

c o m p o n e n t
c a t a l o g



Made With
Pride in the
USA



hollaender.com

Hollaender
Your Handrail Source.



Slip-On Fittings

Speed-Rail®, Speed-Rail® II, Nu-Rail®, Rackmaster®, Mend-A-Rail® _____ 1-13

Flanges

Flanges _____ 14
 Selection Guide _____ 15
 Products _____ 16-27

Accessories

Gates, Hinges, Latches, Toeplate, Fasteners, Brackets,
 Splices, Shelf/Gridwall Supports _____ 28-34

Handrail Systems

Speed-Rail® _____ 35-36
 Interna-Rail® _____ 37-41
 ADA Rail _____ 42-44
 Bumble-Bee® Safety Rail _____ 45-47

Structural Applications

Applications _____ 48-49

Technical Information

Pipe Size _____ 51
 Q & A _____ 52
 How to Specify _____ 53
 Aluminum-Magnesium Alloy 535.0 Sand Castings _____ 54
 Load Capacity of Fitting Set Screws when Properly Torqued _____ 54
 Building Code Information _____ 55-56
 Guardrail & Handrail Structural Design _____ 57



The Hollaender® Advantage

- **Speed of Installation** – Studies have shown significant cost savings when compared to the cost of welded handrail and other structures
- **Ease of Installation** – Only tools required are a saw, hex key and tape measure
- **Flexibility** – Aluminum magnesium cast fittings can be used with aluminum, galvanized steel, stainless steel and black iron pipe
- **Reusability** – Structures fabricated with Hollaender® fittings can easily be disassembled and reconfigured
- **Strength** – Railing systems can be designed using standard Hollaender® products to meet any building code. Please refer to Technical Section of Catalog, www.hollaender.com, or call our engineers.
- **Time Tested** – Products are backed by over 65 years of experience

Applications are limited only by the imagination

Handrails & guardrails, playgrounds and carts, store fixtures, offshore petro/chemical, industrial plants, racking systems, warehouses, health & medical buildings, portable structures, recreational areas, amusement parks, film industry, government facilities & public works, displays, and much, much more.

Typical Hollaender® Slip-On Fittings

Hollaender® features the World's best known brands

Speed-Rail® – Inline design has become the benchmark for quality throughout the industry.

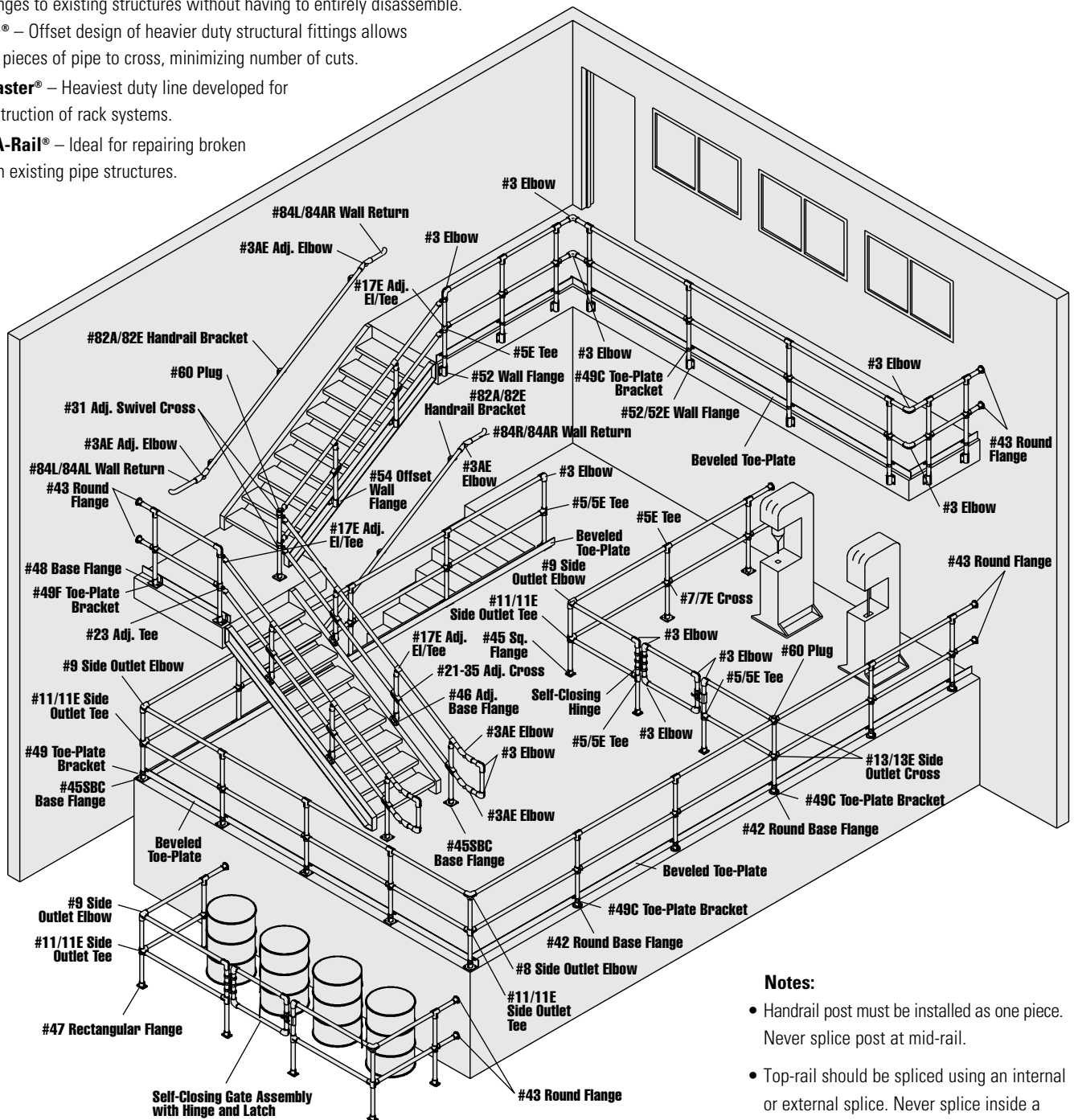
Speed-Rail® II – Patented modular fitting system which easily allows for additions and changes to existing structures without having to entirely disassemble.


Nu-Rail® – Offset design of heavier duty structural fittings allows multiple pieces of pipe to cross, minimizing number of cuts.

Rackmaster® – Heaviest duty line developed for the construction of rack systems.


Mend-A-Rail® – Ideal for repairing broken welds on existing pipe structures.


Hollaender® products are produced from only the highest quality materials such as Aluminum Alloy 535, the most corrosive resistant alloy available today, and feature proprietary fasteners that have tremendous slip and loosening resistance.





No. 2S Modular Tee	I.P.S. Size	Item Number
	3/4"	15000
	1-1/4"	17000
	1-1/2"	18000
Components: (1) No. 99C, (1) No. 2SB		

No. 3 Elbow	I.P.S. Size	Item Number
	3/4"	05020
	1"	06020
	1-1/4"	07020
	1-1/2"	08020
	2"	09020


No. 3AE Adjustable Elbow	I.P.S. Size	Item Number
	1-1/4"	07030
	1-1/2"	08030


No. 5 Tee	I.P.S. Size	Item Number
	3/4"	05040
	1"	06040
	1-1/4"	07040
	1-1/2"	08040
	2"	09040

No. 5AT Angle Tee (55°)	I.P.S. Size	Item Number
	3/4"	05050
	1"	06050
	1-1/4"	07050


No. 5E Tee-E	I.P.S. Size	Item Number
	3/4"	05060
	1"	06060
	1-1/4"	07060
	1-1/2"	08060

No. 5EXT Extended Barrel Tee	I.P.S. Size	Item Number
	1-1/2"	08110


No. 5SR Tee Side Rib	I.P.S. Size	Item Number
	1-1/2"	08070
	2"	09070


No. 6 Angle Tee (45°)	I.P.S. Size	Item Number
	1-1/4"	07080
	1-1/2"	08080


No. 7 Cross	I.P.S. Size	Item Number
	3/4"	05090
	1"	06090
	1-1/4"	07090
	1-1/2"	08090
	2"	09090


No. 7E Cross-E	I.P.S. Size	Item Number
	3/4"	05100
	1"	06100
	1-1/4"	07100
	1-1/2"	08100


