



## High Precision and Rigidity

The ball bearing is produced from a solid steel outer cylinder and incorporates an industrial strength polymer retainer.

## Ease of Assembly

The standard type of linear ball bearing can be loaded from any direction. Precision control is possible using only the shaft supporter, and the mounting surface can be machined easily.

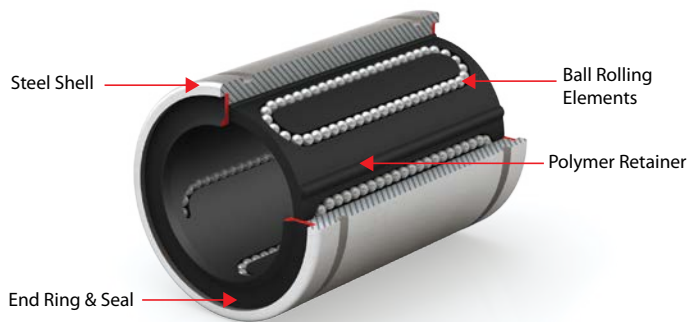
## Ease of Replacement

Linear ball bearings of each type are completely interchangeable because of their standardized dimensions and strict precision control. Replacement because of wear or damage is therefore easy and accurate.

## Materials

Ball bearings consist of an outer cylinder, ball retainer, balls, double seals, and two end rings. The ball retainer which holds the balls in the recirculating tracks is held inside the outer cylinder by end rings.

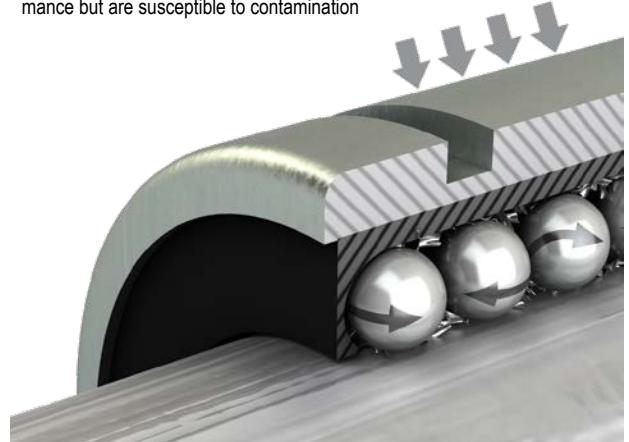
- Parts are assembled to optimize their required functions.
- The outer shell is heat treated to ensure long life.
- The ball retainer is molded from a durable polymer to ensure smooth and quiet motion.
- Double seals are standard.



# PBC Linear Ball Bearings

### Ball Bearing

Better performance for moment loading  
Balls provide precise, low-friction performance but are susceptible to contamination



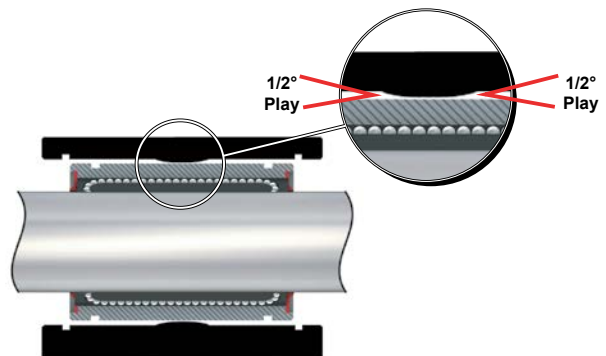
## Pillow Blocks and Flange Mounts

- Made of aluminum alloy
- Clear anodized finish (Standard)
- Pillow blocks are interchangeable with industry standard ball bearing pillow blocks
- Critical centerline dimensions hold accuracy within  $\pm 0.001$ ".

## Self-Alignment

Standard pillow blocks have built-in self-alignment in all directions:

- Standard pillow blocks have  $1/2^\circ$  misalignment from centerline
- This feature is built into the housing with a spherical radius at the midpoint of the block
- This self-aligning capability will allow for some shaft deflection and misalignment





# PBC Linear Ball Bearings

## PBC Linear Ball Bearing Features

- For Linear, oscillating, rotary motion, or combination of all 3
- End Seals included
- Bearing Shell Material: GCr15 Steel, heat treated
- Bearing Material: GCr15 Steel
- Bearing Retainer Material: Polyoxymethylene polymer
- Lubrication required

