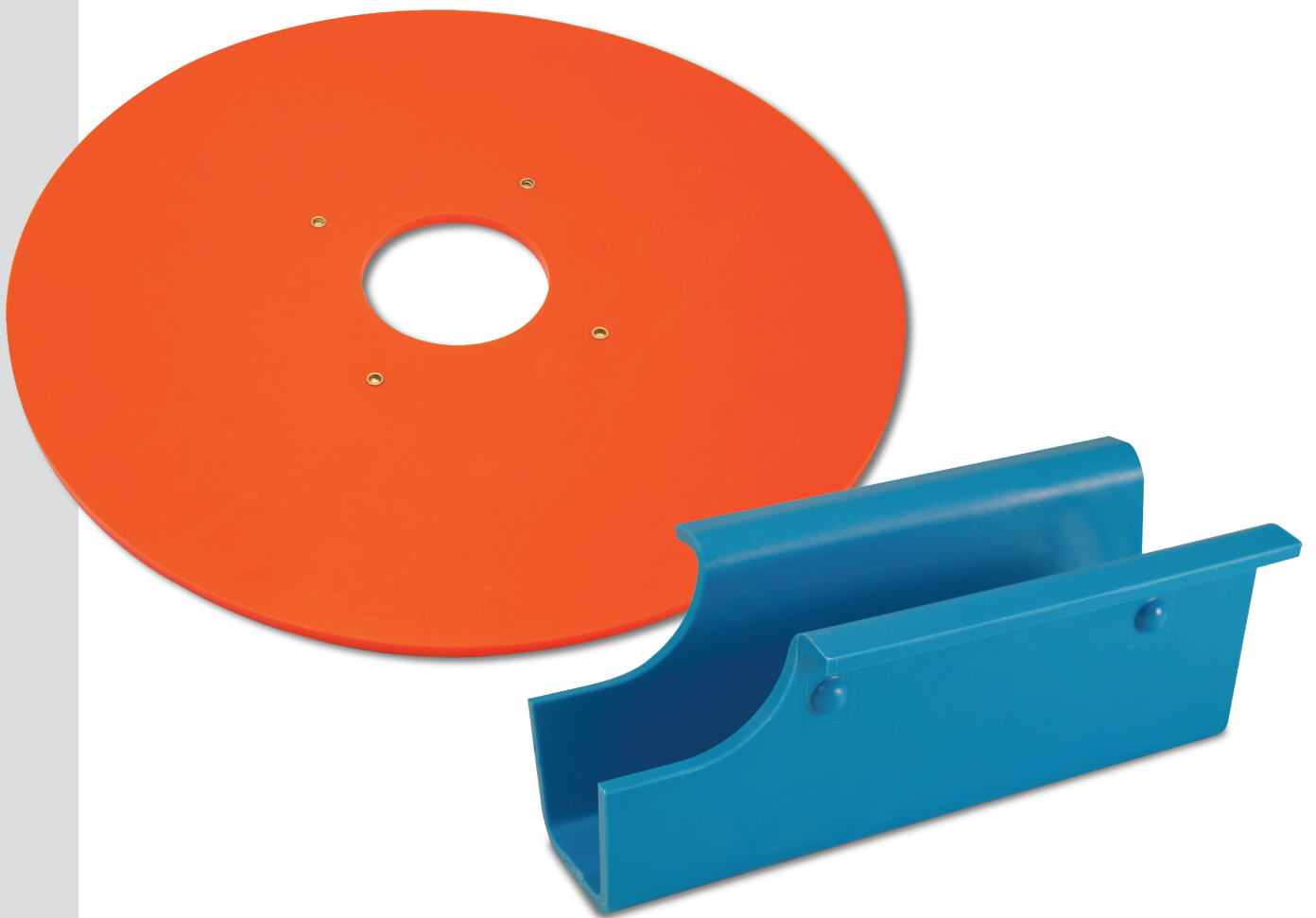




PRODUCT GUIDE

WEAR PREVENTION



STOP THE GRINDING TO EXTEND THE LIFE OF YOUR RAILCAR COMPONENTS.



Heavy haul operations are tough on your fleet's components, especially where metal meets metal. Amsted Rail's Hollube® and Hollamax™ wear prevention products significantly extend the life of your railcars by reducing metal-to-metal contact at high wear points. These AAR-approved, lightweight products can save you thousands of dollars in maintenance and replacement costs. Engineered for heavy loads, they prevent wear on critical components for hundreds of thousands of miles.

STRONGER THAN STEEL

Hollube and Hollamax wear prevention products are made of a patented polymer. This advanced material is resistant to cold-flow, lighter and stronger than steel – and reduces wear by up to 88%. These products are designed to help your railcar components last longer.

LOWER MAINTENANCE COSTS

Our wear prevention products can help you save on maintenance and replacement costs by extending the product life cycles of components. They are easy to install and never need lubrication, so you get the most out of your investment – and keep your fleet rolling.

