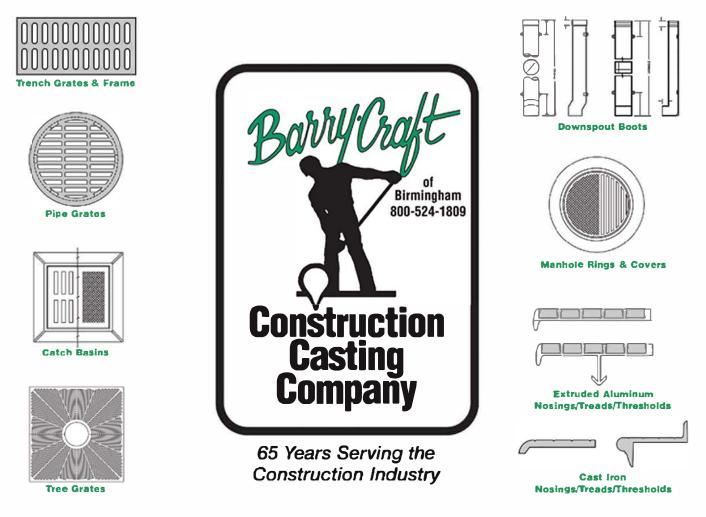
### 8th EDITION

## **REFERENCE MANUAL**

# CONSTRUCTION SPECIALTY CASTINGS



Trench Grates • Downspout Boots • Nosings • Treads • Tree Grates Gray Cast Iron • Ductile Cast Iron • Cast Aluminum

## Barry Pattern & Foundry Company, Inc.

3333 35th Avenue North, Birmingham, AL 35207 Toll-Free 1-800-524-1809

Fax: 205-841-1972

BarryCraft.com or BarryFdy.com

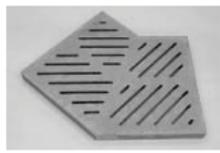
Loadings shown are for Gray and Ductile Cast Iron. For aluminum covers and grates: If H-20 Loading is required – it must be specified.

### OVER SIXTY YEARS



### **EXPERIENCE & SERVICE**

### For all purposes: from the simplest to the most complex casting needs...



BarryCraft manufactures quality trench grating for virtually any requirement or need that you may have – from the simplest to the most complex casting needs.

BarryCraft is dedicated to providing the personal service that you need. You will find very quickly that we care about our customers.



BarryCraft is committed to provide the best service, to sell competitively and to meet your needs.

### BarryCraft Specifications Meet:

- · ASTM (American Society for Testing and Materials) standards.
- Federal Government Standards (RR-F-621C)
- AASHTO (American Association of State Highway and Transportation Official) standards.
- BarryCraft provides load capacities including impact and free open area data on virtually all of our grating.

### Short Form Specifications & Service Information

#### Gray cast iron

Gray cast iron trench grating/solid covers and frames shall be as manufactured by Barry Pattern and Foundry (BarryCraft), Birmingham, Alabama. Gray cast iron used in the manufacture of trench grating or solid covers and frames shall conform to ASTM A48-83 CLASS 35. All castings shall be of uniform quality, free from blow holes, shrinkage defects, swells, cracks or other defects. Casting will be free of fins, burrs and slag.

### Ductile cast iron

Ductile cast iron trench grating or solid covers (frames furniched in gray cast iron unless specified ductile cast iron) shall be as furnished by Barry Pattern and Foundry (BarryCraft), Birmingham, Alabama. Ductile cast iron used in the manufacture of trench grating or solid covers and frames shall conform to ASTM A536-80 grade 65-45-12. All castings shall be of uniform quality, free from blow holes, shrinkage defects, swells, cracks or other defects. Casting will be free of fins, burrs and slag.

### Cast aluminum

Cast aluminum trench grating or solid ocvers and frames shall be as manufactured by Barry Pattern and Foundry (BarryCraft), Birmingham, Alabama. Cast aluminum used in the manufacture of trench grating or solid covers and frames shall by alloy 319 meeting Federal Specifications QQ-A-601 and ASTM B-26. All castings shall be of uniform quality, free from blow holes, shrinkage defects, swells, cracks or other defects. Casting will be free of fins, burrs and slag. Cast aluminum will be natural sand-cast finish. H-20 loading must be specified if required.