No. 7S Modular Cross Assembly	I.P.S. Size	Item Number
	1-1/2"	18020
	Components: (1) No. 7SB (1) No. 2SB	


No. 9 Side Outlet Elbow	I.P.S. Size	Item Number
	3/4"	05120
	1"	06120
	1-1/4"	07120
	1-1/2"	08120
	2"	09120


No. 10 Offset Cross	I.P.S. Size	Item Number
	3/4"	05130
	1"	06130
	1-1/4"	07130
	1-1/2"	08130
	2"	09130


No. 11 Side Outlet Tee	I.P.S. Size	Item Number
	3/4"	05140
	1"	06140
	1-1/4"	07140
	1-1/2"	08140
	2"	09140

No. 11E Side Outlet Tee-E	I.P.S. Size	Item Number
	3/4"	05150
	1"	06150
	1-1/4"	07150
	1-1/2"	08150

No. 12 Short Barrel Cross	I.P.S. Size	Item Number
	3/4"	05160
	1"	06160
	1-1/4"	07160
	1-1/2"	08160


No. 13 Side Outlet Cross	I.P.S. Size	Item Number
	3/4"	05170
	1"	06170
	1-1/4"	07170
	1-1/2"	08170

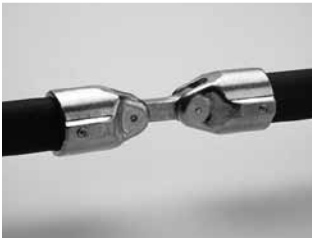
No. 13E Side Outlet Cross-E	I.P.S. Size	Item Number
	1"	06180
	1-1/4"	07180
	1-1/2"	08180

No. 14S Modular Offset Cross Assembly	I.P.S. Size	Item Number
	1"	16040
	1-1/4"	17040
	1-1/2"	18040
Components: (1) No. 99C (1) No. 14SB		

No. 15 Nu-Rail Offset Tee	I.P.S. Size	Item Number
	1-1/4"	07210

No. 16 Bolt-On Tee	I.P.S. Size	Item Number
	1-1/4"	07220
	1-1/2"	08220

No. 17 Adj. Elbow or Tee Assembly	I.P.S. Size	Item Number
	3/4"	05230
	1"	06230
	1-1/4"	07230
	1-1/2"	08230
	2"	09230


No. 17A Adjustable Elbow 180°	I.P.S. Size	Item Number
	3/4"	05290
	1"	06290
	1-1/4"	07290
	1-1/2"	08290

No. 17E Adj. Elbow or Tee-E Assembly	I.P.S. Size	Item Number
	3/4"	05240
	1-1/4"	07240
	1-1/2"	08240

No. 17EM Adj. Elbow or Tee-E Male Body	I.P.S. Size	Item Number
	3/4"	05250
	1-1/4"	07250
	1-1/2"	08250

No. 17EMO Adj. El or Tee Male/Oval Slot	I.P.S. Size	Item Number
	1-1/2"	08260

No. 17F Adj. Elbow or Tee Female Body	I.P.S. Size	Item Number
	3/4"	05270
	1"	06270
	1-1/4"	07270
	1-1/2"	08270
	2"	09270


No. 17HM Hook	I.P.S. Size	Item Number
	1-1/4"	07490
	1-1/2"	08490


No. 17M Adj. Elbow or Tee Male Body	I.P.S. Size	Item Number
	3/4"	05280
	1"	06280
	1-1/4"	07280
	1-1/2"	08280
	2"	09280

No. 17MA Extended Tab	I.P.S. Size	Item Number
	1-1/2"	08390


No. 17S Modular Adj. Tee Assembly	I.P.S. Size	Item Number
	1-1/2"	18060
Components: (1) No. 98C (1) No. 17SB (1) No. 17F		

No. 18 Shelf Support	I.P.S. Size	Item Number
	1"	31490

No. 18S Modular Stair Bracket Assembly	I.P.S. Size	Item Number
	1-1/4"	17100
	1-1/2"	18100
Components: (1) No. 99C (1) No. 18SB		

No. 19 Adj. Cross Assembly	I.P.S. Size	Item Number
	3/4"	05330
	1"	06330
	1-1/4"	07330
	1-1/2"	08330
	2"	09330


No. 19E Adj. Cross-E	I.P.S. Size	Item Number
	1-1/2"	08300


No. 19EM Adj. Cross Male Body-E	I.P.S. Size	Item Number
	1-1/2"	08310


No. 19EMO Adj. Cross Male-E/Oval Slot	I.P.S. Size	Item Number
	1-1/2"	08320


No. 19M Adj. Cross Male Body	I.P.S. Size	Item Number
	3/4"	05340
	1"	06340
	1-1/4"	07340
	1-1/2"	08340
	2"	09340


No. 19MA Double Extended Tab	I.P.S. Size	Item Number
	1-1/2"	08970


No. 20 Outside Corner	I.P.S. Size	Item Number
	3/4"	05350
	1"	06350
	1-1/4"	07350
	1-1/2"	08350
	2"	09350


No. 21-35 Adj. Cross (10°-35°)	I.P.S. Size	Item Number
	3/4"	05360
	1"	06360
	1-1/4"	07360
	1-1/2"	08360

No. 21-45 Adj. Cross (30°-45°)	I.P.S. Size	Item Number
	3/4"	05370
	1"	06370
	1-1/4"	07370
	1-1/2"	08370


No. 22S Mod. Cross Elbow Assembly	I.P.S. Size	Item Number
	1-1/4"	17120
	1-1/2"	18120
Components: (1) No. 99C (1) No. 22SB		

No. 23 Adj. Tee or Cross	I.P.S. Size	Item Number
	3/4"	05400
	1"	06400
	1-1/4"	07400
	1-1/2"	08400


No. 23M Adj. Tee or Cross Male	I.P.S. Size	Item Number
	3/4"	05410
	1"	06410
	1-1/4"	07410
	1-1/2"	08410

No. 23S Modular Adj. Cross	I.P.S. Size	Item Number
	1-1/4"	17140
	1-1/2"	18140
Components: (1) No. 2SB (1) No. 17SB (1) No. 17F		

No. 24 Universal Adapter	I.P.S. Size	Item Number
	1-1/2"	08860

No. 25 Side Outlet Adj. Elbow or Tee	I.P.S. Size	Item Number
	3/4"	05420
	1"	06420
	1-1/4"	07420
	1-1/2"	08420

No. 25M Adj. Side Outlet Ell or Tee Male	I.P.S. Size	Item Number
	3/4"	05430
	1"	06430
	1-1/4"	07430
	1-1/2"	08430


No. 27 Dbl. Adj. Side Outlet El or Tee Assem.	I.P.S. Size	Item Number
	3/4"	05440
	1"	06440
	1-1/4"	07440
	1-1/2"	08440

No. 27E Dbl. Adj. Side Outlet Tee-E	I.P.S. Size	Item Number
	1-1/2"	08460


No. 27EM Dbl. Adj. Side Outlet Tee-E Male	I.P.S. Size	Item Number
	1-1/2"	08470

No. 27EMO Dbl. Adj. Side Outlet Tee Male	I.P.S. Size	Item Number
	1-1/2"	08480

No. 27M Dbl. Adj. S.O. El or Tee Male Body	I.P.S. Size	Item Number
	3/4"	05450
	1"	06450
	1-1/4"	07450
	1-1/2"	08450

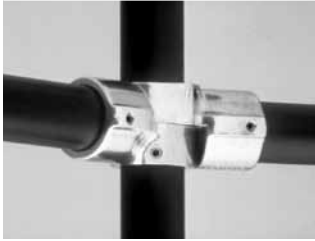
No. 28S Mod. Corner El (1 Barrel) Assem.	I.P.S. Size	Item Number
	1-1/4"	17150
	1-1/2"	18150
	Components: (1) No. 99C (1) No. 28SB	

No. 29 Adjustable Side Outlet Elbow	I.P.S. Size	Item Number
	1-1/4"	07570


No. 30 Nu-Rail Adj. Cross	I.P.S. Size	Item Number
	3/4"	05500
	1"	06500
	1-1/4"	07500
	1-1/2"	08500
	2"	09500
	Components: (1) 30A (1) 30B	

No. 30A Nu-Rail Modified Cross	I.P.S. Size	Item Number
	3/4"	05510
	1"	06510
	1-1/4"	07510
	1-1/2"	08510
	2"	09510