## Performance Ratings (for Linear Motion)

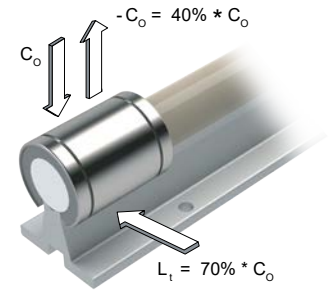
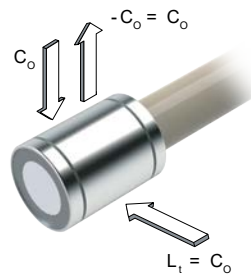
- Coefficient of friction: 0.05
- Maximum Speed ( $V_{max}$ ): 590 ft/min
- IP04G-xx thru IP16G-xx ID tolerance: 0/-0.0005"
- IP20G-xx ID tolerance: 0/-0.0006"



Closed Bearing



Open Bearing



| PBC Linear Ball Bearing  |         |            |                     |           |                |                              |                         |                     |
|--------------------------|---------|------------|---------------------|-----------|----------------|------------------------------|-------------------------|---------------------|
| Part Number              | Price   | Nominal ID | Bearing Form Factor | OD        | Overall Length | Static Load Rating ( $C_o$ ) | Dynamic Load Rating (C) | Drawing Links       |
| <a href="#">IP04G</a>    | \$15.50 | 1/4 in     | closed              | 1/2 in    | 3/4in          | 59 lbs                       | 46 lbs                  | <a href="#">PDF</a> |
| <a href="#">IP06G</a>    | \$16.50 | 3/8 in     |                     | 5/8 in    | 7/8in          | 70 lbs                       | 50 lbs                  | <a href="#">PDF</a> |
| <a href="#">IP08G</a>    | \$17.00 | 1/2 in     |                     | 7/8 in    | 1-1/4in        | 178 lbs                      | 114 lbs                 | <a href="#">PDF</a> |
| <a href="#">IP10G</a>    | \$19.00 | 5/8 in     |                     | 1 1/8 in  | 1-1/2in        | 265 lbs                      | 174 lbs                 | <a href="#">PDF</a> |
| <a href="#">IP12G</a>    | \$21.00 | 3/4 in     |                     | 1 1/4 in  | 1-5/8in        | 307 lbs                      | 193 lbs                 | <a href="#">PDF</a> |
| <a href="#">IP16G</a>    | \$38.00 | 1 in       |                     | 1 9/16 in | 2-1/4in        | 352 lbs                      | 220 lbs                 | <a href="#">PDF</a> |
| <a href="#">IP20G</a>    | \$64.00 | 1 1/4 in   |                     | 2 in      | 2-5/8in        | 615 lbs                      | 352 lbs                 | <a href="#">PDF</a> |
| <a href="#">IP08G-OP</a> | \$24.50 | 1/2 in     | open                | 7/8 in    | 1-1/4in        | 178 lbs                      | 114 lbs                 | <a href="#">PDF</a> |
| <a href="#">IP10G-OP</a> | \$25.50 | 5/8 in     |                     | 1 1/8 in  | 1-1/2in        | 265 lbs                      | 174 lbs                 | <a href="#">PDF</a> |
| <a href="#">IP12G-OP</a> | \$27.50 | 3/4 in     |                     | 1 1/4 in  | 1-5/8in        | 307 lbs                      | 193 lbs                 | <a href="#">PDF</a> |
| <a href="#">IP16G-OP</a> | \$51.00 | 1 in       |                     | 1 9/16 in | 2-1/4in        | 352 lbs                      | 220 lbs                 | <a href="#">PDF</a> |
| <a href="#">IP20G-OP</a> | \$86.00 | 1 1/4 in   |                     | 2 in      | 2-5/8in        | 615 lbs                      | 352 lbs                 | <a href="#">PDF</a> |



# PBC Linear Ball-Bearing Pillow Blocks

## PBC Linear Ball Bearing Pillow Block Features

- PBC Linear Ball Bearing Pre-installed
- Pillow Block Housing Material: Aluminum alloy with clear anodize finish
- Centerline tolerance:  $\pm 0.001"$
- Internal self-aligning feature provides  $\pm 1/2^\circ$  bearing movement in all directions allowing for some shaft deflection and misalignment
- IPP(x)04G thru IPP(x)16G ID tolerance:  $0/-0.0005"$
- IPP(x)20G ID tolerance:  $0/-0.0006"$