CENTER PLATES AND BOWL LINERS

Center bowl liners prevent wear on center plate and center bowl horizontal surfaces. They weigh less than metallic liners and have simple drop-in installation with no welding required. Our anti-static center bowl liners eliminate the risk of static buildup, providing constant ground to trucks without use of metal grounding pins.

BRAKE BEAM GUIDES & BRAKE ROD BRACKET PROTECTORS

The brake beam guide reduces brake shoe consumption and eliminates brake beam wear, preventing brake beam droop. Helping cars comply with AAR specifications for M-976, the brake beam guide is designed for high mileage, heavy gross axle load applications and has a heavy-duty construction with advanced, cold-flow resistant material. The brake rod bracket protector prevents wear on the brake rod and bracket, reducing friction in the braking system.

COUPLER CARRIERS AND WEAR PLATES

Coupler carriers and wear plates eliminate wear on the coupler shank and carrier basket. They weigh less than metallic wear plates and provide longer service life. Products include those designed for simple drop-in installation with no welding required as well as those bonded to a steel backing for easy weld-on installation. Amsted Rail offers coupler carriers and wear plates designed for "F" type draft sills and rotary dump cars and universal wear plates that fit both newer and older "box-type" carriers.



REDUCE METAL-TO-METAL SURFACE WEAR FOR LONGER SERVICE LIFE

AMSTED RAIL WEAR PREVENTION PRODUCTS

- WE-1010-1016 Center Bowl Horizontal Liner
- WE-1014-XLS, WE-1016-XLS Center Bowl Horizontal Liner
- WE-2016, WE-2016J Center Bowl Horizontal Liner
- WE-2416, WE-2416J Premium Center Bowl Wear Liner
- WE-2516J Heavy Duty Center Bowl Wear Liner
- WE-3001 Rear Yoke Support Wear Eliminator
- WE-4001 Snap-on Coupler Carrier Wear Plate for F-Type Carriers
- WE-4002 Coupler Carrier Wear Plate
- WE-4004 Coupler Carrier for Rotary Dump Cars
- WE-4110 Weld-on Coupler Carrier Wear Plate
- WE-4340, WE 4340-XL Universal Coupler Carrier Wear Plate
- WE-4900 Coupler Carrier for "F" Type Draft Sills and Rotary Dump Cars
- WE-5000 Brake Rod Bracket Wear Eliminator
- WE-5001-5004 Brake Rod Wear Protector
- WE-5505 Brake Beam Guide Wear Eliminator
- WE-5510-EL Heavy Duty Brake Beam Guide Wear Eliminator
- WE-5525 Alignment Plus Brake Beam guide Wear Liner

WE-1010-1016 CENTER BOWL HORIZONTAL LINER

PRODUCT BENEFITS

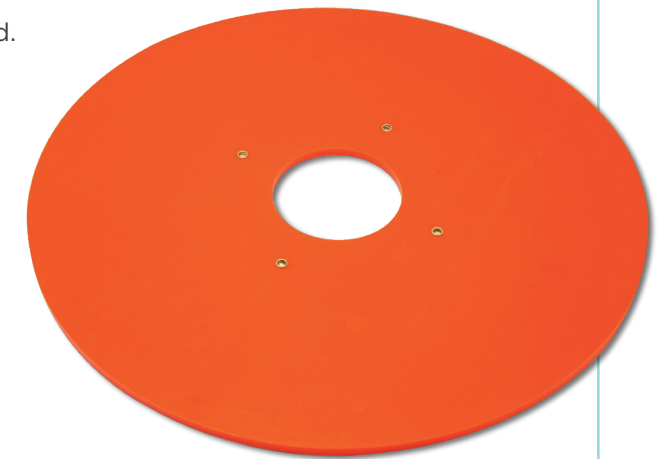
- ▶ Prevents center plate and center bowl horizontal surface wear.
- ▶ Available with ground rivets (WE-1016) or without ground rivets (WE-1016-1).
- ▶ AAR approved for M-976.
- ▶ Never requires lubrication.
- ▶ Simple drop-in installation - no welding required.
- ▶ Weighs less than metallic liners.

PHYSICAL PROPERTIES

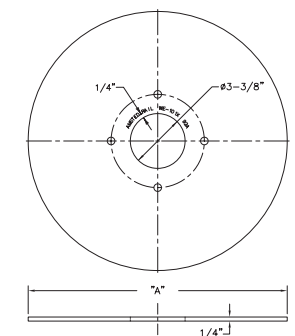
- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Orange

APPLICATION NOTES

- ▶ Truck bolster bowl must be designed to accept vertical and horizontal bowl liner.
- ▶ Center plates and bolster bowls must be smooth; free of foreign material, weld splatter, and/or sharp edges.



