

# Gas Products

PRODUCT CATALOG  
2016 EDITION

Meter Connections  
& Accessories



## More than 60 years of quality and service to the utility industry

Richards Manufacturing Company supplies a wide variety of products to utilities for overhead and underground transmission and distribution. In the following pages you will find a wide selection of our standard electrical products reflecting many years of engineering and manufacturing excellence. Many nonstandard and specialty products are designed, manufactured and tested to meet our customers' requirements. If you do not find the product you need in this catalog, please contact the factory. In addition to the products described in this catalog, Richards provides:

### Gas Products

Richards supplies natural gas utilities with a wide variety of meter accessories, manifold assemblies, and prefabricated meter assemblies. Please refer to our gas products catalog for more details.

### Bus Bar Fabrication

Richards Manufacturing Company maintains a large inventory of copper and aluminum bus bars. Manufacturing processes include cutting, punching, drilling, milling, bending, and welding. Complete spot network bus vaults are designed and fabricated to meet space and ampacity requirements. Hot tinning and silver plating are part of our in-house capabilities.

### Network Protectors – New And Reconditioned

Richards is the largest supplier of network protectors and related equipment in the world. We manufacture several different designs of new network protectors. We also recondition utility-owned network protectors and provide a wide variety of replacement parts for most existing designs.

### High Voltage Products

Richards manufactures a variety of molded primary distribution connectors, including disconnectable splices up to 35kV and 600 Ampere Elbows up to 35kV. Richards also manufactures specialized 600 Ampere elbow connectors including compound elbows integrating various plugs into the elbow body.

### Electronic Technology, Inc. (ETI)

ETI is a sister company to Richards with extensive engineering and manufacturing capabilities. ETI provides network protector manufacturing, reconditioning, and replacement parts. Products include microprocessor network protector relays, microprocessor capacitor bank controls and network monitoring transmitters, and receivers. Currently more than 30 major utilities are utilizing the ETI MNPR® or RCM™ to automate their underground networks.

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## METER SWIVELS

### Non-Insulated, Straight, Male Swivels



RICHARDS PART NUMBER			PILOT SIZE	THREAD SIZE	LENGTH
BLACK	GALVANIZED	ZINC ELECTROPLATED			
SS-5LT-1 1/2	SS-5LT-1 1/2-G	SS-5LT-1 1/2-Z	5LT	1/2"	2-7/32"
SS-10LT-3/4	SS-10LT-3/4-G	SS-10LT-3/4-Z	10LT	3/4"	2-15/16"
SS-1A-3/4	SS-1A-3/4-G	SS-1A-3/4-Z	1A	3/4"	2-3/8"
SS-1A-01	SS-1A-01-G	SS-1A-01-Z	1A	1"	2-13/32"
SS-20LT-3/4	SS-20LT-3/4-G	SS-20LT-3/4-Z	20LT	3/4"	2-11/32"
SS-20LT-01	SS-20LT-01-G	SS-20LT-01-Z	20LT	1"	2-25/32"
SS-30LT-01	SS-30LT-01-G	SS-30LT-01-Z	30LT	1"	2-27/32"
SS-30LT-1 1/4	SS-30LT-1 1/4-G	SS-30LT-1 1/4-Z	30LT	1-1/4"	2-7/8"
SS-45LT-1 1/4	SS-45LT-1 1/4-G	SS-45LT-1 1/4-Z	45LT	1-1/4"	3-3/4"
SS-45LT-1 1/2	SS-45LT-1 1/2-G	SS-45LT-1 1/2-Z	45LT	1-1/2"	2-15/16"
SS-60LT-1 1/2	SS-60LT-1 1/2-G	SS-60LT-1 1/2-Z	60LT	1-1/2"	3-1/32"
SS-3&4-1 1/2	SS-3&4-1 1/2-G	SS-3&4-1 1/2-Z	SP 3 & 4	1-1/2"	3-1/16"
SS-100LT-2	SS-100LT-2-G	SS-100LT-2-Z	100LT	2"	3-13/16"

### Insulated, Straight Male Swivels



RICHARDS PART NUMBER			PILOT SIZE	THREAD SIZE	LENGTH
BLACK	GALVANIZED	ZINC ELECTROPLATED			
SS-10LT-3/4-I	SS-10LT-3/4-GI	SS-10LT-3/4-ZI	10LT	3/4"	2-5/16"
SS-1A-3/4-I	SS-1A-3/4-GI	SS-1A-3/4-ZI	1A	3/4"	2-3/8"
SS-1A-01-I	SS-1A-01-GI	SS-1A-01-ZI	1A	1"	2-13/32"
SS-20LT-3/4-I	SS-20LT-3/4-GI	SS-20LT-3/4-ZI	20LT	3/4"	2-11/32"
SS-20LT-01-I	SS-20LT-01-GI	SS-20LT-01-ZI	20LT	1"	2-25/32"
SS-20LT-01-I4	SS-20LT-01-GI4	SS-20LT-01-ZI4	20LT	1"	3-13/16"
SS-30LT-01-I	SS-30LT-01-GI	SS-30LT-01-ZI	30LT	1"	2-27/32"
SS-30LT-1 1/4-I	SS-30LT-1 1/4-GI	SS-30LT-1 1/4-ZI	30LT	1-1/4"	2-7/8"
SS-45LT-1 1/4-I	SS-45LT-1 1/4-GI	SS-45LT-1 1/4-ZI	45LT	1-1/4"	3-3/4"
SS-45LT-1 1/2-I	SS-45LT-1 1/2-GI	SS-45LT-1 1/2-ZI	45LT	1-1/2"	2-15/16"
SS-3&4-1 1/2-I	SS-3&4-1 1/2-GI	SS-3&4-1 1/2-ZI	SP 3 & 4	1-1/2"	3-1/16"
SS-100LT-2-I	SS-100LT-2-GI	SS-100LT-2-ZI	100LT	2"	3-13/16"

Richards Swivels are also available with PRESSURE TAPS. Please specify the size and location of the tap, and the type of plug when ordering.

## METER SWIVELS

### Non-Insulated, Straight, Female Swivels



RICHARDS PART NUMBER			PILOT SIZE	THREAD SIZE	OFFSET
BLACK	GALVANIZED	ZINC ELECTROPLATED			
FS-1A-3/4	FS-1A-3/4-G	FS-1A-3/4-Z	1A	3/4"	—
FS-20LT-3/4	FS-20LT-3/4-G	FS-20LT-3/4-Z	20LT	3/4"	—
FS-45LT-1 1/4	FS-45LT-1 1/4-G	FS-45LT-1 1/4-Z	45LT	1-1/4"	—

### Insulated, Straight, Female Swivels



RICHARDS PART NUMBER			PILOT SIZE	THREAD SIZE	OFFSET
BLACK	GALVANIZED	ZINC ELECTROPLATED			
FS-1A-3/4-I	FS-1A-3/4-GI	FS-1A-3/4-ZI	1A	3/4"	—
FS-20LT-3/4-I	FS-20LT-3/4-GI	FS-20LT-3/4-ZI	20LT	3/4"	—
FS-45LT-1 1/4-I	FS-45LT-1 1/4-GI	FS-45LT-1 1/4-ZI	45LT	1-1/4"	—

### Non-Insulated, Swivel Elbows



RICHARDS PART NUMBER			PILOT SIZE	THREAD SIZE	OFFSET
BLACK	GALVANIZED	ZINC ELECTROPLATED			
OS-90-3/4-20LT	OS-90-3/4-20LT-G	OS-90-3/4-20LT-Z	20LT	3/4"	—
OS-90-1-20LT	OS-90-1-20LT-G	OS-90-1-20LT-Z	20LT	1"	—
MEL-1 1/4-30LT	MEL-1 1/4-30LT-G	MEL-1 1/4-30LT-Z	30LT	1-1/4"	—

### Insulated, Swivel Elbows



RICHARDS PART NUMBER			PILOT SIZE	THREAD SIZE	OFFSET
BLACK	GALVANIZED	ZINC ELECTROPLATED			
OS-90-1-20LT-I	OS-90-1-20LT-GI	OS-90-1-20LT-ZI	20LT	1"	—

# METER SWIVELS



## Non-Insulated, Offset Male Swivels

RICHARDS PART NUMBER			PILOT SIZE	THREAD SIZE	OFFSET
BLACK	GALVANIZED	ZINC ELECTROPLATED			
OS-1/2-1 1/4-5LT	OS-1/2-1 1/4-5LT-G	OS-1/2-1 1/4-5LT-Z	5LT	1/2"	1-1/4"
OS-1/2-3-10LT	OS-1/2-3-10LT-G	OS-1/2-3-10LT-Z	10LT	1/2"	3"
OS-1/2-1 3/4-10LT	OS-1/2-1 3/4-10LT-G	OS-1/2-1 3/4-10LT-Z	10LT	1/2"	1-3/4"
OS-3/4-3/8-10LT	OS-3/4-3/8-10LT-G	OS-3/4-3/8-10LT-Z	10LT	3/4"	3/8"
OS-3/4-1-10LT	OS-3/4-1-10LT-G	OS-3/4-1-10LT-Z	10LT	3/4"	1"
OS-3/4-1 1/4-10LT	OS-3/4-1 1/4-10LT-G	OS-3/4-1 1/4-10LT-Z	10LT	3/4"	1-1/4"
OS-3/4-1 3/4-10LT	OS-3/4-1 3/4-10LT-G	OS-3/4-1 3/4-10LT-Z	10LT	3/4"	1-3/4"
OS-3/4-4-10LT	OS-3/4-4-10LT-G	OS-3/4-4-10LT-Z	10LT	3/4"	3-15/16"
OS-1/2-3-1A	OS-1/2-3-1A-G	OS-1/2-3-1A-Z	1A	1/2"	2-3/4"
OS-3/4-1-1A	OS-3/4-1-1A-G	OS-3/4-1-1A-Z	1A	3/4"	1"
OS-3/4-3-1A	OS-3/4-3-1A-G	OS-3/4-3-1A-Z	1A	3/4"	3"
OS-1-1-1A	OS-1-1-1A-G	OS-1-1-1A-Z	1A	1"	1"
OS-1/2-3-20LT	OS-1/2-3-20LT-G	OS-1/2-3-20LT-Z	20LT	1/2"	2-7/8"
OS-3/4-1 5/8-20LT	OS-3/4-1 5/8-20LT-G	OS-3/4-1 5/8-20LT-Z	20LT	3/4"	1-5/8"
OS-3/4-3-20LT	OS-3/4-3-20LT-G	OS-3/4-3-20LT-Z	20LT	3/4"	3"
OS-1-1-20LT	OS-1-1-20LT-G	OS-1-1-20LT-Z	20LT	1"	1"
OS-1-1 1/2-20LT	OS-1-1 1/2-20LT-G	OS-1-1 1/2-20LT-Z	20LT	1"	1-1/2"
OS-3/4-3-30LT	OS-3/4-3-30LT-G	OS-3/4-3-30LT-Z	30LT	3/4"	3"
OS-1-1-30LT	OS-1-1-30LT-G	OS-1-1-30LT-Z	30LT	1"	1"
OS-1-1 1/4-30LT	OS-1-1 1/4-30LT-G	OS-1-1 1/4-30LT-Z	30LT	1"	1-1/4"
OS-1-4 3/8-30LT	OS-1-4 3/8-30LT-G	OS-1-4 3/8-30LT-Z	30LT	1"	4-3/8"
OS-1 1/4-1-30LT	OS-1 1/4-1-30LT-G	OS-1 1/4-1-30LT-Z	30LT	1-1/4"	1"
OS-1 1/4-1 5/8-45LT	OS-1 1/4-1 5/8-45LT-G	OS-1 1/4-1 5/8-45LT-Z	45LT	1-1/4"	1-5/8"
OS-1 1/4-2-45LT	OS-1 1/4-2-45LT-G	OS-1 1/4-2-45LT-Z	45LT	1-1/4"	2"
OS-1 1/4-2 3/4-45LT	OS-1 1/4-2 3/4-45LT-G	OS-1 1/4-2 3/4-45LT-Z	45LT	1-1/4"	2-3/4"
OS-1 1/2-1-45LT	OS-1 1/2-1-45LT-G	OS-1 1/2-1-45LT-Z	45LT	1-1/2"	1"
OS-1 1/2-2-45LT	OS-1 1/2-2-45LT-G	OS-1 1/2-2-45LT-Z	45LT	1-1/2"	2"
OS-1 1/2-1-60LT	OS-1 1/2-1-60LT-G	OS-1 1/2-1-60LT-Z	60LT	1-1/2"	1"
OS-1 1/2-41/2-60LT	OS-1 1/2-41/2-60LT-G	OS-1 1/2-41/2-60LT-Z	60LT	1-1/2"	4-1/2"
OS-1 1/2-1-3&4	OS-1 1/2-1-3&4-G	OS-1 1/2-1-3&4-Z	3&4	1-1/2"	1"
OS-2-1-100LT	OS-2-1-100LT-G	OS-2-1-100LT-Z	100LT	2"	1"

# METER SWIVELS

## Insulated, Offset Male Swivels



RICHARDS PART NUMBER			PILOT SIZE	THREAD SIZE	OFFSET
BLACK	GALVANIZED	ZINC ELECTROPLATED			
OS-1-1-20LT-I	OS-1-1-20LT-GI	OS-1-1-20LT-ZI	20LT	1"	1"
OS-1-1-30LT-I	OS-1-1-30LT-GI	OS-1-1-30LT-ZI	30LT	1"	1"
OS-1 1/4-1-30LT-I	OS-1 1/4-1-30LT-GI	OS-1 1/4-1-30LT-ZI	30LT	1-1/4"	1"
OS-1 1/4-2-45LT-I	OS-1 1/4-2-45LT-GI	OS-1 1/4-2-45LT-ZI	45LT	1-1/4"	2"
OS-1 1/2-1-45LT-I	OS-1 1/2-1-45LT-GI	OS-1 1/2-1-45LT-ZI	45LT	1-1/2"	1"
OS-1 1/2-2-45LT-I	OS-1 1/2-2-45LT-GI	OS-1 1/2-2-45LT-ZI	45LT	1-1/2"	2"

## METER ACCESSORIES

### Meter Connection Nuts



RICHARDS PART NUMBER			PILOT SIZE
BLACK	GALVANIZED	ZINC ELECTROPLATED	
N5LT	N5LT-G	N5LT-Z	5LT
N10LT	N10LT-G	N10LT-Z	10LT
N1A	N1A-G	N1A-Z	1A
NEMCO	NEMCO-G	NEMCO-Z	0 EMCO
N20LT	N20LT-G	N20LT-Z	20LT
N30LT	N30LT-G	N30LT-Z	30LT
N45LT	N45LT-G	N45LT-Z	45LT
N60LT	N60LT-G	N60LT-Z	60LT
N3&4	N3&4-G	N3&4-Z	SP 3&4
N100LT	N100LT-G	N100LT-Z	100LT

### Meter Nut Plugs



RICHARDS PART NUMBER				PILOT SIZE
PLASTIC	BLACK	GALVANIZED	ZINC ELECTROPLATED	
PP-5LT	P5LT	P5LT-G	P5LT-Z	5LT
PP-10LT	P10LT	P10LT-G	P10LT-Z	10LT
PP-1A	P1A	P1A-G	P1A-Z	1A
PP-20LT	P20LT	P20LT-G	P20LT-Z	20LT
PP-30LT	P30LT	P30LT-G	P30LT-Z	30LT
PP-45LT	P45LT	P45LT-G	P45LT-Z	45LT



## METER ACCESSORIES

### Meter Connection Adaptors

Meter connection adaptors allow you to change the size of your meter connection without changing swivels. For instance, you can turn an existing 10LT connection into a 20LT connection, or you can use one of our adaptors to attach a new connection swivel to an existing one. Special needs can be accommodated as well — call us with your particular request..