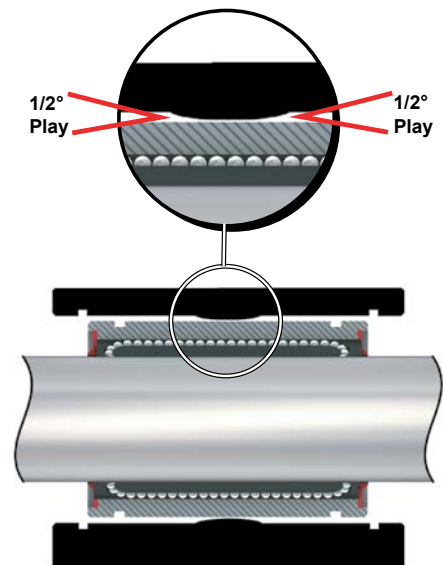


**Closed Bearing**



**Open Bearing**

| PBC Ball Bearing Pillow Block |          |            |                          |             |                              |                         |                     |
|-------------------------------|----------|------------|--------------------------|-------------|------------------------------|-------------------------|---------------------|
| Part Number                   | Price    | Nominal ID | Installed Bearing        | Form Factor | Static Load Rating ( $C_0$ ) | Dynamic Load Rating (C) | Drawing Links       |
| <a href="#">IPP04G</a>        | \$27.48  | 1/4in      | <a href="#">IP04G</a>    | closed type | 59 lbs                       | 48 lbs                  | <a href="#">PDF</a> |
| <a href="#">IPP06G</a>        | \$51.00  | 3/8in      | <a href="#">IP06G</a>    |             | 70 lbs                       | 50 lbs                  | <a href="#">PDF</a> |
| <a href="#">IPP08G</a>        | \$56.00  | 1/2in      | <a href="#">IP08G</a>    |             | 178 lbs                      | 114 lbs                 | <a href="#">PDF</a> |
| <a href="#">IPP10G</a>        | \$62.00  | 5/8in      | <a href="#">IP10G</a>    |             | 265 lbs                      | 174 lbs                 | <a href="#">PDF</a> |
| <a href="#">IPP12G</a>        | \$66.00  | 3/4in      | <a href="#">IP12G</a>    |             | 307 lbs                      | 193 lbs                 | <a href="#">PDF</a> |
| <a href="#">IPP16G</a>        | \$93.00  | 1in        | <a href="#">IP16G</a>    |             | 352 lbs                      | 220 lbs                 | <a href="#">PDF</a> |
| <a href="#">IPP20G</a>        | \$140.00 | 1-1/4in    | <a href="#">IP20G</a>    | open type   | 615 lbs                      | 352 lbs                 | <a href="#">PDF</a> |
| <a href="#">IPPN08G</a>       | \$68.00  | 1/2in      | <a href="#">IP08G-OP</a> |             | 178 lbs                      | 114 lbs                 | <a href="#">PDF</a> |
| <a href="#">IPPN10G</a>       | \$78.00  | 5/8in      | <a href="#">IP10G-OP</a> |             | 265 lbs                      | 174 lbs                 | <a href="#">PDF</a> |
| <a href="#">IPPN12G</a>       | \$85.00  | 3/4in      | <a href="#">IP12G-OP</a> |             | 307 lbs                      | 193 lbs                 | <a href="#">PDF</a> |
| <a href="#">IPPN16G</a>       | \$122.00 | 1in        | <a href="#">IP16G-OP</a> |             | 352 lbs                      | 220 lbs                 | <a href="#">PDF</a> |
| <a href="#">IPPN20G</a>       | \$183.00 | 1-1/4in    | <a href="#">IP20G-OP</a> |             | 615 lbs                      | 352 lbs                 | <a href="#">PDF</a> |



**Internal Self-aligning Feature**



# PBC Linear Shafts and Shaft Supports

## PBC Linear Simplicity® 60 Plus Linear Shaft Features

- Optimized surface finish for plain and ball bearings
- Straightness: 0.001"–0.002" per ft cumulative
- Length Tolerance:  $\pm 0.030$ "
- Surface Finish: 8-12Ra
- Hardness:
  - RC60-65 for 1060 Steel
  - RC50-55 for 440C Stainless Steel