No. 30B Nu-Rail Swivel	I.P.S. Size	Item Number
	3/4"	05520
	1"	06520
	1-1/4"	07520
	1-1/2"	08520
	2"	09520


No. 30C Nu-Rail Adj. Swivel	I.P.S. Size	Item Number
	3/4"	05530
	1"	06530
	1-1/4"	07530
	1-1/2"	08530
	2"	09530

End caps not included

No. 31 2-Dimensional Adj. Cross	I.P.S. Size	Item Number
	1-1/2"	08540

No. 32 Sloping Adjustable Tee	I.P.S. Size	Item Number
NEW! 	1-1/4"	07840

No. 41RSP Mounting Bracket	I.P.S. Size	Item Number
NEW! 	1-1/4"	07960
	1-1/2"	08960
	2"	09940

No. 56SLP Mounting Bracket	I.P.S. Size	Item Number
NEW! 	1-1/4"	31430
	1-1/2"	31440
	2"	31450

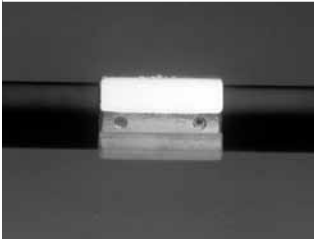
No. 60 Plug Sch. 40 (O.D. Fitting)	I.P.S. Size	Item Number
	3/4"	05600
	1"	06600
	1-1/4"	07600
	1-1/2"	08600
	2"	09600

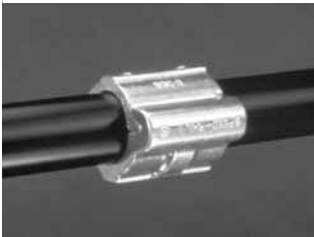
No. 62 Plug Sch. 40 (O.D. Pipe)	I.P.S. Size	Item Number
	3/4"	05610
	1"	06610
	1-1/4"	07610
	1-1/2"	08610
	2"	09610

No. 62P Plastic Plug Sch. 40	I.P.S. Size	Item Number
	3/4"	10550
	1"	10560
	1-1/4"	10570
	1-1/2"	10580
	2"	10590


No. 63 Plug Sch. 80	I.P.S. Size	Item Number
NEW! 	1-1/2"	10870

No. 65 Plug Sch. 80 (O.D. Pipe)	I.P.S. Size	Item Number
	1-1/4"	07620
	1-1/2"	08620
	2"	09620


No. 70 External Coupling	I.P.S. Size	Item Number
	3/4"	05630
	1"	06630
	1-1/4"	07630
	1-1/2"	08630
	2"	09630

No. 70S Modular External Coupling	I.P.S. Size	Item Number
	1-1/2"	18170
	Components: (1) No. 99C (1) No. 98C	


No. 78 Short Collar	I.P.S. Size	Item Number
	1-1/4"	07680
	1-1/2"	08680


No. 94 Double Tab Bracket – Oval Slot	I.P.S. Size	Item Number
	1-1/2"	08780

No. 95 Single Tab Bracket – Oval Slot	I.P.S. Size	Item Number
	1-1/2"	08790

No. 96 Platform Bracket	I.P.S. Size	Item Number
	1-1/2"	08720

No. 98C Modular Cap Female	I.P.S. Size	Item Number
	1-1/2"	18180


No. 99C Modular Cap Male	I.P.S. Size	Item Number
	3/4"	15190
	1"	16190
	1-1/4"	17190
	1-1/2"	18190


No. 100 Rackmaster	I.P.S. Size	Item Number
	1"	06730
	1-1/4"	07730
	1-1/2"	08730
	2"	09730

No. 102 Rackmaster	I.P.S. Size	Item Number
	3/4"	05740
	1"	06740
	1-1/4"	07740
	1-1/2"	08740
	2"	09740


No. 104 Side Outlet Cross	I.P.S. Size	Item Number
	3/4"	05750
	1"	06750
	1-1/4"	07750
	1-1/2"	08750

No. 104S Modular Side Outlet Cross	I.P.S. Size	Item Number
	3/4"	15240
	1"	16200

No. 106 Dbl. Side Outlet Cross	I.P.S. Size	Item Number
	3/4"	05760
	1"	06760
	1-1/4"	07760
	1-1/2"	08760

No. 106E Dbl. Side Outlet Cross-E	I.P.S. Size	Item Number
	1"	06770
	1-1/4"	07770
	1-1/2"	08770


No. 150 Speed Tee	I.P.S. Size	Item Number
	1-1/2"	58500

No. 151 Adjustable Speed Tee	I.P.S. Size	Item Number
	1-1/4"	31410
	1-1/2"	58510

No. 300 Mend-A-Rail Elbow	I.P.S. Size	Item Number
	1-1/2"	38800

No. 500 Mend-A-Rail Tee	I.P.S. Size	Item Number
	1-1/2"	38810

No. 700 Mend-A-Rail Cross	I.P.S. Size	Item Number
	1-1/2"	38860

No. 1700 Mend-A-Rail Adj. El or Tee	I.P.S. Size	Item Number
	1-1/2"	38820

No. 1900 Mend-A-Rail Cross Adj.	I.P.S. Size	Item Number
	1-1/2"	38830

No. 2500 Mend-A-Rail Side Outlet El/Tee	I.P.S. Size	Item Number
	1-1/2"	38840

No. 7000 Mend-A Rail Coupling	I.P.S. Size	Item Number
	1-1/2"	38850

Hollaender® offers an extensive line of flanges for mounting handrail, guardrail, and other pipe structures. These flanges are available in optional finishes. Selecting the right flange becomes extremely important in all handrail applications. To aid in the selection process, please refer to the chart on the following page and dimensional drawings on the subsequent pages.



Our engineering staff is available to answer questions regarding the appropriate hardware. Concrete anchors and machined bolts may be ordered to complete the handrail system. Many applications require toeplate. (Refer to Tech Information section, Building Codes and OSHA standard pipe railing for requirements.)

Refer to our Accessories section for our toeplate and toeplate brackets. Please refer to our web page at www.hollaender.com for additional technical support.

Base Flange Selection Guide for Handrail Applications

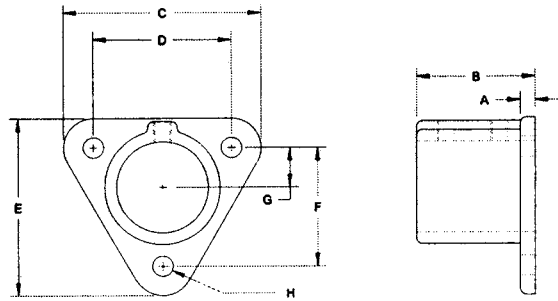
1-1/2" Mounting Flange	OSHA only or 4' Post Spacing	IBC/UBC 5' Post Spacing	Wall Mount Only Non-Structural	ADA Ramp 5' Post Spacing	USACE EM385-1-1
#40			●		
#41			●		
#42	●				
#43			●		
#45	●				
#45SBC	●	●		●	●
#45BCS				●	●
#46	●	●			
#46ADJ*	●				
#46AF	●	●			
#46AHD	●	●			
#46CR	●	●			
#46EXT	●	●			
#47	●				
#47R	●	●			
#48/48SB	●	●			●
#48BC	●	●			●
#50	●	●			
#52	●	●			●
#52E	●	●			●
#54-3/4/5	●	●			●

● Surface Mount Flange ● Side Mount Flange ● Non-Structural Flange

Information shown above should be considered only as a guide, not a recommendation. Data used to develop this chart does not take pipe materials or mounting hardware into consideration. Both factors will greatly affect the overall performance of a handrail system.