### 1-800-524-1809 BarryCraft.com or BarryFdy.com

## **Our Newest Product**



PATENT #4,993,877

### We proudly introduce our newest product...

### **Consider the advantages:**

### **Cost Savings**

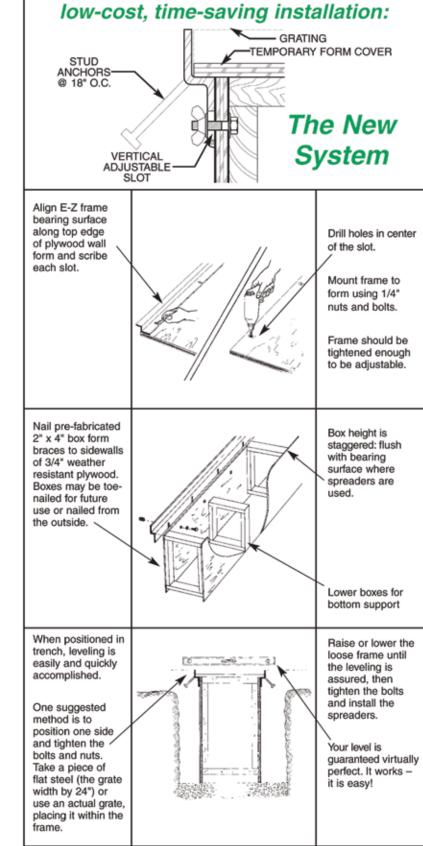
- Labor costs drastically reduced.
- Less forming material less cost.

### Simple Installation

- Personnel inexperienced in forming can easily install.
- Frames attach simply without the use of wire, nails and seat forms.
- Quickly adjusts for leveling.
- Frames easily cut in the field.
- Frames easily welded in the field.

### A Superior Frame Design That Produces Quality Trench Installation

- Insures level frame installation.
- Provides superior anchorage in concrete.
- Reduces risk of spalling of concrete underframes.
- Continuous bearing surface with fewer joints.
- Supplied in standard 4'0" lengths.
- Excellent with brick pavers and tile.
- Galvanized steel.

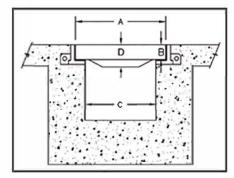


Unique features for high-quality,



Detailed installation instructions are included when requested.

## Gray Cast Iron Standard Designs



The above illustration, found also on the foliowing pages, shows only basic dimensions, and does not apply to all cover designs. Bar depths, seating widths and center thickness may very on different styles and sizes. Gray Cast Iron is an excellent and economical material for use in areas where heavy or light wheel loadings do not subject the grates or covers to extreme shock levels. Gray Cast Iron exhibits good corrosion resistance in road wear areas. BarryCraft Construction Casting Company has provided you with loading tables to enable you to select exactly what you require.

Note: The wheel load selection including impact (such as H-20) is your most important consideration. if H-20 loading is required on aluminum – it must be specified.

**Grates For Heavy Loads** 



### **Quality Products**

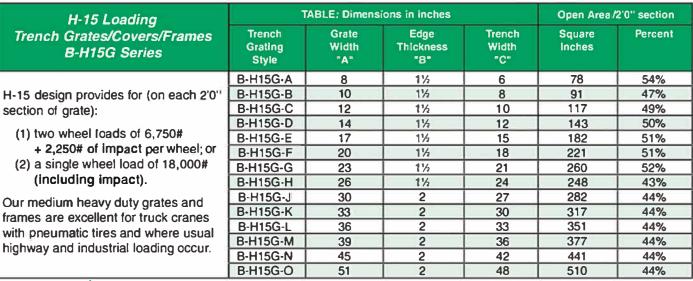
0 )