In most applications, smoother is not better; in fact it means decreased performance and shortened life. PBC Linear has engineered the surface finish for optimum performance

| PBC Linear Shafts (1060 Carbon Steel) |         |                  |         |            |                     |
|---------------------------------------|---------|------------------|---------|------------|---------------------|
| Part Number                           | Price   | Nominal Diameter | Length  | Material   | Drawing Links       |
| <a href="#">NIL04-006.000-SL</a>      | \$4.50  | 1/4in            | 6.0 in  | 1060 steel | <a href="#">PDF</a> |
| <a href="#">NIL04-012.000-SL</a>      | \$9.00  |                  | 12.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL06-006.000-SL</a>      | \$5.00  | 3/8in            | 6.0 in  |            | <a href="#">PDF</a> |
| <a href="#">NIL06-012.000-SL</a>      | \$10.00 |                  | 12.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL06-018.000-SL</a>      | \$15.00 | 1/2in            | 18.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL08-012.000-SL</a>      | \$10.50 |                  | 12.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL08-024.000-SL</a>      | \$21.00 | 1/2in            | 24.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL08-036.000-SL</a>      | \$32.00 |                  | 36.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL10-012.000-SL</a>      | \$13.00 | 5/8in            | 12.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL10-024.000-SL</a>      | \$26.00 |                  | 24.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL10-036.000-SL</a>      | \$39.00 | 5/8in            | 36.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL12-012.000-SL</a>      | \$17.00 |                  | 12.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL12-024.000-SL</a>      | \$34.00 | 3/4in            | 24.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL12-036.000-SL</a>      | \$51.00 |                  | 36.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL16-012.000-SL</a>      | \$23.00 | 1in              | 12.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL16-024.000-SL</a>      | \$46.00 |                  | 24.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL16-036.000-SL</a>      | \$68.00 | 1in              | 36.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL20-012.000-SL</a>      | \$29.00 |                  | 12.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL20-024.000-SL</a>      | \$58.00 | 1-1/4in          | 24.0 in |            | <a href="#">PDF</a> |
| <a href="#">NIL20-036.000-SL</a>      | \$88.00 |                  | 36.0 in |            | <a href="#">PDF</a> |

| PBC Linear Shafts (440C Stainless Steel) |          |                  |         |                      |                     |
|------------------------------------------|----------|------------------|---------|----------------------|---------------------|
| Part Number                              | Price    | Nominal Diameter | Length  | Material             | Drawing Links       |
| <a href="#">NIL06SS-006.000-SL</a>       | \$13.25  | 3/8in            | 6.0 in  | 440C stainless steel | <a href="#">PDF</a> |
| <a href="#">NIL06SS-012.000-SL</a>       | \$26.50  |                  | 12.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL08SS-012.000-SL</a>       | \$25.00  | 1/2in            | 12.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL08SS-024.000-SL</a>       | \$50.00  |                  | 24.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL08SS-036.000-SL</a>       | \$97.00  | 1/2in            | 36.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL10SS-012.000-SL</a>       | \$32.00  |                  | 12.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL10SS-024.000-SL</a>       | \$64.00  | 5/8in            | 24.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL10SS-036.000-SL</a>       | \$97.00  |                  | 36.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL12SS-012.000-SL</a>       | \$35.50  | 3/4in            | 12.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL12SS-024.000-SL</a>       | \$71.00  |                  | 24.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL12SS-036.000-SL</a>       | \$140.00 | 3/4in            | 36.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL16SS-012.000-SL</a>       | \$50.00  |                  | 12.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL16SS-024.000-SL</a>       | \$100.00 | 1in              | 24.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL16SS-036.000-SL</a>       | \$150.00 |                  | 36.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL20SS-012.000-SL</a>       | \$55.00  | 1-1/4in          | 12.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL20SS-024.000-SL</a>       | \$110.00 |                  | 24.0 in |                      | <a href="#">PDF</a> |
| <a href="#">NIL20SS-036.000-SL</a>       | \$165.00 | 1-1/4in          | 36.0 in |                      | <a href="#">PDF</a> |

## PBC Linear Shaft Support Features

- End support blocks can be used for end or intermediate shaft support
- Instant bolt-down installation
- Lightweight and strong.
- Can be used with all shaft types.
- Should be used where deflection between supports is not a problem.
- Material: Aluminum with anodize finish
- Center height tolerance:  $\pm 0.001$ "