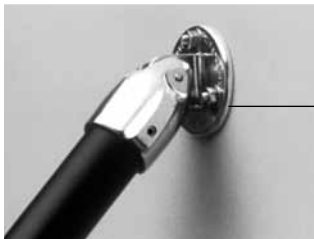
*Stair handrail only - 36" maximum height

No. 40 Triangular Flange

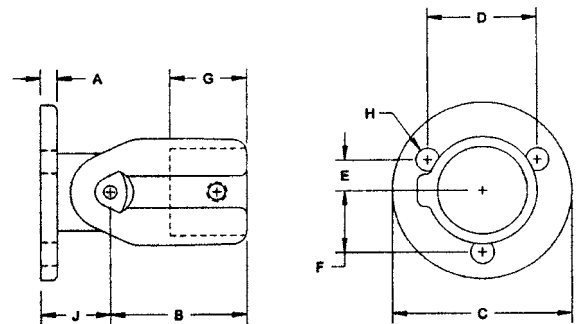
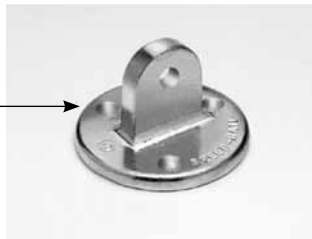


I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
3/4"	25010	3/16"	1-1/2"	2-1/2"	1-3/4"	2-1/4"	1-1/2"	1/2"	5/16" Ø	-
1"	26010	1/4"	1-3/4"	3-3/16"	2-5/16"	2-7/8"	2"	11/16"	5/16" Ø	-
1-1/4"	27020	1/4"	1-3/4"	3-7/8"	2-5/8"	3-1/2"	2-1/4"	3/4"	7/16" Ø	-
1-1/2"	28020	5/16"	2-1/2"	4-3/16"	2-15/16"	3-13/16"	2-9/16"	7/8"	7/16" Ø	-

No. 41 Adj. Flange (Wall Only)



No. 41M Flange Base

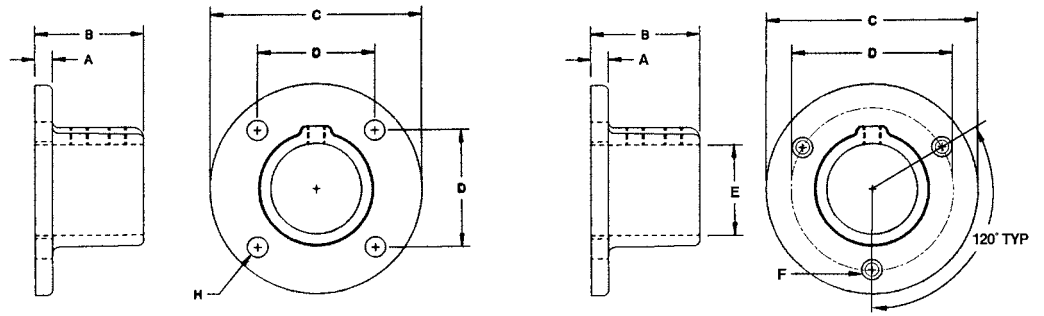


I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
3/4"	25040	1/4"	1-15/16"	2-7/8"	1-5/8"	15/32"	15/16"	31/32"	5/16" Ø	1-3/16"
1"	26040	1/4"	2"	2-7/8"	1-5/8"	15/32"	15/16"	1-3/16"	5/16" Ø	1-3/16"
1-1/4"	27050	5/16"	2-1/2"	3-3/8"	2-1/16"	19/32"	1-3/16"	1-9/16"	7/16" Ø	1-5/16"
1-1/2"	28050	5/16"	2-13/16"	3-3/8"	2-1/16"	19/32"	1-3/16"	1-11/16"	7/16" Ø	1-5/16"

No. 41M Flange Base

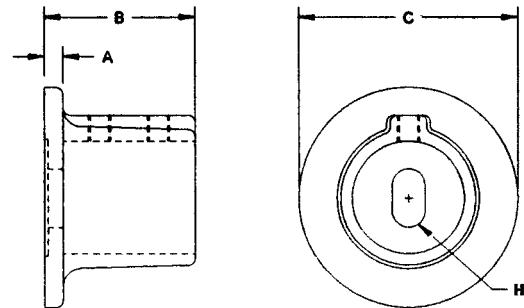
3/4"	25060
1"	26060
1-1/4"	27070
1-1/2"	28070

No. 42 Round Base Flange



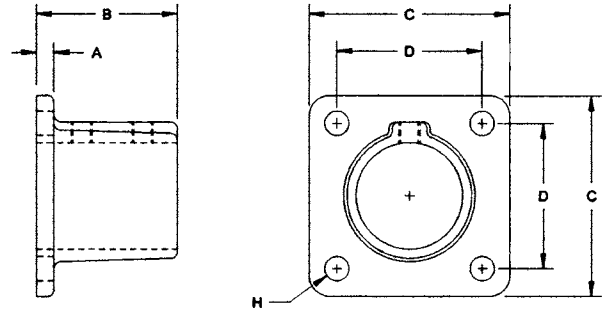
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/4"	27090	3/8"	2-1/8"	4-1/2"	2-1/2"	-	-	-	7/16" Ø	-
1-1/2"	28090	3/8"	2-5/16"	4-1/2"	2-1/2"	-	-	-	7/16" Ø	-
No. 42 Round Base Flange – 3 Mounting Holes										
3/4"	25080	1/4"	1-3/4"	2-1/2"	2"	1-1/2"	3/16" Ø			
1"	26080	11/32"	1-5/32"	3"	2-11/32"	1-11/32"	1/4" Ø			

No. 43 Round Wall Flange



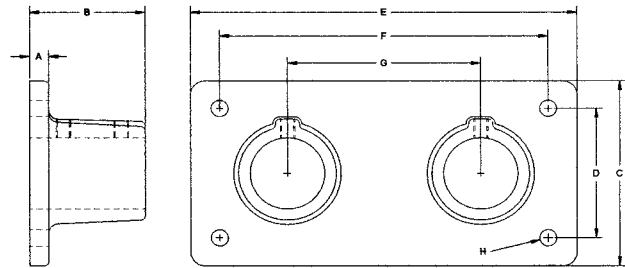
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
3/4"	25100	1/4"	1-3/4"	2-1/2"	-	-	-	-	7/16" Ø	-
1"	26100	5/16"	2-1/8"	3"	-	-	-	-	15/32" x 7/8"	-
1-1/4"	27100	5/16"	2-7/16"	3-1/2"	-	-	-	-	17/32" x 1"	-
1-1/2"	28100	5/16"	2-9/16"	3-3/4"	-	-	-	-	9/16" x 1"	-

No. 45 Square Floor Flange



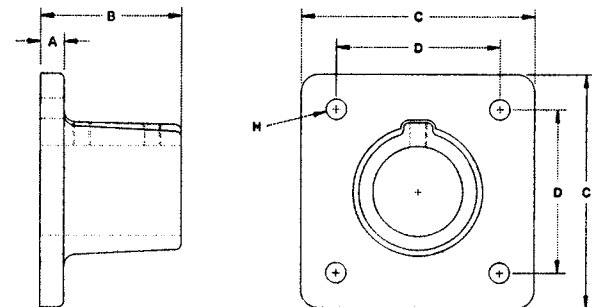
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
3/4"	25120	1/4"	1-1/2"	2-5/8"	1-3/4"	-	-	-	5/16" Ø	-
1"	26120	1/4"	1-13/16"	3"	2-1/16"	-	-	-	5/16" Ø	-
1-1/4"	27130	5/16"	2-3/16"	3-11/32"	2-3/8"	-	-	-	7/16" Ø	-
1-1/2"	28130	5/16"	2-17/32"	3-5/8"	2-5/8"	-	-	-	7/16" Ø	-

No. 45D Dual Barrel Flange



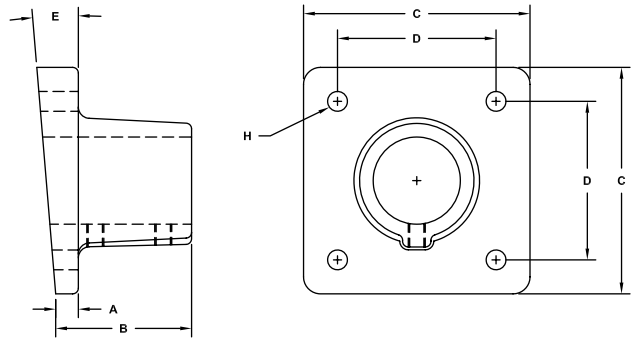
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28670	1/2"	3"	5"	3-1/2"	10"	8-1/2"	5"	7/16" Ø	-

