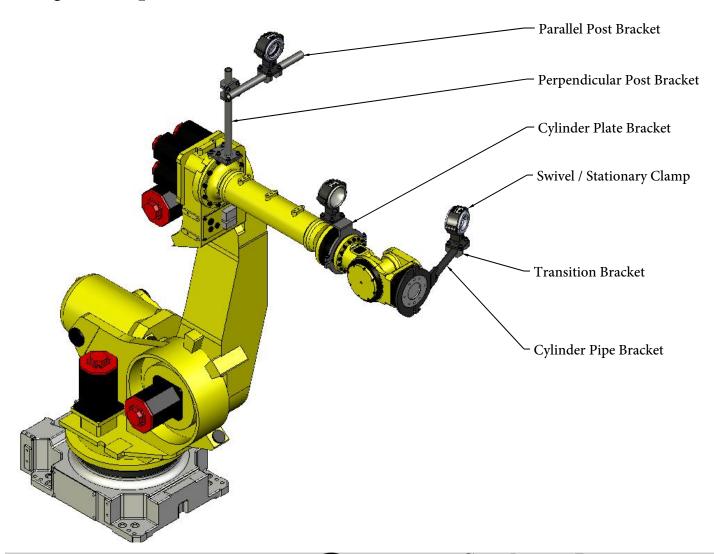
(248) 356-2839

Rigid, light weight brackets used with utility clamps to route utilities to the EOAT (End Of Arm Tooling)

#### **Features**

- Allows flexibility to rearrange utility routings to match application
- Decrease downtime
- Easy to use and reposition
- Secure non-slip mount of cylinder brackets
- Use with SH, TH, UH and LH series utility clamps
- Robot Dress Assistance readily available
- Value added' services available

#### Usage Example (SA & SD Brackets with UH clamps and Inserts shown below)



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## Robot Dress Brackets

#### **Post Brackets**



Perpendicular

RDA-R1-F0-250 SAA-R1-F0-460



Parallel

RDA-R1-F1-250 SAA-R1-F1-460

#### **Mounting Hole Pattern**

RD Series
7mm thru
31.8 mm
square c-c

SA Series 11mm thru 60 mm square c-c

#### Cylinder - Pipe Bracket



Angled (20 degree)

RDD-R3-(diameter)-250 SDR3-(diameter)-460



RDD-R1-(diameter)-250 SDR1-(diameter)-460

Straight

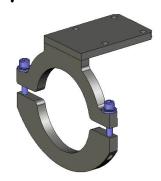
#### Thickness

 RD Series
 SD Series

 3/8 in
 1/2 in

 9.5 mm
 12.7 mm

#### Cylinder - Plate Bracket



RDD-F1- (diameter) - (Syndevco assigned)

SDF1- (diameter) - (Syndevco assigned)

#### **Thickness**

**RD Series**3/8 in
9.5 mm

1/2 in
12.7 mm

#### **Transition Brackets**



RD Series RDB-A-C



Medium/ Large SAB-A-C

Typically 2 pcs required per application

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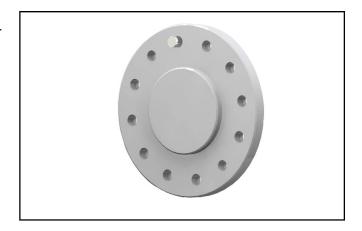
## Robot Face Plate Spacers

(248) 356-2839

Spacers used when robot face plates are not thick enough to use an Axis 6 (SD or RDD) bracket

#### **Features**

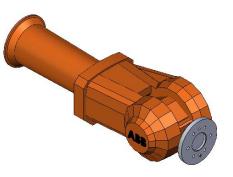
- Spaces tool from robot face plate to allow mounting of secondary brackets
- Steel or Aluminum construction
- Two locating points- boss and dowel or two dowels
- Use to mount SD or RDD series Brackets where needed
- Robot Dress assistance readily available
- Value added' services available



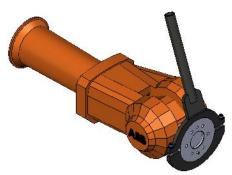
#### **Usage Examples**

# Before

#### After



#### In-use



#### **Robot Wrist**

 Not enough room to mount an Axis 6 bracket for dressout purposes

#### Robot Wrist w/ Spacer

Spacer is placed between tool and robot face plate (tool not shown)

## Robot Wrist w/ Spacer and Axis 6 Bracket

Spacer allows the Axis
 6 bracket to be mounted
 – assisting in a successful dressout

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## Robot Face Plate Spacers

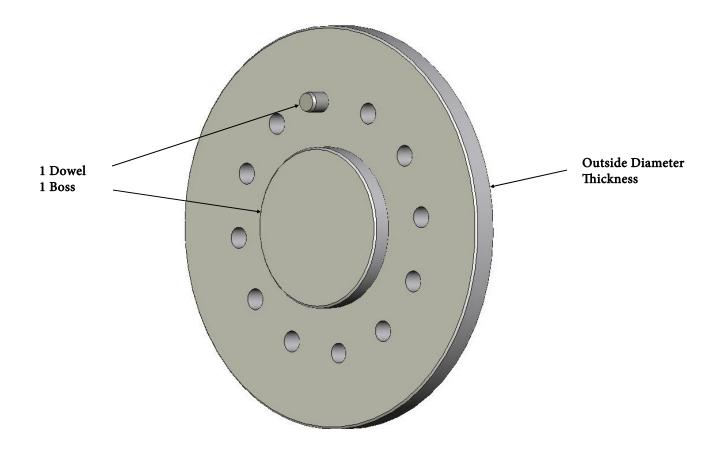
#### Part Numbering

Step 1 Step 2 Step 3 Step 4 Step 5 Define Robot Choose material and Choosing Define Outside **Define Thickness** Manufacturer and finish Locating Style Diameter (after mounting) Model (in mm)

FPS-

Model					(III min)				
UUU	V  Robot Material and Finish		W Locating Style		XXX Outside Diameter (in mm)		YYY Thickness (in mm)		Z Additonal Options
Robot									
	s	Steel no finish	Α	1 boss 1 dowel	Е	xam ple	Exam ple		
See a Syndevco Representative for the 3 digit designation	Т	Steel Oxide- Black	В	2 dowel	160	160 mm	010	10 mm use with RDD	See a Syndevco Representative for further
	Α	Aluminum no finish			200	200 mm	013	13 mm use with SD	options
	В	Aluminum Anodized-Black							

#### SAMPLE PART NUMBER: FPS-F1EA-A200/013



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SE Series Stand Assemblies

(248) 356-2839

Route utilities from the plant floor to a robot using different clamp methods and adjustable heights

#### **Features**

- Height range 2 to 12 feet
- Regular duty

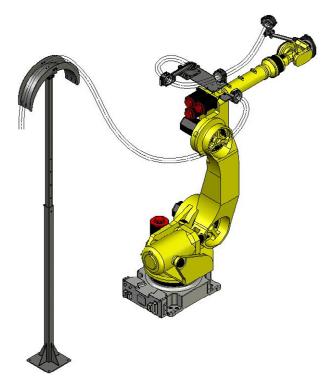
  round tubing structure,
  recommended when height requirements are 5 ft or less
  and/or have minimal horizontal stress
- Heavy duty—square tubing structure, recommended when heights exceed 5 ft and/ or are likely to have considerable horizontal stress
- Order alone or with clamps/ other brackets
  - SH Series clamps
  - TH Series clamps
  - UH Series clamps
  - LH Series clamps
  - SM Saddle Brackets
  - Custom assemblies
- Robot Dress assistance readily available
- Value added' services available

#### **Usage Examples**



#### Regular Duty SE Assembly

- 5ft Height or less
- Mount SH, TH, UH, LH clamps
- Mount Saddle Brackets



#### Heavy Duty SE Assembly

- Application of 5 ft or greater
  - robot on riser
  - top feed application
- Mount SH, TH, UH, LH clamps
- Mount Saddle Brackets

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## SE Series Stand Assemblies





Stand Assemblies





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### SM Series Saddle Assembly

(248) 356-2839

Protect utilities from sharp bends. Eliminate broken wires or kinked hoses

#### **Features**

- 1/4 saddle for end routings
- 1/3 saddle for good compact protection
- 1/2 saddle for complete protection
- Radii from 3 to 16 inches
- Widths from 2 to 12 inches
- Mounting on top, bottom or along radius
- Eye bolt mounting available

- Swivel/ Stationary mounting available
- Stationary mounting available
- Steel or Aluminum construction
- Strap slots at ends to hold utilities
- Use with SAA or SE series brackets
- Robot Dress assistance readily available
- 'Value added' services available

#### SM4- 1/4 Saddle



#### Step 1 Choose Material

- Aluminum
- Steel
- Step 2 Choose Radius (inches)
- 3-16 inches
- (inches)
   2-12 inches

**Choose Width** 

Step 3

#### Step 4 Choose Mounting Location

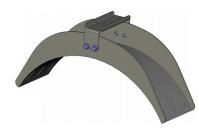
along radius

#### Step 5 Choose Mounting Style

- Swivel/ Stationary
- SAA pattern

See reverse side for more information

#### SM3-1/3 Saddle



#### Step 1 Choose Material

- Aluminum
- Steel

#### Step 2 Choose Radius (inches)

3-16 inches

#### Step 3 Choose Width (inches)

• 2-12 inches

#### Step 4 Choose Mounting Location

Top

• Bottom can be switched in field

#### Step 5 Choose Mounting Style

- Eye bolt
- Swivel/ Stationary
- SAA pattern

See reverse side for more information



#### SM2- 1/2 Saddle

Step 1 Choose Material

- Aluminum
- Steel

Step 2 Choose Radius (inches)

3-16 inches

Step 3 Choose Width (inches)

• 2-12 inches

Step 4 Choose Mounting Location

- Top
- Bottom

  can be switched in field

Step 5 Choose Mounting Style

- Eye bolt
- Swivel/ Stationary
- SAA pattern

See reverse side for more information

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### SM Series Saddle Assembly

#### **Mounting Options**

#### **Along Radius**

Swivel/ Stationary

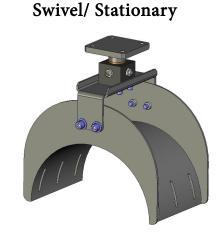


SAA Hole Pattern

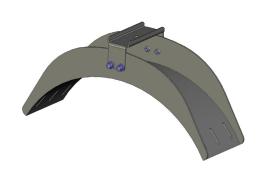


Top Mount

Eye Bolt



**UHC Hole Pattern** 

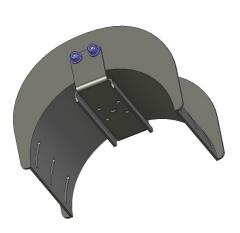


**Bottom Mount** 

Swivel/ Stationary



**UHC Hole Pattern** 



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### Corrugated Tube/ WB Wear Bands

Protect and control utilities for long service life.

(248) 356-2839

#### **Features**

- Cut Resistant
- Tear Resistant
- Abrasion Resistant
- Flame Resistant
- Flexible
- Sizes available to match most applications
- Designed for robotic applications
- Wear Bands readily available for localized abrasion resistance
- Use with SH, TH, UH and LH series clamps and inserts
- 'Value added' services available



Corrugated Tube: R70R Wear Band: WB-CC70

#### Part Numbering / Dimensions/ Usage

	Corrugated Tub	е	- Wear Band	Best Clamp Usage						
Part	OD	ID	Part Number	(if clamp used)						
Num ber	inches (mm)	inches (mm)	Part Number	LH	UH/UN	TH	SH			
R07T	0.39 (10.0)	0.24 (6.2)	Not yet available	С	С	С	R			
R10T	0.51 (13.0)	0.38 (9.6)	Not yet available	С	С	C	R			
R12T	0.62 (15.8)	0.47 (11.9)	Not yet available	С	С	С	R			
R17C	0.83 (21.1)	0.60 (15.2)	WB-BC17	С	С	С	R			
R23C	1.12 (28.4)	0.85 (21.7)	WB-BC23	С	С	С	R			
R29C	1.35 (34.3)	1.08 (27.4)	WB-BC29	С	С	C	R			
R36C	1.67 (42.3)	1.41 (35.8)	WB-BC36	С	С	С	R			
R48C	2.13 (54.2)	1.84 (46.7)	WB-BC48	С	С	R				
R56C	2.65 (67.2)	2.22 (56.3)	WB-BC56	С	R					
R70R	3.13 (79.6)	2.65 (67.2)	WB-CC70	С	R					
R95C	4.17 (106)	3.59 (91.3)	WB-AC95	R						

\* Ordered per foot or

with lengths (in feet) (Example: R70R-07)

R- Recommended C- Capable

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K- Recommended 6- Capable

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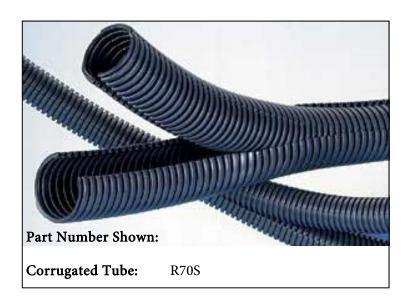
### Split Corrugated Tube/ WB Wear Bands

(248) 356-2839

Provides both protection of and access to control utilities for entire service life.

#### **Features**

- Allows Access to Utilities
- Cut Resistant
- Tear Resistant
- Abrasion Resistant
- Flame Resistant
- Flexible
- Sizes available to match most applications
- Use with SH, TH, UH and LH clamps and inserts
- Value added' services available



#### Part Numbering / Dimensions / Usage

	Corrugated Tub	e	Wear Band	Best Clamp Usage						
Part	OD	ID	Part Number	(if clamp used)						
Number	inches (mm)	inches (mm)	Fait Number	H	UH/UN	TH	SH			
R07S	0.39 (10.1)	0.24 (6.5)	Not yet available	С	С	С	R			
R10S	0.51 (13.5)	0.38 (8.8)	Not yet available	O	С	С	R			
R12S	0.62 (16.3)	0.47 (11.3)	Not yet available	O	С	С	R			
R14S	0.62 (18.7)	0.47 (13.2)	Not yet available	С	С	С	R			
R17S	0.83 (21.8)	0.60 (16.5)	WB-BC17	С	С	С	R			
R20S	0.83 (25.7)	0.60 (20.2)	WB-BC20	C	С	С	R			
R23S	1.12 (31.3)	0.85 (23.9)	WB-BC23	С	С	С	R			
R29S	1.35 (35.9)	1.08 (27.8)	WB-BC29	С	С	С	R			
R37S	1.67 (41.9)	1.41 (32.5)	WB-BC36	С	С	С	R			
R45S	2.13 (54.2)	1.84 (43.0)	WB-BC48	С	С	R	_			
R70S	3.13 (79.8)	2.65 (66.5)	WB-CC70	С	R					

\* Ordered per foot or

with lengths (in feet) (Example: R70S-07)

R- Recommended C- Capable

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### WS Series Wear Sleeves

(248) 356-2839

Protect utilities for long wear and low downtime. Cut, tear, and abrasion resistant removable wear sleeves.