- Use existing connections
- No need to repipe existing meter installations
- Upsize or downsize meters with minimal effort



### Meter Connection Blinds

RICHARDS PART NUMBER		PILOT SIZE
B5LT		5LT
B10LT		10LT
B1A		1A
B1A		0 EMCO
B20LT		20LT
B30LT		30LT
B45LT		45LT
B3&4		SPRAGUE 3&4
B100LT		100LT
B5A		SPRAGUE #5



### Meter Connection Washers

RICHARDS PART NUMBER		DIMENSIONS ID X OD	PILOT SIZE
0.100" THICK	1/8" THICK		
W5LT		3/4" X 1"	5LT
W10LT		31/32" X 1-5/16"	10LT
W1A	W1A - 1/8	31/32" X 1-3/8"	1A
W1A	W1A - 1/8	31/32" X 1-3/8"	0 EMCO
W20LT	W20LT -1/8	1-9/32" X 1-21/32"	20LT
W30LT	W30LT - 1/8	1-15/32" X 1-7/8"	30LT
W45LT	W45LT - 1/8	1-21/32" X 2-7/32"	45LT
W3&4		1-15/32" X 2-1/8"	SPRAGUE 3&4
W100LT		2-3/16" X 2-13/16"	100LT
W5A		2-7/32" X 3-3/16"	SPRAGUE 5A



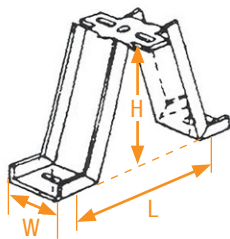
**Meter Support Brackets**

- Keep your meter installations looking good and performing properly
- Prevent problems due to ground settlement
- Support meters and associated piping
- Prevent possible leaks and costly call backs

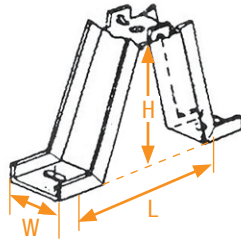


RICHARDS PART NUMBER			STYLE	DESCRIPTION	H	L	W
BLACK	GALVANIZED	ZINC ELECTROPLATED					
BR-F	BR-F-G	BR-F-Z	A	FLAT TABS, RISER OR BAR MOUNT	5-3/4"	7-1/2"	2-1/4"
BR-U	BR-U-G	BR-U-Z	B	TABS UP, BAR MOUNT	5-3/4"	7-1/2"	2-1/4"
BR-A	BR-A-G	BR-A-Z	C	ADJUSTABLE	7-1/2" - 14"	9" - 14"	2-1/4"

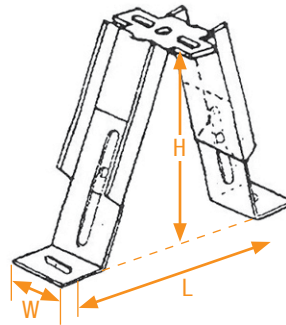
Meter brackets can be packaged with a "U" bolt for mounting on service risers and with hardware for meter bar attachment. Brackets can also be provided with various hardware for wall mounting. Please specify hardware required when ordering.



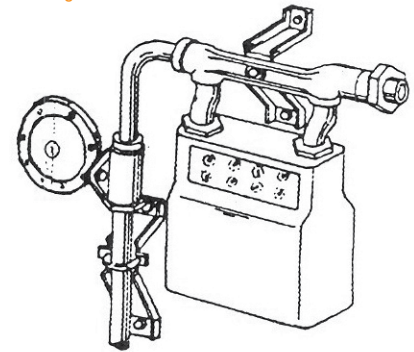
STYLE A



STYLE B



STYLE C - Adjustable



**Dust Caps**

RICHARDS PART NUMBER	PILOT SIZE
DC-1	1"
DC-5LT	5LT
DC-1A	10LT
DC-10LT	1A
DC-EMCO	0 EMCO
DC-20LT	20LT
DC-30LT	30LT
DC-45LT	45LT
DC-100LT	100LT
DC-3&4	3&4
DC-5A	5A



Gas Relief Vents

- Keeps water, insects and debris out of your relief piping
- Non corrosive aluminum
- 16" x 16", 0.018 gauge screen
- Made for use on all relief piping
- Screen designed to blow out in relief if the screen has become blocked



RICHARDS PART NUMBER		PIPE SIZE
GV-3/4		3/4"
GV-1		1"
GV-1 1/4		1-1/4"
GV-1 1/2		1-1/2"
GV-2		2"

O-Ring Insulating Unions

- Insulating unions protect against stray or induced currents to prevent galvanic and electrolytic corrosion
- 150-175 lb working pressure
- Confined O-Ring seal make Richards unions reusable — only light torque creates a gas-tight seal
- Integral insulation makes this union easy to install, no loose parts to align or lose
- Malleable iron nut and body
- Nylon insulation provides dielectric strength beyond the toughest requirements
- Available in black or galvanized



RICHARDS PART NUMBER		PIPE SIZE
BLACK	GALVANIZED	
IU-1/2	IU-1/2-G	1/2"
IU-3/4	IU-3/4-G	3/4"
IU-1	IU-1-G	1"
IU-3/4X1	IU-3/4X1-G	3/4" X 1"
IU-1 1/4	IU-1 1/4-G	1-1/4"
IU-2	IU-2-G	2"

# METER BARS

MBSS

- Side Inlet
- Side Outlet
- Insulated Union Outlet
- Flat Gasket on Union Outlet



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBSS6-1-1-1-FI	MBSS6-1-1-1-FI-G	MBSS6-1-1-1-FI-Z	1"	1"	1"	6"
MBSS6-1-3/4-1-FI	MBSS6-1-3/4-1-FI-G	MBSS6-1-3/4-1-FI-Z	1"	3/4"	1"	6"
MBSS6-1-1-3/4-FI	MBSS6-1-1-3/4-FI-G	MBSS6-1-1-3/4-FI-Z	1"	1"	3/4"	6"
MBSS6-1-3/4-3/4-FI	MBSS6-1-3/4-3/4-FI-G	MBSS6-1-3/4-3/4-FI-Z	1"	3/4"	3/4"	6"
MBSS6-3/4-1-1-FI	MBSS6-3/4-1-1-FI-G	MBSS6-3/4-1-1-FI-Z	3/4"	1"	1"	6"
MBSS6-3/4-3/4-1-FI	MBSS6-3/4-3/4-1-FI-G	MBSS6-3/4-3/4-1-FI-Z	3/4"	3/4"	1"	6"
MBSS6-3/4-1-3/4-FI	MBSS6-3/4-1-3/4-FI-G	MBSS6-3/4-1-3/4-FI-Z	3/4"	1"	3/4"	6"
MBSS6-3/4-3/4-3/4-FI	MBSS6-3/4-3/4-3/4-FI-G	MBSS6-3/4-3/4-3/4-FI-Z	3/4"	3/4"	3/4"	6"
MBSS-1-1-1-FI	MBSS-1-1-1-FI-G	MBSS-1-1-1-FI-Z	1"	1"	1"	6-1/2"
MBSS-1-3/4-1-FI	MBSS-1-3/4-1-FI-G	MBSS-1-3/4-1-FI-Z	1"	3/4"	1"	6-1/2"
MBSS-1-1-3/4-FI	MBSS-1-1-3/4-FI-G	MBSS-1-1-3/4-FI-Z	1"	1"	3/4"	6-1/2"
MBSS-1-3/4-3/4-FI	MBSS-1-3/4-3/4-FI-G	MBSS-1-3/4-3/4-FI-Z	1"	3/4"	3/4"	6-1/2"
MBSS-3/4-1-1-FI	MBSS-3/4-1-1-FI-G	MBSS-3/4-1-1-FI-Z	3/4"	1"	1"	6-1/2"
MBSS-3/4-3/4-1-FI	MBSS-3/4-3/4-1-FI-G	MBSS-3/4-3/4-1-FI-Z	3/4"	3/4"	1"	6-1/2"
MBSS-3/4-1-3/4-FI	MBSS-3/4-1-3/4-FI-G	MBSS-3/4-1-3/4-FI-Z	3/4"	1"	3/4"	6-1/2"
MBSS-3/4-3/4-3/4-FI	MBSS-3/4-3/4-3/4-FI-G	MBSS-3/4-3/4-3/4-FI-Z	3/4"	3/4"	3/4"	6-1/2"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.

# METER BARS

MBSS

- Side Inlet
- Side Outlet
- Insulated Union Outlet
- O-Ring Gasket on Union Outlet



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBSS6-1-1-1-OI	MBSS6-1-1-1-OI-G	MBSS6-1-1-1-OI-Z	1"	1"	1"	6"
MBSS6-1-3/4-1-OI	MBSS6-1-3/4-1-OI-G	MBSS6-1-3/4-1-OI-Z	1"	3/4"	1"	6"
MBSS6-1-1-3/4-OI	MBSS6-1-1-3/4-OI-G	MBSS6-1-1-3/4-OI-Z	1"	1"	3/4"	6"
MBSS6-1-3/4-3/4-OI	MBSS6-1-3/4-3/4-OI-G	MBSS6-1-3/4-3/4-OI-Z	1"	3/4"	3/4"	6"
MBSS6-3/4-1-1-OI	MBSS6-3/4-1-1-OI-G	MBSS6-3/4-1-1-OI-Z	3/4"	1"	1"	6"
MBSS6-3/4-3/4-1-OI	MBSS6-3/4-3/4-1-OI-G	MBSS6-3/4-3/4-1-OI-Z	3/4"	3/4"	1"	6"
MBSS6-3/4-1-3/4-OI	MBSS6-3/4-1-3/4-OI-G	MBSS6-3/4-1-3/4-OI-Z	3/4"	1"	3/4"	6"
MBSS6-3/4-3/4-3/4-OI	MBSS6-3/4-3/4-3/4-OI-G	MBSS6-3/4-3/4-3/4-OI-Z	3/4"	3/4"	3/4"	6"
MBSS-1-1-1-OI	MBSS-1-1-1-OI-G	MBSS-1-1-1-OI-Z	1"	1"	1"	6-1/2"
MBSS-1-3/4-1-OI	MBSS-1-3/4-1-OI-G	MBSS-1-3/4-1-OI-Z	1"	3/4"	1"	6-1/2"
MBSS-1-1-3/4-OI	MBSS-1-1-3/4-OI-G	MBSS-1-1-3/4-OI-Z	1"	1"	3/4"	6-1/2"
MBSS-1-3/4-3/4-OI	MBSS-1-3/4-3/4-OI-G	MBSS-1-3/4-3/4-OI-Z	1"	3/4"	3/4"	6-1/2"
MBSS-3/4-1-1-OI	MBSS-3/4-1-1-OI-G	MBSS-3/4-1-1-OI-Z	3/4"	1"	1"	6-1/2"
MBSS-3/4-3/4-1-OI	MBSS-3/4-3/4-1-OI-G	MBSS-3/4-3/4-1-OI-Z	3/4"	3/4"	1"	6-1/2"
MBSS-3/4-1-3/4-OI	MBSS-3/4-1-3/4-OI-G	MBSS-3/4-1-3/4-OI-Z	3/4"	1"	3/4"	6-1/2"
MBSS-3/4-3/4-3/4-OI	MBSS-3/4-3/4-3/4-OI-G	MBSS-3/4-3/4-3/4-OI-Z	3/4"	3/4"	3/4"	6-1/2"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.