PART NUMBER	DIM A
WE-1010	9 31/32"
WE-1012	11 31/32"
WE-1014	13 31/32"
WE-1015	14 31/32"
WE-1016	15 31/32"



WE-1014-XLS, WE-1016-XLS ANTI-STATIC CENTER BOWL HORIZONTAL LINER

PRODUCT BENEFITS

- ▶ Eliminates risk of static buildup, providing constant ground to trucks without the use of metal grounding pins.
- ▶ Prevents center plate and center bowl horizontal surface wear.
- ▶ Never requires lubrication.
- ▶ Made of Extended Life Hollube, specially designed for today's high rail loads of 286,000 lbs.
- ▶ Simple drop-in installation - no welding required.
- ▶ AAR approved for M-976.

PHYSICAL PROPERTIES

- ▶ Climate limitations: -70° to +180°F
- ▶ Surface load capabilities: 1200 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Black
- ▶ Volume resistivity: 106 OHMS

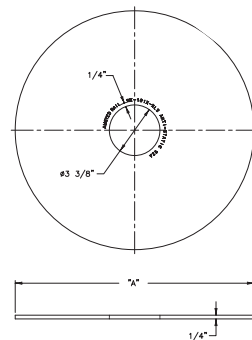
APPLICATION NOTES

- ▶ Truck bolster bowl must be designed to accept a horizontal liner.
- ▶ Remove all foreign material, weld splatter and rough or sharp edges.

PART NUMBER	DIM A
WE-1014-XLS	13 15/16"
WE-1016-XLS	15 15/16"



WE-1016-XLS



WE-2016, WE-2016J CENTER BOWL WEAR LINER

PRODUCT BENEFITS

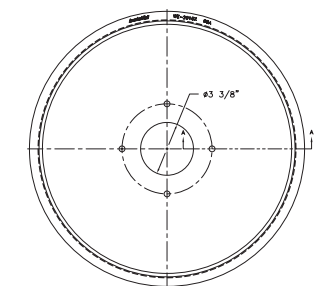
- ▶ Prevents center plate and center bowl wear.
- ▶ Weighs less than metallic bowl liners.
- ▶ Never requires lubrication.
- ▶ Simple drop-in installation - no welding required.
- ▶ AAR approved for M-976.

PHYSICAL PROPERTIES

- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Orange

APPLICATION NOTES

- ▶ Truck bolster bowl must be designed to accept vertical and horizontal bowl liner.
- ▶ Center plates and bolster bowls must be smooth; free of foreign material, weld splatter, and/or sharp edges.



WE-2416, WE-2416J PREMIUM CENTER BOWL WEAR LINER

PRODUCT BENEFITS

- ▶ AAR approved for M-976.
- ▶ Enhanced cold flow resistance.
- ▶ Heavy duty forged construction.
- ▶ Designed for high mileage.
- ▶ Simple drop-in installation - no lubrication required.
- ▶ Prevents center plate and center bowl wear.

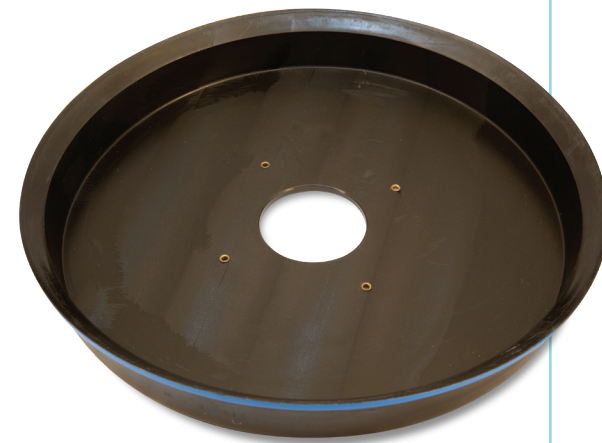
PHYSICAL PROPERTIES

- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Color: WE-2416 - Black with orange indicator
WE-2416-J - Black with blue indicator

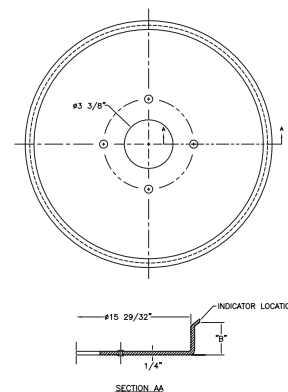
APPLICATION NOTES

- ▶ Truck bolster bowl must be designed to accept vertical and horizontal bowl liner.
- ▶ Center plates and bolster bowls must be smooth; free of foreign material, weld splatter, and/or sharp edges.

PART NUMBER	DIM B
WE-2416	2 ¼"
WE-2416J	2"



WE-2416J



WE-2516J HEAVY DUTY CENTER BOWL WEAR LINER

PRODUCT BENEFITS

- ▶ Advanced Hollamax Material.
- ▶ Superior cold flow resistance.
- ▶ Designed for high mileage and heavy loads.
- ▶ Simple drop-in installation - no lubrication required.
- ▶ Prevents center plate and center bowl wear.