#### **Features**

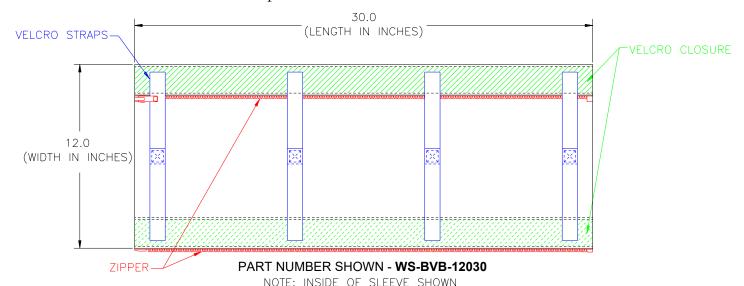
- Cut Resistant
- Tear Resistant
- Abrasion Resistant
- Velcro straps (standard) inside to assist in positioning
- Zipper (standard) outside to hold the sleeve closed during use
- Velcro flap to protect zipper during use
- Standard sleeve protects up to a 3 inch (76mm) diameter bundle
- Customizing readily available
- Robot Dress assistance readily available
- 'Value added' services available



#### **Usages and Dimensions**

#### **Uses Include:**

- Robot Dress utility protection
- Robot Dress utility containment
- Maintenance hose/ cable protection
- Weld flash guard
- Adds a clean appearance to bundles



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### WS Series Wear Sleeves

#### **Part Numbering**

GENERIC PART NUMBER: WS-UVW-XXYYY-Z SAMPLE PART NUMBER: WS-BVB-12030

WS-

	U		V		W	XX		
	Material	Int	ernal Straps		Closure	Widt	th (inches)	
В	Denier Black (standard)	٧	Velcro - no buckle (standard)	В	Velcro and Zipper (standard)	12	12 inches (standard)	
K	Kevlar <b>0</b> No Straps		Z	Zipper Only		See a Syndevco entative for additional		
				٧	Velcro Only	repres	options	

Please see our other products for further design solutions



Corrugated Tube & Wear Bands



Cylinder Brackets



Velcro Straps



**Clamps & Inserts** 





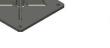


**Post Brackets** 



**Transition Brackets** 





**Stand Assemblies** 

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### Velcro Buckle Straps

(248) 356-2839

Industrial grade buckled velcro straps securely hold bundles together, buckles allow for a tight cinch

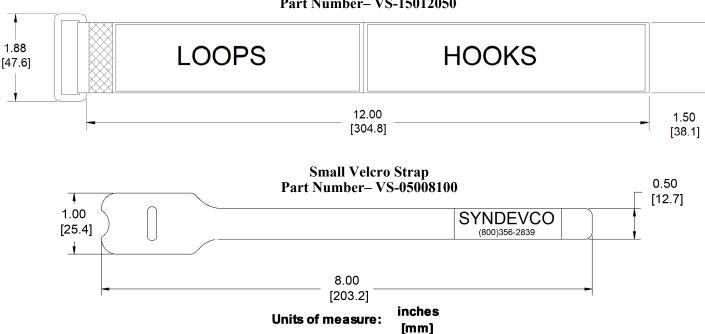
#### **Features**

- Economical way to keep hoses and cords together
- Use on robot dressouts/cable management
- Use on utility applications
- Large size securely holds bundle 1-3 inch in diameter (after cinching)
- Small size securely holds bundle 1/4-11/2 inch in diameter (after cinching)
- Use two large straps to increase capacity
- Reusable
- Durable nylon velcro material
- Flame retardant (Large strap only)



#### Part Numbers / Dimensions

Large Buckle Strap Part Number – VS-15012050



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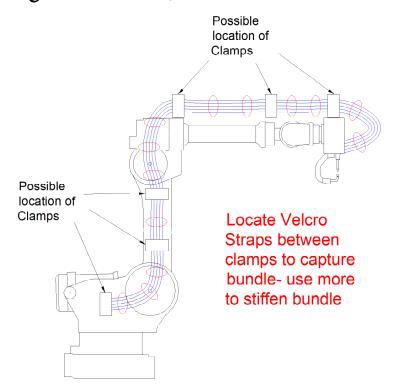


Syndevco Inc. Sheet: 141114



### Velcro Buckle Straps

#### Usage Locations (not limited to robot uses)







### Please see our other products for further design solutions



Corrugated Tube & Wear Bands



Clamps & Inserts







Wear Sleeves

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Syndevco Inc.



### CABLES & GRIPS

#### **CONTROL CABLES**







**Rectangular Connectors** 



**Circular Connectors** 

#### **POWER CABLES**



#### **Transgun Cable and Receptacles**

- RF series
- C2 series

### Power Plug 8000 SERIES







Tap Switch
• 2446 SERIES

#### **CABLE GRIPS**

#### StrainAid- Urethane

- Straight
- 90 degree



#### **Cage Bushings**

- Flat/ Oval
- Round



**Split Bushings** 

24205 Telegraph Rd. Southfield, MI 48033



# Robot Dressings/ Cable Management & Power Distribution







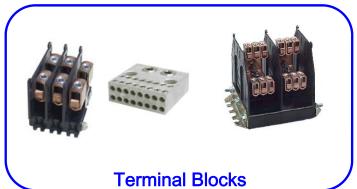






- Stability– over 50 years in business
- Experienced representation
- Timely response to customer requests/ requirements
- Deliveries
   – many stocked components to 15 day lead times
- Focused efforts- manufacturing

**Syndevco** 



24205 Telegraph Rd. Southfield, MI 48033





### Control Cable Assemblies

(248) 356-2839

Alone or within a robotic cable management system

#### **APPLICATIONS**– Typical

- Servo / Encoder
- Motor/ Power
- Discrete Communication
- Serial Communication
  - DeviceNet
  - Profibus
  - Ethernet
- Double Ended Cables
- Single Ended Cables
- Receptacles

#### **COMPONENTS**

#### **CONNECTORS**

- Highest quality connectors used CABLE
- Proper cable for proper application (example: cable used in robot dress has appropriate jacket, torsion specification and flex specification)

#### **PROTECTION**

- Proper strain relief used per application
- Corrugated tube covering cable for added protection where required

#### CUSTOM SPECIFICATIONS WELCOME









#### RECTANGULAR CONNECTORS







#### **VALUE ADDED SERVICES**

- Junction boxes
- Control Panels



#### **QUALITY/TESTING**

#### When applicable:

- Continuity
- Short-Insulation Resistance
- HI-POT
- Procedures as specified

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Syndevco Inc. She



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# RF Series Transgun Panel Mounts

(248) 356-2839

Industrial strength panel mounts enable quick connections to a transgun or power distribution box w/finger tipped safety

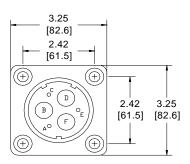
#### **FEATURES**

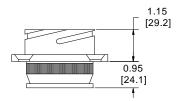
- 'Finger Tipped' insulated male contacts for maximum safety (male is the line end)
- 6 AWG—1/O AWG conductor choices
- Auxiliary conductors available for control connections
- Industrial strength connectors with multi–key connection for connection strength and stability
- Secure 120 degree turn Rapid Change connection
- Audible, tactile, and visual indication of proper connection w/ RF series transgun cables
- Crimp connections used
- Choose receptacles from RF Series Transgun Cables
- Design and dressout assistance readily available
- 'Value Added' services available
   power distribution assemblies, dense packs, complete dressouts



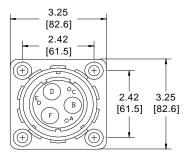
#### **DIMENSIONS**

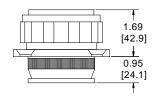
RFF40 Female Flanged Receptacle (Load)



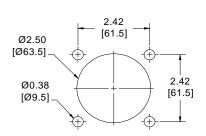


RFM30 Male Flanged Plug (Line)





**Mounting Hole Pattern** 



Units of Measure: inches [mm]

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Syndevco Inc. Sheet: 141114



### RF Series Transgun Panel Mounts

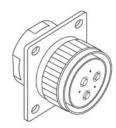
#### PART NUMBER SYSTEM

GENERIC PART NUMBER: RFAAA-BB-CC-D SAMPLE PART NUMBER: RFM30- GJ-03

					-
AAA CONNECTOR STVLE			BB	CC	D
CONNECTOR STYLE		_		LENGTH (FEET)	ADDITIONAL OPTIONS
M30	Male Flanged Plug	GE	6 AWG 3c.	INSERT CABLE	LEAVE BLANK FOR
E40	Female Flanged	CE	6 AWG 3c.		NONE OR SEE A
Γ40	Receptacle	GF	+ 3c (control)	FEET	SYNDEVCO
See a Syndevco Representative for		GG	4 AWG 3c.		REP.
further options		СП	4 AWG 3c.		
		GII	+ 3c (control)		
		GJ	2 AWG 3c.		
		CV	2 AWG 3c.		
		GK	+ 3c (control)		
		Repr	esentative for		
	M30 F40 Se	CONNECTOR STYLE  M30 Male Flanged Plug  F40 Female Flanged Receptacle  See a Syndevco Representative for	CONNECTOR STYLE  CON  M30  Male Flanged Plug  Female Flanged Receptacle  See a Syndevco Representative for further options  GH  GJ  GK  See Repr	CONNECTOR STYLE  CONDUCTOR CONFIGURATION  M30  Male Flanged Plug  Female Flanged Receptacle  See a Syndevco Representative for further options  GH  4 AWG 3c. + 3c (control)  GH  CH  CH  CH  CH  CH  CH  CH  CH  CH	CONNECTOR STYLE  CONDUCTOR CONFIGURATION  Male Flanged Plug  Female Flanged Receptacle  See a Syndevco Representative for further options  GH  AWG 3c. + 3c (control)  GH  AWG 3c. + 3c (control)  GH  AWG 3c. + 3c (control)  GH  CH  AWG 3c.

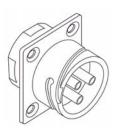
#### RFM30 Male Flanged Plug (Line Side)

(Plugs have an active coupler and mate with receptacles)



### RFF40 Female Flanged Receptacle (Load Side)

(Receptacles have a static coupler and mate with plugs)



### Please see our other products for further design solutions



RF Series Transgun Cables



Stamped Series
Compact Power Blocks



GTP Series

Power Distribution Boxes

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#### Syndevco Inc.



### RF Series Transgun Cables

(248) 356-2839

Industrial strength connectors, finger tipped for safety, and urethane strain relief for the longest service life

#### **FEATURES**

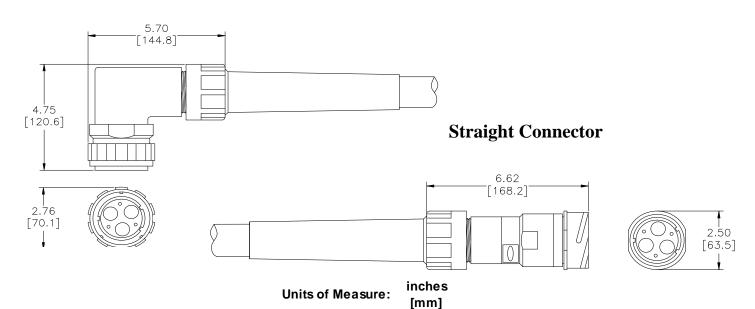
- 'Finger Tipped' insulated male contacts for maximum safety (male is the line end)
- Audible and visual indication of mating with panel mount
- 6 AWG—1/O AWG conductor choices
- Auxiliary conductors available for control connections
- Urethane Strain Aid on the cable ends for long flexing life
- Straight and 90 degree connectors available
- Industrial strength connectors
- Multi–key connectors for connection strength and stability
- Secure 120 degree turn Rapid Change connection
- 36 shell connector size
- Crimp connections used
- Choose mating panel mounts from RF Series Transgun Panel Mounts
- Custom lengths for design efficiency
- Design and dressout assistance readily available
- 'Value Added' services available
   power distribution assemblies, dense packs, complete dressouts



#### **DIMENSIONS**

#### 90 degree Connector

Dimensions are reference only—for exact information please see a Syndevco Representative.



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Sheet: 141114



### RF Series Transgun Cables

#### PART NUMBER SYSTEM

GENERIC PART NUMBER: RFAAB-CCDDE-FG-HH-J
SAMPLE PART NUMBER: RFM52-RFF22-AJ-10

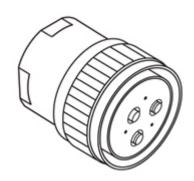
NOTE: ON DUAL ENDED CABLES IDENTIFY MALE END FIRST

	END 1 END 2						END 2					(	CABLE			
RF		AA		В		CC DD		DD	E		F		G		НН	J
•	CON	NECTOR STYLE	S	TRAIN RELIEF TYPE	CON	INECTOR TYPE	CON	NECTOR STYLE	S	TRAIN RELIEF TYPE	C	ABLETYPE	CC	CONDUCTOR ONFIGURATION	LENGTH (FEET)	ADDITIONAL OPTIONS
	M1	Male Straight Plug	1	No Strain Relief Cord Grip Only	RF	Rapid Change	М1	Male Straight Plug	0	N/A	Α	(composite)		6 AWG 3c.	INSERT CABLE	LEAVE BLANK FOR NONE OR
	M3	Male Straight Flanged Plug	2	Urethane StrainAid	0 0	None	М3	Male Straight Flanged Plug	1	No Strain Relief Cord Grip Only	В	TPC (composite)	F	6 AWG 3c. + 3c (control)	LENGTH IN FEET	SEE A SYNDEVCO REP.
	IVI 5	Male 90 degree Plug	3	Basket Weave	Rep	e a Syndevco resentative for	М5	Male 90 degree Plug	2	Urethane StrainAid	C	Elocab (composite)	G	4 AWG 3c.		ILI.
	F2	Female Straight Receptacle	Re	ee a Syndevco	fu	rther options	F2	Female Straight Receptacle	3	Basket Weave	ט	Carol (composite)	Н	4 AWG 3c. + 3c (control)		
	F4 I	Female Straight Flanged Recept.		urther options			F4	Female Straight Flanged Recept.	Re	p. 00 0a 0 . 0.	Е	Tiger (composite)	J	2 AWG 3c.		
	Rep	e a Syndevco					0 0	None	1	urther options		See a Syndevco	K	2 AWG 3c. + 3c (control)		
	10	irther options					LZ	Blunt w / lugs				or further options	R	ee a Syndevco depresentative		
							Rep	e a Syndevco presentative for urther options				-F 10	101	further options		

#### **CONNECTOR STYLES**

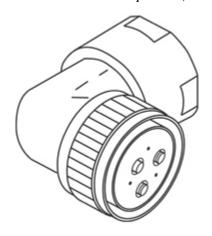
### RFM1 Male Straight Plug (Line Side)

(Plugs have an active coupler and mate with receptacles)



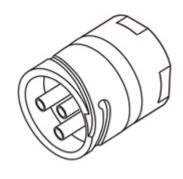
### RFM5 Male 90 degree Plug (Line Side)

(Plugs have an active coupler and mate with receptacles)



### RFF2 Female Straight Receptacle (Load Side)

(Receptacles have a static coupler and mate with plugs)



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#### Syndevco Inc.