# METER BARS

MBSS

- Side Inlet
- Side Outlet
- Standard Union Outlet
- Flat Gasket on Union Outlet



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBSS6-1-1-1-F	MBSS6-1-1-1-F-G	MBSS6-1-1-1-F-Z	1"	1"	1"	6"
MBSS6-1-3/4-1-F	MBSS6-1-3/4-1-F-G	MBSS6-1-3/4-1-F-Z	1"	3/4"	1"	6"
MBSS6-1-1-3/4-F	MBSS6-1-1-3/4-F-G	MBSS6-1-1-3/4-F-Z	1"	1"	3/4"	6"
MBSS6-1-3/4-3/4-F	MBSS6-1-3/4-3/4-F-G	MBSS6-1-3/4-3/4-F-Z	1"	3/4"	3/4"	6"
MBSS6-3/4-1-1-F	MBSS6-3/4-1-1-F-G	MBSS6-3/4-1-1-F-Z	3/4"	1"	1"	6"
MBSS6-3/4-3/4-1-F	MBSS6-3/4-3/4-1-F-G	MBSS6-3/4-3/4-1-F-Z	3/4"	3/4"	1"	6"
MBSS6-3/4-1-3/4-F	MBSS6-3/4-1-3/4-F-G	MBSS6-3/4-1-3/4-F-Z	3/4"	1"	3/4"	6"
MBSS6-3/4-3/4-3/4-F	MBSS6-3/4-3/4-3/4-F-G	MBSS6-3/4-3/4-3/4-F-Z	3/4"	3/4"	3/4"	6"
MBSS-1-1-1-F	MBSS-1-1-1-F-G	MBSS-1-1-1-F-Z	1"	1"	1"	6-1/2"
MBSS-1-3/4-1-F	MBSS-1-3/4-1-F-G	MBSS-1-3/4-1-F-Z	1"	3/4"	1"	6-1/2"
MBSS-1-1-3/4-F	MBSS-1-1-3/4-F-G	MBSS-1-1-3/4-F-Z	1"	1"	3/4"	6-1/2"
MBSS-1-3/4-3/4-F	MBSS-1-3/4-3/4-F-G	MBSS-1-3/4-3/4-F-Z	1"	3/4"	3/4"	6-1/2"
MBSS-3/4-1-1-F	MBSS-3/4-1-1-F-G	MBSS-3/4-1-1-F-Z	3/4"	1"	1"	6-1/2"
MBSS-3/4-3/4-1-F	MBSS-3/4-3/4-1-F-G	MBSS-3/4-3/4-1-F-Z	3/4"	3/4"	1"	6-1/2"
MBSS-3/4-1-3/4-F	MBSS-3/4-1-3/4-F-G	MBSS-3/4-1-3/4-F-Z	3/4"	1"	3/4"	6-1/2"
MBSS-3/4-3/4-3/4-F	MBSS-3/4-3/4-3/4-F-G	MBSS-3/4-3/4-3/4-F-Z	3/4"	3/4"	3/4"	6-1/2"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.



# METER BARS

MBSS

- Side Inlet
- Side Outlet
- Standard Union Outlet
- O-Ring Gasket on Union Outlet



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBSS6-1-3/4-1-0	MBSS6-1-3/4-1-0-G	MBSS6-1-3/4-1-0-Z	1"	3/4"	1"	6"
MBSS6-1-1-3/4-0	MBSS6-1-1-3/4-0-G	MBSS6-1-1-3/4-0-Z	1"	1"	3/4"	6"
MBSS6-1-3/4-3/4-0	MBSS6-1-3/4-3/4-0-G	MBSS6-1-3/4-3/4-0-Z	1"	3/4"	3/4"	6"
MBSS6-3/4-1-1-0	MBSS6-3/4-1-1-0-G	MBSS6-3/4-1-1-0-Z	3/4"	1"	1"	6"
MBSS6-3/4-3/4-1-0	MBSS6-3/4-3/4-1-0-G	MBSS6-3/4-3/4-1-0-Z	3/4"	3/4"	1"	6"
MBSS6-3/4-1-3/4-0	MBSS6-3/4-1-3/4-0-G	MBSS6-3/4-1-3/4-0-Z	3/4"	1"	3/4"	6"
MBSS6-3/4-3/4-3/4-0	MBSS6-3/4-3/4-3/4-0-G	MBSS6-3/4-3/4-3/4-0-Z	3/4"	3/4"	3/4"	6"
MBSS-1-1-1-0	MBSS-1-1-1-0-G	MBSS-1-1-1-0-Z	1"	1"	1"	6-1/2"
MBSS-1-3/4-1-0	MBSS-1-3/4-1-0-G	MBSS-1-3/4-1-0-Z	1"	3/4"	1"	6-1/2"
MBSS-1-1-3/4-0	MBSS-1-1-3/4-0-G	MBSS-1-1-3/4-0-Z	1"	1"	3/4"	6-1/2"
MBSS-1-3/4-3/4-0	MBSS-1-3/4-3/4-0-G	MBSS-1-3/4-3/4-0-Z	1"	3/4"	3/4"	6-1/2"
MBSS-3/4-1-1-0	MBSS-3/4-1-1-0-G	MBSS-3/4-1-1-0-Z	3/4"	1"	1"	6-1/2"
MBSS-3/4-3/4-1-0	MBSS-3/4-3/4-1-0-G	MBSS-3/4-3/4-1-0-Z	3/4"	3/4"	1"	6-1/2"
MBSS-3/4-1-3/4-0	MBSS-3/4-1-3/4-0-G	MBSS-3/4-1-3/4-0-Z	3/4"	1"	3/4"	6-1/2"
MBSS-3/4-3/4-3/4-0	MBSS-3/4-3/4-3/4-0-G	MBSS-3/4-3/4-3/4-0-Z	3/4"	3/4"	3/4"	6-1/2"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.

# METER BARS

MBST

- Side Inlet
- Top Outlet
- Insulated Union Outlet
- Flat Gasket on Union Outlet



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBST6-1-1-1-FI	MBST6-1-1-1-FI-G	MBST6-1-1-1-FI-Z	1"	1"	1"	6"
MBST6-1-3/4-1-FI	MBST6-1-3/4-1-FI-G	MBST6-1-3/4-1-FI-Z	1"	3/4"	1"	6"
MBST6-1-1-3/4-FI	MBST6-1-1-3/4-FI-G	MBST6-1-1-3/4-FI-Z	1"	1"	3/4"	6"
MBST6-1-3/4-3/4-FI	MBST6-1-3/4-3/4-FI-G	MBST6-1-3/4-3/4-FI-Z	1"	3/4"	3/4"	6"
MBST6-3/4-1-1-FI	MBST6-3/4-1-1-FI-G	MBST6-3/4-1-1-FI-Z	3/4"	1"	1"	6"
MBST6-3/4-3/4-1-FI	MBST6-3/4-3/4-1-FI-G	MBST6-3/4-3/4-1-FI-Z	3/4"	3/4"	1"	6"
MBST6-3/4-1-3/4-FI	MBST6-3/4-1-3/4-FI-G	MBST6-3/4-1-3/4-FI-Z	3/4"	1"	3/4"	6"
MBST6-3/4-3/4-3/4-FI	MBST6-3/4-3/4-3/4-FI-G	MBST6-3/4-3/4-3/4-FI-Z	3/4"	3/4"	3/4"	6"
MBST-1-1-1-FI	MBST-1-1-1-FI-G	MBST-1-1-1-FI-Z	1"	1"	1"	6-1/2"
MBST-1-3/4-1-FI	MBST-1-3/4-1-FI-G	MBST-1-3/4-1-FI-Z	1"	3/4"	1"	6-1/2"
MBST-1-1-3/4-FI	MBST-1-1-3/4-FI-G	MBST-1-1-3/4-FI-Z	1"	1"	3/4"	6-1/2"
MBST-1-3/4-3/4-FI	MBST-1-3/4-3/4-FI-G	MBST-1-3/4-3/4-FI-Z	1"	3/4"	3/4"	6-1/2"
MBST-3/4-1-1-FI	MBST-3/4-1-1-FI-G	MBST-3/4-1-1-FI-Z	3/4"	1"	1"	6-1/2"
MBST-3/4-3/4-1-FI	MBST-3/4-3/4-1-FI-G	MBST-3/4-3/4-1-FI-Z	3/4"	3/4"	1"	6-1/2"
MBST-3/4-1-3/4-FI	MBST-3/4-1-3/4-FI-G	MBST-3/4-1-3/4-FI-Z	3/4"	1"	3/4"	6-1/2"
MBST-3/4-3/4-3/4-FI	MBST-3/4-3/4-3/4-FI-G	MBST-3/4-3/4-3/4-FI-Z	3/4"	3/4"	3/4"	6-1/2"
MBST7-1 1/4-FI	MBST7-1 1/4-FI-G	MBST7-1 1/4-FI-Z	1-1/4"	1-1/4"	1-1/4"	7"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.

# METER BARS

MBST

- Side Inlet
- Top Outlet
- Insulated Union Outlet
- O-Ring Gasket on Union Outlet



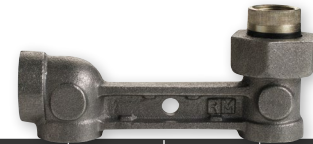
RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBST6-1-1-1-0I	MBST6-1-1-1-0I-G	MBST6-1-1-1-0I-Z	1"	1"	1"	6"
MBST6-1-3/4-1-0I	MBST6-1-3/4-1-0I-G	MBST6-1-3/4-1-0I-Z	1"	3/4"	1"	6"
MBST6-1-1-3/4-0I	MBST6-1-1-3/4-0I-G	MBST6-1-1-3/4-0I-Z	1"	1"	3/4"	6"
MBST6-1-3/4-3/4-0I	MBST6-1-3/4-3/4-0I-G	MBST6-1-3/4-3/4-0I-Z	1"	3/4"	3/4"	6"
MBST6-3/4-1-1-0I	MBST6-3/4-1-1-0I-G	MBST6-3/4-1-1-0I-Z	3/4"	1"	1"	6"
MBST6-3/4-3/4-1-0I	MBST6-3/4-3/4-1-0I-G	MBST6-3/4-3/4-1-0I-Z	3/4"	3/4"	1"	6"
MBST6-3/4-1-3/4-0I	MBST6-3/4-1-3/4-0I-G	MBST6-3/4-1-3/4-0I-Z	3/4"	1"	3/4"	6"
MBST6-3/4-3/4-3/4-0I	MBST6-3/4-3/4-3/4-0I-G	MBST6-3/4-3/4-3/4-0I-Z	3/4"	3/4"	3/4"	6"
MBST-1-1-1-0I	MBST-1-1-1-0I-G	MBST-1-1-1-0I-Z	1"	1"	1"	6-1/2"
MBST-1-3/4-1-0I	MBST-1-3/4-1-0I-G	MBST-1-3/4-1-0I-Z	1"	3/4"	1"	6-1/2"
MBST-1-1-3/4-0I	MBST-1-1-3/4-0I-G	MBST-1-1-3/4-0I-Z	1"	1"	3/4"	6-1/2"
MBST-1-3/4-3/4-0I	MBST-1-3/4-3/4-0I-G	MBST-1-3/4-3/4-0I-Z	1"	3/4"	3/4"	6-1/2"
MBST-3/4-1-1-0I	MBST-3/4-1-1-0I-G	MBST-3/4-1-1-0I-Z	3/4"	1"	1"	6-1/2"
MBST-3/4-3/4-1-0I	MBST-3/4-3/4-1-0I-G	MBST-3/4-3/4-1-0I-Z	3/4"	3/4"	1"	6-1/2"
MBST-3/4-1-3/4-0I	MBST-3/4-1-3/4-0I-G	MBST-3/4-1-3/4-0I-Z	3/4"	1"	3/4"	6-1/2"
MBST-3/4-3/4-3/4-0I	MBST-3/4-3/4-3/4-0I-G	MBST-3/4-3/4-3/4-0I-Z	3/4"	3/4"	3/4"	6-1/2"
MBST7-1 1/4-0I	MBST7-1 1/4-0I-G	MBST7-1 1/4-0I-Z	1-1/4"	1-1/4"	1-1/4"	7"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.

# METER BARS

MBST

- Side Inlet
- Top Outlet
- Standard Union Outlet
- Flat Gasket on Union Outlet



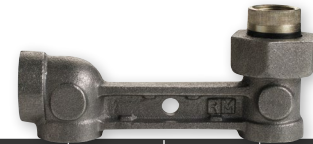
RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBST6-1-1-1-F	MBST6-1-1-1-F-G	MBST6-1-1-1-F-Z	1"	1"	1"	6"
MBST6-1-3/4-1-F	MBST6-1-3/4-1-F-G	MBST6-1-3/4-1-F-Z	1"	3/4"	1"	6"
MBST6-1-1-3/4-F	MBST6-1-1-3/4-F-G	MBST6-1-1-3/4-F-Z	1"	1"	3/4"	6"
MBST6-1-3/4-3/4-F	MBST6-1-3/4-3/4-F-G	MBST6-1-3/4-3/4-F-Z	1"	3/4"	3/4"	6"
MBST6-3/4-1-1-F	MBST6-3/4-1-1-F-G	MBST6-3/4-1-1-F-Z	3/4"	1"	1"	6"
MBST6-3/4-3/4-1-F	MBST6-3/4-3/4-1-F-G	MBST6-3/4-3/4-1-F-Z	3/4"	3/4"	1"	6"
MBST6-3/4-1-3/4-F	MBST6-3/4-1-3/4-F-G	MBST6-3/4-1-3/4-F-Z	3/4"	1"	3/4"	6"
MBST6-3/4-3/4-3/4-F	MBST6-3/4-3/4-3/4-F-G	MBST6-3/4-3/4-3/4-F-Z	3/4"	3/4"	3/4"	6"
MBST-1-1-1-F	MBST-1-1-1-F-G	MBST-1-1-1-F-Z	1"	1"	1"	6-1/2"
MBST-1-3/4-1-F	MBST-1-3/4-1-F-G	MBST-1-3/4-1-F-Z	1"	3/4"	1"	6-1/2"
MBST-1-1-3/4-F	MBST-1-1-3/4-F-G	MBST-1-1-3/4-F-Z	1"	1"	3/4"	6-1/2"
MBST-1-3/4-3/4-F	MBST-1-3/4-3/4-F-G	MBST-1-3/4-3/4-F-Z	1"	3/4"	3/4"	6-1/2"
MBST-3/4-1-1-F	MBST-3/4-1-1-F-G	MBST-3/4-1-1-F-Z	3/4"	1"	1"	6-1/2"
MBST-3/4-3/4-1-F	MBST-3/4-3/4-1-F-G	MBST-3/4-3/4-1-F-Z	3/4"	3/4"	1"	6-1/2"
MBST-3/4-1-3/4-F	MBST-3/4-1-3/4-F-G	MBST-3/4-1-3/4-F-Z	3/4"	1"	3/4"	6-1/2"
MBST-3/4-3/4-3/4-F	MBST-3/4-3/4-3/4-F-G	MBST-3/4-3/4-3/4-F-Z	3/4"	3/4"	3/4"	6-1/2"
MBST7-1 1/4-F	MBST7-1 1/4-F-G	MBST7-1 1/4-F-Z	1-1/4"	1-1/4"	1-1/4"	7"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.