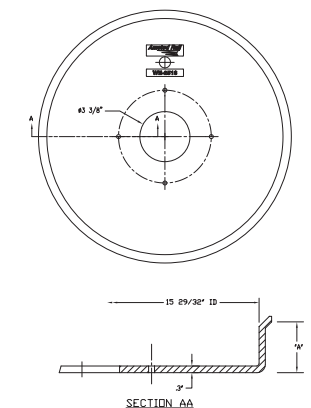
PHYSICAL PROPERTIES

- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 7420 psi @ 73.4°F
- ▶ Coefficient of friction: .32
- ▶ Deflection: @ 1000 psi = .001"
- ▶ Color: Blue

APPLICATION NOTES

- ▶ Truck bolster bowl must be designed to accept vertical and horizontal bowl liner.
- ▶ Center plates and bolster bowls must be smooth; free of foreign material, weld splatter, and/or sharp edges.

PART NUMBER	DIM A
WE-2516J	2"



WE-3001 REAR YOKE SUPPORT WEAR ELIMINATOR

PRODUCT BENEFITS

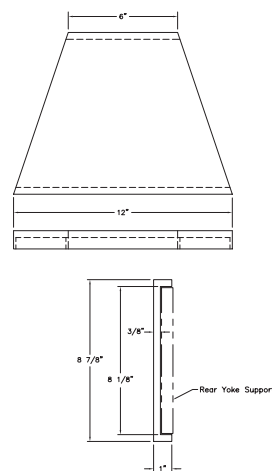
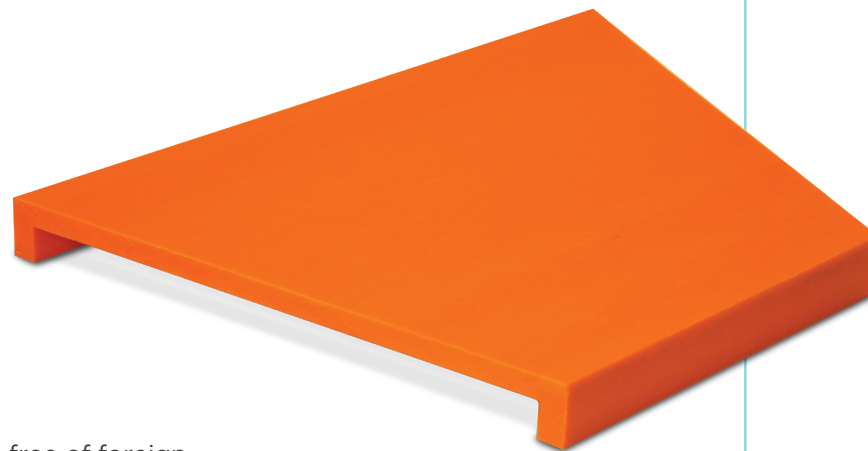
- ▶ Prevents wear on yoke strap.
- ▶ Prevents wear on yoke strap support.
- ▶ Easy to install - no welding required.
- ▶ Never needs lubrication.
- ▶ Ideal for high-mileage applications.

PHYSICAL PROPERTIES

- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Orange

APPLICATION NOTES

- ▶ Rear yoke support must be smooth; free of foreign material, weld splatter, and/or sharp edges.



WE-4001 SNAP-ON COUPLER CARRIER WEAR PLATE FOR F-TYPE CARRIERS

PRODUCT BENEFITS

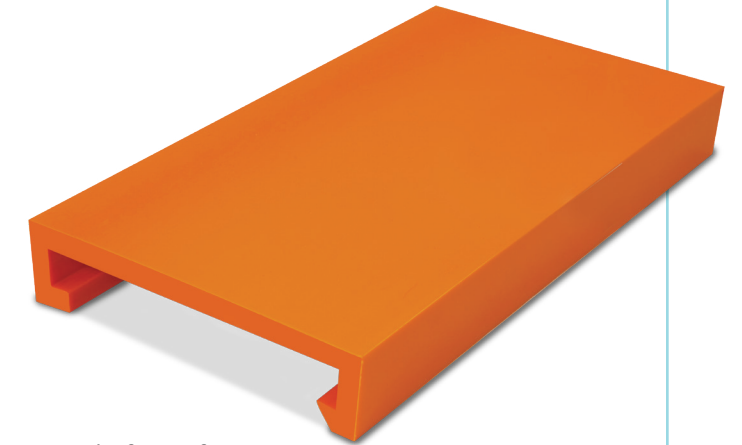
- ▶ Prevents coupler shank wear.
- ▶ Fits on existing F-type coupler carriers.
- ▶ Easy snap-on installation.
- ▶ Unconditionally AAR approved.