# C2 Series Transgun Panel Mounts

(248) 356-2839

Economical receptacles enable quick connecting to a transgun or power distribution box

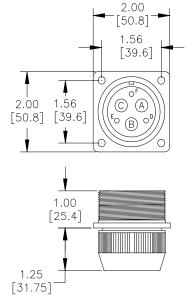
#### **FEATURES**

- Compact size
- 6 AWG 4 AWG power conductor choices
- Auxiliary conductors available for control connections
- Military style (fine thread style) mating connection
- Choose mating cables from C2 Series Transgun Cables
- Design assistance readily available
- Dressout assistance readily available
- 'Value Added' services available— power distribution assemblies, dense packs, complete dressouts

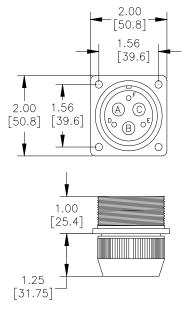


#### **DIMENSIONS**

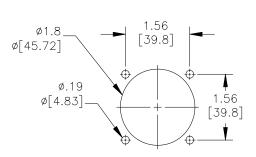
### C2M40 Male Flanged Receptacle (Load)



#### C2F40 Female Flanged Receptacle (Line)



#### **Mounting Hole Pattern**



Units of Measure: inches [mm]

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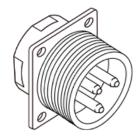
# C2 Series Transgun Panel Mounts

#### PART NUMBER SYSTEM

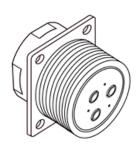
GENERIC PART NUMBER: C2AAA-BB-CC-D SAMPLE PART NUMBER: C2M40- GG-03

$\sim$	•
- 1 -	٠,

2	AAA CONNECTOR STYLE			ВВ	CC	D			
	CONNECTOR STYLE			NDUCTOR FIGURATION	LENGTH (FEET)	ADDITIONAL OPTIONS			
	M40	Straight Male Flanged Recept.	GE	6 AWG 3c.	INSERT CABLE	FOR NONE OR			
	F40	Straight Female Flanged Recept.	GF	6 AWG 3c. + 3c (control)	LENGTH IN FEET	SEE A SYNDEVCO REP.			
	See a Syndevco Representative for		esentative for GG						
	π	further options		4 AWG 3c. + 3c (control)					
			Represen	a Syndevco tative for further options					



C2M40 Male Flanged Receptacle (Load Side)



C2F40 Female Flanged Receptacle (Line Side)

### Please see our other products for further design solutions



GTP Series
Power Distribution Boxes



Stamped Series Compact Power Blocks



C2 Series
Transgun Cables

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#### Syndevco Inc.



### C2 Series Transgun Cables

(248) 356-2839

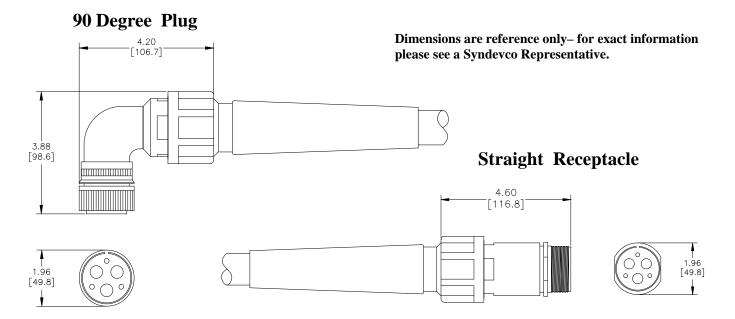
Industrial strength connectors, with urethane strain reliefs for longer service life

#### **FEATURES**

- 6 AWG 4 AWG power conductor choices
- Auxiliary conductors available for control connections
- Military style (fine thread style) mating connection
- Choose mating panel mounts from C2 Series Panel Mounts
- Design assistance readily available
- Dressout assistance readily available
- 'Value Added' services available
   power distribution assemblies, dense packs, complete dressouts



#### **DIMENSIONS**



Units of Measure:

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Syndevco Inc.
ISO 9001:2015
Certificate #
10002227 OMI5

Syndevco Inc.

inches

[mm]

Sheet: 141114



### C2 Series Transgun Cables

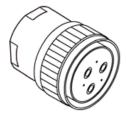
#### PART NUMBER SYSTEM

GENERIC PART NUMBER: C2AAB-CCDDE-FG-HH-J
SAMPLE PART NUMBER: C2M52-C2F12-BG-10
NOTE: ON DUAL ENDED CABLES IDENTIFY MALE END FIRST

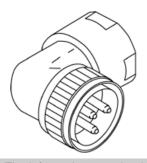
		EN	D 1	1				END 2					(	CABLE		
C2		AA		В		CC		DD		Е		F		G	HH	J
	(	CONNECTOR	S	TRAIN RELIEF	(	CONNECTOR		CONNECTOR	S	TRAIN RELIEF	C	ABLETYPE		CONDUCTOR	LENGTH	ADDITIONAL
		STYLE		TYPE		TYPE		STYLE		TYPE			C	ONFIGURATION	(FEET)	OPTIONS
	М1	Straight Male	1	No Strain Relief	C2	C2 Style	М1	Straight Male	0	N/A	Α	BIW	Ε	6 AWG 3c.	INSERT	Leave blank for
		Plug		Cord Grip Only		Connector		Plug				(composite)			CABLE	none or see a
	М2	Straight Male	2	Urethane	0 0	None	М2	Straight Male	1	No Strain Relief	В	TPC	F	6 AWG 3c.	LENGTH IN FEET	Syndevco
		Receptacle		StrainAid				Receptacle		Cord Grip Only		(composite)		+ 3c (control)	FEET	Representative for further
	М5	90 deg Male	3	Basket Weave			М5	90 deg Male	2	Urethane	С	Elocab	G	4 AWG 3c.		options
		Plug			R	epresentative		Plug		StrainAid		(composite)				
	F1	Straight Female		ee a Syndevco	for	further options	F1	Straight Female	3	Basket Weave	D	Carol	Н	4 AWG 3c.		
		Plug		presentative for				Plug				(composite)		+ 3c (control)		
	F2	Staight Female	f	urther options			F2	Staight Female	S	ee a Syndevco	Е	Tiger		ee a Syndevco		
		Receptacle						Receptacle		presentative for		(composite)		presentative for		
	F5	90 deg Female					F5	90 deg Female	1	further options		See a	f	urther options		
		Plug						Plug				Syndevco				
Ī	S	ee a Syndevco					0 0	None (blunt)				presentative				
		presentative for									'	for further				
	f	urther options					L2	Blunt w / lugs				options				
							S	ee a Syndevco								
								presentative for								
							1	further options								

#### **CONNECTOR STYLES**

C2F1 Female Straight Plug (Line Side)



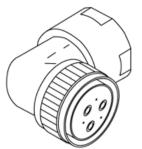
C2M5 Male 90 Degree plug (Line Side)



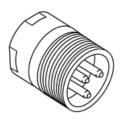
C2M1 Male Straight Plug (Load Side)



C2F5 Female 90 Degree Plug (Load Side)



C2M2 Male Straight Receptacle (Load Side)



C2F2 Female Straight Receptacle (Line Side)



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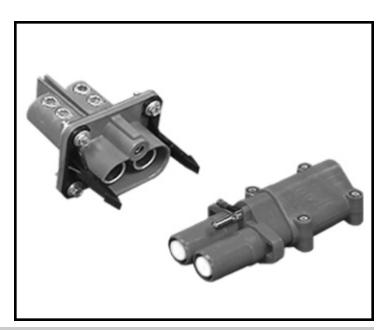
8000 Series Two Pole Plugs

(248) 356-2839

Quick connect, field wirable connectors for larger size cables which allow for high current capacities

#### **FEATURES**

- Quick connection for larger size cables
- Cable range 4/O AWG- 4 AWG
- Field wirable w/ no special tools required
- 'Finger Tipped' insulated male contacts for the ultimate in safety (male is the line end)
- 600 Volt rated
- 460 Amp continuous current capacity
- 90 degree Celsius rated
- Visible locking mechanism
- Variety of standard colors
- 'Value Added' services available
   power distribution assemblies, cable assemblies, etc.



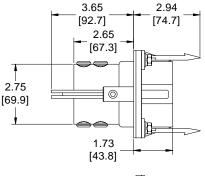
#### **DIMENSIONS**

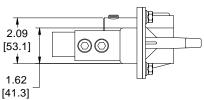
Female Contact (load side)

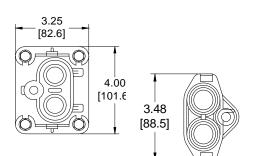


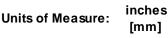
Male Contact (line side)

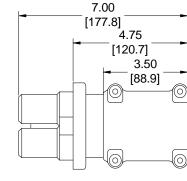


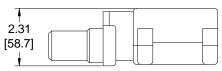












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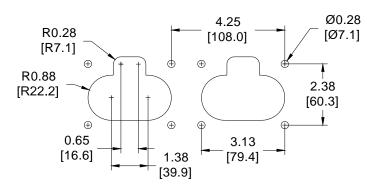


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### 8000 Series Two Pole Plugs

#### MOUNTING DIMENSIONS—FEMALE RECEPTACLE



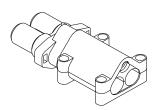
Units of measure: inches [mm]

#### **PART NUMBERING**

83

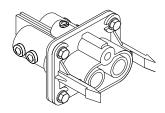
Male Contact (line side)

GENERIC PART NUMBER: 83WXX-Y-Z SAMPLE PART NUMBER: 8322G-O



	W		XX		Υ	Z	
CONDUCTOR RANGE			STRAIN RELIEF		COLOR	ADDITIONAL OPTIONS	
2	4/0 AWG- 1/O AWG	0G	2/O AWG Flat Oval Cable	0	Orange	Leave blank for	
3 1/O AWG- 4 AWG		1G	4/O AWG Flat Oval Cable	le Y Yellow		none or see a Syndevco	
	See a Syndevco	2G 2 individual 7/8 in diameter			Red	Representative for	
Repre	presentative for further 3G		options 2 individual 3/4 in diameter		W	White	further options
	options	4G	2 individual 5/8 in diameter	В	Black		
		5G	2 individual 1/2 in diameter		a Syndevco		
		See a	Syndevco Representative for further options	•	esentative for ther options		

### Female Contact (load side)



GENERIC PART NUMBER: 84XX-Y-Z SAMPLE PART NUMBER: 8420-O

84			XX		Υ	Z
		COND	JCTOR TYPE		COLOR	ADDITIONAL OPTIONS
ľ		QTY	WIRE RANGE			
Ī	20	1	4/0 AWG- 1/O AWG	0	Orange	Leave blank for none or
	30	1	1/O AWG- 4 AWG	Υ	Yellow	see a Syndevco Representative for
	40 4 2 AWG- 14 AWG		R	Red	further options	
	60	6	2 AWG- 14 AWG	W	White	,
	80	2	4/O AWG-1/O AWG	В	Black	
	See a	-	o Representative for er options	Repre	a Syndevco esentative for her options	

Notice: The information contained herein is, to the best of our knowledge, true, accurate and reliable. Since procedures and conditions under which these products may be used are beyond our control, no warranty, expressed or implied, is made to their performance.



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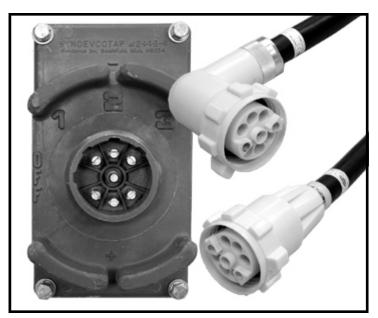
# 2446 Series Tap Switch and Cable

(248) 356-2839

Constructed from nonconductive material, has no moving parts and is waterproof for safety

#### **FEATURES**

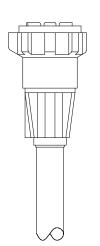
- No moving parts—no wiper—just reposition the plug to get up to 3 different settings
- Contacts are silver-plated copper
- Connector constructed of nonconductive material
- 600 Volt rated
- 90 degree Celsius rated
- 150 Amps @ 30 degree Celsius continuous current capacity
- Straight and 90 degree plug heads available
- Waterproof transformer receptacle
- Custom lengths of cables readily available
- 2 AWG type W cable used as a standard
- Custom type and brand of cable available
- 'Value Added' services available

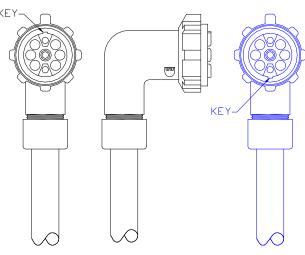


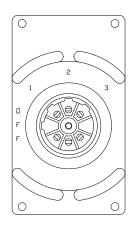
#### PART NUMBERING

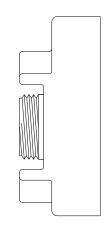
STANDARD STRAIGHT 2446-W-XX STANDARD 90 DEGREE 2446-H90-XX OPTIONAL 90 DEGREE (OPPOSITE KEYWAY) 2446-H90B-XX

2446-4









XX in part number denotes length in feet For special options see a Syndevco representative

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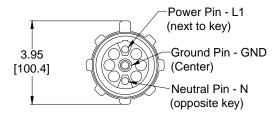


# 2446 Series Tap Switch and Cable

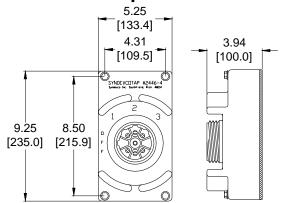
#### **DIMENSIONS**

Units of Measure inches [mm]

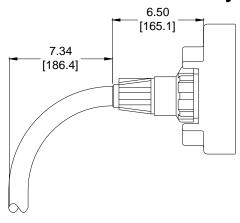
### Cable Plug (Face View) [do not scale]



#### 2446-4 Tap Switch

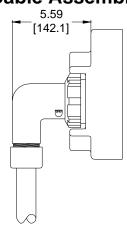


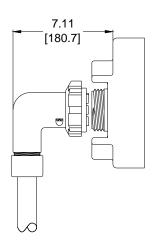
#### 2446-W Cable Assembly



# 7.34 [186.4]

#### 2446-H90 Cable Assembly





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#### Syndevco Inc.