# METER BARS

MBST

- Side Inlet
- Top Outlet
- Standard Union Outlet
- O-Ring Gasket on Union Outlet



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBST6-1-1-1-O	MBST6-1-1-1-0-G	MBST6-1-1-1-0-Z	1"	1"	1"	6"
MBST6-1-3/4-1-O	MBST6-1-3/4-1-0-G	MBST6-1-3/4-1-0-Z	1"	3/4"	1"	6"
MBST6-1-1-3/4-O	MBST6-1-1-3/4-0-G	MBST6-1-1-3/4-0-Z	1"	1"	3/4"	6"
MBST6-1-3/4-3/4-O	MBST6-1-3/4-3/4-0-G	MBST6-1-3/4-3/4-0-Z	1"	3/4"	3/4"	6"
MBST6-3/4-1-1-O	MBST6-3/4-1-1-0-G	MBST6-3/4-1-1-0-Z	3/4"	1"	1"	6"
MBST6-3/4-3/4-1-O	MBST6-3/4-3/4-1-0-G	MBST6-3/4-3/4-1-0-Z	3/4"	3/4"	1"	6"
MBST6-3/4-1-3/4-O	MBST6-3/4-1-3/4-0-G	MBST6-3/4-1-3/4-0-Z	3/4"	1"	3/4"	6"
MBST6-3/4-3/4-3/4-O	MBST6-3/4-3/4-3/4-0-G	MBST6-3/4-3/4-3/4-0-Z	3/4"	3/4"	3/4"	6"
MBST-1-1-1-O	MBST-1-1-1-0-G	MBST-1-1-1-0-Z	1"	1"	1"	6-1/2"
MBST-1-3/4-1-O	MBST-1-3/4-1-0-G	MBST-1-3/4-1-0-Z	1"	3/4"	1"	6-1/2"
MBST-1-1-3/4-O	MBST-1-1-3/4-0-G	MBST-1-1-3/4-0-Z	1"	1"	3/4"	6-1/2"
MBST-1-3/4-3/4-O	MBST-1-3/4-3/4-0-G	MBST-1-3/4-3/4-0-Z	1"	3/4"	3/4"	6-1/2"
MBST-3/4-1-1-O	MBST-3/4-1-1-0-G	MBST-3/4-1-1-0-Z	3/4"	1"	1"	6-1/2"
MBST-3/4-3/4-1-O	MBST-3/4-3/4-1-0-G	MBST-3/4-3/4-1-0-Z	3/4"	3/4"	1"	6-1/2"
MBST-3/4-1-3/4-O	MBST-3/4-1-3/4-0-G	MBST-3/4-1-3/4-0-Z	3/4"	1"	3/4"	6-1/2"
MBST-3/4-3/4-3/4-O	MBST-3/4-3/4-3/4-0-G	MBST-3/4-3/4-3/4-0-Z	3/4"	3/4"	3/4"	6-1/2"
MBST7-1 1/4-O	MBST7-1 1/4-0-G	MBST7-1 1/4-0-Z	1-1/4"	1-1/4"	1-1/4"	7"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.

# METER BARS

# MBSSL

- Side Inlet
- Sleeved Outlet



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBSSL6-1-1-1	MBSSL6-1-1-1-G	MBSSL6-1-1-1-Z	1"	1"	1"	6"
MBSSL6-1-3/4-1	MBSSL6-1-3/4-1-G	MBSSL6-1-3/4-1-Z	1"	3/4"	1"	6"
MBSSL6-1-1-3/4	MBSSL6-1-1-3/4-G	MBSSL6-1-1-3/4-Z	1"	1"	3/4"	6"
MBSSL6-1-3/4-3/4	MBSSL6-1-3/4-3/4-G	MBSSL6-1-3/4-3/4-Z	1"	3/4"	3/4"	6"
MBSSL6-3/4-1-1	MBSSL6-3/4-1-1-G	MBSSL6-3/4-1-1-Z	3/4"	1"	1"	6"
MBSSL6-3/4-3/4-1	MBSSL6-3/4-3/4-1-G	MBSSL6-3/4-3/4-1-Z	3/4"	3/4"	1"	6"
MBSSL6-3/4-1-3/4	MBSSL6-3/4-1-3/4-G	MBSSL6-3/4-1-3/4-Z	3/4"	1"	3/4"	6"
MBSSL6-3/4-3/4-3/4	MBSSL6-3/4-3/4-3/4-G	MBSSL6-3/4-3/4-3/4-Z	3/4"	3/4"	3/4"	6"
MBSSL-1-1-1	MBSSL-1-1-1-G	MBSSL-1-1-1-Z	1"	1"	1"	6-1/2"
MBSSL-1-3/4-1	MBSSL-1-3/4-1-G	MBSSL-1-3/4-1-Z	1"	3/4"	1"	6-1/2"
MBSSL-1-1-3/4	MBSSL-1-1-3/4-G	MBSSL-1-1-3/4-Z	1"	1"	3/4"	6-1/2"
MBSSL-1-3/4-3/4	MBSSL-1-3/4-3/4-G	MBSSL-1-3/4-3/4-Z	1"	3/4"	3/4"	6-1/2"
MBSSL-3/4-1-1	MBSSL-3/4-1-1-G	MBSSL-3/4-1-1-Z	3/4"	1"	1"	6-1/2"
MBSSL-3/4-3/4-1	MBSSL-3/4-3/4-1-G	MBSSL-3/4-3/4-1-Z	3/4"	3/4"	1"	6-1/2"
MBSSL-3/4-1-3/4	MBSSL-3/4-1-3/4-G	MBSSL-3/4-1-3/4-Z	3/4"	1"	3/4"	6-1/2"
MBSSL-3/4-3/4-3/4	MBSSL-3/4-3/4-3/4-G	MBSSL-3/4-3/4-3/4-Z	3/4"	3/4"	3/4"	6-1/2"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.



# METER BARS

MBSD

- Side Inlet
- Side Outlet
- Direct Thread Outlet



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBSD6-1-1-1	MBSD6-1-1-1-G	MBSD6-1-1-1-Z	1"	1"	1"	6"
MBSD6-1-1/2-1	MBSD6-1-1/2-1-G	MBSD6-1-1/2-1-Z	1-1/2"	1-1/2"	1-1/2"	6"
MBSD6-1-3/4-1	MBSD6-1-3/4-1-G	MBSD6-1-3/4-1-Z	1"	3/4"	1"	6"
MBSD6-1-1-3/4	MBSD6-1-1-3/4-G	MBSD6-1-1-3/4-Z	1"	1"	3/4"	6"
MBSD6-1-3/4-3/4	MBSD6-1-3/4-3/4-G	MBSD6-1-3/4-3/4-Z	1"	3/4"	3/4"	6"
MBSD6-3/4-1-1	MBSD6-3/4-1-1-G	MBSD6-3/4-1-1-Z	3/4"	1"	1"	6"
MBSD6-3/4-3/4-1	MBSD6-3/4-3/4-1-G	MBSD6-3/4-3/4-1-Z	3/4"	3/4"	1"	6"
MBSD6-3/4-1-3/4	MBSD6-3/4-1-3/4-G	MBSD6-3/4-1-3/4-Z	3/4"	1"	3/4"	6"
MBSD6-3/4-3/4-3/4	MBSD6-3/4-3/4-3/4-G	MBSD6-3/4-3/4-3/4-Z	3/4"	3/4"	3/4"	6"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.

## Meter Bars

- Side Inlet
- Top Outlet



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBSD6-1-1/2	MBSD6-1-1/2-G	MBSD6-1-1/2-Z	1-1/2"	1-1/2"	1-1/2"	6"

- Rear Center Inlet
- Side Outlet



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
MBLG-1-1-1	MBLG-1-1-1-G	MBLG-1-1-1-Z	1"	1"	1"	6"
MBLG-1-3/4-1	MBLG-1-3/4-1-G	MBLG-1-3/4-1-Z	1"	3/4"	1"	6"
MBLG-1-1-3/4	MBLG-1-1-3/4-G	MBLG-1-1-3/4-Z	1"	1"	3/4"	6"
MBLG-1-3/4-3/4	MBLG-1-3/4-3/4-G	MBLG-1-3/4-3/4-Z	1"	3/4"	3/4"	6"
MBLG-3/4-1-1	MBLG-3/4-1-1-G	MBLG-3/4-1-1-Z	3/4"	1"	1"	6"
MBLG-3/4-3/4-1	MBLG-3/4-3/4-1-G	MBLG-3/4-3/4-1-Z	3/4"	3/4"	1"	6"
MBLG-3/4-1-3/4	MBLG-3/4-1-3/4-G	MBLG-3/4-1-3/4-Z	3/4"	1"	3/4"	6"
MBLG-3/4-3/4-3/4	MBLG-3/4-3/4-3/4-G	MBLG-3/4-3/4-3/4-Z	3/4"	3/4"	3/4"	6"
MBLG7-1 1/4	MBLG7-1 1/4-G	MBLG7-1 1/4-Z	1-1/4"	1-1/4"	1-1/4"	7"

Meter Bars

- Center Rear Inlet with Integral Valve for Manifold Use
- Top O-Ring Insulated Union Outlet



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
CMBV-20LT	CMBV-20LT-G	CMBV-20LT-Z	1"	1"	20LT	6"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.

# METER BARS

CMB

- Side Inlet
- Side Outlet
- Integral Swivels
- Insulated O-Ring Union



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
CMB-1-1-20LT-I	CMB-1-1-20LT-GI	CMB-1-1-20LT-ZI	1"	1"	20LT	6"
CMB-1-3/4-20LT-I	CMB-1-3/4-20LT-GI	CMB-1-3/4-20LT-ZI	1"	3/4"	20LT	6"
CMB-3/4-1-20LT-I	CMB-3/4-1-20LT-GI	CMB-3/4-1-20LT-ZI	3/4"	1"	20LT	6"
CMB-3/4-3/4-20LT-I	CMB-3/4-3/4-20LT-GI	CMB-3/4-3/4-20LT-ZI	3/4"	3/4"	20LT	6"
CMB-1-1-1A-I	CMB-1-1-1A-GI	CMB-1-1-1A-ZI	1"	1"	1A	6"
CMB-1-3/4-1A-I	CMB-1-3/4-1A-GI	CMB-1-3/4-1A-ZI	1"	3/4"	1A	6"
CMB-3/4-1-1A-I	CMB-3/4-1-1A-GI	CMB-3/4-1-1A-ZI	3/4"	1"	1A	6"
CMB-3/4-3/4-1A-I	CMB-3/4-3/4-1A-GI	CMB-3/4-3/4-1A-ZI	3/4"	3/4"	1A	6"
CMB-1-1-0EMCO-I	CMB-1-1-0EMCO-GI	CMB-1-1-0EMCO-ZI	1"	1"	0EMCO	6"
CMB-1-3/4-0EMCO-I	CMB-1-3/4-0EMCO-GI	CMB-1-3/4-0EMCO-ZI	1"	3/4"	0EMCO	6"
CMB-3/4-1-0EMCO-I	CMB-3/4-1-0EMCO-GI	CMB-3/4-1-0EMCO-ZI	3/4"	1"	0EMCO	6"
CMB-3/4-0EMCO-I	CMB-3/4-0EMCO-GI	CMB-3/4-0EMCO-ZI	3/4"	3/4"	0EMCO	6"
CMB8-1 1/4-30LT-I	CMB8-1 1/4-30LT-GI	CMB8-1 1/4-30LT-ZI	1-1/4"	1-1/4"	30LT	8-1/4"

Richards Meter Bars are also available with PRESSURE TAPS. Please specify the size, location and type of plug when ordering.