PHYSICAL PROPERTIES

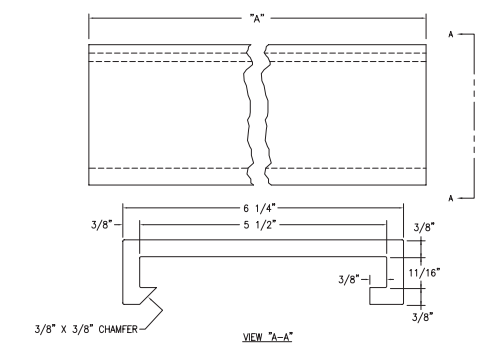
- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Orange

APPLICATION NOTES

- ▶ Lubrication is not required.
- ▶ Coupler carrier and coupler shank must be smooth; free of foreign material, weld splatter, and/or sharp edges.



PART NUMBER	DIM A
WE-4001	11 3/4"
WE-4001-1	10 3/4"
WE-4001-21	21"



WE-4002 COUPLER CARRIER WEAR PLATE

PRODUCT BENEFITS

- ▶ Eliminates wear on coupler shank.
- ▶ Weighs less than metallic wear plates.
- ▶ Simple drop-in installation - no welding required.
- ▶ Unconditionally AAR approved.

PHYSICAL PROPERTIES

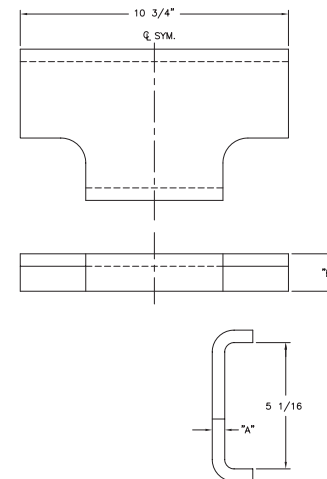
- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Orange

APPLICATION NOTES

- ▶ Coupler carrier and coupler shank must be smooth; free of foreign material, weld splatter, and/or sharp edges.
- ▶ Lubrication is not required.



PART NUMBER	DIM A	DIM B
WE-4002	1/2"	1 1/2"
WE-4002-3	3/8"	1 3/8"
WE-4002-5	5/8"	1 5/8"



WE-4004 COUPLER CARRIER FOR ROTARY DUMP CARS

PRODUCT BENEFITS

- ▶ Eliminates wear on coupler shank and carrier basket.
- ▶ Weighs only 9 pounds, 18 pounds less than steel.
- ▶ Comes in four sizes for maximum flexibility in adjusting coupler height.
- ▶ Unconditionally AAR approved.
- ▶ 10 year/one million mile warranty* when installed in new cars.

PHYSICAL PROPERTIES

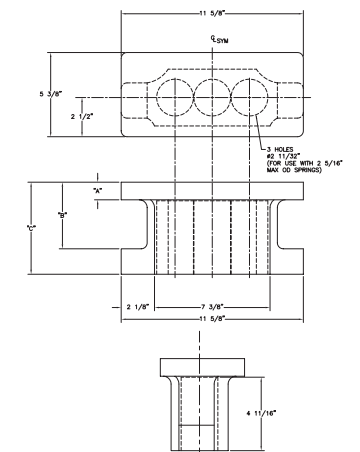
- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Orange

APPLICATION NOTES

- ▶ Coupler carrier spring basket and coupler shank must be smooth; free of foreign material, weld splatter, and/or sharp edges.
- ▶ Lubrication is not required.

*whichever comes first

PART NUMBER	DIM A	DIM B	DIM C
WE-4004-1	5/8"	3 3/4"	5 3/8"
WE-4004-2	7/8"	5 5/8"	5 5/8"
WE-4004-3	1 1/8"	5 7/8"	5 7/8"
WE-4004-4	1 3/8"	1/8"	1/8"



WE-4110 WELD-ON COUPLER CARRIER WEAR PLATE

PRODUCT BENEFITS

- ▶ Prevents wear on coupler shank.
- ▶ Long life Hollube bonded to a steel backing provides excellent wear resistance and easy weld-on installation.
- ▶ New flow-through physical bond provides 38% stronger bond than old chemical bond.
- ▶ No need to remove the coupler for installation.
- ▶ Comes in a variety of thicknesses.
- ▶ Unconditionally AAR approved.