| PBC Shaft Support     |         |                  |               |                     |
|-----------------------|---------|------------------|---------------|---------------------|
| Part Number           | Price   | Nominal Diameter | Center Height | Drawing Links       |
| <a href="#">NSB04</a> | \$21.00 | 1/4 in           | 11/16 in      | <a href="#">PDF</a> |
| <a href="#">NSB06</a> | \$21.50 | 3/8 in           | 3/4 in        | <a href="#">PDF</a> |
| <a href="#">NSB08</a> | \$29.00 | 1/2 in           | 1 in          | <a href="#">PDF</a> |
| <a href="#">NSB10</a> | \$30.50 | 5/8 in           | 1 in          | <a href="#">PDF</a> |
| <a href="#">NSB12</a> | \$32.00 | 3/4 in           | 1-1/4 in      | <a href="#">PDF</a> |
| <a href="#">NSB16</a> | \$39.00 | 1 in             | 1-1/2 in      | <a href="#">PDF</a> |
| <a href="#">NSB20</a> | \$47.00 | 1-1/4 in         | 1-3/4 in      | <a href="#">PDF</a> |



# PBC Linear Supported Shafts

## PBC Linear Simplicity® 60 Plus Supported Linear Shaft Features

- Optimized surface finish for plain and ball bearings
- Straightness: 0.001"–0.002" per ft cumulative
- Length Tolerance:  $\pm 0.030$ "
- Surface Finish: 8-12Ra
- Hardness:
  - RC60-65 for 1060 Steel
  - RC50-55 for 440C Stainless Steel
- Shaft support material: Aluminum
- Centerline tolerance:  $\pm 0.002$ "



In most applications, smoother is not better; in fact it means decreased performance and shortened life. PBC Linear has engineered the surface finish for optimum performance

### PBC Supported Linear Shafts (1060 Carbon Steel)

| Part Number                      | Price    | Nominal Diameter | Length  | Material   | Drawing Links       |
|----------------------------------|----------|------------------|---------|------------|---------------------|
| <a href="#">SRA08-012.000-SL</a> | \$100.00 | 1/2in            | 12.0 in | 1060 steel | <a href="#">PDF</a> |
| <a href="#">SRA08-024.000-SL</a> | \$205.00 |                  | 24.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA08-036.000-SL</a> | \$310.00 |                  | 36.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA10-012.000-SL</a> | \$115.00 | 5/8in            | 12.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA10-024.000-SL</a> | \$221.00 |                  | 24.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA10-036.000-SL</a> | \$340.00 |                  | 36.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA12-012.000-SL</a> | \$123.00 | 3/4in            | 12.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA12-024.000-SL</a> | \$252.00 |                  | 24.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA12-036.000-SL</a> | \$360.00 |                  | 36.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA16-012.000-SL</a> | \$153.00 | 1in              | 12.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA16-024.000-SL</a> | \$305.00 |                  | 24.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA16-036.000-SL</a> | \$460.00 |                  | 36.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA20-012.000-SL</a> | \$170.00 | 1-1/4in          | 12.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA20-024.000-SL</a> | \$360.00 |                  | 24.0 in |            | <a href="#">PDF</a> |
| <a href="#">SRA20-036.000-SL</a> | \$510.00 |                  | 36.0 in |            | <a href="#">PDF</a> |

### PBC Supported Linear Shafts (440C Stainless Steel)

| Part Number                        | Price    | Nominal Diameter | Length  | Material             | Drawing Links       |
|------------------------------------|----------|------------------|---------|----------------------|---------------------|
| <a href="#">SRA08SS-012.000-SL</a> | \$155.00 | 1/2in            | 12.0 in | 440C stainless steel | <a href="#">PDF</a> |
| <a href="#">SRA08SS-024.000-SL</a> | \$310.00 |                  | 24.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA08SS-036.000-SL</a> | \$465.00 |                  | 36.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA10SS-012.000-SL</a> | \$155.00 | 5/8in            | 12.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA10SS-024.000-SL</a> | \$310.00 |                  | 24.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA10SS-036.000-SL</a> | \$465.00 |                  | 36.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA12SS-012.000-SL</a> | \$185.00 | 3/4in            | 12.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA12SS-024.000-SL</a> | \$370.00 |                  | 24.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA12SS-036.000-SL</a> | \$550.00 |                  | 36.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA16SS-012.000-SL</a> | \$220.00 | 1in              | 12.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA16SS-024.000-SL</a> | \$410.00 |                  | 24.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA16SS-036.000-SL</a> | \$650.00 |                  | 36.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA20SS-012.000-SL</a> | \$285.00 | 1-1/4in          | 12.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA20SS-024.000-SL</a> | \$570.00 |                  | 24.0 in |                      | <a href="#">PDF</a> |
| <a href="#">SRA20SS-036.000-SL</a> | \$850.00 |                  | 36.0 in |                      | <a href="#">PDF</a> |