# METER BARS

CMB

- Side Inlet
- Side Outlet
- Integral Swivels
- Standard O-Ring Union

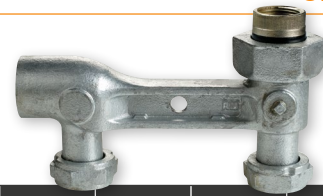


RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
CMB-1-1-20LT	CMB-1-1-20LT-G	CMB-1-1-20LT-Z	1"	1"	20LT	6"
CMB-1-3/4-20LT	CMB-1-3/4-20LT-G	CMB-1-3/4-20LT-Z	1"	3/4"	20LT	6"
CMB-3/4-1-20LT	CMB-3/4-1-20LT-G	CMB-3/4-1-20LT-Z	3/4"	1"	20LT	6"
CMB-3/4-3/4-20LT	CMB-3/4-3/4-20LT-G	CMB-3/4-3/4-20LT-Z	3/4"	3/4"	20LT	6"
CMB-1-1-1A	CMB-1-1-1A-G	CMB-1-1-1A-Z	1"	1"	1A	6"
CMB-1-3/4-1A	CMB-1-3/4-1A-G	CMB-1-3/4-1A-Z	1"	3/4"	1A	6"
CMB-3/4-1-1A	CMB-3/4-1-1A-G	CMB-3/4-1-1A-Z	3/4"	1"	1A	6"
CMB-3/4-3/4-1A	CMB-3/4-3/4-1A-G	CMB-3/4-3/4-1A-Z	3/4"	3/4"	1A	6"
CMB-1-1-0EMCO	CMB-1-1-0EMCO-G	CMB-1-1-0EMCO-Z	1"	1"	0EMCO	6"
CMB-1-3/4-0EMCO	CMB-1-3/4-0EMCO-G	CMB-1-3/4-0EMCO-Z	1"	3/4"	0EMCO	6"
CMB-3/4-1-0EMCO	CMB-3/4-1-0EMCO-G	CMB-3/4-1-0EMCO-Z	3/4"	1"	0EMCO	6"
CMB-3/4-0EMCO	CMB-3/4-0EMCO-G	CMB-3/4-0EMCO-Z	3/4"	3/4"	0EMCO	6"
CMB8-1 1/4-30LT	CMB8-1 1/4-30LT-G	CMB8-1 1/4-30LT-Z	1-1/4"	1-1/4"	30LT	8-1/4"

# METER BARS

CMBT

- Side Inlet
- Top Outlet
- Integral Swivels
- Insulated O-Ring Union

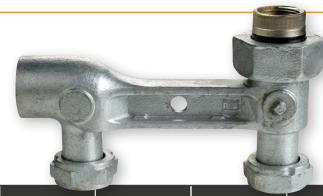


RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
CMBT-1-1-20LT-I	CMBT-1-1-20LT-GI	CMBT-1-1-20LT-ZI	1"	1"	20LT	6"
CMBT-1-3/4-20LT-I	CMBT-1-3/4-20LT-GI	CMBT-1-3/4-20LT-ZI	1"	3/4"	20LT	6"
CMBT-3/4-1-20LT-I	CMBT-3/4-1-20LT-GI	CMBT-3/4-1-20LT-ZI	3/4"	1"	20LT	6"
CMBT-3/4-3/4-20LT-I	CMBT-3/4-3/4-20LT-GI	CMBT-3/4-3/4-20LT-ZI	3/4"	3/4"	20LT	6"
CMBT-1-1-1A-I	CMBT-1-1-1A-GI	CMBT-1-1-1A-ZI	1"	1"	1A	6"
CMBT-1-3/4-1A-I	CMBT-1-3/4-1A-GI	CMBT-1-3/4-1A-ZI	1"	3/4"	1A	6"
CMBT-3/4-1-1A-I	CMBT-3/4-1-1A-GI	CMBT-3/4-1-1A-ZI	3/4"	1"	1A	6"
CMBT-3/4-3/4-1A-I	CMBT-3/4-3/4-1A-GI	CMBT-3/4-3/4-1A-ZI	3/4"	3/4"	1A	6"
CMBT-1-1-0EMCO-I	CMBT-1-1-0EMCO-GI	CMBT-1-1-0EMCO-ZI	1"	1"	0EMCO	6"
CMBT-1-3/4-0EMCO-I	CMBT-1-3/4-0EMCO-GI	CMBT-1-3/4-0EMCO-ZI	1"	3/4"	0EMCO	6"
CMBT-3/4-1-0EMCO-I	CMBT-3/4-1-0EMCO-GI	CMBT-3/4-1-0EMCO-ZI	3/4"	1"	0EMCO	6"
CMBT-3/4-0EMCO-I	CMBT-3/4-0EMCO-GI	CMBT-3/4-0EMCO-ZI	3/4"	3/4"	0EMCO	6"

# METER BARS

CMBT

- Side Inlet
- Top Outlet
- Integral Swivels
- Standard O-Ring Union



RICHARDS PART NUMBER			INLET SIZE	OUTLET SIZE	SWIVEL TAP SIZE	SWIVEL TAP C TO C
BLACK	GALVANIZED	ZINC ELECTROPLATED				
CMBT-1-1-20LT	CMBT-1-1-20LT-G	CMBT-1-1-20LT-Z	1"	1"	20LT	6"
CMBT-1-3/4-20LT	CMBT-1-3/4-20LT-G	CMBT-1-3/4-20LT-Z	1"	3/4"	20LT	6"
CMBT-3/4-1-20LT	CMBT-3/4-1-20LT-G	CMBT-3/4-1-20LT-Z	3/4"	1"	20LT	6"
CMBT-3/4-3/4-20LT	CMBT-3/4-3/4-20LT-G	CMBT-3/4-3/4-20LT-Z	3/4"	3/4"	20LT	6"
CMBT-1-1-1A	CMBT-1-1-1A-G	CMBT-1-1-1A-Z	1"	1"	1A	6"
CMBT-1-3/4-1A	CMBT-1-3/4-1A-G	CMBT-1-3/4-1A-Z	1"	3/4"	1A	6"
CMBT-3/4-1-1A	CMBT-3/4-1-1A-G	CMBT-3/4-1-1A-Z	3/4"	1"	1A	6"
CMBT-3/4-3/4-1A	CMBT-3/4-3/4-1A-G	CMBT-3/4-3/4-1A-Z	3/4"	3/4"	1A	6"
CMBT-1-1-0EMCO	CMBT-1-1-0EMCO-G	CMBT-1-1-0EMCO-Z	1"	1"	0EMCO	6"
CMBT-1-3/4-0EMCO	CMBT-1-3/4-0EMCO-G	CMBT-1-3/4-0EMCO-Z	1"	3/4"	0EMCO	6"
CMBT-3/4-1-0EMCO	CMBT-3/4-1-0EMCO-G	CMBT-3/4-1-0EMCO-Z	3/4"	1"	0EMCO	6"
CMBT-3/4-0EMCO	CMBT-3/4-0EMCO-G	CMBT-3/4-0EMCO-Z	3/4"	3/4"	0EMCO	6"

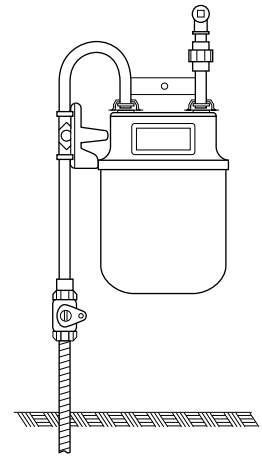




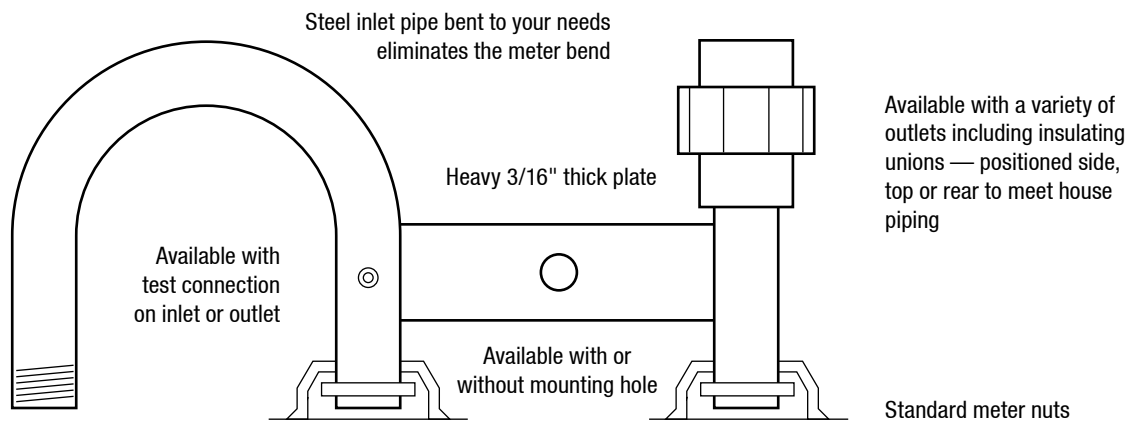
## CUSTOM INSTALLATION OPTIONS

## Direct Pipe Meter Set Assemblies

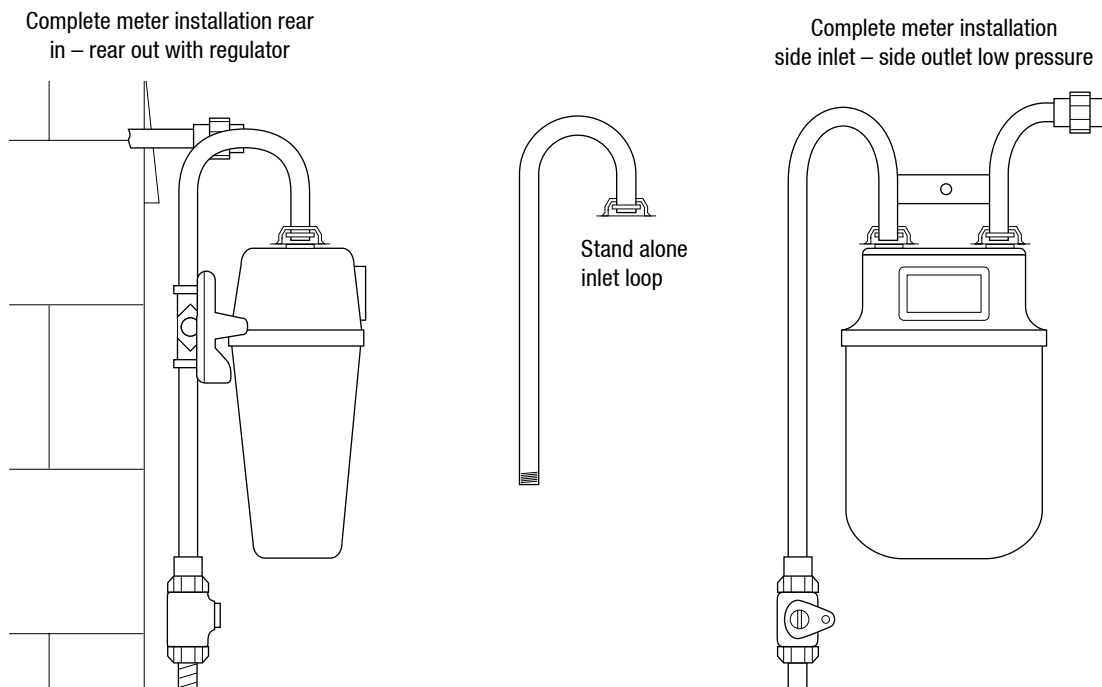
- Eliminates virtually all of the threaded connections associated with a standard meter bend, meter bar, and swivel installation
- Provides a strong, lightweight, all-steel, meter hook up
- Versatile — virtually any inlet/outlet configuration can be accommodated
- Unrestricted flow to the meter
- Cost effective
- Factory coated



Examples of Richards Direct Pipe installations that utilize 90-degree or 180-degree bends or loops ...



Standard 10LT, 1A, 20LT, or 30LT connections

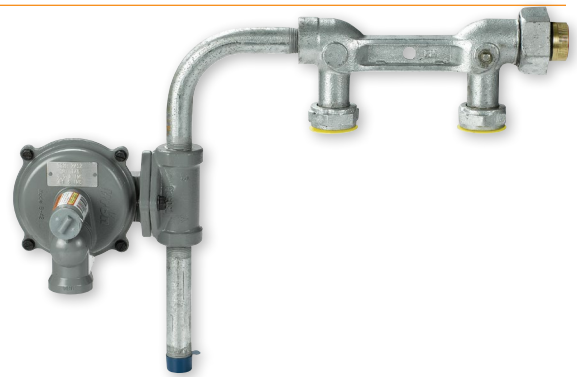


## CUSTOM INSTALLATION OPTIONS

- Pressure Tested
- Economical
- Attractive
- Factory Painted

Examples of some of the prefabricated meter set assembly configurations that Richards can build for you using approved components ...

## Meter Sets And Meter Manifolds



Richards Meter Sets and Meter Manifolds make meter installation easy, fast, uniform, and error free. The photos below show several popular designs for prefabricated meter sets and manifolds. Richards will build meter sets and manifolds to your company's specifications using approved components.



# ORDERING GUIDE

# Meter Manifold Ordering Guide

Please use this form as a guide to help you when ordering. (Complete all that apply)

1. Header Pipe Size:

- 1"     1-1/4"     1-1/2"     2"

2. Number of meter connection: \_\_\_\_\_

3. Pipe size of the meter connections:

- 3/4"     1"     1-1/4"

4. Number of inches separating the meter connections: \_\_\_\_\_

5. Number of inches from the manifold inlet to the center of the first connection: \_\_\_\_\_

6. Number of inches from the center of the last meter connection to the end of the manifold: \_\_\_\_\_

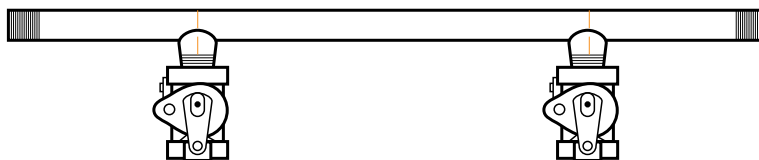
7. The meter connections should be:

- Straight     Bent

8. Dimension of the meter connection take off pipe: \_\_\_\_\_

9. Do you require a valve on the meter take off?

- Yes     No    If yes, what valve model? \_\_\_\_\_



# ORDERING GUIDE

# Meter Bend Ordering Guide

Please use this form as a guide to help you when ordering. (Complete all that apply)

1. Type of Bend:

- 90°       180°

2. Pipe Size:

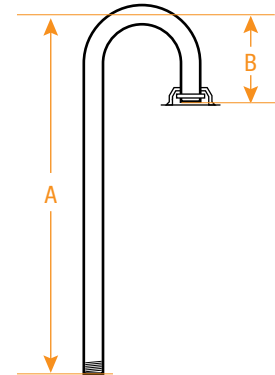
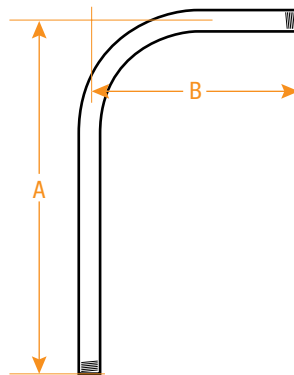
- 3/4"       1"       1-1/4"

3. Inlet Side:

- Threaded       Plain

4. Outlet Side:

- Threaded       Swivel Connection



5. Connection Size:

- 10LT       1A       EMCO       20LT       30LT

6. Radius (for 90° bends) in inches: \_\_\_\_\_

7. Center to Center (for 180° loops) in inches: \_\_\_\_\_

8. Inlet Dimension (A): \_\_\_\_\_

9. Outlet Dimension (B): \_\_\_\_\_

10. Finish:

- Black       Galvanized       Zinc Plated       Painted (Color: \_\_\_\_\_ )

Please use this form as a guide to help you when ordering. (Complete all that apply) For examples please see page GP25.