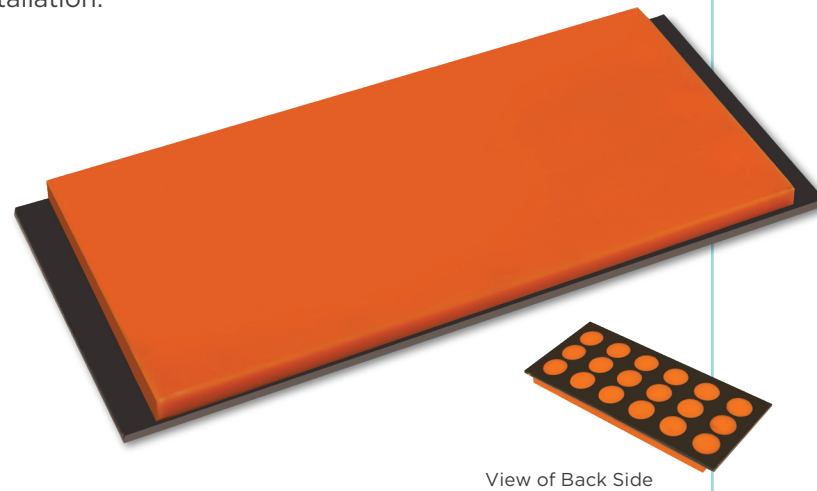
PHYSICAL PROPERTIES

- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Orange

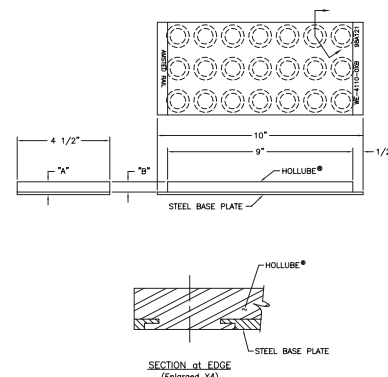
APPLICATION NOTES

- ▶ Coupler carrier and coupler shank must be smooth; free of foreign material, weld splatter, and/or sharp edges.
- ▶ Lubrication is not required.
- ▶ Available in lengths from 5" to 33".

PART NUMBER	DIM A	DIM B
WE-4110-03B	3/8"	1/4"
WE-4110-04B	1/2"	3/8"
WE-4110-05B	5/8"	1/2"
WE-4110-06B	3/4"	5/8"



View of Back Side



WE-4340, WE-4340-XL UNIVERSAL COUPLER CARRIER WEAR PLATE

PRODUCT BENEFITS

- ▶ Fits T-type carriers on newer cars, as well as older "box-type" carriers.
- ▶ Longer legs provide insurance against loss.
- ▶ Available in standard Hollube (orange) or Extended Life (-XL) Hollube (blue), engineered to provide hundreds of thousands of miles of wear prevention.
- ▶ Patented and AAR approved.
- ▶ Eliminates the need to stock multiple wear plates for older and newer cars.
- ▶ Simple drop-in installation - no welding required.

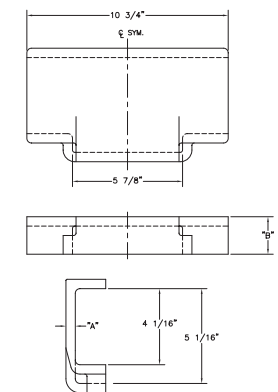
PHYSICAL PROPERTIES

- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: Hollube - 1000 psi, Hollube XL - 1200 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Standard Hollube - Orange
Extended Life Hollube - Blue

APPLICATION NOTES

- ▶ Coupler carrier and coupler shank must be smooth; free of sharp edges, weld splatter, and/or foreign material.
- ▶ Lubrication is not required.

PART NUMBER	DIM A	DIM B
WE-4340-3	3/8"	1 7/8"
WE-4340-4	1/2"	2"
WE-4340-XL	1/2"	2"
WE-4340-5	5/8"	2 1/8"



WE-4900 COUPLER CARRIER FOR "F" TYPE DRAFT SILLS AND ROTARY DUMP CARS

PRODUCT BENEFITS

- ▶ Eliminates wear on coupler shank and carrier basket. No metal-to-metal contact.
- ▶ Car Set weighs 42 to 46 pounds less than steel carrier.
- ▶ Eliminates the need for basket wear plate application.
- ▶ Comes in four sizes for maximum flexibility in adjusting coupler height.
- ▶ New design provides higher load capacity.
- ▶ Patented and AAR approved.
- ▶ Longer service life.

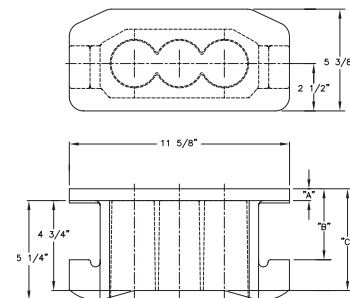
PHYSICAL PROPERTIES

- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Dark blue

APPLICATION NOTES

- ▶ Coupler carrier and coupler shank must be smooth; free of sharp edges, weld splatter, and/or foreign material.
- ▶ Lubrication is not required.

PART NUMBER	DIM A	DIM B	DIM C
WE-4900-1	5/8"	3 3/4"	5 3/8"
WE-4900-2	7/8"	4"	5 5/8"
WE-4900-3	1 1/8"	4 1/4"	5 7/8"
WE-4900-4	1 3/8"	4 1/2"	6 1/8"