Call Us Toll Free: 1-800-524-1809 Fax: 205-841-1972

### BarryCraft.com or BarryFdy.com

#### TABLE: Dimensions in inches Open Area /2'0" section H-20 Loading Trench Edae Trench Square Percent Trench Grates/Covers/Frames Grate Grating Width Thickness Width Inches **B-H20G Series** Style "A" -8-"C" B-H20G-A 78 54% 8 1% 6 47% 91 B-H20G-B 10 1% 8 H-20 design provides for (on each 2'0" B-H20G-C 12 1% 10 117 49% section of grate): B-H20G-D 14 1% 12 143 50% (1) two wheel loads of 9,000# 182 B-H20G-E 17 1% 15 51% + 3,000# of impact per wheel; or B-H20G-F 20 1% 18 221 51% (2) a single wheel load of 24,000# 23 1% 21 260 52% B-H20G-G (including impact). 26 1% 248 B-H20G-H 24 43% B-H20G-J 30 2 27 282 44% Our heavy duty grates and frames B-H20G-K 33 2 30 317 44% are designed for warehouse trucks, B-H20G-L 36 2 33 351 44% concrete mixers and tractor trailers. B-H20G-M 39 2 36 377 44% **B-H20G-N** 45 2 42 441 44% 2 B-H20G-O 51 48 510 44%

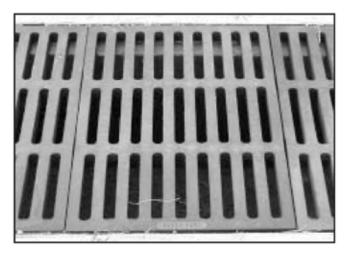
### Grates For Lighter Loads





## Gray Cast Iron Standard Designs





### Grates For Lighter Loads 🛑



H-10 Loading	TABLE: Dimensions in inches				Open Area /2'0" section	
Trench Grates/Covers/Frames B-H10G Series	Trench Grating Style	Grate Width "A"	Edge Thickness "B"	Trench Width "C"	Square Inches	Percent
	B-H10G-A	8	1½	6	78	54%
H-10 design provides for (on each 2'0"	B-H10G-B	10	1½	8	91	47%
section of grate):	B-H10G-C	12	1½	10	117	49%
, °,	B-H10G-D	14	1½	12	143	50%
(1)two wheel loads 2'0" of 4,500#	B-H10G-E	17	1½	15	182	51%
+ 1,500# of impact per wheel; or	B-H10G-F	20	1½	18	221	51%
(2) a single wheel load of 12,000# (including impact).	B-H10G-G	23	1½	21	260	52%
(including impact).	B-H10G-H	26	1½	24	248	43%
Our medium duty grates and grames	B-H10G-J	30	1½	27	282	44%
are excellent for vehicles such as for	B-H10G-K	33	1½	30	317	44%
light trucks, automobiles and dollies.	B-H10G-L	36	1½	33	351	44%
	B-H10G-M	39	1½	36	377	44%
	B-H10G-N	45	1½	42	441	44%
	B-H10G-O	51	1½	48	510	44%

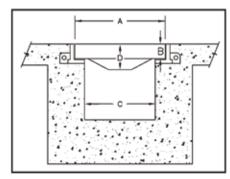
	TABLE: Dimensions in inches				Open Area /2'0" section	
1000 Pound Loading Trench Grates/Covers/Frames	Trench Grating Style	Grate Width "A"	Edge Thickness "B"	Trench Width "C"	Square Inches	Percent
Light duty trench grates, covers and frames are recommended for	B-1000G-A	8	1½	6	78	54%
	B-1000G-B	10	1½	8	91	47%
applications where maximum wheel	B-1000G-C	12	1½	10	117	49%
loads do not exceed 1,000 pounds.	B-1000G-D	14	1½	12	143	50%
In addition to areas with light traffic,	B-1000G-E	16	1½	14	182	51%
these grates are also excellent for	B-1000G-F	18	1½	16	221	51%
pedestrian traffic. They are functional and yet attractive enough for the most	B-1000G-G	20	1½	18	260	52%
	B-1000G-H	24	1½	22	248	43%
demanding eye.	B-1000G-J	26	1½	24	282	44%

\*Note: 1,000 pound loading trench grates and covers are supplied with  $1\frac{1}{2}$ " edge thickness for use with "L" frame installations. "EZ" frames are also available. Type "L1" frames are available for 3/4" cover thickness. Please specify edge thickness and frame type when ordering.