1. Size of meter connection:

10LT     1A     EMCO     20LT     30LT     45LT

2. Size pipe:

3/4"     1"     1-1/4"     1-1/2"

3. Degree of bend on the inlet:

90°     180°

4. Number of inches on the inlet side to the center of the bend: \_\_\_\_\_

5. Center to Center on the meter hub:

6"     6-1/2"

6. Direction of the outlet:

Top Outlet     90° Side Outlet     90° Back Outlet

7. Do you want an insulated union on the outlet?

Yes     No

8. Do you want a pressure tap?

Yes     No    If yes, what size?     1/8"     1/4"

9. Location of your pressure tap: \_\_\_\_\_

10. Do you want your prefab painted?

Yes     No    If yes, what color? \_\_\_\_\_

11. Do you want a regulator on your prefab?

Yes     No    If yes, which regulator do you want? \_\_\_\_\_

12. Do you want a valve?

Yes     No    If yes, which valve? \_\_\_\_\_

13. Nipple length (if needed): \_\_\_\_\_



## ORDERING GUIDE

## Meter Bar Ordering Guide

Please use this form as a guide to help you when ordering. (Complete all that apply)

1. Inlet Location:

- Side     Top     Rear

2. Inlet Thread:

- 3/4"     1"     1-1/4"

3. Outlet Location:

- Side     Top     Rear

4. Outlet Style:

- Insulated Union     Threaded

5. Outlet Size:

- 3/4"     1"     1-1/4"

6. Swivel Connections:

- 3/4"     1"     1-1/4"

7. Swivel Connections Integral:

- 10LT     1A     EMCO     20LT     30LT

8. Swivels Center To Center:

- 6"     6-1/2"     7"     8-1/4"

9. Finish:

- Black     Galvanized     Zinc Plated     Painted (Color: \_\_\_\_\_)

10. Pressure Tap: Size \_\_\_\_\_

11. Pressure Tap: Type Plug \_\_\_\_\_

12. Pressure Tap: Location \_\_\_\_\_



# INDEX

# Alphabetical Listing by Richards Part Number

B1A.....	GP7	CMB-3/4-1-1A-Z.....	GP22	CMBT-3/4-1-OEMCO-GI.....	GP23	IU-2-G.....	GP9
B3&4.....	GP7	CMB-3/4-1-1A-ZI.....	GP21	CMBT-3/4-1-OEMCO-I.....	GP23	IU-3/4.....	GP9
B5A.....	GP7	CMB-3/4-1-20LT.....	GP22	CMBT-3/4-1-OEMCO-Z.....	GP24	IU-3/4-G.....	GP9
B5LT.....	GP7	CMB-3/4-1-20LT-G.....	GP22	CMBT-3/4-1-OEMCO-ZI.....	GP23	IU-3/4X1.....	GP9
B10LT.....	GP7	CMB-3/4-1-20LT-GI.....	GP21	CMBT-3/4-1-1A.....	GP24	IU-3/4X1-G.....	GP9
B20LT.....	GP7	CMB-3/4-1-20LT-I.....	GP21	CMBT-3/4-1-1A-G.....	GP24	MBLG-1-1-1.....	GP20
B30LT.....	GP7	CMB-3/4-1-20LT-Z.....	GP22	CMBT-3/4-1-1A-GI.....	GP23	MBLG-1-1-1-G.....	GP20
B45LT.....	GP7	CMB-3/4-1-20LT-ZI.....	GP21	CMBT-3/4-1-1A-I.....	GP23	MBLG-1-1-1-Z.....	GP20
B100LT.....	GP7	CMB-3/4-3/4-1A.....	GP22	CMBT-3/4-1-1A-Z.....	GP24	MBLG-1-1-3/4.....	GP20
BR-A.....	GP8	CMB-3/4-3/4-1A-G.....	GP22	CMBT-3/4-1-1A-ZI.....	GP23	MBLG-1-1-3/4-G.....	GP20
BR-A-G.....	GP8	CMB-3/4-3/4-1A-GI.....	GP21	CMBT-3/4-1-20LT.....	GP24	MBLG-1-1-3/4-Z.....	GP20
BR-A-Z.....	GP8	CMB-3/4-3/4-1A-I.....	GP21	CMBT-3/4-1-20LT-G.....	GP24	MBLG-1-3/4-1.....	GP20
BR-F.....	GP8	CMB-3/4-3/4-1A-Z.....	GP22	CMBT-3/4-1-20LT-GI.....	GP23	MBLG-1-3/4-1-G.....	GP20
BR-F-G.....	GP8	CMB-3/4-3/4-1A-ZI.....	GP21	CMBT-3/4-1-20LT-I.....	GP23	MBLG-1-3/4-1-Z.....	GP20
BR-F-Z.....	GP8	CMB-3/4-3/4-20LT.....	GP22	CMBT-3/4-1-20LT-Z.....	GP24	MBLG-1-3/4-3/4.....	GP20
BR-U.....	GP8	CMB-3/4-3/4-20LT-G.....	GP22	CMBT-3/4-1-20LT-ZI.....	GP23	MBLG-1-3/4-3/4-G.....	GP20
BR-U-G.....	GP8	CMB-3/4-3/4-20LT-GI.....	GP21	CMBT-3/4-3/4-1A.....	GP24	MBLG-1-3/4-3/4-Z.....	GP20
BR-U-Z.....	GP8	CMB-3/4-3/4-20LT-I.....	GP21	CMBT-3/4-3/4-1A-G.....	GP24	MBLG-3/4-1-1.....	GP20
CMB-1-1-OEMCO.....	GP22	CMB-3/4-3/4-20LT-Z.....	GP22	CMBT-3/4-3/4-1A-GI.....	GP23	MBLG-3/4-1-1-G.....	GP20
CMB-1-1-OEMCO-G.....	GP22	CMB-3/4-3/4-20LT-ZI.....	GP21	CMBT-3/4-3/4-1A-I.....	GP23	MBLG-3/4-1-1-Z.....	GP20
CMB-1-1-OEMCO-GI.....	GP21	CMB8-1 1/4-30LT.....	GP22	CMBT-3/4-3/4-1A-Z.....	GP24	MBLG-3/4-1-3/4.....	GP20
CMB-1-1-OEMCO-I.....	GP21	CMB8-1 1/4-30LT-G.....	GP22	CMBT-3/4-3/4-1A-ZI.....	GP23	MBLG-3/4-1-3/4-G.....	GP20
CMB-1-1-OEMCO-Z.....	GP22	CMB8-1 1/4-30LT-GI.....	GP21	CMBT-3/4-3/4-20LT.....	GP24	MBLG-3/4-1-3/4-Z.....	GP20
CMB-1-1-OEMCO-ZI.....	GP21	CMB8-1 1/4-30LT-I.....	GP21	CMBT-3/4-3/4-20LT-G.....	GP24	MBLG-3/4-3/4-1.....	GP20
CMB-1-1-1A.....	GP22	CMB8-1 1/4-30LT-Z.....	GP22	CMBT-3/4-3/4-20LT-GI.....	GP23	MBLG-3/4-3/4-1-G.....	GP20
CMB-1-1-1A-G.....	GP22	CMB8-1 1/4-30LT-ZI.....	GP21	CMBT-3/4-3/4-20LT-I.....	GP23	MBLG-3/4-3/4-1-Z.....	GP20
CMB-1-1-1A-GI.....	GP21	CMBT-1-1-OEMCO.....	GP24	CMBT-3/4-3/4-20LT-Z.....	GP24	MBLG-3/4-3/4-3/4.....	GP20
CMB-1-1-1A-I.....	GP21	CMBT-1-1-OEMCO-G.....	GP24	CMBT-3/4-3/4-20LT-ZI.....	GP23	MBLG-3/4-3/4-3/4-G.....	GP20
CMB-1-1-1A-Z.....	GP22	CMBT-1-1-OEMCO-GI.....	GP23	CMBV-20LT.....	GP20	MBLG-3/4-3/4-3/4-Z.....	GP20
CMB-1-1-1A-ZI.....	GP21	CMBT-1-1-OEMCO-I.....	GP23	CMBV-20LT-G.....	GP20	MBLG7-1 1/4.....	GP20
CMB-1-1-20LT.....	GP22	CMBT-1-1-OEMCO-Z.....	GP24	CMBV-20LT-Z.....	GP20	MBLG7-1 1/4-G.....	GP20
CMB-1-1-20LT-G.....	GP22	CMBT-1-1-OEMCO-ZI.....	GP23	DC-1.....	GP8	MBLG7-1 1/4-Z.....	GP20
CMB-1-1-20LT-GI.....	GP21	CMBT-1-1-1A.....	GP24	DC-1A.....	GP8	MBSD6-1-1-1.....	GP19
CMB-1-1-20LT-I.....	GP21	CMBT-1-1-1A-G.....	GP24	DC-3&4.....	GP8	MBSD6-1-1-1-G.....	GP19
CMB-1-1-20LT-Z.....	GP22	CMBT-1-1-1A-GI.....	GP23	DC-5A.....	GP8	MBSD6-1-1-1-Z.....	GP19
CMB-1-1-20LT-ZI.....	GP21	CMBT-1-1-1A-I.....	GP23	DC-5LT.....	GP8	MBSD6-1-1/2.....	GP19
CMB-1-3/4-OEMCO.....	GP22	CMBT-1-1-1A-Z.....	GP24	DC-10LT.....	GP8	MBSD6-1-1/2-1.....	GP19
CMB-1-3/4-OEMCO-G.....	GP22	CMBT-1-1-1A-ZI.....	GP23	DC-20LT.....	GP8	MBSD6-1-1/2-1-G.....	GP19
CMB-1-3/4-OEMCO-GI.....	GP21	CMBT-1-1-20LT.....	GP24	DC-30LT.....	GP8	MBSD6-1-1/2-1-Z.....	GP19
CMB-1-3/4-OEMCO-I.....	GP21	CMBT-1-1-20LT-G.....	GP24	DC-45LT.....	GP8	MBSD6-1-1/2-G.....	GP19
CMB-1-3/4-OEMCO-Z.....	GP22	CMBT-1-1-20LT-GI.....	GP23	DC-100LT.....	GP8	MBSD6-1-1/2-Z.....	GP19
CMB-1-3/4-OEMCO-ZI.....	GP21	CMBT-1-1-20LT-I.....	GP23	DC-EMCO.....	GP8	MBSD6-1-1-3/4.....	GP19
CMB-1-3/4-1A.....	GP22	CMBT-1-1-20LT-Z.....	GP24	FS-1A-3/4.....	GP3	MBSD6-1-1-3/4-G.....	GP19
CMB-1-3/4-1A-G.....	GP22	CMBT-1-1-20LT-ZI.....	GP23	FS-1A-3/4-G.....	GP3	MBSD6-1-1-3/4-Z.....	GP19
CMB-1-3/4-1A-GI.....	GP21	CMBT-1-3/4-OEMCO.....	GP24	FS-1A-3/4-GI.....	GP3	MBSD6-1-3/4-1.....	GP19
CMB-1-3/4-1A-I.....	GP21	CMBT-1-3/4-OEMCO-G.....	GP24	FS-1A-3/4-I.....	GP3	MBSD6-1-3/4-1-G.....	GP19
CMB-1-3/4-1A-Z.....	GP22	CMBT-1-3/4-OEMCO-GI.....	GP23	FS-1A-3/4-Z.....	GP3	MBSD6-1-3/4-1-Z.....	GP19
CMB-1-3/4-1A-ZI.....	GP21	CMBT-1-3/4-OEMCO-I.....	GP23	FS-1A-3/4-ZI.....	GP3	MBSD6-1-3/4-3/4.....	GP19
CMB-1-3/4-20LT.....	GP22	CMBT-1-3/4-OEMCO-Z.....	GP24	FS-20LT-3/4.....	GP3	MBSD6-1-3/4-3/4-G.....	GP19
CMB-1-3/4-20LT-G.....	GP22	CMBT-1-3/4-OEMCO-ZI.....	GP23	FS-20LT-3/4-G.....	GP3	MBSD6-1-3/4-3/4-Z.....	GP19
CMB-1-3/4-20LT-GI.....	GP21	CMBT-1-3/4-1A.....	GP24	FS-20LT-3/4-GI.....	GP3	MBSD6-3/4-1-1.....	GP19
CMB-1-3/4-20LT-I.....	GP21	CMBT-1-3/4-1A-G.....	GP24	FS-20LT-3/4-I.....	GP3	MBSD6-3/4-1-1-G.....	GP19
CMB-1-3/4-20LT-Z.....	GP22	CMBT-1-3/4-1A-GI.....	GP23	FS-20LT-3/4-Z.....	GP3	MBSD6-3/4-1-1-Z.....	GP19
CMB-1-3/4-20LT-ZI.....	GP21	CMBT-1-3/4-1A-I.....	GP23	FS-20LT-3/4-ZI.....	GP3	MBSD6-3/4-1-3/4.....	GP19
CMB-3/4-OEMCO.....	GP22	CMBT-1-3/4-1A-Z.....	GP24	FS-45LT-1 1/4.....	GP3	MBSD6-3/4-1-3/4-G.....	GP19
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CMB-3/4-OEMCO-GI.....	GP21	CMBT-1-3/4-20LT.....	GP24	FS-45LT-1 1/4-I.....	GP3	MBSD6-3/4-3/4-1.....	GP19
CMB-3/4-OEMCO-I.....	GP21	CMBT-1-3/4-20LT-G.....	GP24	FS-45LT-1 1/4-Z.....	GP3	MBSD6-3/4-3/4-1-G.....	GP19
CMB-3/4-OEMCO-Z.....	GP22	CMBT-1-3/4-20LT-GI.....	GP23	GV-1.....	GP9	MBSD6-3/4-3/4-1-Z.....	GP19
CMB-3/4-OEMCO-ZI.....	GP21	CMBT-1-3/4-20LT-I.....	GP23	GV-1 1/2.....	GP9	MBSD6-3/4-3/4-3/4.....	GP19
CMB-3/4-1-OEMCO.....	GP22	CMBT-1-3/4-20LT-Z.....	GP24	GV-1 1/4.....	GP9	MBSD6-3/4-3/4-3/4-G.....	GP19
CMB-3/4-1-OEMCO-G.....	GP22	CMBT-1-3/4-20LT-ZI.....	GP23	GV-2.....	GP9	MBSD6-3/4-3/4-3/4-Z.....	GP19
CMB-3/4-1-OEMCO-GI.....	GP21	CMBT-3/4-OEMCO.....	GP24	GV-3/4.....	GP9	MBSS-1-1-1-F.....	GP12
CMB-3/4-1-OEMCO-I.....	GP21	CMBT-3/4-OEMCO-G.....	GP24	IU-1.....	GP9	MBSS-1-1-1-F-G.....	GP12
CMB-3/4-1-OEMCO-Z.....	GP22	CMBT-3/4-OEMCO-GI.....	GP23	IU-1 1/4.....	GP9	MBSS-1-1-1-FI.....	GP10
CMB-3/4-1-OEMCO-ZI.....	GP21	CMBT-3/4-OEMCO-I.....	GP23	IU-1 1/4-G.....	GP9	MBSS-1-1-1-FI-G.....	GP10
CMB-3/4-1-1A.....	GP22	CMBT-3/4-OEMCO-Z.....	GP24	IU-1/2.....	GP9	MBSS-1-1-1-FI-Z.....	GP10
CMB-3/4-1-1A-G.....	GP22	CMBT-3/4-OEMCO-ZI.....	GP23	IU-1/2-G.....	GP9	MBSS-1-1-1-F-Z.....	GP12
CMB-3/4-1-1A-GI.....	GP21	CMBT-3/4-1-OEMCO.....	GP24	IU-1-G.....	GP9	MBSS-1-1-1-O.....	GP13
CMB-3/4-1-1A-I.....	GP21	CMBT-3/4-1-OEMCO-G.....	GP24	IU-2.....	GP9	MBSS-1-1-1-O-G.....	GP13