WE-5000 BRAKE ROD BRACKET WEAR ELIMINATOR

PRODUCT BENEFITS

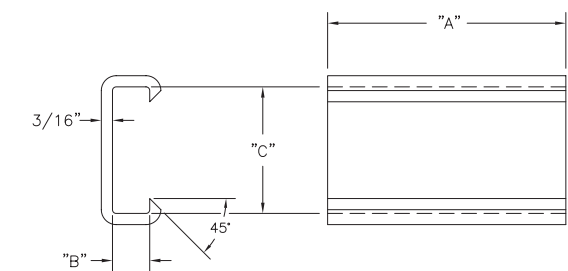
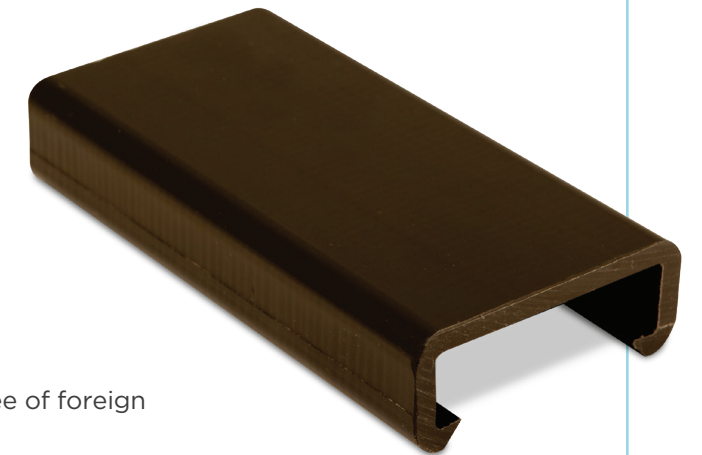
- ▶ Prevents wear on brake rod and bracket.
- ▶ Easy snap-on installation.
- ▶ Reduces friction in braking system.
- ▶ Available for a variety of bracket sizes.

PHYSICAL PROPERTIES

- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Black

APPLICATION NOTES

- ▶ Brake rods and supports must be smooth; free of foreign material, weld splatter, and/or sharp edges.
- ▶ Lubrication is not required.



Note: Dimensions A, B & C are variable per customer request

WE-5001-5004 BRAKE ROD WEAR PROTECTOR

PRODUCT BENEFITS

- ▶ Prevents wear on brake rod and bracket.
- ▶ Easy installation: snap on wear eliminator, then tack-weld retainers.
- ▶ Reduces friction in braking system.
- ▶ Available in any length required.

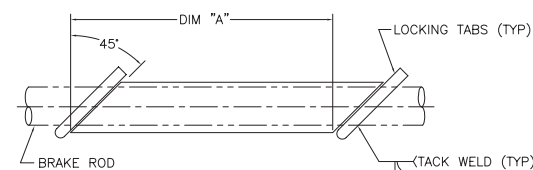
PHYSICAL PROPERTIES

- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Orange

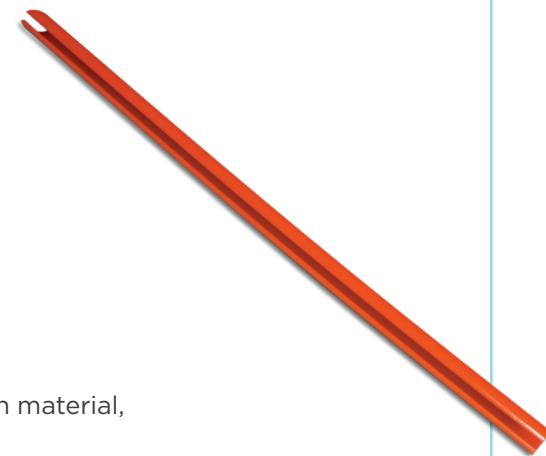
APPLICATION NOTES

- ▶ Brake rods and supports must be smooth; free of foreign material, weld splatter, and/or sharp edges.
- ▶ Lubrication is not required.

PART NUMBER	DIM B	DIM C	DIM D
WE-5001	.844"	.17"	.375"
WE-5002	1.125"	.25"	.625"
WE-5003	1"	.25"	.5"
WE-5004	.875"	.313"	.375"



NOTE:
DIMENSION "A" IS VARIABLE
PER CUSTOMER REQUEST



WE-5505 BRAKE BEAM GUIDE WEAR ELIMINATOR

PRODUCT BENEFITS

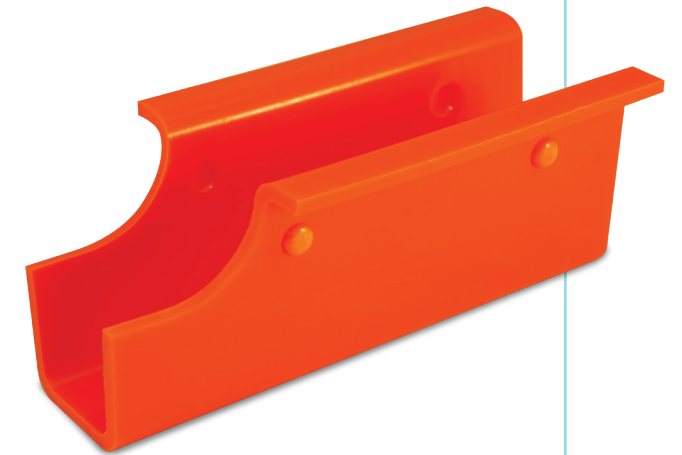
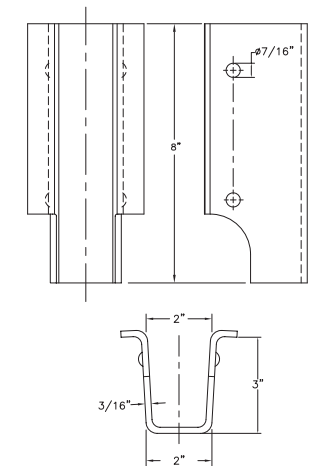
- ▶ Reduces brake shoe consumption.
- ▶ Eliminates wear on brake beam guide, preventing brake beam droop and reduces wheel flange wear.
- ▶ Light weight.
- ▶ Our most economical brake beam guide wear eliminator.