No. 45SBC Square Floor Flange



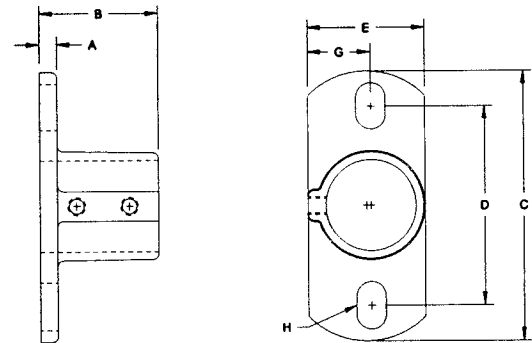
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28470	1/2"	3"	5"	3-1/2"	-	-	-	7/16" Ø	-

No. 45SBCS Sq. Floor Flange (1-12 Slope)



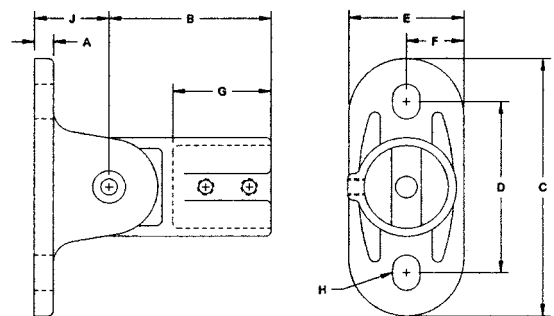
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28480	1/2"	3"	5"	3-1/2"	1:12	-	-	7/16" Ø	-

No. 46 Base Flange



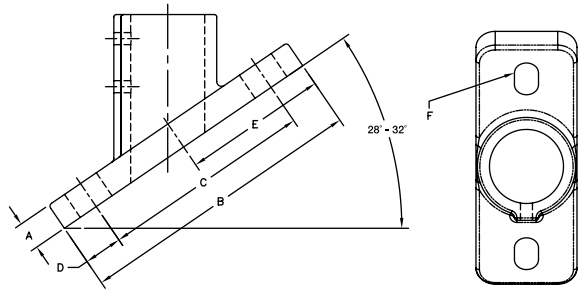
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1"	26140	9/32"	1-13/32"	3-1/2"	2-5/8"	2-3/8"	-	1-3/16"	5/16" Ø	-
1-1/4"	27140	3/8"	2-3/16"	5-3/4"	4-1/4"	2-1/2"	-	1-11/32"	9/16" x 13/16"	-
1-1/2"	28140	9/16"	3"	6"	4-1/4"	2-3/4"	-	1-3/8"	9/16" x 13/16"	-

No. 46ADJ Adj. Flange



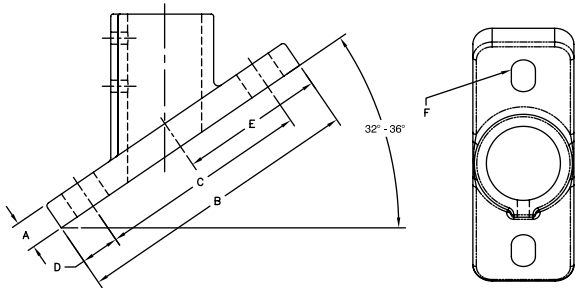
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/4"	27150	7/16"	3-11/16"	6"	4"	2-5/8"	1-5/16"	2-1/4"	9/16" x 13/16"	1-11/16"
1-1/2"	28150	7/16"	3-11/16"	6"	4"	2-5/8"	1-5/16"	2-1/4"	9/16" x 13/16"	1-11/16"

No. 46AF1 Angle Base Flange 28° - 32°



I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28710	23/32"	7-1/2"	5-1/2"	1"	3-3/4"	5/8" x 1"	-	-	-

No. 46AF2 Angle Base Flange 32° - 36°

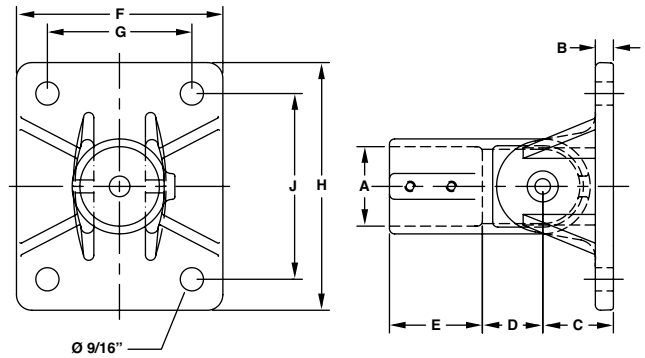


I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28720	23/32"	7-1/2"	5-1/2"	1"	3-3/4"	5/8" x 1"	-	-	-

No. 46AHD Heavy-Duty Adj. Flange



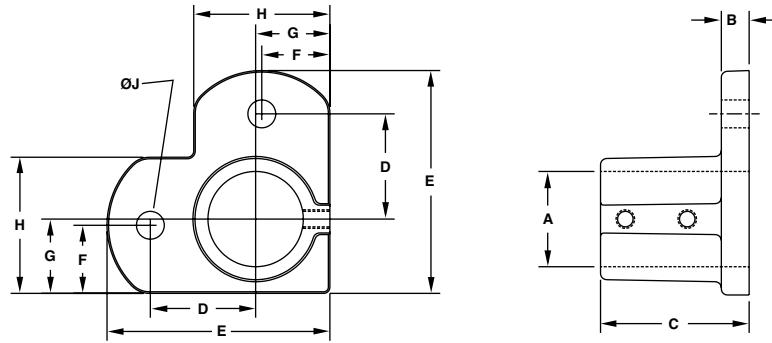
NEW!



I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/4"	27990	1-11/16"	7/16"	1-23/32"	1-7/16"	2-1/4"	5"	3-1/2"	6"	4-1/2"
1-1/2"	28990	1-15/16"	7/16"	1-23/32"	1-7/16"	2-1/4"	5"	3-1/2"	6"	4-1/2"

No. 46CR Corner Flange

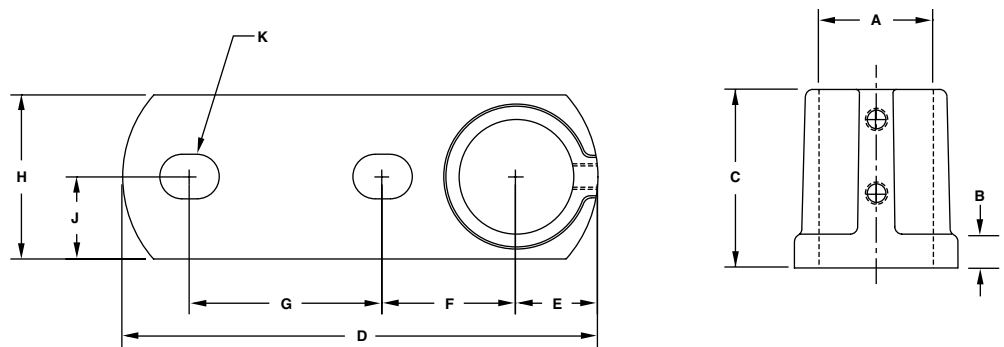
NEW!



I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28410	1-15/16"	9/16"	3"	2-1/8"	4-1/2"	1-13/32"	1-29/64"	2-3/4"	9/16" Ø

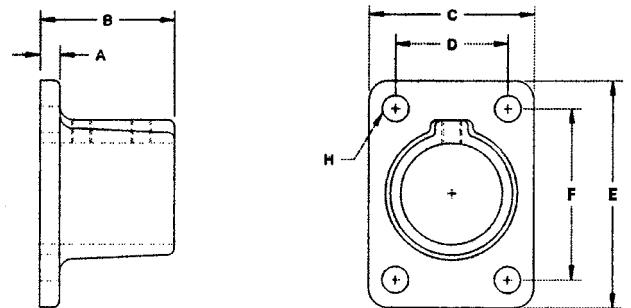
No. 46EXT Extended Base Flange

NEW!