BarryCr **Construction Casting Company** 800-524-1809



## Ductile Cast Iron Standard Designs



A = Grate/Cover Width B = Edge Thickness

- C = Trench Width
- D = Varies with Load Required

Ductile Cast Iron is an excellent material to be used in areas where heavy or light wheel loading subject extreme and sudden levels of shock to the grates/covers. Ductile Cast Iron by nature will bend slightly, absorbing extreme and sudden impacts. Ductile Cast Iron exhibits essentially the same corrosive resistance as Gray Cast Iron.

Please note: Load strength is in the grate itself. Ductile grates are furnished with gray cast iron frames with no sacrifice in load strength. Ductile iron frames can be furnished - but must be specified. 100 Ton loading is available in type "A" grates and type "D" covers with type "L" Frames only.

BarryCraft Construction Casting Company has provided you with load tables to enable you to select exactly what you need.

### Grates For Extremely Heavy Loads Available in Type "A" or "D" Covers Only in Type "L" Frame Only

60 Ton Wheel Load	TABLE: Dimensions in inches				Open Area/2'0" section	
Trench Grates/Covers/ Frames B-60TD Series	Trench Grating Style	Grate Width "A"	Edge Thickness "B"	Trench Width "C"	Square Inches	Percent
This design provides for (on each	B-60TD-A	8	1½	6	78	54%
This design provides for (on each 2' section of grate).	B-60TD-B	10	1½	8	91	47%
<b>,</b>	B-60TD-C	12	1½	10	117	49%
(1) a single wheel load of 60 Tons	B-60TD-D	15	2	12	143	50%
(120,000#) + <b>24,000</b> #	B-60TD-E	18	2	15	182	51%
of impact, equaling a total wheel load of 144,000#.	B-60TD-F	21	2	18	221	51%
	B-60TD-G	24	2	21	260	52%
Our extra heavy duty grates and frames	B-60TD-H	27	2	24	248	43%
are recommended in areas subjected	B-60TD-J	30	2	27	282	44%
to extremely heavy loads and shock	B-60TD-K	33	2	30	317	44%
levels. They are excellent in areas subjected to heavy aircraft, heavy dock cranes, military vehicles and very heavy	B-60TD-L	36	2	33	351	44%
	B-60TD-M	39	2	36	377	44%
earthmoving equipment.	B-60TD-N	45	2	42	441	44%
earthinoving equipment.	B-60TD-O	51	2	48	510	44%

40 Ton Wheel Load	TABLE: Dimensions in inches				Open Area/2'0" section	
Trench Grates/ Covers/Frames B-40TD Series	Trench Grating Style	Grate Width "A"	Edge Thickness "B"	Trench Width "C"	Square Inches	Percent
This design provides for (on each 2'0"	B-40TD-A	8	1½	6	78	54%
section of grate):	B-40TD-B	10	1½	8	91	47%
(1) a single wheel load of 40 Tons	B-40TD-C	12	1½	10	117	49%
(1) a single wheel load of 40 fons (80,000#) + 16,000# of impact,	B-40TD-D	15	2	12	143	50%
equaling a total wheel load of	B-40TD-E	18	2	15	182	51%
96.000#	B-40TD-F	21	2	18	221	51%
	B-40TD-G	24	2	21	260	52%
Our extra heavy duty grates and frames are recommended in areas subjected	B-40TD-H	27	2	24	248	43%
to extremely heavy loads and shock	B-40TD-J	30	2	27	282	44%
levels. They are excellent in areas	B-40TD-K	33	2	30	317	44%
subjected to heavy aircraft, heavy dock	B-40TD-L	36	2	33	351	44%
cranes, military vehicles and very heavy	B-40TD-M	39	2	36	377	44%
earth moving equipment.	B-40TD-N	45	2	42	441	44%
out in the stage of the state o	B-40TD-O	51	2	48	510	44%