3000 Series Cable Strain Aid

(248) 356-2839

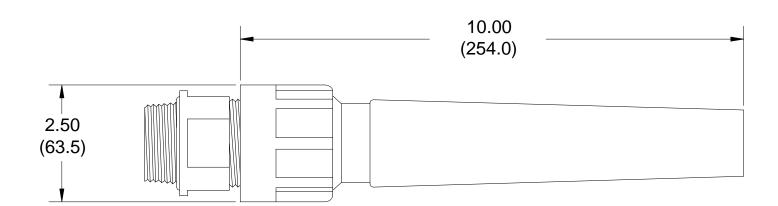
The 3000 Series Cable Strain Aid provides optimal strain relief for maximum life

#### **FEATURES**

- Superior design to control bend radius of TRANSGUN primary cable
- Eliminates frequent downtime and maintenance
- Securely supports and removes strain from cable
- Straight and 90 degree styles available
- Provides liquid tight strain relief
- Constructed of non-conductive high grade urethane
- Molded with silicone-free release agents
- Tear and abrasion resistant
- Component parts available separately
- Available with Transgun Cable assemblies



#### **DIMENSIONS**



Units of Measure: inches (mm)

**Dimensions are approximations** 

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### 3000 series Cable Strain Aid

#### PART NUMBERING SYSTEM

		Part Nu	ımber
		Straight	90 degree
Conduit Hub Size NPT	Cable Range inches		
	1.000 - 1.125	3024-00	3024-90
1-1/4	1.125 - 1.250	3025-00	3025-90
	1.250 - 1.375	3026-00	3026-90
	1.000 - 1.125	3034-00	3034-90
1-1/2	1.125 - 1.250	3035-00	3035-90
	1.250 - 1.375	3036-00	3036-90

## Please see our other strain relief products for further design solutions



7000 Series Cage Bushings

RF Series
Transgun Cables

C2 Series Transgun Cables

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#### Syndevco Inc.



(248) 356-2839

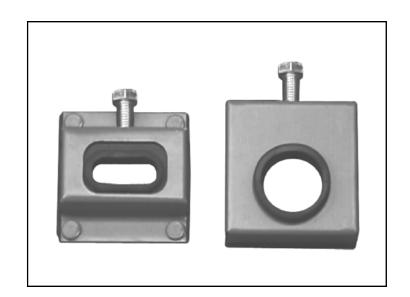
### 7000 Series Cage Bushings

Provides a cost effective low profile means for power cable entry into an enclosure

#### **FEATURES**

- Cost effective
- Low profile
- Good sealing properties
- Excellent pull-out resistance
- Simple clamping mechanism
- Common mount patterns
- Cover plate available
- For oval or round cable

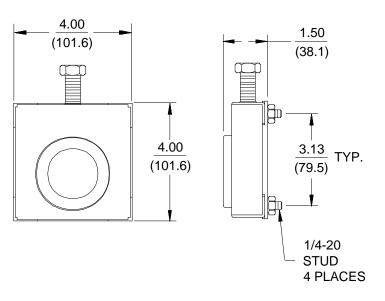
**DIMENSIONS ROUND** 



#### **DIMENSIONS OVAL**

inches [mm]





3.75 (95.3) 3.75 (95.3) 3.75 (95.3) 1/4-20 STUD 4 PLACES

PART NUMBER SHOWN-7090

PART NUMBER SHOWN-7080

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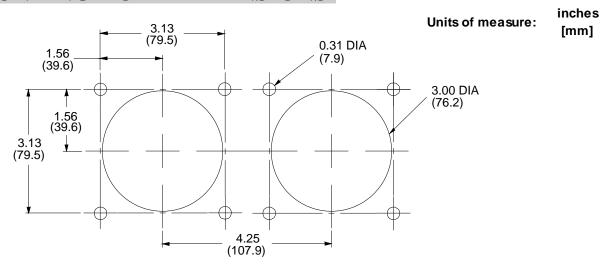


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### 7000 Series Cage Bushings

#### MOUNTING HOLE DIMENSIONS



#### **PART NUMBERING**

GENERIC PART NUMBER: 70XY-Z SAMPLE PART NUMBER: 7080

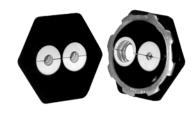
70

	X		Υ	Z
Type of Cable			Size of Cable	Additional Options
8	Oval	0	2- 4/O AWG w/ 1/O AWG Gnd	Leave blank for none or
	<b>6</b> Ovai		2- 4 AWG w/ 7 AWG Gnd	see a Syndevco Representative for futher
9	9 Round		2- 4/O AWG w/ 1/O AWG Gnd	options

### Please see our other Strain Relief products for further design solutions



3000 Series Strain Relief



2490 Series Split Bushings

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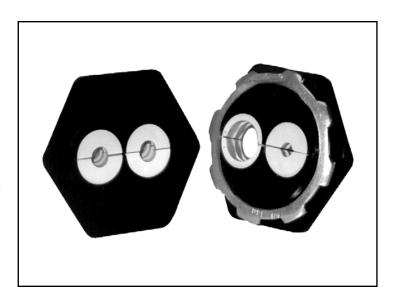
(248) 356-2839

### 2490 Series Split Bushing

The 2490 series Split Bushing maintains a firm grasp of all cables in a pass through water resistant device

#### **FEATURES**

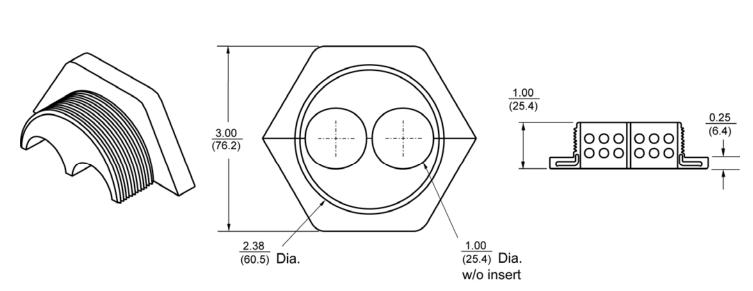
- "Split" type design
- Molded of 94VO flame retardant rated material
- Non conductive
- Inserts made of flexible Estane
- Keyed inserts securely lock to the body
- Accommodates two cables from 1/8" 1"
- Accommodates four cables from 1/8" 3/8"
- Mounts in a 2" conduit hole
- Lock nut provided, securely holds bushing to enclosure
- Customized inserts readily available



#### **DIMENSIONS**

UNIT OF MEASUREMENT

in (mm)



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24205 Telegraph Rd - Southfield MI 48033



### 2490 Series Split Bushing

#### **PART NUMBERING**

GENERIC PART NUMBER: 2490 - YYY - Z

SAMPLE PART NUMBER: 2490 - 500

2490 -

YYY		Z	
HOLE SIZE (in)		ADDITIONAL OPTIONS	
000	PLUG	/: INDICATES THE	
125	1/8	SECOND INSERT IS DIFFERENT FROM THE FIRST INSERT	
250	1/4		
375	3/8	D: TWO HOLES IN INSERT	
500	1/2	(AVAILABLE IN 125, 250, AND 375 ONLY) R: WITHOUT LOCK NUT	
625	5/8		
750	3/4		
875	7/8	LEAVE BLANK FOR NONE OR SEE	
999	1	A SYNDEVCO REPRESENTATIVE	

#### **ORDER SAMPLES**

BUSHING REQUIRED	REPRESENTATION	ORDERED COMPONENTS
BOTH INSERTS SINGLE 1/2 in HOLE		2490-500
INSERT 1- SINGLE 1/4 in HOLE INSERT 2- DUAL 1/4 in HOLE		2490-250/250D
INSERT 1- SINGLE 1/2 in HOLE INSERT 2- PLUG		2490-500/000
INSERT 1- DUAL 3/8 in HOLE INSERT 2- NONE NO LOCK NUT REQUIRED		2490-375D/999R

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# SUPPORT ASSEMBLIES & MANIFOLDS

#### **SUPPORT ASSEMBLIES**

#### **Dense Packs**

- Gun Mount
- Arm Mount
- Hip Mount
- Base Mount







#### **Utility Assemblies**

- Air/ Water
- Air Only

#### **MANIFOLDS**

#### **Wye Manifolds**

- Single Stack
- Double Stack





#### **Hex Manifolds**

- NPT
- BSPT
- BSPP (G-Port)

24205 Telegraph Rd. Southfield, MI 48033

Toll Free: 800-356-2839 Local: 248-356-2839 Fax: 248-356-0928



# Robot Dressings/ Cable Management & Power Distribution













- Stability– over 50 years in business
- Experienced representation
- Timely response to customer requests/ requirements
- Deliveries
   – many stocked components to 15 day lead times
- Focused efforts

   manufacturing

**Syndevco** 



**Terminal Blocks** 

24205 Telegraph Rd. Southfield, MI 48033

Toll Free: 800-356-2839 Local: 248-356-2839 Fax: 248-356-0928





# Densification Packages (Dense Packs)

(248) 356-2839

Compact packages with air, water, and controls— or any combinations ofto assist in controlling weld guns and/or EOAT (end of arm tooling)

#### **FEATURES**

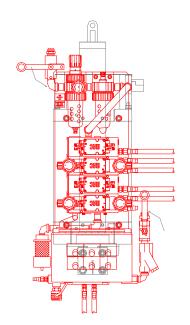
- Compact, space efficient designs
- Standard or custom designs available
- Mounting for
  - Manual Guns
  - Robot Arm Mount
  - Robot Hip Mount
  - Robot EOAT (end of arm tooling) Mount
- Many Configurations (limited examples listed)
  - Transgun
  - Cable gun (portable)
  - Pedestal gun
  - Material handler
  - Combo units
- Controls [VAC, VDC, discrete and serial I/O]
- Pneumatic [shut offs, air prep, valves (weld, retract,

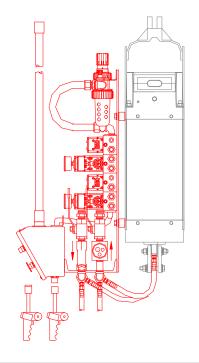
MH, vacuum, tool changing, etc), exhaust]

- Water [shut offs, water control valves, manifolds, sensors, indicators, etc.]
- 'Value Added' services available
- Dressout assistance readily available



#### MANUAL GUN DENSE PACK (EXAMPLE)





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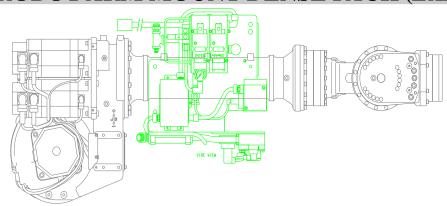
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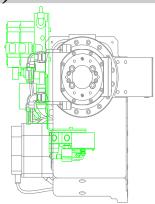
Sheet: 141114



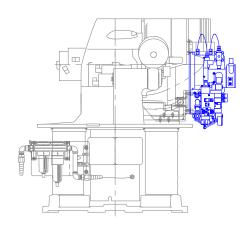
# Densification Packages (Dense Packs)

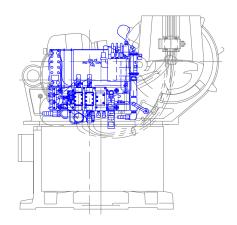
#### ROBOT ARM MOUNT DENSE PACK (EXAMPLE)



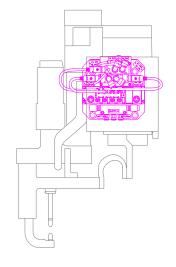


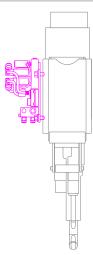
#### ROBOT HIP MOUNT DENSE PACK (EXAMPLE)





#### ROBOT END OF ARM TOOLING DENSE PACK (EXAMPLE)





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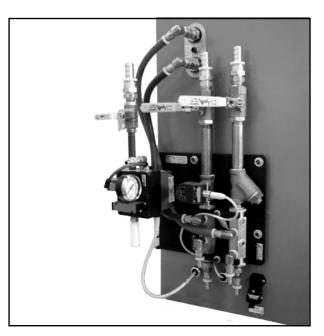
# Utility Assemblies (Air / Water/ Electric)

(248) 356-2839

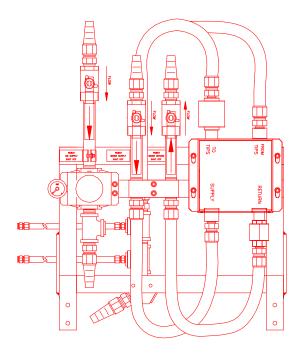
Keep shut-offs and controls in one area for ease of operation and organization. Air prep, water distribution, electric.

#### **FEATURES**

- · Keep shut- offs in same area
- Air prep—regulators, shut-offs, filters, lubricators, gauges, etc.
- Water distribution— water savers, shutoffs, filters, indicators, manifolds, etc.
- *Electric* controls, wiring, etc.
- Use in conjunction with controller stands for further organization
- Many configurations readily available
- New designs easily adapted
- Robot Dress assistance readily available
- 'Value added' services available



#### EXAMPLE (Air / Water) - not limited to



#### Air

- Shut-off w/ exhaust
- Regulator w/ gauge
- Distribution

#### Water

- Shut-offs
- Water saver
- Manifold

#### Electric

Device Net connections

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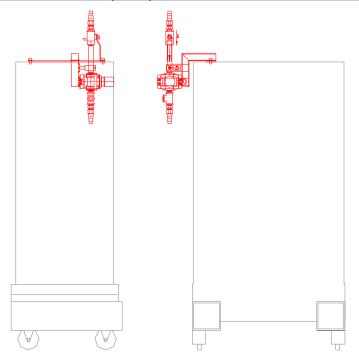
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Sheet: 141114



# Utility Assemblies (Air / Water / Electric)

#### **EXAMPLE** (Air) - not limited to

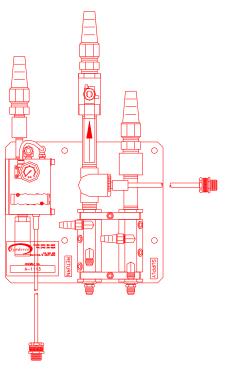


Shown with: Controller

#### Air

- Shut-off w/ exhaust
- Regulator w/ gauge
- Distribution

#### **EXAMPLE (2) - not limited to**



#### Air

- Proportional Regulator w/ gauge
- Distribution

#### Water

- Shut-off
- Flow Switch
- Check Valve
- Manifold

#### Electric

Hardwire connections

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## H Series Manifolds

(248) 356-2839

Compact manifolds with a variety of ports, port sizes, thread types, material and mounting options

#### **FEATURES**

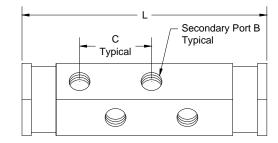
- Compact size
- Brass or Aluminum construction
- Primary port range from 3/8 inch to 2 inch
- Secondary port range from 1/8 inch to 3/4 inch
- Bottom mount U-bolt clamps available
- Top mount Wing clamps available
- Thread types available
  - NPT—Standard
  - BSPT
  - BSPP (G port)
- Inquire about other thread types
- · Value added services available

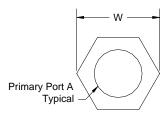


PART NUMBERS SHOWN- H553-4NB & H552-4NB

#### **DIMENSIONS**

Primary	W-W	/idth			
Port A	in	mm			
3/8	1.15	29.2			
1/2	1.44	36.6			
3/4	1.73	43.9			
1	2.31	58.7			
1-1/4	2.31	58.7			
1-1/2	2.60	66.0			
2	3.18	80.8			