I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J	K
1-1/2"	28420	1-15/16"	9/16"	3"	8"	1-13/32"	2-1/4"	3-1/4"	2-3/4"	1-3/8"	9/16" Ø

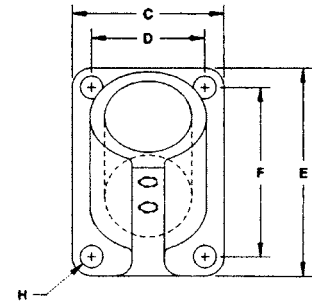
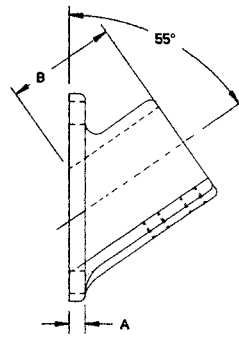
No. 47 Rectangular Base Flange



I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
3/4"	25160	1/4"	1-3/4"	1-7/8"	(2) on CL	3-1/2"	2-5/8"	-	5/16" Ø*	-
1"	26160	9/32"	1-13/16"	2-3/8"	1-7/16"	3-1/2"	2-5/8"	-	5/16" Ø	-
1-1/4"	27170	5/16"	2-1/8"	2-15/16"	1-7/8"	4-1/16"	3"	-	7/16" Ø	-
1-1/2"	28170	3/8"	2-17/32"	3-1/8"	2-1/8"	4-5/16"	3-1/4"	-	7/16" Ø	-
2"	29170	3/8"	2-7/8"	3-3/4"	2-5/8"	5"	3-3/4"	-	7/16" Ø	-

* 3/4" has (2) mounting holes

No. 47AF Angle Base Flange (55°)

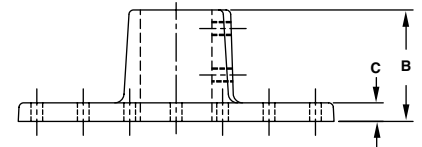
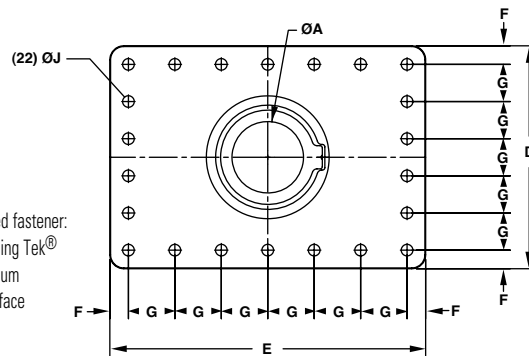


I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
3/4"	25180	1/4"	1-1/2"	1-7/8"	1-3/16"	3-1/2"	2-13/16"	-	5/16" Ø	-
1"	26180	1/4"	1-13/16"	2-3/8"	1-5/8"	3-1/2"	2-3/4"	-	5/16" Ø	-
1-1/4"	27180	5/16"	2-1/8"	2-15/16"	2-1/8"	4-1/16"	3-5/16"	-	5/16" Ø	-

No. 47R Roof Flange



Recommended fastener:
1/4" self-drilling Tek®
screw (minimum
mounting surface
20 ga. steel

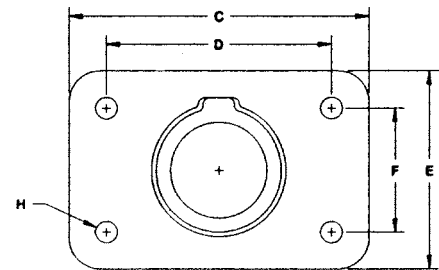
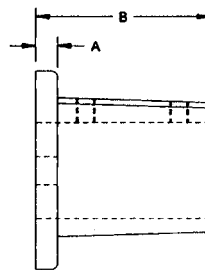


I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28910	1-15/16"	3"	1/2"	6"	8-1/2"	1/2"	1-1/4"	1"	5/16" Ø

No. 48 Heavy-Duty Base Flange (4-Hole)

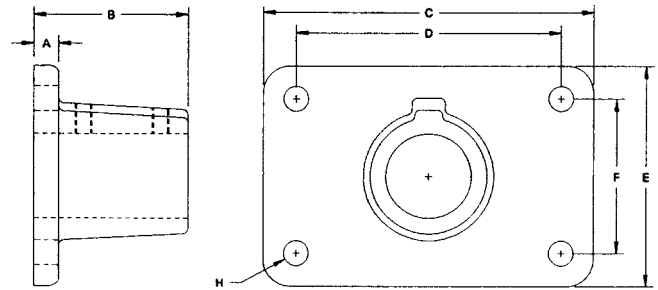


Also available with 2 mounting holes.



I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	23210	7/16"	3-1/2"	6"	4-1/2"	4"	2-1/2"	-	7/16" Ø	-
2"	29220	9/16"	3-1/2"	8"	6"	5"	3-1/2"	-	9/16" Ø	-

No. 48BC Heavy-Duty Rect. Base Flange

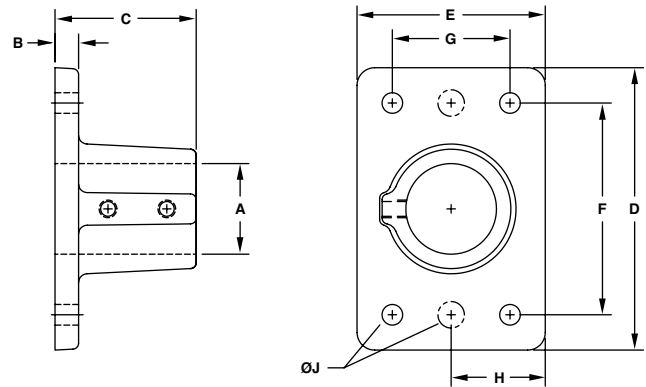


I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28490	9/16"	3-1/2"	7-1/2"	6"	5"	3-1/2"	-	9/16" Ø	-

No. 48SB Heavy-Duty Base Flange

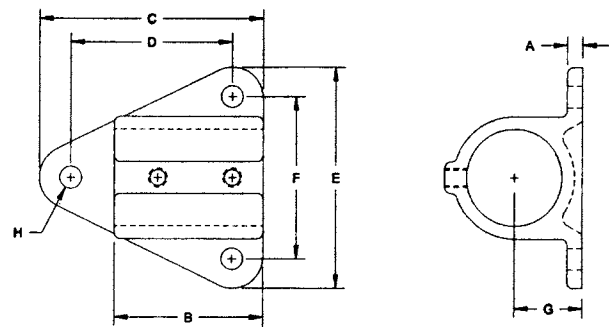


(for use with Hollaender toeplate)



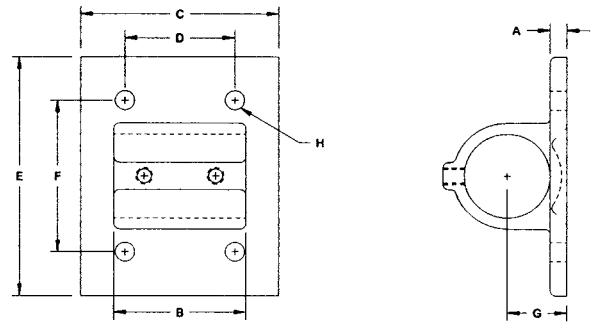
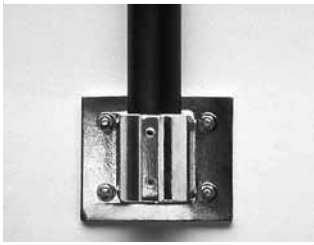
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28880 (2-hole)	1-15/16"	1/2"	3"	6"	4"	4-1/2"	2-1/2"	-	7/16" Ø
1-1/2"	28890 (4-hole)	1-15/16"	1/2"	3"	6"	4"	4-1/2"	-	2"	9/16" Ø

No. 50 Wall Mount Flange



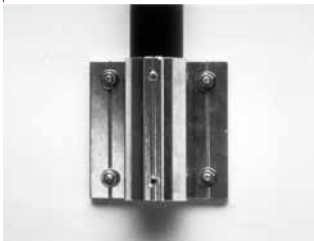
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
3/4"	25270	3/16"	2"	3-1/4"	2-1/4"	3-3/16"	2-1/4"	1"	5/16" Ø	-
1"	26270	1/4"	2-1/4"	3-7/8"	2-5/8"	3-3/4"	2-1/2"	1-1/16"	5/16" Ø	-
1-1/4"	27280	3/8"	2-1/2"	3-7/8"	2-5/8"	4-1/4"	3"	1-9/32"	7/16" Ø	-
1-1/2"	28280	5/16"	3"	4-1/2"	3-1/4"	4-7/16"	3-1/4"	1-3/8"	7/16" Ø	-