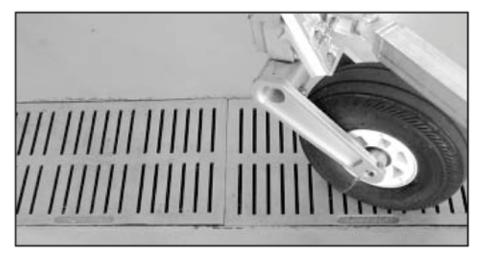
Construction Casting Company 800-524-1809

BarryCraft.com or BarryFdy.com

## Ductile Cast Iron Standard Designs

33 44 00/BAR BuyLine 0790





20 Ton Wheel Load	TABLE: Dimensions in inches				Open Area /2'0" section	
Trench Grates/ Covers/ Frames B-20TD Series	Trench Grating Style	Grate Width "A"	Edge Thickness "B"	Trench Width "C"	Square Inches	Percent
This design provides for (on each 2'0"	B-20TD-A	8	1½	6	78	54%
section of grate):	B-20TD-B	10	1½	8	91	47%
(1) a single wheel load of 20 tons	B-20TD-C	12	1½	10	117	49%
(40,000#) + 8,000# of impact,	B-20TD-D	14	1½	12	143	50%
equaling a total wheel load of	B-20TD-E	17	1½	15	182	51%
48.000#.	B-20TD-F	20	1½	18	221	51%
	B-20TD-G	23	1½	21	260	52%
Our extra heavy duty grates and frames	B-20TD-H	26	1½	24	248	43%
are recommended in areas subjected to extremely heavy loads and shock	B-20TD-J	30	2	27	282	44%
levels. They are excellent in areas	B-20TD-K	33	2	30	317	44%
subjected to heavy aircraft, heavy dock	B-20TD-L	36	2	33	351	44%
cranes, military vehicles and very heavy	B-20TD-M	39	2	36	377	44%
earth moving equipment.	B-20TD-N	45	2	42	441	44%
out in thoma of a phone.	B-20TD-O	51	2	48	510	44%

## Grates For Heavy Loads



H-20 Loading	TABLE: Dimensions in inches				Open Area/2'0" section	
Trench Covers/Grates/ Frames B-H20D Series	Trench Grating Style	Grate Width "A"	Edge Thickness "B"	Trench Width "C"	Square Inches	Percent
	B-H20D-A	8	1½	6	78	54%
H-20 design provides for (on each	B-H20D-B	10	1½	8	91	47%
2'0" section of grate):	B-H20D-C	12	1½	10	117	49%
<b>e</b> ,	B-H20D-D	14	1½	12	143	50%
<ol> <li>two wheel loads of 9,000# +</li> </ol>	B-H20D-E	17	1½	15	182	51%
3,000# of impact per wheel; or	B-H20D-F	20	1½	18	221	51%
(2) a single wheel load of 24,000#	B-H20D-G	23	1½	21	260	52%
(including impact).	B-H20D-H	26	1½	24	248	43%
Our heavy duty grates and frames	B-H20D-J	30	2	27	282	44%
are designed for warehouse trucks,	B-H20D-K	33	2	30	317	44%
concrete mixers, tractor trailers and	B-H20D-L	36	2	33	351	44%
heavy forklifts.	B-H20D-M	39	2	36	377	44%
	B-H20D-N	45	2	42	441	44%
	B-H20D-O	51	2	48	510	44%

BarryCra Construction Casting Company 800-524-1809



## Pedestrian – Handicap/Bicycle Trench Grating

### Pedestrian Trench Grating

BarryCraft's "pedestrian" trench grating (type HH design: see Page 11) is a new improved trench grate design for pedestrian traffic. The 5/16" wide slot helps to provide safer grating to walk on in the areas where drainage is required. When specifying or ordering BarryCraft's "pedestrian" grating, please remember to indicate the type of material required. BarryCraft offers you three choices:

> Gray cast iron Ductile cast iron Cast aluminum

The type L frame is standard and will be provided with the pedestrian grating when a frame is specified.