	L-Length														
Secondary		Number of Secondary Port B													
Port B	2 3 4 5 6 7 8 9		9	10	11	12	Between								
Size	in	in	in	in	in	in	in	in	in	in	in	in			
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm			
1/8	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	1.00			
1/0	63.5	76.2	88.9	101.6	114.3	127.0	139.7	152.4	165.1	177.8	190.5	25.4			
1/4	2.85	3.60	4.35	5.10	5.85	6.60	7.35	8.10	8.85	9.60	10.35	1.05			
1/4	72.4	91.4	110.5	129.5	148.6	167.6	186.7	205.7	224.8	243.8	262.9	26.7			
3/8	3.24	4.24	5.24	6.24	7.24	8.24	9.24	10.24	11.24	12.24	13.24	1.12			
3/0	82.3	107.7	133.1	158.5	183.9	209.3	234.7	260.1	285.5	310.9	336.3	28.4			
1/2	3.51	4.63	5.76	6.88	8.01	9.13	10.26	11.38	12.51	13.63	14.76	1.19			
1/2	89.0	117.6	146.2	174.8	203.3	231.9	260.5	289.1	317.6	346.2	374.8	30.2			
3/4	3.98	5.35	6.73	8.10	9.48	10.85	12.23	13.60	14.98	16.35	17.73	1.30			
3/4	101.0	135.9	170.8	205.7	240.7	275.6	310.5	345.4	380.4	415.3	450.2	33.0			

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## H Series Manifolds

#### PART NUMBER SYSTEM

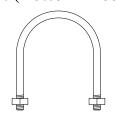
GENERIC PART NUMBER: HAAA-BCD-E SAMPLE PART NUMBER: H553-4NB

Н	AAA		В		С		D	E	
	Manifold Number		uantity of econdary Ports	Th	read Type		Type of Material	ADDITIONAL OPTIONS	
		2	tw o	N	NPT	В	Brass	Leave blank for none or see a Syndevco representative for	
	Insert Manifold Number	3	three				1.60		
	from Chart to the Right		four	В	BSPT	A	Aluminum	further options	
- 1"	Griant to the raight	5	five	١	36				
		6	six	Р	BSPP		e a Syndevco resentative for		
		7	seven		(G port)		rther options		
		8	eight		e a Syndevco presentative				
		9	nine		for further				
		10	ten		options				
		11	eleven						
		Rep	tw elve e a Syndevco resentative for rther options						

Manifold		
Number	Port A	Port B
331	3/8	1/8
332	3/8	1/4
441	1/2	1/8
442	1/2	1/4
551	3/4	1/8
552	3/4	1/4
553	3/4	3/8
661	1	1/8
662	1	1/4
663	1	3/8
664	1	1/2
771	1-1/4	1/8
772	1-1/4	1/4
773	1-1/4	3/8
774	1-1/4	1/2
881	1-1/2	1/8
882	1-1/2	1/4
883	1-1/2	3/8
884	1-1/2	1/2
991	2	1/8
992	2	1/4
993	2	3/8
994	2	1/2
995	2	3/4

#### **MOUNTING ACCESSORIES**

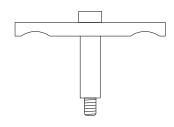
#### **U-Bolt (Bottom Mount)**



2 pcs required per manifold

P rim ary	Part
Port Size	Number
3/8	U101
1/2	U102
3/4	U143
1	U145
1-1/4	U146
1-1/2	U387
2	U388

## Wing Clamp (Top Mount) [for mounting pairs]



2 pcs required per pair of manifolds

P rim ary	Part
Port Size	Number
3/8	W 101
1/2	W 102
3/4	W 143
1	W 145

**English bolt standard Use a -M to specify Metric** 

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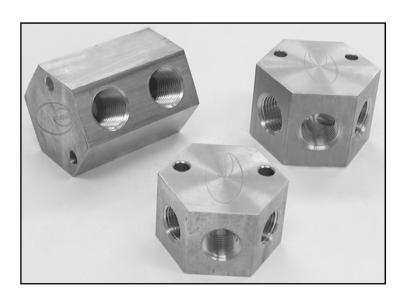
### Wye Series Manifolds

Brass compact wye manifolds with two or three secondary ports

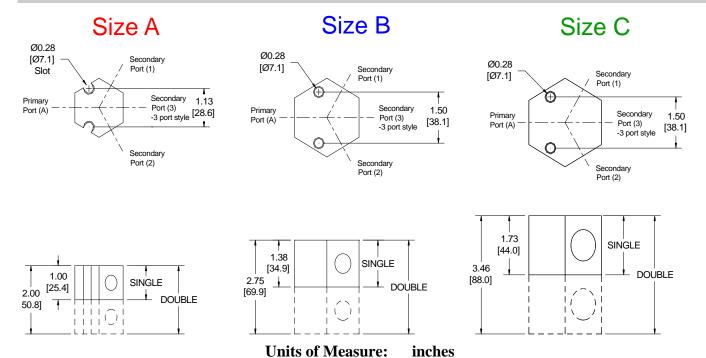
(248) 356-2839

#### **FEATURES**

- Compact size
- Easily mounts with 1/4 or M6 bolts
- Brass construction
- Thread types available
  - NPT—Standard
  - BSPT
  - BSPP (G port)
- Excellent to supply weld tips in parallel
- 1/8 to 1 inch port sizes available
- Two or three secondary ports available
- Dressout assistance readily available



#### **DIMENSIONS**



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[mm]

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Sheet: 141114



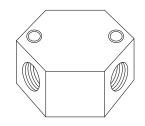
### Wye Series Manifolds

#### PART NUMBER SYSTEM - 2 PORT

GENERIC PART NUMBER: AABBB/C-D SAMPLE PART NUMBER: 38382/2

_			AA		BBB		С	D			
	Size	Priı	mary Port Size	Seco	ndary Port Size	Sin	gle or Double	Additional Options			
							Stack				
	Α	12	1/8 NPT	122	1/8 NPT	None	Single	1	w/ tag holes		
	Α	25	1/4 NPT	122	1/8 NPT	NOHE	Olligie	'	w tag notes		
	^	25	1/ <del>4</del> INI 1	252	1/4 NPT	2	Double				
				122	1/8 NPT		Double				
	Α	38	3/8 NPT	252	1/4 NPT						
				382	3/8 NPT						
				122	1/8 NPT						
	В	50	1/2 NPT	252	1/4 NPT						
	В	30	1/2 INF 1	382	3/8 NPT						
				502	1/2 NPT						
				122	1/8 NPT						
	В	75	3/4 NPT	252	1/4 NPT						
	В	13	3/4 INF I	382	3/8 NPT						
				502	1/2 NPT						
1	С	75	3/4 NPT	752	3/4 NPT	1					

## **2 PORT** (View of secondary ports)

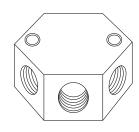


#### PART NUMBER SYSTEM - 3 PORT

**GENERIC PART NUMBER:** AABBB/C-D **SAMPLE PART NUMBER: 38383/2** 

		AA		BBB		С	D				
Size	Prim	ary Port Size	Secor	ndary Port Size	Sing	gle or Double	Add	Additional Options			
						Stack					
Α	12	1/8 NPT	123	1/8 NPT	None	Single	1	w/ tag holes			
Α	25	1/4 NPT	123	1/8 NPT	None	Olligie	⊥'_	w/ tag noics			
Λ	23	1/ <del>4</del> INI I	253	1/4 NPT	2	Double		<u>'</u>			
Α	38	3/8 NPT	123	1/8 NPT	]	Double	Leave blank for none or				
٨	30	3/0 INF I	253	1/4 NPT			C	all a Syndevco			
В	38	3/8 NPT	383	3/8 NPT			F	Representative			
			123	1/8 NPT	1						
В	50	1/2 NPT	253	1/4 NPT							
			383	3/8 NPT							
С	50	1/2 NPT	503	1/2 NPT	1						
			123	1/8 NPT	1						
В	75	3/4 NPT	253	1/4 NPT							
			383	3/8 NPT							
С	75	3/4 NPT	503	1/2 NPT	1						

**3 PORT** (View of secondary ports)



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Syndevco Inc.



# ENCLOSURE ASSEMBLIES POWER & CONTROL

#### **POWER DISTRIBUTION ASSEMBLIES**







Standard P Series

- P2H

   Standard Capacity
- P3H– High Capacity

NEC Compliant Assemblies



Compact Assemblies
GTP Series



G2D
General Motors
style

#### **CONTROL ASSEMBLIES**

#### **Control Panels**







**Junction Assemblies** 

24205 Telegraph Rd. Southfield, MI 48033

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## Robot Dressings/ Cable Management & Power Distribution













- Stability– over 50 years in business
- Experienced representation
- Timely response to customer requests/ requirements
- Deliveries
   – many stocked components to 15 day lead times
- Focused efforts

   manufacturing

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## Power Distribution Assemblies

(248) 356-2839

Power Distribution Assemblies designed to distribute line or welding power in industrial applications

#### **FEATURES**

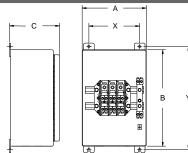
- Utilizes the MB-2 and MB-3 terminal blocks
- For use with single or 3 phase applications
- For use with multi-circuit applications
- Terminals orientated horizontally standard
- Terminals orientated vertically available Please ask a Syndevco representative
- ANSI 61 Gray finish standard
- Other color finishes available Please ask a Syndevco representative
- NEMA Type 12
- Conductor size range 500MCM 6 AWG

- Ground bonding complies with current accepted NEC code
- 'DANGER 480/575 VOLTS' Labeling
- Compact enclosures
- Custom requirements welcome
- 'Value Added' services available creating holes, inserting cord grips or strain relief, etc.
- Assemblies meeting current accepted NEC code available (sizes are typically larger than industry standard)
- Assemblies with UL-508A listing available (sizes may differ)



#### **P2H Assemblies**

- Uses MB2 series Terminal Blocks
- Sized to industry standards— see chart to the right
- Part Numbering see reverse side

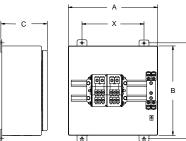


	Number of		Overall		Mounting					
	Poles + Ground	Width	Height	Depth	Width	Height				
_	Bars	Α	В	С	Х	Υ				
	2 - 5	12 [304.8]	18		9.5 [241.3]	19.25				
	6 - 9	18 [457.2]	[457.2]	9.35	12 [304.8]	[489.0]				
Y	10 - 13	24 [609.6]	20	[237.5]	18 [457.2]	21.25 [539.8]				
	14 - 17	30 [762.0]	[508.0]		24 [609.6]					
	Additional Poles	See a Syndevco representative for further options								
_										



#### P3H Assemblies

- Uses MB3 series Terminal Blocks
- Sized to industry standards— see chart to the right
- Part Numbering see reverse side



	Number of		Overall		Mounting						
	Poles + Ground	Width	Height	Depth	Width	Height					
	Bars	Α	В	С	Х	Υ					
1	2	12 [304.8]	18		9.5 [241.3]	19.25					
	3 - 4	18 [457.2]	[457.2]	9.35	12 [304.8]	[489.0]					
Y	5 - 6	24 [609.6]	20	[237.5]	18 [457.2]	21.25					
	7 - 8	30 [762.0]	[508.0]		24 [609.6]	[539.8]					
	Additional Poles	See a Syndevco representative for further options									



#### **NEC** Assemblies

- Uses MB2 or MB3 series Terminal Blocks
- **Sized to current NEC Code** see a Syndevco representative for further information
- Part Numbering- see a Syndevco representative for further information

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Sheet: 141114



### Power Distribution Assemblies

#### **PART NUMBERING**

GENERIC PART NUMBER: P2H-BBB-CC-DEF-G SAMPLE PART NUMBER: P2H-220-04-B1B

2H-	BBB	CC			D				E	F		G
		Number of Poles			Ground 7	Гуре	•	Normals and		E	nclosure Color	
	Conductor Type				LINE	LOAD		Number of Grounds		Exterior/		Additional Options
				QTY	WIRE RANGE	QTY	WIRE RANGE		O. Ganag	Interior/ Interior door		
	Choose a Copper Number (XXX) from Chart on	Choose	0		No Ground	ls Re	quired	0	No Grounds Required	В	ANSI61 Gray/ White/ White	Leave blank for none or see a Syndevco representative
	MB-2 SERIES POWER BLOCKS Catalog Sheet	01 - 30	Α	2	1/OAWG- 6 AWG	2	1/O AWG- 6 AWG		Choose 1 - 9	rep	e a Syndevco resentative for rther options	for further options
	See a Syndevco representative for further options	See a Syndevco representative for	<b>B</b> 2 1/OAWG-6 AWG		4 1/O AWG- 6 AWG		See a Syndevco		vco e for			
		further options		1	350MCM- 1/O AWG	2	1/O AWG- 6 AWG	iu	further options			
			F	1	350MCM- 1/O AWG	4	1/O AWG- 6 AWG					
			J	1	350MCM- 1/O AWG	1	350MCM- 1/O AWG					
			κ	1	350MCM- 1/O AWG	2	350MCM- 1/O AWG					
			S	ee a	Syndevco rep further op		ntative for					

GENERIC PART NUMBER: P3H-BBB-CC-DEF-G SAMPLE PART NUMBER: P3H-340-03-C1B

Р3Н-	BBB	CC			D				Е	F		G
	Conductor Type	Number of		1	Ground T	уре		N	lumber of	Exterior/ Interior/		Additional Options
	Conductor 1 ype	Poles		QTY	LINE WIRE RANGE	OTV	LOAD WIRE RANGE	(	Grounds			Additional Options
	Choose a Copper Number (XXX) from Chart on	Choose	0	QII	No Ground	-		0	No Grounds Required		ANSI61 Gray/ White/ White	Leave blank for none or see a Syndevco representative for further
	MB-3 SERIES POWER BLOCKS Catalog Sheet	01 - 08	С	3	1/OAWG- 6 AWG	3	1/O AWG- 6 AWG		Choose 1 - 9	rep	e a Syndevco resentative for rther options	options
	See a Syndevco representative for further options	See a Syndevco representative for	D	3	1/OAWG- 6 AWG	6	1/O AWG- 6 AWG	repi	See a Syndevco representative for		rulei opuolis	
		further options	G	2	350MCM- 1/O AWG	3	1/O AWG- 6 AWG	tur	rther options			
			Н	2	350MCM- 1/O AWG	6	1/O AWG- 6 AWG	1				
			L	2	350MCM- 1/O AWG	2	350MCM- 1/O AWG					
			М	2	350MCM- 1/O AWG	4	350MCM- 1/O AWG					
			Se	ee a	Syndevco rep further opt							





## G2D Series (General Motors) Power Distribution Boxes

(248) 356-2839

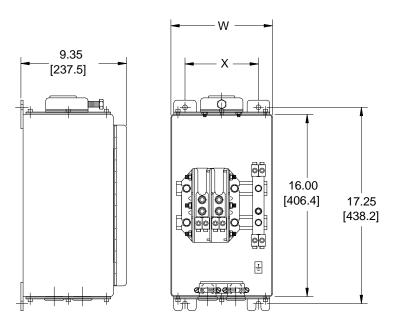
Built to GM standards – grounding for all line and load connections—uses MB -2 series power blocks