No. 52 Wall Flange

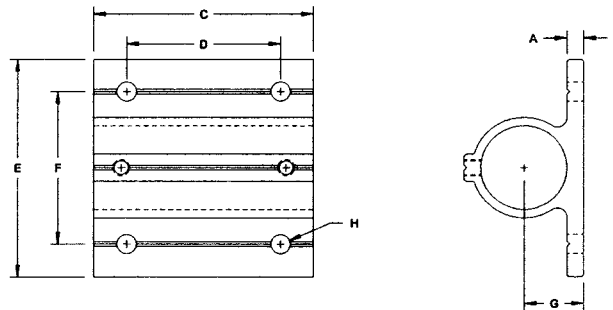


I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/4"	27290	3/8"	3"	4"	2-1/2"	5-1/2"	4"	1-17/32"	7/16" Ø	-
1-1/2"	28290	3/8"	3"	4-1/2"	3"	5-1/2"	4"	1-11/32"	7/16" Ø	-

No. 52E Extruded Wall Flange (4-Hole)*

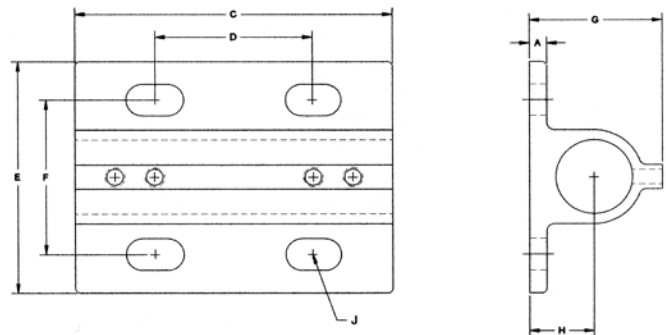


Also available with 2 mounting holes.
* Must be used with aluminum pipe.



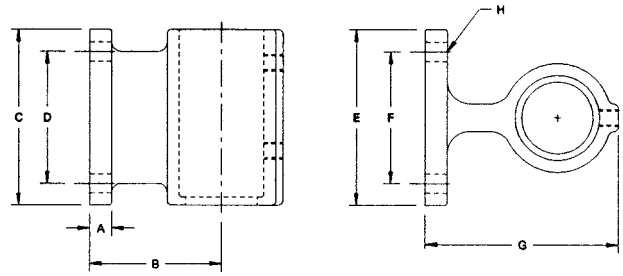
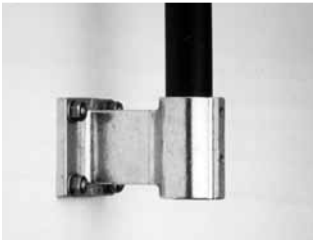
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/4"	27300	3/8"	-	5"	3-1/2"	5"	3-1/2"	1-11/32"	7/16" Ø	-
1-1/2"	28300	3/8"	-	5"	3-1/2"	5"	3-1/2"	1-11/32"	7/16" Ø	-
2"	29300	7/16"	-	5"	3-1/2"	6"	4-1/2"	1-5/8"	7/16" Ø	-

No. 52HD Extra Heavy-Duty Wall Flange



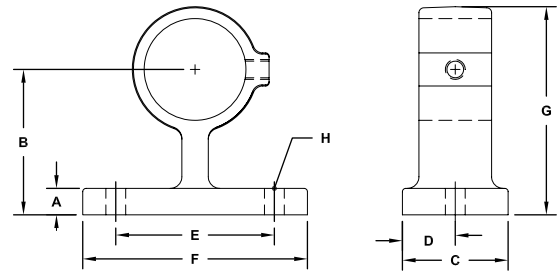
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28580	7/16"	-	8"	4"	6"	4-1/2"	3-5/16"	1-5/8"	11/16" x 1-3/8"

No. 54-3/4/5 Offset Wall Flange



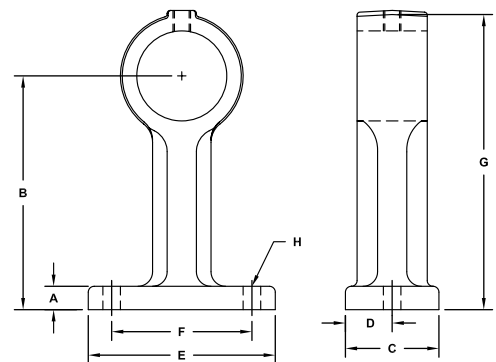
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28330 (3")	1/2"	3"	4"	3"	4"	3"	4-13/32"	7/16" Ø	-
1-1/2"	28340 (4")	1/2"	4"	4"	3"	4"	3"	5-13/32"	7/16" Ø	-
1-1/2"	28350 (5")	1/2"	5"	4"	3"	4"	3"	6-13/32"	7/16" Ø	-

No. 55 Offset Support Bracket



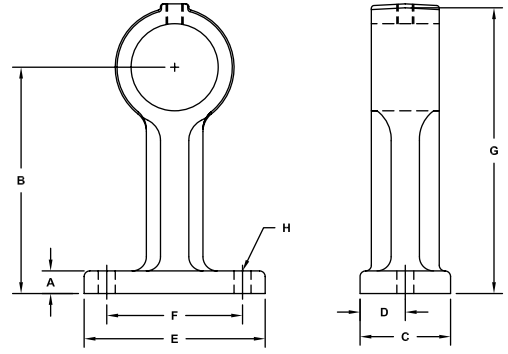
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
3/4"	25360	3/8"	2-1/8"	2"	1"	3"	4"	2-13/16"	5/16" Ø	-
1-1/4"	27360	1/2"	2-3/4"	2"	1"	3"	4"	3-25/32"	5/16" Ø	-
1-1/2"	28360	1/2"	2-3/4"	2"	1"	3"	4-1/4"	3-15/32"	5/16" Ø	-

No. 55-4 Offset (4") Wall Bracket



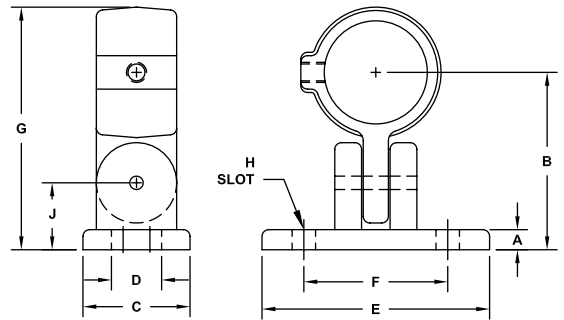
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28370	1/2"	4"	2"	1"	4"	3"	5-5/16"	7/16" Ø	-

No. 55-5 Offset (5") Wall Bracket



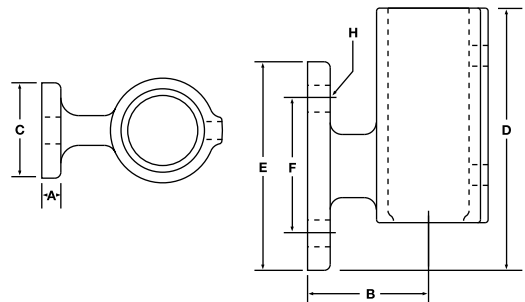
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/2"	28380	1/2"	5"	2"	1"	4"	3"	6-5/16"	7/16" Ø	-

No. 56 Adj. Offset Wall Bracket



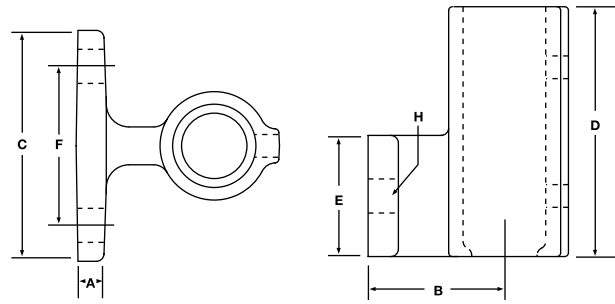
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/4"	27390	3/8"	3-1/4"	2"	15/16"	4-1/4"	2-11/16"	4-5/16"	7/16" Ø	1-1/4"
1-1/2"	28390	3/8"	3-3/4"	2"	15/16"	4-1/4"	2-11/16"	4-11/16"	7/16" Ø	1-1/4"