Applications for BarryCraft's "pedestrian" grating include: sidewalks, terraces, shopping malls, around swimming pools and other areas where appearance and public safety are important. *Call Us Toll Free:* 1-800-524-1609 Fax: 205-841-1972

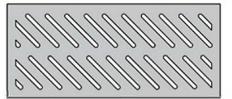
TABLE: Dimensions in inches						
Trench Grating Style	Grate Width "A"	Edge Thickness "8"	Trench Width "C"			
B-PED-A1	6	1½	4			
B-PED-A2	8	1½	6			
B- PED-A3	10	1½	8			
B-PED-A4	12	1½	10			
B-PED-A5	14	1%	12			

\*Note: "Pedestrian" trench grating are supplied with 1½" edge thickness for use with "L" frame installations,

"EZ" frames are also available. Please specify edge thickness and frame type when ordering.

Custom sizes may be available.

### Handicap/Bicycle Trench Grating



BarryCraft's "handicapped/bicycle" trench grating (type AAA design: see Page 11) is designed to help ease handicap and bicycle traffic safely over trench grating installations. BarryCraft's "handicapped/ bicycle" trench grating's standard diagonal slots are 3/8" wide with a maximum slot length of 9". Grates and frames may be ordered or specified in:

Gray cast iron Ductile cast iron Cast aluminum

The type L frame (see page 11) is standard and will be provided with the Handicapped/bicycle grating when a frame is specified.

BarryCraft's "handicapped/bicycle" trench grating is particularly suitable in any public area where handicapped and others on small tire traffic have access. Such areas include hospitals, schools, office buildings, colleges, public sidewalks and shopping malls.

**Construction Casting Company** 800-524-1809

8



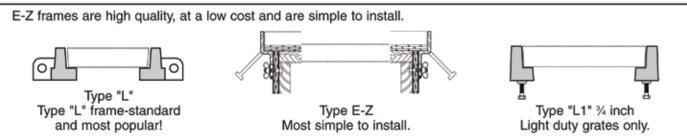
TABLE: Dimensions in inches						
Trench Grating Style	Grate Width "A"	Edge Thickness "B"	Trench Width "C"			
B-HCB-A1	6	1½	4			
B-HCB-A2	8	1½	6			
B-HCB-A3	10	1½	8			
B-HCB-A4	12	1½	10			
B-HCB-A5	14	1½	12			

\*Note: "Handicapped/bicycle" trench grating are supplied with 1½" edge thickness for use with "L" frame installations. "EZ" frames are also available. Please specify edge thickness and frame type when ordering. Custom sizes may be available.

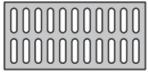


# **Standard Frame Types**

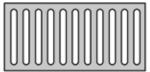
#### 33 44 00/BAR BuyLine 0790



### Standard Grate & Cover Designs Available in Gray, Ductile Cast Iron, Aluminum



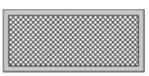
Type "A" Grate (slots run perpendicular to frame). Recommended for highest strength and lowest cost.



Type "B" Grate (slots perpendicular to frame.)

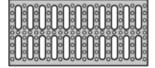
$\square$			
$\square$	$\neg$	$\neg$	
$\square$			

Type "C" Grate (slots parallel to frame.)



Type "D" Solid Cover. Abrasive grit available.

New!

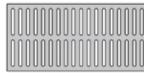


Type "AK" Grate (slots run perpendicular to frame). Recommended for highest strength and lowest cost with raised knobs to improve drainage and traction.

### New grate designs for safety!



Type "AAA" (slots run diagonal to frame. For handicap/bicycle safety.)