#### **FEATURES**

- Utilizes the MB-2 series power blocks
- ANSI 61 Gray standard color
- Unused entrance/exit holes sealed
- Grounding available for all line and load connections
- Choice of crimp or collar lugs on the line side
- Conductor size range 300MCM- 6 AWG
- 'DANGER 480/575 VOLTS' labeling
- Choice of strain relief for round or oval cable of various sizes
- One (1) to four (4) circuit enclosure standard
- Up to 4 transformers per circuit capacity



#### **DIMENSIONS**



Number of Circuits	Width - in	ches [mm]
(Number of Poles)	Overall	Mounting
	W	Х
1 Circuit	9.00 [228.6]	6.50 [165.1]
(2 pole)	9.00 [220.0]	0.50 [105.1]
2 Circuit	12.00 [304.8]	9.50 [241.3]
(4 pole)	12.00 [304.6]	9.50 [241.5]
3 Circuit	17.00 [431.8]	11.00 [279.4]
(6 pole)	17.00 [431.6]	11.00 [279.4]
4 Circuit	22 00 [559 9]	16.00 [406.4]
(8 pole)	22.00 [558.8]	16.00 [406.4]

Units of measure: inches [mm]

1 Circuit (2 pole) Enclosure Shown

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Sheet: 141114



## G2D Series (General Motors) Power Distribution Boxes

#### **PART NUMBERING**

GENERIC PART NUMBER: G2D-AAA-BB-CD-E SAMPLE PART NUMBERS: G2D-270-02-21

G2D-

		AAA				ВВ		С		D		Е
		CONDUC	TOR		N	umber of Poles	Type of			# of Entrance	Ad	ditional Options
		TYPE			(number of circuits)		ı	<b>Entrance Cable</b>		Fittings		
		LINE		LOAD					Not to exceed # of circuits			
	QTY WIRE RANGE QTY WIRE RANG		WIRE RANGE	:				Unused hole will be sealed				
270	1	4/0 AWG	2	1/O AWG-	02	2 Poles	0	Not Specified		N/A		Indicates Solid
270	'	Crimp Lug		6 AWG	02	(1 circuit)	U	(Solid Plate)	Α	use when option	1	Plate on Bottom
271	1	4/0 AWG	4	1/OAWG-	04	4 Poles	1	BOC-19 Flat Oval	^	0, 3, or 4 is chosen		of Enclosure
211	'	Crimp Lug		6 AWG	04	(2 circuit)	•	(7080)		in previous column C		
200	1	4/0 AWG	1	300 MCM-	06	6 Poles	2	BOC-31 Round	1	one		Leave blank for
280	'	Crimp Lug	'	1/O AWG	סטן	(3 circuit)	2	(7090)	1	one		none or see a
284	1	4/0 AWG	2	300 MCM-	08	8 Poles	3	2 AWG 3 cond.	2	two		Syndevco
204	'	Crimp Lug	_	1/O AWG	00	(4 circuit)	3	(Hat Grommets)		two		Representative
240	2	1/O AWG-	2	1/O AWG-		See a Syndevco	4	Hole Pattern	3	throo		
210	-	6 AWG	_	6 AWG		epresentative for	4	for Cage Bushing	3	three		
Se	e a	Syndevco Rep		ntative for	'	Further Options		See a Syndevco	4	four		
		Further Op	otions					Representative for	4	loui		
					Further		Further Options	See a Syndevco				
										Representative for		
										Further Options		

## Please see our Strain Relief products for further design solutions



3000 Series Strain Aids



2490 Series Split Bushings





7000 Series Cage Bushings

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## **GTP Series Power Distribution Boxes**

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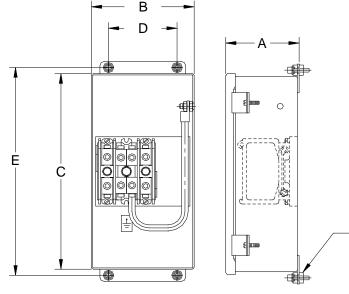
Compact grounded power distribution with removable insulated mounting feet for transgun applications

#### **FEATURES**

- **Utilizes Compact Series Power Distribution Blocks**
- **ANSI 61 Gray standard color**
- Ground terminal is bonded to the enclosure for safety
- Removable insulating feet to isolate robot from ground currents
- Conductor size range 300 MCM- 6 AWG
- Choice of conductor and ground terminals
- 'DANGER 480/575 VOLTS' labeling
- 'Value Added' services available- cord grips/ strain reliefs added, transgun cables, robotic dressout assistance, etc.



#### **DIMENSIONS**



E	nclosure		Dimer	sions - i	n [mm]	
	Type		Overall	Mounting		
		Α	В	С	D	Е
1	12 x 6 x 4	4.28	6.00	12.00	4.00	12.75
'	12 X 0 X 4	[108.7]	[152.4]	[304.8]	[101.6]	[323.9]
2	12 x 6 x 6	6.28	6.00	12.00	4.00	12.75
	12 X 0 X 0	[159.5]	[152.4]	[304.8]	[101.6]	[323.9]
3	10 x 10 x 4	4.28	10.00	10.00	8.00	10.75
"	10 × 10 × 4	[108.7]	[254.0]	[254.0]	[203.2]	[273.1]

Removable insulating feet.

PART NUMBER SHOWN - GTP-SN12-ST3-1B

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## **GTP Series Power Distribution Boxes**

#### **PART NUMBERING**

GENERIC PART NUMBER: GTP-AAAB-CCC-DE-F SAMPLE PART NUMBER: GTP-SN12-ST3-1B

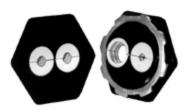
GTP-

-	•	AAA		•		В			CCC				D		E	F
		CONDUCT	OR		NUN	IBER OF			GROUNI	)			ENCLOSURE	ENCLOSURE		ADDITIONAL
		TYPE			CONDUCTOR			TYPE			SIZE		COLOR		OPTIONS	
	LINE LOAD			LOAD	POLES				LINE		LOAD					
	QTY	WIRE RANGE	QTY	WIRE RANGE				QTY	WIRE RANGE	QTY	WIRE RANGE					
AM:	1	300MCM-	1	300MCM-	1	ONE	SM3	1	300MCM-	2	1/OAWG-		12x6x4	В	ANSI61 Gray/	Leave blank for
AIVI	' l'	1/O AWG	'	1/O AWG	'	ONE	SIVIS	'	1/O AWG		6 AWG	1	Mounting Feet	D	GR/GR	none or see a
CM		300MCM-	2	1/OAWG-	2	TWO	СТЭ	2	1/OAWG-	2	1/OAWG-		Opposite of hinge			Syndevco
SM	' l'	1/O AWG	2	6 AWG	~	1000	ST3	2	6 AWG	2	6 AWG		12x6x6			Representative
CT	2	1/OAWG-	2	1/OAWG-		THREE					•	2	Mounting Feet			
ST	'  <sup>-</sup>	6 AWG	2	6 AWG	3	INKEE							Opposite of hinge			
CNI		1/O AWG-	4	1/O AWG-									10x10x4	S	ee a Syndevco	
SN1	1	6 AWG	1	6 AWG		See a						3	Mounting Feet	Re	presentative for	
						ndevco	See	a Sy	ndevco Repi further opti		itative for		Opposite of hinge	fı	urther options	
Se	e a S	yndevco Rep further opti	tative for	R fu	ep for urther otions			iuitilei opti	OHS		Re	See a Syndevco epresentative for further options				

## Please see our Strain Relief products for further design solutions



3000 Series Strain Aids



2490 Series Split Bushings





7000 Series Cage Bushings

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Syndevco Inc.



Control Panels & Junction Assemblies

(248) 356-2839

U/L and CU/L approved for Control Panels. Value-added junction assemblies

#### **FEATURES**

- U/L and CU/L approved for panel build
- Only panels required to have U/L and CU/L approvals will receive sticker
- Over 50 years of manufacturing experience
- Strict quality standards that ensure accurate build
- Hybrid panel build with electrical, pneumatic, hydraulic, paint, etc.
- Customization/ rework of existing panels available
- Most end user specifications known
- Field integration available







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## TERMINAL BLOCKS

#### **GROUNDS**



**SGA SERIES** 



**HCG SERIES** 

#### **COMPACT POWER BLOCKS**



STAIR STEP SERIES



**STAMPED SERIES** 



**MACHINED SERIES** 

#### **POWER BLOCKS**



**MB-2 SERIES** 



**MB-3 SERIES** 

#### **SPECIAL TERMINALS**



**T-TAP** 



**CUSTOMIZED CONNECTORS** 

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## Robot Dressings/ Cable Management & Power Distribution













- Stability– over 50 years in business
- Experienced representation
- Timely response to customer requests/ requirements
- Deliveries
   – many stocked components to 15 day lead times
- Focused efforts

   manufacturing

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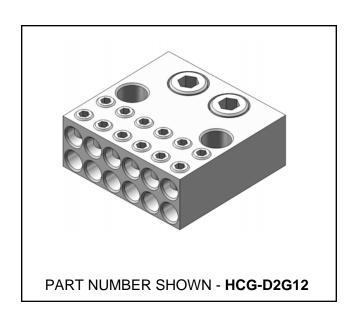
## HCG Series High Capacity Grounds

(248) 356-2839

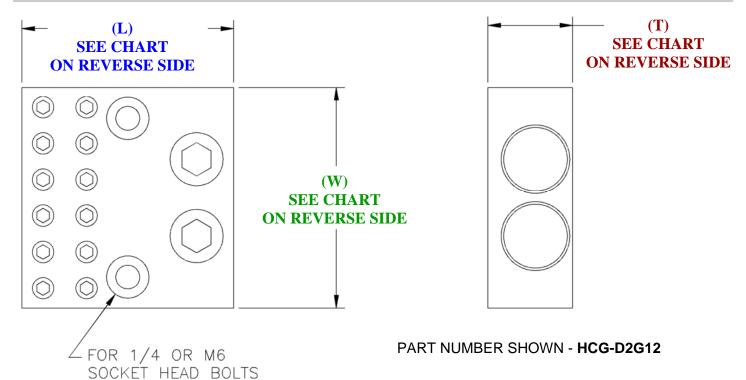
High capacity copper ground bars, perfect for single point grounding where space is a premium

#### **FEATURES**

- Copper construction
- Compact size
- Plated for corrosion resistance
- Single or dual line connections
- Up to 21 load connections
- Wire range from 500 MCM to 14 AWG
- Rated to 105 degrees Celsius
- "Value added" services are available



#### **DIMENSIONS**



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## HCG Series High Capacity Grounds

#### PART NUMBER SYSTEM

GENERIC PART NUMBER : HCG - XXXXX - Z SAMPLE PART NUMBER : HCG - D1G08

HCG -

XXXXX	Z
COPPER NUMBER	ADDITIONAL OPTIONS
SEE CHART BELOW	LEAVE BLANK FOR NONE OR SEE A SYNDEVCO REPRESENTATIVE

	LINE		LOAD	COPPER NUMBER	WIDTH (W)	LENGTH (L)	THICKNESS (T)
#	WIRE RANGE	#	WIRERANGE	XXXXX	inches (mm)	inches (mm)	inches (mm)
		2	500 M C M - 4 A W G	C2C02	2.10 (53.3)		
0	500 MOM 4 AWO	6	2/0 AWG - 14 AWG	C2E06	3.19 (81.0)	0.00 (70.0)	4 05 (04 75)
2	500 M C M - 4 A W G	12	4 A W G - 14 A W G	C2H12	2.10 (53.3)	3.00 (76.2)	1.25 (31.75)
		16	4 A W G - 14 A W G	C2H16	2.64 (67.1)	1	
		1	500 M C M - 4 A W G	C1C01	1.25 (31.8)		
		2	350 M C M - 6 A W G	C1D02	1.80 (45.7)	1	
		4	2/0 AWG - 14 AWG	C1E04	2.14 (54.4)	1	
		6	2/0 AWG - 14 AWG	C1E06	3.19 (81.0)	1	
1	500 M C M - 4 A W G	6	2 AWG - 14 AWG	C1G06	1.32 (33.5)	3.00 (76.2)	1.25 (31.75)
		8	2 AWG - 14 AWG	C1G08	1.75 (44.5)	` ´	,
		12	4 A W G - 14 A W G	C1H12	2.00 (50.8)		
		10	6 AWG - 14 AWG	C1J10	1.50 (38.1)	•	
		18	8 AWG - 14 AWG	C1K18	1.47 (37.3)	1	
		2	350 M C M - 6 A W G	D2D02	1.80 (45.7)		
		6	2/0 AWG - 14 AWG	D2E06	3.19 (81.0)		
		12	2 AWG - 14 AWG	D2G12	2.61 (66.3)		
2	350 M C M - 6 A W G	12	4 AWG - 14 AWG	D2H12	2.00 (50.8)	2.50 (63.5)	1.00 (25.4)
		16	4 AWG - 14 AWG	D2H16	2.64 (67.1)		
		18	6 AWG - 14 AWG	D2J18	2.67 (67.8)	•	
		1	350 MCM - 6 AWG	D1D01	1.00 (25.4)		
		2	2/0 AWG - 14 AWG	D1E02	1.10 (27.9)	•	
		4	2/0 AWG - 14 AWG	D1E04	2.14 (54.4)	1	
		6	2/0 AWG - 14 AWG	D1E06	3.19 (81.0)	1	
		4	2 AWG - 14 AWG	D1G04	1.00 (25.4)		
,	050 404 0 4 40	6	2 AWG - 14 AWG	D1G06	1.32 (33.5)	0.50 (00.5)	4 00 (05 4)
1	350 M C M - 6 A W G	8	2 AWG - 14 AWG 4 AWG - 14 AWG	D1G08	1.75 (44.5)	2.50 (63.5)	1.00 (25.4)
		8	4 AWG - 14 AWG	D1H06 D1H08	1.03 (25.2) 1.36 (34.5)	-	
		12	4 AWG - 14 AWG	D1H12	2.00 (50.8)		
		10	6 AWG - 14 AWG	D1J10	1.50 (38.1)		
		15	8 A W G - 14 A W G	D1K15	1.24 (31.4)		
		21	8 A W G - 14 A W G	D1K21	1.71 (43.4)		
		2	2/0 AWG - 14 AWG	E2E02	1.20 (30.5)		
		6	2 A W G - 14 A W G	E 2 G 0 6	1.32 (33.5)		
		8	2 A W G - 14 A W G	E2G08	1.75 (44.5)		
2	2/0 AWG - 14 AWG	12	4 A W G - 14 A W G	E2H12	2.00 (50.8)	2.50 (63.5)	1.00 (25.4)
		10	6 A W G - 14 A W G	E 2J10	1.50 (38.1)		
		15	8 A W G - 14 A W G	E 2 K 1 5	1.24 (31.5)		
		21	8 A W G - 14 A W G	E 2 K 2 1	1.71 (43.4)		
		1	2/0 AWG - 14 AWG	E1E01	0.72 (18.3)		
		4	2 AWG - 14 AWG	E1G04	0.90 (22.3)		
		6	2 AWG - 14 AWG	E1G06	1.32 (33.5)		
1	2/0 AWG - 14 AWG	8	2 AWG - 14 AWG	E1G08	1.75 (44.5)	2.50 (63.5)	1.00 (25.4)
		4	4 A W G - 14 A W G	E1H04	0.72 (18.3)	]	
		10	6 A W G - 14 A W G	E 1J10	1.50 (38.1)	1	
		12	8 A W G - 14 A W G	E1K12	1.00 (25.4)	1	

Notice: The information contained herein is, to the best of our knowledge, true, accurate and reliable. Since procedures and conditions under which these products may be used are beyond our control, no warranty, expressed or implied, is made to their performance.