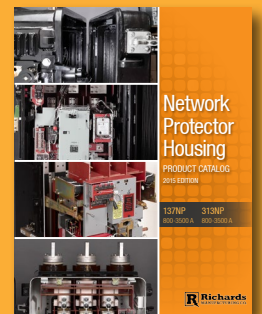
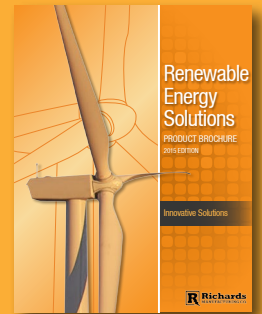
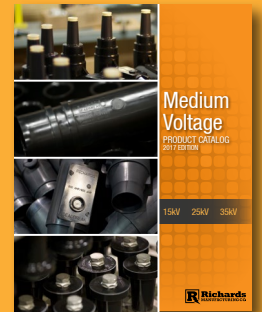
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GP588, GP589, GP590, GP591, GP592, GP593, GP594, GP595, GP596, GP597, GP598, GP599, GP600, GP601, GP602, GP603, GP604, GP605, GP606, GP607, GP608, GP609, GP610, GP611, GP612, GP613, GP614, GP615, GP616, GP617, GP618, GP619, GP620, GP621, GP622, GP623, GP624, GP625, GP626, GP627, GP628, GP629, GP630, GP631, GP632, GP633, GP634, GP635, GP636, GP637, GP638, GP639, GP640, GP641, GP642, GP643, GP644, GP645, GP646, GP647, GP648, GP649, GP650, GP651, GP652, GP653, GP654, GP655, GP656, GP657, GP658, GP659, GP660, GP661, GP662, GP663, GP664, GP665, GP666, GP667, GP668, GP669, GP670, GP671, GP672, GP673, GP674, GP675, GP676, GP677, GP678, GP679, GP680, GP681, GP682, GP683, GP684, GP685, GP686, GP687, GP688, GP689, GP690, GP691, GP692, GP693, GP694, GP695, GP696, GP697, GP698, GP699, GP700, GP701, GP702, GP703, GP704, GP705, GP706, GP707, GP708, GP709, GP710, GP711, GP712, GP713, GP714, GP715, GP716, GP717, GP718, GP719, GP720, GP721, GP722, GP723, GP724, GP725, GP726, GP727, GP728, GP729, GP730, 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GP874, GP875, GP876, GP877, GP878, GP879, GP880, GP881, GP882, GP883, GP884, GP885, GP886, GP887, GP888, GP889, GP890, GP891, GP892, GP893, GP894, GP895, GP896, GP897, GP898, GP899, GP900, GP901, GP902, GP903, GP904, GP905, GP906, GP907, GP908, GP909, GP910, GP911, GP912, GP913, GP914, GP915, GP916, GP917, GP918, GP919, GP920, GP921, GP922, GP923, GP924, GP925, GP926, GP927, GP928, GP929, GP930, GP931, GP932, GP933, GP934, GP935, GP936, GP937, GP938, GP939, GP940, GP941, GP942, GP943, GP944, GP945, GP946, GP947, GP948, GP949, GP950, GP951, GP952, GP953, GP954, GP955, GP956, GP957, GP958, GP959, GP960, GP961, GP962, GP963, GP964, GP965, GP966, GP967, GP968, GP969, GP970, GP971, GP972, GP973, GP974, GP975, GP976, GP977, GP978, GP979, GP980, GP981, GP982, GP983, GP984, GP985, GP986, GP987, GP988, GP989, GP990, GP991, GP992, GP993, GP994, GP995, GP996, GP997, GP998, GP999, GP1000.