Type "HH" Grate (slots run perpendicular to frame. Slots to 5/16" wide for pedestrian traffic.)

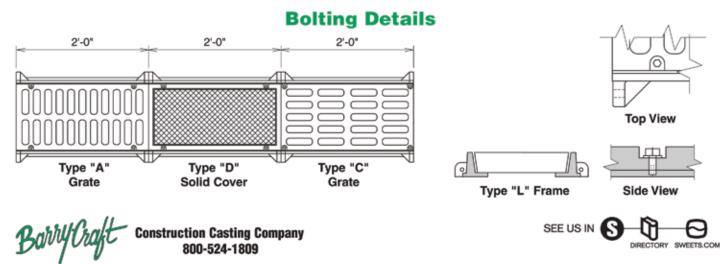


Type "W" Wave Grates. This is a top surface view. There are Cross Ribs underneath for support.

Safer for wheelchairs and bicycles! Excellent drainage from all directions. Strength designs for light wheelchair/ bicycle traffic up to aircraft traffic.



Safer for pedestrian traffic. Strength designs for light pedestrian traffic up to aircraft traffic.



## **Downspout Boots** Gray Cast Iron & Cast Aluminum

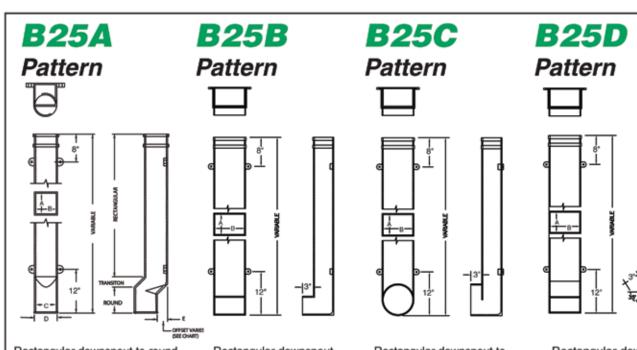
### B4924 Series

BarryCraft's gray cast iron and cast aluminum downspout boots are heavy duty and should last virtually the life of the building.

Cast iron downspout boots will be painted primer gray. Aluminum downspout boots will have a sand cast finish.

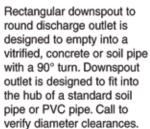
#### When ordering, please specify:

- Material Cast Iron or Cast Aluminum
- Style of Downspout Example "B25A"
- What length downspout boot is required
- What size downspout is fitting into the top of the boot
- What size outlet is desired to attach to your drainage system



Rectangular downspout to round discharge outlet is designed to empty straight into a soil pipe. This downspout boot is also designed with an offset from the building to allow the pipe hub to fit around the downspout boot. They may be used with PVC pipe. Check clearances in the table below.

Rectangular downspout to rectangular discharge outlet is designed to empty into a trench or gutter box at a 90° turn.



Rectangular downspout to rectangular discharge is designed to empty onto a splash block or paved area.

72"

B25 Series Standard Inside A" x B" Dimensions					
	3" x 3"				
	3" x 4"				
	3" x 5"				
	4" x 4"				
	4" x 5"				
	4" x 6"				
	5" x 5"				
	6" x 6"				

#### DOWNSPOUT BOOTS STYLE 25A STANDARD OUTLETS AVAILABLE Other sizes may be available upon request for the B25A downspout boots.

OUTLET I.D. C	OUTLET O.D. D	OFFSET E
3"	4"	21/2"
4"	4%"	21/2"
5"	6"	2%"
4"	4%"	2¼"
4"	41/8"	21/2"
5"	6"	21/8"
4"	4%"	1½"
6"	6%"	1½"
6"	7"	21/2"
6"	7"	1¼"
	C 3" 4" 5" 4" 5" 4" 6" 6"	C         D $3^{"}$ $4^{"}$ $4^{"}$ $4^{7}\!/\!{}^{"}$ $5^{"}$ $6^{"}$ $4^{"}$ $4^{7}\!/\!{}^{"}$ $4^{"}$ $4^{7}\!/_{\!/}^{"}$ $5^{"}$ $6^{"}$ $4^{"}$ $4^{7}\!/_{\!/}^{"}$ $5^{"}$ $6^{"}$ $4^{"}$ $4^{7}\!/_{\!/}^{"}$ $6^{"}$ $6^{7}\!/_{\!/}^{"}$ $6^{"}$ $7^{"}$