#### Syndevco Inc.



## SGA Series Ground Bar

(248) 356-2839

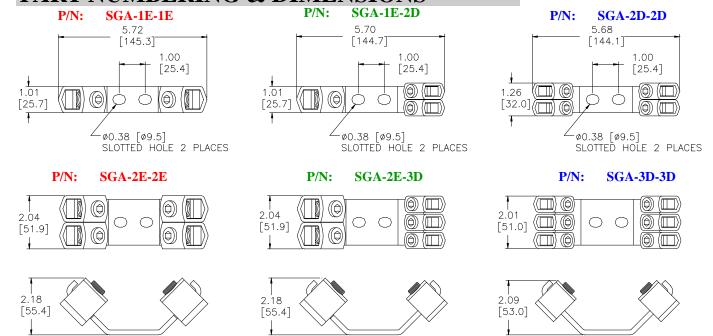
Multi- point ground bars to keep the integrity of the ground bond. Excellent next to disconnects for main feeds

#### **FEATURES**

- Copper construction
- 2 to 6 connections
- 300MCM to 6 AWG wire range
- Excellent to use next to primary disconnects as a bond point
- Keep all composite wires the same length
- High Capacity ground also available
- Power distribution assemblies available



#### **PART NUMBERING & DIMENSIONS**



**Units of Measure:** inches

Notice: The information contained herein is, to the best of our knowledge, true, accurate and reliable. Since procedures and conditions under which these products may be used are beyond our control, no warranty, expressed or implied, is made to their performance.



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Sheet: 141114



## **SGA Series Ground Bar**

#### **CONNECTION SPECIFICATIONS**

PART NUMBER		LINE	LOAD			
PART NOWBER	QTY	WIRE RANGE	QTY	WIRE RANGE		
SGA-1E-1E	1	300MCM - 1/O AWG	1	300MCM - 1/O AWG		
SGA-2E-2E	2	300MCM - 1/O AWG	2	300MCM - 1/O AWG		
SGA-1E-2D	1	300MCM - 1/O AWG	2	1/O AWG - 6 AWG		
SGA-2E-3D	2	300MCM - 1/O AWG	3	1/O AWG - 6 AWG		
SGA-2D-2D	2	1/O AWG - 6 AWG	2	1/O AWG - 6 AWG		
SGA-3D-3D	3	1/O AWG - 6 AWG	3	1/O AWG - 6 AWG		

#### Please see some of our other products for further design solutions

For clarity, picture shown w/o cover



**HCG** Series **High Capacity** Grounds



Stair Step Series **Compact Power Blocks** 



MB2 and MB3 Series Power **Blocks** 



3000 Series Strain Aids



2490 Series **Split Bushings** 





7000 Series Cage Bushings

Notice: The information contained herein is, to the best of our knowledge, true, accurate and reliable. Since procedures and conditions under which these products may be used are beyond our control, no warranty, expressed or implied, is made to their performance.



#### Syndevco Inc.

24205 Telegraph Rd - Southfield MI 48033 Toll Free: (800) 356-2839 Local: (248) 356-2839 Fax: (248) 356-0928 visit us at: www.syndevco.com



## Machined Series Compact Power Blocks

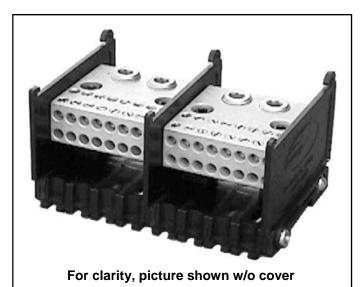
(248) 356-2839



Copper construction to accommodate 500 MCM thru 14 AWG in various configurations

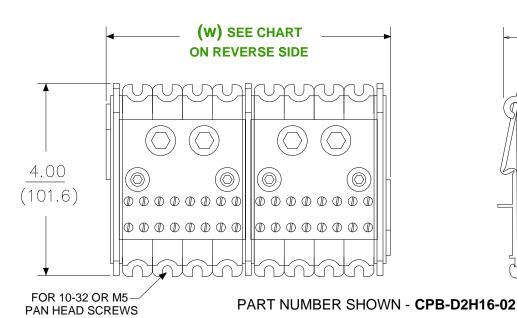
#### **FEATURES**

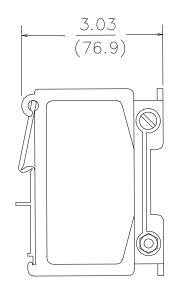
- UL recognized components, Guide XCFR2, File E68623
- C-UL recognized components, Guide XCFR8, File E68623
- Copper construction
- Compact size
- Units are completely assembled
- Units are supplied with hinged "dead front" cover
- Units are labeled with "DANGER 480/575 VOLTS"
- 600 VOLT rated
- Up to 760 AMP rating continuous
- Rated to 105° Celsius
- 94VO rating (flammability self extinguishing
- "Value added services available



#### **DIMENSIONS**

UNIT OF MEASUREMENT  $\frac{\text{in}}{\text{(mm)}}$ 





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expressed or implied, is made to their performance.



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Sheet: 141114



## Machined Series Compact Power Blocks

#### PART NUMBER SYSTEM

GENERIC PART NUMBER : CPB - XXX - YY - Z

SAMPLE PART NUMBER: CPB - D1G08 - 02

CPB -



XXXXX	YY	Z
COPPER NUMBER	NUMBER OF POLES	ADDITIONAL OPTIONS
SEE CHART BELOW	CHOOSE 01 - 99	LEAVE BLANK FOR NONE OR SEE A SYNDEVCO REPRESENTATIVE

	LINE		LOAD	COPPER NUMBER			ENSION (W)		AMPS PER POLE
#	WIRE RANGE	#	WIRE RANGE	XXXXX	1 POLE	2 POLE	3 POLE	ADDITIONAL POLES	(CONTINUOUS)
		2	500 MCM - 4 AWG	C2C02	2.70 (68.6)	4.95 (125.7)	7.20 (182.9)	2.25 (57.2)	
_		6	2/0 AWG - 14 AWG	C2E06	3.80 (96.5)	7.26 (184.4)	10.74 (272.8)	3.47 (88.1)	
2	500 MCM - 4 AWG	12	4 AWG - 14 AWG	C2H12	2.70 (68.6)	4.95 (125.7)	7.20 (182.9)	2.25 (57.2)	760
		16	4 AWG - 14 AWG	C2H16	3.33 (84.6)	6.20 (157.5)	9.08 (230.6)	2.88 (73.2)	
		1	500 MCM - 4 AWG	C1C01	1.83 (46.5)	3.20 (81.3)	4.58 (116.3)	1.38 (35.1)	
		2	350 MCM - 6 AWG	C1D02	2.45 (62.2)	4.45 (113.0)	6.45 (163.8)	2.00 (50.8)	
		4	2/0 AWG - 14 AWG	C1E04	3.06 (77.7)	5.78 (146.8)	8.50 (215.9)	2.72 (69.1)	
		6	2/0 AWG - 14 AWG	C1E06	3.80 (96.5)	7.26 (184.4)	10.74 (272.8)	3.47 (88.1)	
1	500 MCM - 4 AWG	6	2 AWG - 14 AWG	C1G06	1.95 (49.5)	3.45 (87.6)	4.95 (125.7)	1.50 (38.1)	380
		8	2 AWG - 14 AWG	C1G08	2.45 (62.2)	4.45 (113.0)	6.45 (163.8)	2.00 (50.8)	
		12	4 AWG - 14 AWG	C1H12	2.58 (65.5)	4.70 (119.4)	6.83 (173.5)	2.13 (54.0)	
		10	6 AWG - 14 AWG	C1J10	2.20 (55.9)	3.95 (100.3)	5.70 (144.8)	1.75 (44.5)	
		18	8 AWG - 14 AWG	C1K18	2.20 (55.9)	3.95 (100.3)	5.70 (144.8)	1.75 (44.5)	
		2	350 MCM - 6 AWG	D2D02	2.45 (62.2)	4.45 (113.0)	6.45 (163.8)	2.00 (50.8)	
		6	2/0 AWG - 14 AWG	D2E06	3.80 (96.5)	7.26 (184.4)		3.47 (88.1)	
		12	2 AWG - 14 AWG	D2G12	3.20 (81.3)	5.95 (151.1)	8.70 (221.0)	2.75 (70.0)	
2	350 MCM - 6 AWG	12	4 AWG - 14 AWG	D2H12	2.58 (65.5)	4.70 (119.4)	6.83 (173.5)	2.13 (54.0)	620
		16	4 AWG - 14 AWG	D2H16	3.33 (84.6)	6.20 (157.5)	9.08 (230.6)	2.88 (73.2)	
		18	6 AWG - 14 AWG	D2J18	3.18 (80.8)	6.02 (152.9)	8.86 (225.04)	2.84 (72.1)	
		1	350 MCM - 6 AWG	D1D01	1.83 (46.5)	3.20 (81.3)	4.58 (116.3)	1.38 (35.1)	
		2	2/0 AWG - 14 AWG	D1E02	1.83 (46.5)	3.20 (81.3)	4.58 (116.3)	1.38 (35.1)	
		4	2/0 AWG - 14 AWG	D1E04	3.06 (77.7)	5.78 (146.8)	8.50 (215.9)	2.72 (69.1)	
		6	2/0 AWG - 14 AWG	D1E06	3.80 (96.5)	7.26 (184.4)	10.74 (272.8)	3.47 (88.1)	
		4	2 AWG - 14 AWG 2 AWG - 14 AWG	D1G04 D1G06	1.83 (46.5) 1.95 (49.5)	3.20 (81.3)	4.58 (116.3) 4.95 (125.7)	1.38 (35.1) 1.50 (38.1)	
1	350 MCM - 6 AWG	8	2 AWG - 14 AWG	D1G08	2.45 (62.2)	4.45 (113.0)	6.45 (163.8)	2.00 (50.8)	310
-		6	4 AWG - 14 AWG	D1H06	1.83 (46.5)	3.20 (81.3)	4.58 (116.3)	1.38 (35.1)	
		8	4 AWG - 14 AWG	D1H08	1.95 (49.5)	3.45 (87.6)	4.95 (125.7)	1.50 (38.1)	
		12	4 AWG - 14 AWG	D1H12	2.58 (65.5)	4.70 (119.4)		2.13 (54.0)	
		10	6 AWG - 14 AWG	D1J10	2.20 (55.9)	3.95 (100.3)	5.70 (144.8)	1.75 (44.5)	
		15 21	8 AWG - 14 AWG 8 AWG - 14 AWG	D1K15 D1K21	1.83 (46.5) 2.45 (62.2)	3.20 (81.3) 4.45 (113.0)	4.58 (116.3) 6.45 (163.8)	1.38 (35.1) 2.00 (50.8)	
		2	2/0 AWG - 14 AWG	E2E02	1.83 (46.5)	3.20 (81.3)	4.58 (116.3)	1.38 (35.1)	
		6	2 AWG - 14 AWG	E2G06	1.95 (49.5)	3.45 (87.6)	4.95 (125.7)	1.50 (38.1)	
		8	2 AWG - 14 AWG	E2G08	2.45 (62.2)	4.45 (113.0)	6.45 (163.8)	2.00 (50.8)	
2	2/0 AWG - 14 AWG	12	4 AWG - 14 AWG	E2H12	2.58 (65.5)	4.70 (119.4)	6.83 (173.5)	2.13 (54.0)	350
-		10	6 AWG - 14 AWG	E2J10	2.20 (55.9)	3.95 (100.3)	5.70 (144.8)	1.75 (44.5)	
		15	8 AWG - 14 AWG	E2K15	1.83 (46.5)	3.20 (81.3)	4.58 (116.3)	1.38 (35.1)	
		21	8 AWG - 14 AWG	E2K21	2.45 (62.2)	4.45 (113.0)	6.45 (163.8)	2.00 (50.8)	
		1	2/0 AWG - 14 AWG	E1E01	1.33 (33.8)	2.20 (55.9)	3.08 (78.2)	1.75 (44.5)	
		4	2 AWG - 14 AWG	E1G04	1.83 (46.5)	3.20 (81.3)	4.58 (116.3)	1.38 (35.1)	
		6	2 AWG - 14 AWG	E1G06	1.95 (49.5)	3.45 (87.6)	4.95 (125.7)	1.50 (38.1)	
1	2/0 AWG - 14 AWG	8	2 AWG - 14 AWG	E1G08	2.45 (62.2)	4.45 (113.0)	6.45 (163.8)	2.00 (50.8)	175
•		4	4 AWG - 14 AWG	E1H04	1.33 (33.8)	2.20 (55.9)	3.08 (78.2)	1.75 (44.5)	
		10	6 AWG - 14 AWG	E1J10	2.20 (55.9)	3.95 (100.3)	5.70 (144.8)	1.75 (44.5)	
		12	8 AWG - 14 AWG	E1K12	1.83 (46.5)	3.20 (81.3)	4.58 (116.3)	1.38 (35.1)	
		12	0 /.W 0 14 /.W 0	LINIZ	1.00 (+0.0)	3.20 (01.3)	1.00 (110.0)	1.00 (00.1)	

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#### Syndevco Inc.



## **Stamped Series Compact Power Blocks**

(248) 356-2839



Copper construction design for larger size wires with a collar to protect fine stranded wires.

#### **FEATURES**

- UL recognized components, Guide XCFR2, File
- C-UL recognized components, Guide XCFR8, File E68623
- **Copper construction**
- **Compact size**
- Designed with collars to protect fine stranded wires
- Units are completely assembled
- Units are supplied with hinged "dead front" cover
- Units are labeled with "DANGER 480/575 **VOLTS''**
- 94VO rating (flammability self extinguishing)
- 600 VOLT rated
- Rated to 105° Celsius
- Up to 300 AMP rating continuous
- Custom configurations readily available
- "Value added" services are available

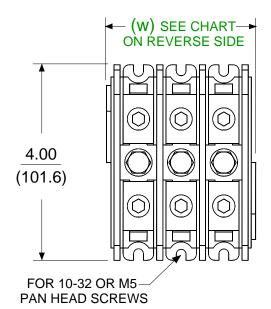


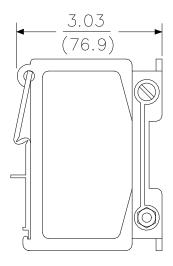
For clarity, picture shown w/o cover or end barrier

#### **DIMENSIONS**

UNIT OF MEASUREMENT

in (mm)





PART NUMBER SHOWN - CPB-SN-03

Notice: The information contained herein is, to the best of our knowledge, true, accurate and reliable. Since procedures and conditions under which these products may be used are beyond our control, no warranty, expressed or implied, is made to their performance.