MBST-3/4-1-1-FI-G.....	GP14	MBST6-1-3/4-1-F-G.....	GP16	MBST6-3/4-3/4-3/4-0-Z.....	GP17	OS-1 1/2-2-45LT-I.....	GP5
MBST-3/4-1-1-FI-Z.....	GP14	MBST6-1-3/4-1-FI.....	GP14	MBST7-1 1/4-F.....	GP16	OS-1 1/2-2-45LT-Z.....	GP4
MBST-3/4-1-1-F-Z.....	GP16	MBST6-1-3/4-1-FI-G.....	GP14	MBST7-1 1/4-F-G.....	GP16	OS-1 1/2-2-45LT-ZI.....	GP5
MBST-3/4-1-1-0.....	GP17	MBST6-1-3/4-1-FI-Z.....	GP14	MBST7-1 1/4-FI.....	GP14	OS-1 1/2-41/2-60LT.....	GP4
MBST-3/4-1-1-0-G.....	GP17	MBST6-1-3/4-1-F-Z.....	GP16	MBST7-1 1/4-FI-G.....	GP14	OS-1 1/2-41/2-60LT-G.....	GP4
MBST-3/4-1-1-0I.....	GP15	MBST6-1-3/4-1-0.....	GP17	MBST7-1 1/4-FI-Z.....	GP14	OS-1 1/2-41/2-60LT-Z.....	GP4
MBST-3/4-1-1-0I-G.....	GP15	MBST6-1-3/4-1-0-G.....	GP17	MBST7-1 1/4-F-Z.....	GP16	OS-1 1/4-1 5/8-45LT.....	GP4
MBST-3/4-1-1-0I-Z.....	GP15	MBST6-1-3/4-1-0I.....	GP15	MBST7-1 1/4-0.....	GP17	OS-1 1/4-1 5/8-45LT-G.....	GP4
MBST-3/4-1-1-0-Z.....	GP17	MBST6-1-3/4-1-0I-G.....	GP15	MBST7-1 1/4-0-G.....	GP17	OS-1 1/4-1 5/8-45LT-Z.....	GP4
MBST-3/4-1-3/4-F.....	GP16	MBST6-1-3/4-1-0I-Z.....	GP15	MBST7-1 1/4-0I.....	GP15	OS-1 1/4-1-30LT.....	GP4
MBST-3/4-1-3/4-F-G.....	GP16	MBST6-1-3/4-1-0-Z.....	GP17	MBST7-1 1/4-0I-G.....	GP15	OS-1 1/4-1-30LT-G.....	GP4
MBST-3/4-1-3/4-FI.....	GP14	MBST6-1-3/4-3/4-F.....	GP16	MBST7-1 1/4-0I-Z.....	GP15	OS-1 1/4-1-30LT-GI.....	GP5
MBST-3/4-1-3/4-FI-G.....	GP14	MBST6-1-3/4-3/4-F-G.....	GP16	MBST7-1 1/4-0-Z.....	GP17	OS-1 1/4-1-30LT-I.....	GP5
MBST-3/4-1-3/4-FI-Z.....	GP14	MBST6-1-3/4-3/4-FI.....	GP14	MEL-1 1/4-30LT.....	GP3	OS-1 1/4-1-30LT-Z.....	GP4
MBST-3/4-1-3/4-F-Z.....	GP16	MBST6-1-3/4-3/4-FI-G.....	GP14	MEL-1 1/4-30LT-G.....	GP3	OS-1 1/4-1-30LT-ZI.....	GP5
MBST-3/4-1-3/4-0.....	GP17	MBST6-1-3/4-3/4-FI-Z.....	GP14	MEL-1 1/4-30LT-Z.....	GP3	OS-1 1/4-2 3/4-45LT.....	GP4
MBST-3/4-1-3/4-0-G.....	GP17	MBST6-1-3/4-3/4-F-Z.....	GP16	N1A.....	GP6	OS-1 1/4-2 3/4-45LT-G.....	GP4
MBST-3/4-1-3/4-0I.....	GP15	MBST6-1-3/4-3/4-0.....	GP17	N1A-G.....	GP6	OS-1 1/4-2 3/4-45LT-Z.....	GP4
MBST-3/4-1-3/4-0I-G.....	GP15	MBST6-1-3/4-3/4-0-G.....	GP17	N1A-Z.....	GP6	OS-1 1/4-2-45LT.....	GP4
MBST-3/4-1-3/4-0I-Z.....	GP15	MBST6-1-3/4-3/4-0I.....	GP15	N3&4.....	GP6	OS-1 1/4-2-45LT-G.....	GP4
MBST-3/4-1-3/4-0-Z.....	GP17	MBST6-1-3/4-3/4-0I-G.....	GP15	N3&4-G.....	GP6	OS-1 1/4-2-45LT-GI.....	GP5
MBST-3/4-3/4-1-F.....	GP16	MBST6-1-3/4-3/4-0I-Z.....	GP15	N3&4-Z.....	GP6	OS-1 1/4-2-45LT-I.....	GP5
MBST-3/4-3/4-1-F-G.....	GP16	MBST6-1-3/4-3/4-0-Z.....	GP17	N5LT.....	GP6	OS-1 1/4-2-45LT-Z.....	GP4
MBST-3/4-3/4-1-FI.....	GP14	MBST6-3/4-1-1-F.....	GP16	N5LT-G.....	GP6	OS-1 1/4-2-45LT-ZI.....	GP5
MBST-3/4-3/4-1-FI-G.....	GP14	MBST6-3/4-1-1-F-G.....	GP16	N5LT-Z.....	GP6	OS-1-1-20LT.....	GP4
MBST-3/4-3/4-1-FI-Z.....	GP14	MBST6-3/4-1-1-FI.....	GP14	N10LT.....	GP6	OS-1-1-20LT-G.....	GP4
MBST-3/4-3/4-1-F-Z.....	GP16	MBST6-3/4-1-1-FI-G.....	GP14	N10LT-G.....	GP6	OS-1-1-20LT-GI.....	GP5
MBST-3/4-3/4-1-0.....	GP17	MBST6-3/4-1-1-FI-Z.....	GP14	N10LT-Z.....	GP6	OS-1-1-20LT-I.....	GP5
MBST-3/4-3/4-1-0-G.....	GP17	MBST6-3/4-1-1-F-Z.....	GP16	N20LT.....	GP6	OS-1-1-20LT-Z.....	GP4
MBST-3/4-3/4-1-0I.....	GP15	MBST6-3/4-1-1-0.....	GP17	N20LT-G.....	GP6	OS-1-1-20LT-ZI.....	GP5
MBST-3/4-3/4-1-0I-G.....	GP15	MBST6-3/4-1-1-0-G.....	GP17	N20LT-Z.....	GP6	OS-1-1-30LT.....	GP4
MBST-3/4-3/4-1-0I-Z.....	GP15	MBST6-3/4-1-1-0I.....	GP15	N30LT.....	GP6	OS-1-1-30LT-G.....	GP4
MBST-3/4-3/4-1-0-Z.....	GP17	MBST6-3/4-1-1-0I-G.....	GP15	N30LT-G.....	GP6	OS-1-1-30LT-GI.....	GP5
MBST-3/4-3/4-3/4-F.....	GP16	MBST6-3/4-1-1-0I-Z.....	GP15	N30LT-Z.....	GP6	OS-1-1-30LT-I.....	GP5
MBST-3/4-3/4-3/4-F-G.....	GP16	MBST6-3/4-1-1-0-Z.....	GP17	N45LT.....	GP6	OS-1-1-30LT-Z.....	GP4
MBST-3/4-3/4-3/4-FI.....	GP14	MBST6-3/4-1-3/4-F.....	GP16	N45LT-G.....	GP6	OS-1-1-30LT-ZI.....	GP5
MBST-3/4-3/4-3/4-FI-G.....	GP14	MBST6-3/4-1-3/4-F-G.....	GP16	N45LT-Z.....	GP6	OS-1/2-1 1/4-5LT.....	GP4
MBST-3/4-3/4-3/4-FI-Z.....	GP14	MBST6-3/4-1-3/4-FI.....	GP14	N60LT.....	GP6	OS-1/2-1 1/4-5LT-G.....	GP4
MBST-3/4-3/4-3/4-F-Z.....	GP16	MBST6-3/4-1-3/4-FI-G.....	GP14	N60LT-G.....	GP6	OS-1/2-1 1/4-5LT-Z.....	GP4
MBST-3/4-3/4-3/4-0.....	GP17	MBST6-3/4-1-3/4-FI-Z.....	GP14	N60LT-Z.....	GP6	OS-1/2-1 3/4-10LT.....	GP4
MBST-3/4-3/4-3/4-0-G.....	GP17	MBST6-3/4-1-3/4-F-Z.....	GP16	N100LT.....	GP6	OS-1/2-1 3/4-10LT-G.....	GP4
MBST-3/4-3/4-3/4-0I.....	GP15	MBST6-3/4-1-3/4-0.....	GP17	N100LT-G.....	GP6	OS-1/2-1 3/4-10LT-Z.....	GP4
MBST-3/4-3/4-3/4-0I-G.....	GP15	MBST6-3/4-1-3/4-0-G.....	GP17	N100LT-Z.....	GP6	OS-1/2-3-1A.....	GP4
MBST-3/4-3/4-3/4-0I-Z.....	GP15	MBST6-3/4-1-3/4-0I.....	GP15	NEMCO.....	GP6	OS-1/2-3-1A-G.....	GP4
MBST-3/4-3/4-3/4-0-Z.....	GP17	MBST6-3/4-1-3/4-0I-G.....	GP15	NEMCO-G.....	GP6	OS-1/2-3-1A-Z.....	GP4
MBST6-1-1-1-F.....	GP16	MBST6-3/4-1-3/4-0I-Z.....	GP15	NEMCO-Z.....	GP6	OS-1/2-3-10LT.....	GP4
MBST6-1-1-1-F-G.....	GP16	MBST6-3/4-1-3/4-0-Z.....	GP17	OS-1-1 1/2-20LT.....	GP4	OS-1/2-3-10LT-G.....	GP4
MBST6-1-1-1-FI.....	GP14	MBST6-3/4-3/4-1-F.....	GP16	OS-1-1 1/2-20LT-G.....	GP4	OS-1/2-3-10LT-Z.....	GP4
MBST6-1-1-1-FI-G.....	GP14	MBST6-3/4-3/4-1-F-G.....	GP16	OS-1-1 1/2-20LT-Z.....	GP4	OS-1/2-3-20LT.....	GP4
MBST6-1-1-1-FI-Z.....	GP14	MBST6-3/4-3/4-1-FI.....	GP14	OS-1-1 1/4-30LT.....	GP4	OS-1/2-3-20LT-G.....	GP4
MBST6-1-1-1-F-Z.....	GP16	MBST6-3/4-3/4-1-FI-G.....	GP14	OS-1-1 1/4-30LT-G.....	GP4	OS-1/2-3-20LT-Z.....	GP4
MBST6-1-1-1-0.....	GP17	MBST6-3/4-3/4-1-FI-Z.....	GP14	OS-1-1 1/4-30LT-Z.....	GP4	OS-1-4 3/8-30LT.....	GP4
MBST6-1-1-1-0-G.....	GP17	MBST6-3/4-3/4-1-F-Z.....	GP16	OS-1-1-1A.....	GP4	OS-1-4 3/8-30LT-G.....	GP4
MBST6-1-1-1-0I.....	GP15	MBST6-3/4-3/4-1-0.....	GP17	OS-1-1-1A-G.....	GP4	OS-1-4 3/8-30LT-Z.....	GP4
MBST6-1-1-1-0I-G.....	GP15	MBST6-3/4-3/4-1-0-G.....	GP17	OS-1-1-1A-Z.....	GP4	OS-2-1-100LT.....	GP4
MBST6-1-1-1-0I-Z.....	GP15	MBST6-3/4-3/4-1-0I.....	GP15	OS-1 1/2-1-3&4.....	GP4	OS-2-1-100LT-G.....	GP4
MBST6-1-1-1-0-Z.....	GP17	MBST6-3/4-3/4-1-0I-G.....	GP15	OS-1 1/2-1-3&4-G.....	GP4	OS-2-1-100LT-Z.....	GP4
MBST6-1-1-3/4-F.....	GP16	MBST6-3/4-3/4-1-0I-Z.....	GP15	OS-1 1/2-1-3&4-Z.....	GP4	OS-3/4-1 1/4-10LT.....	GP4
MBST6-1-1-3/4-F-G.....	GP16	MBST6-3/4-3/4-1-0-Z.....	GP17	OS-1 1/2-1-45LT.....	GP4	OS-3/4-1 1/4-10LT-G.....	GP4
MBST6-1-1-3/4-FI.....	GP14	MBST6-3/4-3/4-3/4-F.....	GP16	OS-1 1/2-1-45LT-G.....	GP4	OS-3/4-1 1/4-10LT-Z.....	GP4
MBST6-1-1-3/4-FI-G.....	GP14	MBST6-3/4-3/4-3/4-F-G.....	GP16	OS-1 1/2-1-45LT-GI.....	GP5	OS-3/4-1-1A.....	GP4
MBST6-1-1-3/4-FI-Z.....	GP14	MBST6-3/4-3/4-3/4-FI.....	GP14	OS-1 1/2-1-45LT-I.....	GP5	OS-3/4-1-1A-G.....	GP4
MBST6-1-1-3/4-F-Z.....	GP16	MBST6-3/4-3/4-3/4-FI-G.....	GP14	OS-1 1/2-1-45LT-Z.....	GP4	OS-3/4-1-1A-Z.....	GP4
MBST6-1-1-3/4-0.....	GP17	MBST6-3/4-3/4-3/4-FI-Z.....	GP14	OS-1 1/2-1-45LT-ZI.....	GP5	OS-3/4-1 3/4-10LT.....	GP4
MBST6-1-1-3/4-0-G.....	GP17	MBST6-3/4-3/4-3/4-F-Z.....	GP16	OS-1 1/2-1-60LT.....	GP4	OS-3/4-1 3/4-10LT-G.....	GP4
MBST6-1-1-3/4-0I.....	GP15	MBST6-3/4-3/4-3/4-0.....	GP17	OS-1 1/2-1-60LT-G.....	GP4	OS-3/4-1 3/4-10LT-Z.....	GP4
MBST6-1-1-3/4-0I-G.....	GP15	MBST6-3/4-3/4-3/4-0-G.....	GP17	OS-1 1/2-1-60LT-Z.....	GP4	OS-3/4-1 5/8-20LT.....	GP4
MBST6-1-1-3/4-0I-Z.....	GP15	MBST6-3/4-3/4-3/4-0I.....	GP15	OS-1 1/2-2-45LT.....	GP4	OS-3/4-1 5/8-20LT-G.....	GP4
MBST6-1-1-3/4-0-Z.....	GP17	MBST6-3/4-3/4-3/4-0I-G.....	GP15	OS-1 1/2-2-45LT-G.....	GP4	OS-3/4-1 5/8-20LT-Z.....	GP4
MBST6-1-3/4-1-F.....	GP16	MBST6-3/4-3/4-3/4-0I-Z.....	GP15	OS-1 1/2-2-45LT-GI.....	GP5	OS-3/4-1-10LT.....	GP4

OS-3/4-1-10LT-G .....	GP4	SS-5LT-1 1/2-Z .....	GP2
OS-3/4-1-10LT-Z .....	GP4	SS-10LT-3/4 .....	GP2
OS-3/4-3-1A .....	GP4	SS-10LT-3/4-G .....	GP2
OS-3/4-3-1A-G .....	GP4	SS-10LT-3/4-GI .....	GP2
OS-3/4-3-1A-Z .....	GP4	SS-10LT-3/4-I .....	GP2
OS-3/4-3/8-10LT .....	GP4	SS-10LT-3/4-Z .....	GP2
OS-3/4-3/8-10LT-G .....	GP4	SS-10LT-3/4-ZI .....	GP2
OS-3/4-3/8-10LT-Z .....	GP4	SS-20LT-01 .....	GP2
OS-3/4-3-20LT .....	GP4	SS-20LT-01-G .....	GP2
OS-3/4-3-20LT-G .....	GP4	SS-20LT-01-GI .....	GP2
OS-3/4-3-20LT-Z .....	GP4	SS-20LT-01-GI4 .....	GP2
OS-3/4-3-30LT .....	GP4	SS-20LT-01-I .....	GP2
OS-3/4-3-30LT-G .....	GP4	SS-20LT-01-I4 .....	GP2
OS-3/4-3-30LT-Z .....	GP4	SS-20LT-01-Z .....	GP2
OS-3/4-4-10LT .....	GP4	SS-20LT-01-ZI .....	GP2
OS-3/4-4-10LT-G .....	GP4	SS-20LT-01-ZI4 .....	GP2
OS-3/4-4-10LT-Z .....	GP4	SS-20LT-3/4 .....	GP2
OS-90-1-20LT .....	GP3	SS-20LT-3/4-G .....	GP2
OS-90-1-20LT-G .....	GP3	SS-20LT-3/4-GI .....	GP2
OS-90-1-20LT-GI .....	GP3	SS-20LT-3/4-I .....	GP2
OS-90-1-20LT-I .....	GP3	SS-20LT-3/4-Z .....	GP2
OS-90-1-20LT-Z .....	GP3	SS-20LT-3/4-ZI .....	GP2
OS-90-1-20LT-ZI .....	GP3	SS-30LT-01 .....	GP2
OS-90-3/4-20LT .....	GP3	SS-30LT-1 1/4 .....	GP2
OS-90-3/4-20LT-G .....	GP3	SS-30LT-1 1/4-G .....	GP2
OS-90-3/4-20LT-Z .....	GP3	SS-30LT-1 1/4-GI .....	GP2
P1A .....	GP6	SS-30LT-1 1/4-I .....	GP2
P1A-G .....	GP6	SS-30LT-1 1/4-Z .....	GP2
P1A-Z .....	GP6	SS-30LT-1 1/4-ZI .....	GP2
P5LT .....	GP6	SS-30LT-01-G .....	GP2
P5LT-G .....	GP6	SS-30LT-01-GI .....	GP2
P5LT-Z .....	GP6	SS-30LT-01-I .....	GP2
P10LT .....	GP6	SS-30LT-01-Z .....	GP2
P10LT-G .....	GP6	SS-30LT-01-ZI .....	GP2
P10LT-Z .....	GP6	SS-45LT-1 1/2 .....	GP2
P20LT .....	GP6	SS-45LT-1 1/2-G .....	GP2
P20LT-G .....	GP6	SS-45LT-1 1/2-GI .....	GP2
P20LT-Z .....	GP6	SS-45LT-1 1/2-I .....	GP2
P30LT .....	GP6	SS-45LT-1 1/2-Z .....	GP2
P30LT-G .....	GP6	SS-45LT-1 1/2-ZI .....	GP2
P30LT-Z .....	GP6	SS-45LT-1 1/4 .....	GP2
P45LT .....	GP6	SS-45LT-1 1/4-G .....	GP2
P45LT-G .....	GP6	SS-45LT-1 1/4-GI .....	GP2
P45LT-Z .....	GP6	SS-45LT-1 1/4-I .....	GP2
PP-1A .....	GP6	SS-45LT-1 1/4-Z .....	GP2
PP-5LT .....	GP6	SS-45LT-1 1/4-ZI .....	GP2
PP-10LT .....	GP6	SS-60LT-1 1/2 .....	GP2
PP-20LT .....	GP6	SS-60LT-1 1/2-G .....	GP2
PP-30LT .....	GP6	SS-60LT-1 1/2-Z .....	GP2
PP-45LT .....	GP6	SS-100LT-2 .....	GP2
SS-1A-01 .....	GP2	SS-100LT-2-G .....	GP2
SS-1A-01-G .....	GP2	SS-100LT-2-GI .....	GP2
SS-1A-01-GI .....	GP2	SS-100LT-2-I .....	GP2
SS-1A-01-I .....	GP2	SS-100LT-2-Z .....	GP2
SS-1A-01-Z .....	GP2	SS-100LT-2-ZI .....	GP2
SS-1A-01-ZI .....	GP2	W1A .....	GP7
SS-1A-3/4 .....	GP2	W1A - 1/8 .....	GP7
SS-1A-3/4-G .....	GP2	W3&4 .....	GP7
SS-1A-3/4-GI .....	GP2	W5A .....	GP7
SS-1A-3/4-I .....	GP2	W5LT .....	GP7
SS-1A-3/4-Z .....	GP2	W10LT .....	GP7
SS-1A-3/4-ZI .....	GP2	W20LT .....	GP7
SS-3&4-1 1/2 .....	GP2	W20LT -1/8 .....	GP7
SS-3&4-1 1/2-G .....	GP2	W30LT .....	GP7
SS-3&4-1 1/2-GI .....	GP2	W30LT - 1/8 .....	GP7
SS-3&4-1 1/2-I .....	GP2	W45LT .....	GP7
SS-3&4-1 1/2-Z .....	GP2	W45LT - 1/8 .....	GP7
SS-3&4-1 1/2-ZI .....	GP2	W100LT .....	GP7
SS-5LT-1 1/2 .....	GP2		
SS-5LT-1 1/2-G .....	GP2		







517 Lyons Avenue, Irvington, NJ 07111  
973.371.1771 | www.Richards-Mfg.com