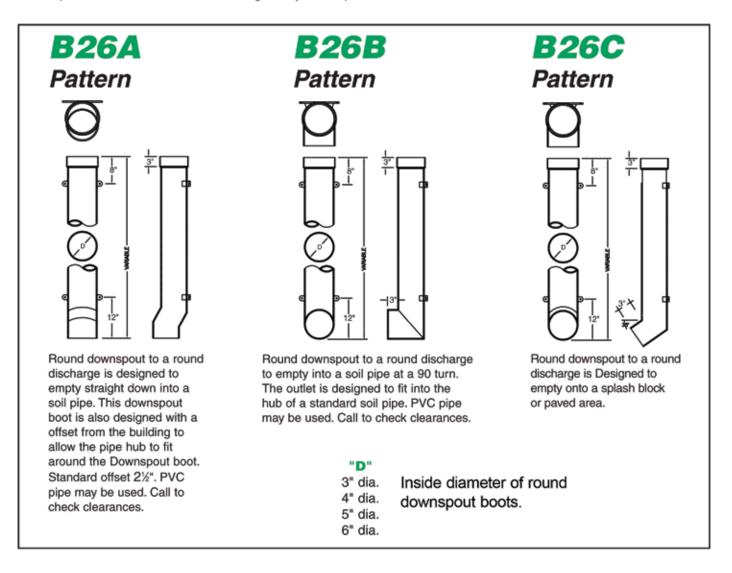
#### Standard Lengths 12" 18" 24" 30" 36" 42" 48" 54" 60"



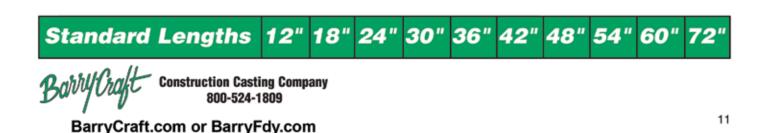
**Construction Casting Company** 800-524-1809

## **Round Downspout Boots** Gray Cast Iron & Cast Aluminum

**BarryCraft** downspout boots are excellent in areas subjected to vehicular traffic where light duty downspout boots can be easily damaged. Our downspout boots are also excellent in public areas such as around buildings or schools where pedestrian traffic can vandalize light duty downspouts.

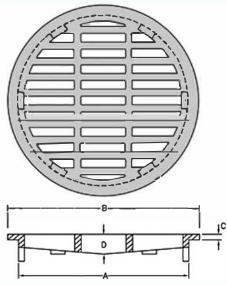


Cast iron downspout boots will be painted primer gray. Cast aluminum downspout boots will have a sand cast finish.



#### The BarryCraft Line of Quality Cast Products Available in Cast Gray Iron or Aluminum

#### **Heavy Duty Pipe Grates**



8-4042 HEAVY DUTY GRATES FOR THE END OF CORRUGATED PIPE OR PVC PIPE							
PIPE SIZE	Α	Overall DIA. (B)	Edge (C)	Center (D)	Total Wt.		
6	5%	7%	1/2	3∕a	12		
8	7%	10	<b>%</b> i4	1%	15		
10	9%	12	3/6	1%	25		
12	11%	14%	3/4	1%	34		
15	14%	17%	3/4	1½	50		
18	17%	20%	3/4	1%	15		
24	23%	26%	*	21/4	130		
30	29%	32%	1	21/4	228		
36	35%	38%	1%	3	325		
42	41%	44%	1%	4	480		
48	471/4	50%	1½	41/4	630		

A = Pipe Size minus 1/4" Diameter