PHYSICAL PROPERTIES

- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 1000 psi
- ▶ Coefficient of friction: .15
- ▶ Deflection: @ 1000 psi = .007"
- ▶ Color: Orange

APPLICATION NOTES

- ▶ Brake beam guide wear eliminators are most effective on new or restored brake beam guides.
- ▶ Brake beam guides must be smooth and free from sharp edges, weld splatter, and debris.
- ▶ Lubrication is not required.



WE-5510-XL HEAVY DUTY BRAKE BEAM GUIDE WEAR ELIMINATOR

PRODUCT BENEFITS

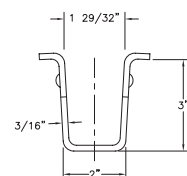
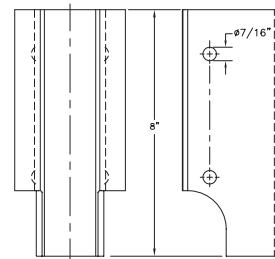
- ▶ Advanced Hollamax material with superior cold flow resistance.
- ▶ New design accepts both standard and “diagonally corrected” brake beams.
- ▶ Reduces brake shoe consumption.
- ▶ Eliminates wear on brake beam guide, preventing brake beam droop and reduces wheel flange wear.
- ▶ Light weight.
- ▶ Heavy-duty construction designed for high mileage, heavy gross axle load applications.

PHYSICAL PROPERTIES

- ▶ Climate limitations: -70°F to +180°F
- ▶ Surface load capabilities: 7420 psi @ 73.4°F
- ▶ Coefficient of friction: .32
- ▶ Deflection: @ 1000 psi = .001”
- ▶ Color: Blue

APPLICATION NOTES

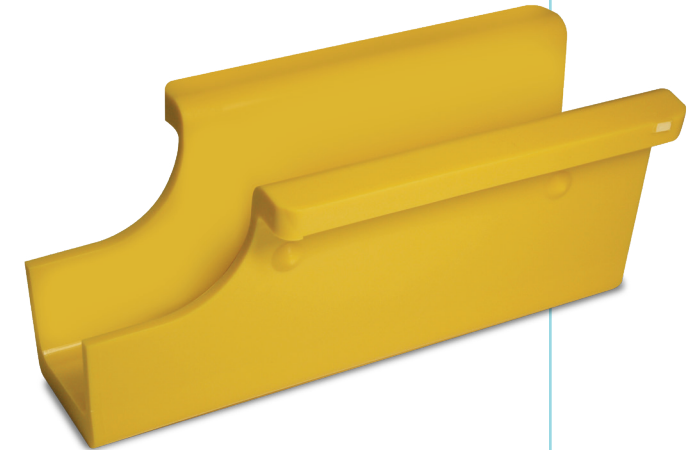
- ▶ Brake beam guide wear eliminators are most effective on new or restored brake beam guides.
- ▶ Brake beam guides must be smooth and free from sharp edges, weld splatter, and debris.
- ▶ Lubrication is not required.



WE-5525 ALIGNMENT PLUS™ BRAKE BEAM GUIDE WEAR LINER FOR M-976 BOGIES

PRODUCT BENEFITS

- ▶ Improved brake beam alignment lowers the occurrence of thin flange wheel defects.
- ▶ Less lateral shift than standard brake beam liners extend wheel wear life.
- ▶ Can be placed into all four truck guide pockets and still allow brakes to be applied properly.
- ▶ Reduced asymmetric wheel wear and provided exceptional wear liner service life in real-world tests.



AMSTED RAIL, THE GLOBAL LEADER IN FULLY INTEGRATED FREIGHT CAR SYSTEMS FOR THE HEAVY HAUL RAIL MARKET.

Amsted Rail is the world's leading provider of undercarriage and end-of-car railcar components, with facilities spanning six continents. Through our state-of-the-art manufacturing processes, Amsted Rail has been redefining industry standards for innovation and technology since 1877, providing our customers worldwide with unmatched performance and reliability for the long haul.

To learn more, visit www.amstedrail.com.