Syndevco Inc.

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## Stamped Series Compact Power Blocks

#### PART NUMBER SYSTEM

GENERIC PART NUMBER: CPB - XXX - YY - Z

*IR*,

SAMPLE PART NUMBER: CPB - ST3 - 02

CPB-

XXX	YY	Z			
COPPER NUMBER	NUMBER OF POLES	ADDITIONAL OPTIONS			
SEE CHART BELOW	CHOOSE 01 - 99	LEAVE BLANK FOR NONE OR SEE A SYNDEVCO REPRESENTATIVE			

	LINE		LOAD	COPPER NUMBER		AMPS PER POLE			
#	WIRE RANGE	#	WIRE RANGE	^^^	1 POLE	2 POLE	3 POLE	ADDITIONAL POLES	(CONTINUOUS)
1	200 MCM 1/O AW/C	1	300 MCM - 1/O AWG	АМЗ	1.81 (45.9)	3.18 (80.8)	4.56 (115.7)	1.375 (34.9)	285
Ľ	300 MCM-1/O AWG	2	1/O AWG - 6 AWG	SM3	1.01 (45.9)	3.10 (00.0)	4.50 (110.7)	1.373 (34.9)	200
2	1/O AWG-4 AWG	2	1/O AWG - 6 AWG	ST3	1.81 (45.9)	3.18 (80.8)	4.56 (115.7)	1.375 (34.9)	300
1	1/O AWG-6 AWG	1	1/O AWG - 6 AWG	SN	1.31 (33.2)	2.18 (55.4)	3.06 (77.6)	0.875 (22.2)	150

## Please see some of our other products for further design solutions

For clarity, pictures shown w/o cover



**Machined Series** 



Stair Step Series



MB2 and MB3 Series

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Syndevco Inc.



## Stair Step Series Compact Power Blocks

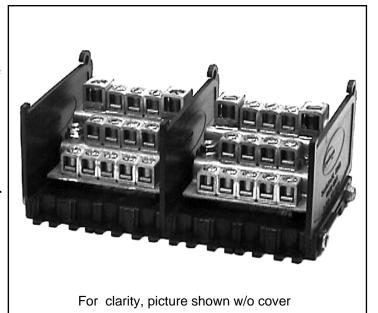
(248) 356-2839



Copper construction design with a pressure plate to protect fine stranded wires

#### **FEATURES**

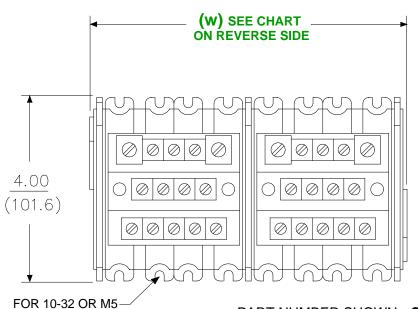
- UL recognized components, Guide XCFR2, File E68623
- C-UL recognized components, Guide XCFR8, File E68623
- Copper construction
- Compact size
- Designed with pressure plates to protect fine stranded wires
- Units are completely assembled
- Units are supplied with hinged "dead front" cover
- Units are labeled with "DANGER 480/575 VOLTS"
- 94VO rating (flammability self extinguishing)
- 600 VOLT rated
- Rated to 105° Celsius
- Up to 460 AMP rating continuous
- "Value added" services are available

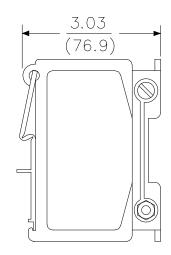


#### **DIMENSIONS**

PAN HEAD SCREWS

UNIT OF MEASUREMENT  $\frac{\text{in}}{(\text{mm})}$ 





PART NUMBER SHOWN - CPB-2SS12-02

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Sheet: 141114



## Stair Step Series Compact Power Blocks

#### PART NUMBER SYSTEM

GENERIC PART NUMBER: CPB-XXXXX-YY-Z

SAMPLE PART NUMBER: CPB-2SS12-02



	Line		Load	Copper Number			ENSION (W) s (mm)		Amps per Pole	
#	Wire Range	#	Wire Range	XXXXX	1 POLE	2 POLE	3 POLE	ADDITIONAL POLES	(continuous)	
		4	4 AWG - 18 AWG *	1SS04	1.81 (46.0)	3.28 (83.3)	4.75 (120.7)	1.47 (37.3)		
2	4/0 AWG - 2 AWG	6	4 AWG - 18 AWG *	1SS06	2.57 (65.3)	4.69 (119.1)	6.81 (173.0)	2.12 (53.8)	460	
	2 4/0 AWG - 2 AWG	12	4 AWG - 18 AWG *	1SS12	3.68 (93.5)	6.93 (176.0)	10.18 (258.6)	3.25 (82.6)	400	
		24	4 AWG - 18 AWG *	1SS24	5.56 (141.2)	10.68 (271.3)	15.80 (401.3)	5.12 (130.0)		
		6	4 AWG - 18 AWG *	2\$\$06	2.57 (65.3)	4.89 (119.1)	6.81 (173.0)	2.12 (53.8)		
2	1/O AWG - 4 AWG	12	4 AWG - 18 AWG *	2SS12	3.68 (93.5)	6.93 (176.0)	10.18 (258.6)	3.25 (82.6)	310	
		24	4 AWG - 18 AWG *	2SS24	5.56 (141.2)	10.68 (271.3)	15.80 (401.3)	5.12 (130.0)		
		6	4 AWG - 18 AWG *	3SS06	2.57 (65.3)	4.69 (119.1)	6.81 (173.0)	2.12 (53.8)		
2	4 AWG - 18 AWG *	12	4 AWG - 18 AWG *	3SS12	3.68 (93.5)	6.93 (176.0)	10.18 (258.6)	3.25 (82.6)	210	
		24	4 AWG - 18 AWG *	3SS24	5.56 (141.2)	10.68 (271.3)	15.80 (401.3)	5.12 (130.0)		

<sup>\*</sup> TWO (2) 14 AWG - 18 AWG WIRES CAN BE INSERTED IN EACH TERMINAL

## Please see some of our other products for further design solutions



For clarity, pictures shown w/o cover



For clarity, pictures shown w/o end barrier and cover

Stamped Series



For clarity, pictures shown w/o cover

MB2 and MB3 Series

Machined Series

Notice: The information contained herein is, to the best of our knowledge, true, accurate and reliable. Since procedures and conditions under which these products may be used are beyond our control, no warranty, expressed or implied, is made to their performance.



#### Syndevco Inc.



## MB-2 Series Power Blocks

(248) 356-2839



Copper construction design for larger size wires with a collar to protect fine stranded wires

#### **FEATURES**

- UL recognized components, Guide XCFR2, File E68623
- C-UL recognized components, Guide XCFR8, File E68623
- Copper construction
- Designed with collars to protect fine stranded wires
- Single line connections
- Up to four (4) load connections
- Auxiliary connections are available for sensing
- Wire range from 500 MCM to 6 AWG
- Units are completely assembled
- Units are supplied with hinged "dead front" cover
- Units are labeled with "DANGER 480/575 VOLTS"
- 94VO rating (flammability—self extinguishing)
- 600 VOLT rated
- Rated to 105° Celsius
- Up to 380 AMP rating continuous
- Custom configurations readily available
- "value added" services available

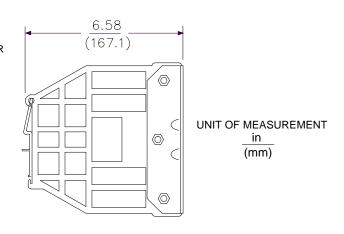


#### **DIMENSIONS**

BODY WIDTH DIMENSION (W) inches (mm)						
1 POLE 2 POLE 3 POLE ADDITIONAL POLES						
2.11 (53.6)	3.61 (91.7)	5.11 (129.8)	1.50 (38.1)			

	4	— (X) S ←(W) S	SEE CH	+	FOR 3/8-16 OF
6.50 (167.1)	3.00 (76.2) 1.75 (44.5)				WITO BOLTS

MOUNTING WIDTH DIMENSION (X) inches (mm)							
1 POLE 2 POLE 3 POLE ADDITIONAL POLE							
3.00 (76.2)	4.50 (114.3)	6.00 (152.4)	1.50 (38.1)				



PART NUMBER SHOWN - MB-221-03

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#### Syndevco Inc. Sheet: 1



### MB-2 Series Power Blocks

#### PART NUMBER SYSTEM

Generic Part Number: MB-XXX-YY-Z Sample Part Number: MB-220-03

MB-

XXX	YY	Z
Copper Number	Number of Poles	Additional Options
See Chart Below	01 - 99	Leave Blank for none or see a Syndevco Representative for further options

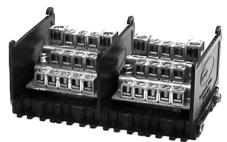
Line Load		Load	Copper	Amps per Pole			
#	Wire Range	#	Wire Range	Number	(continuous)		
		2 500 MCM - 2/O AWG	267 *				
		1	300 WCW - 2/0 AVV	260			
1	500 MCM - 2/O AWG	2	300 MCM - 1/0 AWG	254 *	380		
'	1 4		250	300			
		4 1/O AWG - 6 AWG	231 *				
			1/0 AWO 0 AWO	230			
		2	300 MCM - 1/0 AWG	244 *	_		
1	300 MCM - 1/0 AWG	300 MCM - 1/0 AWG	300 MCM - 1/0 AWG	1	300 MOM - 1/0 AVV	240	310
l '	JOO MOM 170 AVVO	4	1/O AWG - 6 AWG	221 *	310		
		2	1/0 / 1/0 - 0 / 1/0	220			
2	1/O AWG - 6 AWG	1/O AWG - 6 AWG 4 1/O AWG - 6 AWG	1/O AWG - 6 AWG	211 *	300		
	I/O AVVG - 6 AVVG	2	1/0 / 1/0 - 0 / 1/0	210	300		

<sup>\*</sup> Can be provided with auxillary contacts for wire ranges:

- 1/O AWG 6 AWG
- 4 AWG 18 AWG

See a Syndevco representative for part numbering

#### Please see some of our other products for further



For clarity, picture shown w/o cover



For clarity, picture shown w/o cover



For clarity, picture shown w/o cover

Stamped Series

**Machined Series** 

#### Stair Step Series

Syndevco In ISO 9001:201

#### Syndevco Inc.

Notice: The information contained herein is, to the best of our knowledge, true, accurate and reliable. Since procedures and conditions under which these products may be used are beyond our control, no warranty, expressed or implied, is made to their performance.



### MB-3 Series Power Blocks

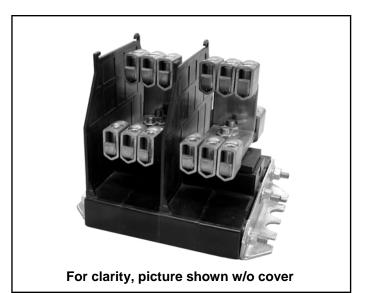
(248) 356-2839



Copper construction designed for extra capacity with a collar to protect fine stranded wires

#### **FEATURES**

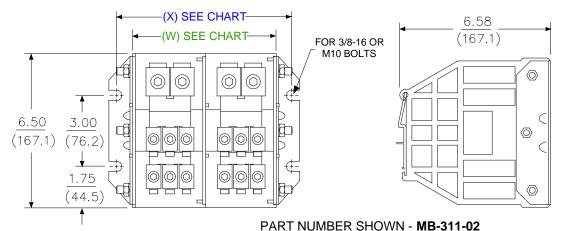
- UL recognized components, Guide XCFR2, File E68623
- C-UL recognized components, Guide XCFR8, File E68623
- Copper construction
- Designed with collars to protect fine stranded wires
- Single line connections
- Up to four (6) load connections
- Auxiliary connections are available for sensing
- Wire range from 500 MCM to 6 AWG
- · Units are completely assembled
- Units are supplied with hinged "dead front" cover
- Units are labeled with "DANGER 480/575 VOLTS"
- 94VO rating (flammability—self extinguishing)
- 600 VOLT rated
- Rated to 105° Celsius
- Up to 400 AMP rating continuous
- Custom configurations readily available
- "value added" services available



#### **DIMENSIONS**

BODY WIDTH DIMENSION (W) inches (mm)					
1 POLE 2 POLE 3 POLE ADDITIONAL POLES					
3.65 (92.7) 6.65 (168.9)		9.65 (245.1)	3.00 (76.2)		

MOUNTING WIDTH DIMENSION (X) inches (mm)							
1 POLE	1 POLE 2 POLE 3 POLE ADDITIONAL POLES						
4.50 (114.3)	7.50 (190.5)	10.50 (266.7)	3.00 (76.2)				



UNIT OF MEASUREMENT  $\frac{\text{in}}{\text{(mm)}}$ 

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Syndevco Inc. Sheet: 141114



### **MB-3 Series Power Blocks**

#### PART NUMBER SYSTEM

Generic Part Number: MB-XXX-YY-Z Sample Part Number: MB-340-03

MB -	XXX	YY	Z
	Copper Number	Number of Poles	Additional Options
	See Chart Below	01 - 99	Leave Blank for none or see a Syndevco Representative for further options

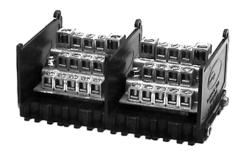
Line			Load	Copper	Amps per Pole		
#	Wire Range	#	Wire Range	Number	(continuous)		
		4	300 MCM - 1/0 AWG	344 *			
1	1 500 MCM - 2/O AWG	2 300 MCM - 1/0 AWG	340	380			
'		300 WCW - 2/0 AWG	300 WGW 2/3 AV3	6	6 1/O AWG - 6 AWG	331 *	300
		3 70 AWS TAWS	330				
	2 300 MCM - 1/0 AWG	4	300 MCM - 1/0 AWG	324 *			
		300 MCM 1/0 AV/C	200 MCM 1/0 AWC 2	2	300 MOM - 1/0 AWG	320	400
~		6	1/O AWG - 6 AWG	311 *	400		
			I/O AVVG - 6 AVVG	310			

Can be provided with auxillary contacts for wire ranges:

- 1/O AWG 6 AWG
- 4 AWG 18 AWG

See a Syndevco representative for part numbering

#### PLEASE SEE OUR OTHER POWER DISTRIBUTION BLOCKS FOR FURTHER DESIGN SOLUTIONS



For clarity, picture shown w/o cover

For clarity, picture shown w/o cover



For clarity, picture shown w/o cover

**Machined Series** 

Stair Step Series

Stamped Series

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#### Syndevco Inc.

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