No. 57 Offset Flange



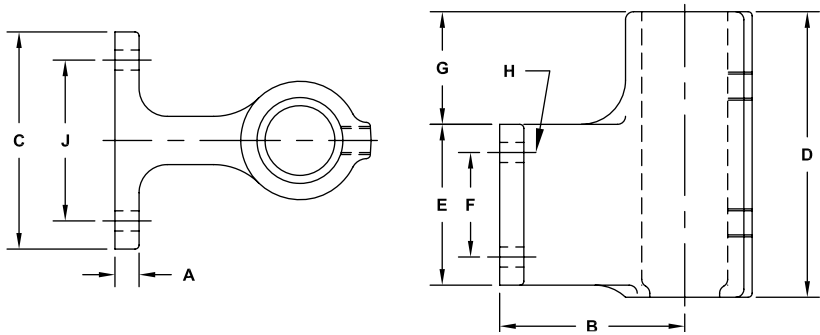
I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1-1/4"	27800	12/32"	2-17/32"	2"	5-1/2"	4-3/8"	2-13/16"	5-5/16"	9/16" Ø	-

No. 58 Offset Flange



I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1"	26810	7/16"	2-1/4"	3-13/16"	4-1/8"	2"	2-5/8"	-	9/16" Ø	-

No. 59 Offset Flange



I.P.S. Size	Item Number	A	B	C	D	E	F	G	H	J
1"	90121	3/8"	2-7/8"	3-3/8"	4-7/16"	2-1/2"	1-5/8"	1-3/4"	5/16" Ø	2-1/2"

Hollaender® has a full line of accessories to complete any handrail or pipe structure project, including, but not limited to:

- **Gates – Self Closing Gates, Queue Gates, Swing Gates**
- **Gate Latches & Hinges**
- **Splices – Internal/External and Locking/Non-Locking**
- **Toeplate**




- **Toeplate Brackets, Splices, Clamps & Hardware**
- **Wall Brackets**
- **Wall Returns**
- **End Loops, Tangent Bends**
- **Finishes – Anodized, Powder Coated**
- **Shelf/Gridwall Support Options**


Hollaender®'s Unique


Beveled Toeplate Design

Hollaender's unique beveled toeplate design allows for quick and easy installation. No drilling or welding; an extruded channel allows for secure attachment with no exposed fasteners. Uniform 1/8" wall thickness and beveled shape provides rigid non-buckling performance with the benefit of lightweight, easy handling.



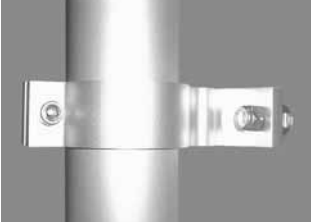
4" Beveled Toeplate - Anodized Aluminum	Item Number
	<p>94102</p> <p>Sold in 24' lengths.</p>

No. 49A Toe-Board Bracket	I.P.S. Size	Item Number
	1-1/2"	28250

No. 49B Toe-Board Bracket	I.P.S. Size	Item Number
	1-1/2"	28260

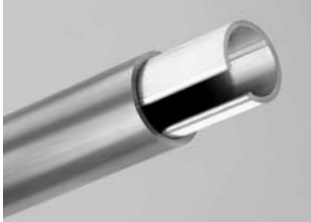
No. 49BTS Bev. Toe-Board Corner Splice	I.P.S. Size	Item Number
	1-1/2"	28526

No. 49BTS Bev. Toe-Board Straight Splice	I.P.S. Size	Item Number
	1-1/2"	28536

No. 49C Toe-Board Clamp*	I.P.S. Size	Item Number
	1-1/2"	28546
		* Must be used with aluminum pipe.

No. 49F Toe-Board Bracket	I.P.S. Size	Item Number
	1-1/2"	28576

No. 52ES Extruded Offset Bracket (1" Cut)	I.P.S. Size	Item Number
	1-1/4"	27610
	1-1/2"	28610
	2"	29610

No. 70E Internal Coupling (Friction Fit)	I.P.S. Size	Item Number
	1-1/4"	07640 (4" length)
	1-1/2"	08640 (4" length)
	1-1/4"	93115 (12" length)
	1-1/2"	93125 (12" length)

No. 70ES Internal Locking Splice	I.P.S. Size	Item Number
	1-1/2"	08655 (4" length)
	2"	09655 (4" length)
	2"	09665 (10" length)

No. 76 Gate Hinge	I.P.S. Size	Item Number
	1-1/4"	07670
	1-1/2"	08670
	2"	09670


No. 78I Gate Hinge Female Extrusion	I.P.S. Size	Item Number
	1-1/4"	07690
	1-1/2"	08690
	2"	09690


No. 82 Handrail Bracket	I.P.S. Size	Item Number
	1-1/4" & 1-1/2"	07875
	Centerline of rail 4-1/8" from wall. Use with 84L/84R Wall Return.	


No. 82A Handrail Bracket	I.P.S. Size	Item Number
	1-1/4" & 1-1/2"	07885
	Centerline of rail 3" from wall. Use with 84AL/84AR Wall Return.	

No. 82E Extruded Handrail Bracket*	I.P.S. Size	Item Number
	1-1/4" & 1-1/2"	07895
	* Must be used with aluminum pipe. Centerline of rail 2-1/2" from wall.	

No. 84L/84R Handrail Return	I.P.S. Size	Item Number
	1-1/4"	07900 (84AL)
		07910 (84AR)
	1-1/4"	07920 (84L)
		07930 (84R)


No. 85 Adj. Handrail Bracket Kit	I.P.S. Size	Item Number
	1-1/4"	07845 
	1-1/2"	08945


No. 87 Architectural Handrail Bracket (Post)	I.P.S. Size	Item Number
	1-1/2"	31106


No. 88 Architectural Handrail Bracket (Wall)	I.P.S. Size	Item Number
	1-1/2"	31046

No. 200 Gate Hinge	I.P.S. Size	Item Number
	1-1/4"	53416
	1-1/2"	51416
	Set of 2	

Heavy Duty Pin Latch & Hinge Assembly	I.P.S. Size	Item Number
	2"	52095

LATCH GATE Gate Hinge & Latch Assem.	I.P.S. Size	Item Number
	1-1/4"	53005
	1-1/2"	51042


Interna-Rail Gate*	I.P.S. Size	Item Number
	1-1/2"	51216

Speed Rail Gate*	I.P.S. Size	Item Number
	1-1/4"	53105
	1-1/2"	51105
	2"	52105


Wall Return Bend	I.P.S. Size	Item Number
	1-1/4"	49391
	1-1/2"	49301
	(1) #70ES Required. Sold Separately.	

2-Rail Offset Sloping Post	I.P.S. Size	Item Number
	1-1/2"	42195
	Fasteners to attach rails included.	


End Loop	I.P.S. Size	Item Number
	1-1/4"	49191
	1-1/2"	49101
	(2) #70ES Required. Sold Separately.	

Tangent Bend	I.P.S. Size	Item Number
	1-1/4"	49291
	1-1/2"	49201
	(2) #70ES Required. Sold Separately.	


Rivet Nuts	I.P.S. Size	Item Number
	5/16-18 x .94"	79233

Rivet Nut Setting Tools	Model No.	Item Number
	RST3	71012

RST3 - Heavy-Duty Lever Tool

Tamper Resistant Set Screw & Tool	Size	Item Number
	3/8-16 x 7/16"	80532

JS-600 Set Screws	Size	Item Number
	3/8-16 x 7/16"	80612
	5/16-18 x 5/16"	80312

304 Stainless Steel Set Screws	Size	Item Number
	3/8-16 x 7/16"	81612
	5/16-18 x 5/16"	81312
	3/8-16 x 1-7/16"	81913


Tubular Dowel	I.P.S. Size	Item Number
	1-1/2" Sched. 40	93201


Solid Dowel	I.P.S. Size	Item Number
	1-1/2" Sched. 40	93200


6063 T6 Sch. 40 Anodized Aluminum Pipe Bundles	I.P.S. Size	Item Number
 <p>NEW!</p>	(5) 8' Lengths	
	1"	92371
	1-1/4"	92351
	1-1/2"	92361

Hollaender

Shelf/Gridwall Support Options


No. 17HM Hook	I.P.S. Size	Item Number
	1-1/4"	07490
	1-1/2"	08490

No. 17MG Gridwall Fitting Single Tab	I.P.S. Size	Item Number
	3/4"	05289
	1"	06289


No. 19MG Gridwall Fitting Double Tab	I.P.S. Size	Item Number
	3/4"	05349
	1"	06349

No. 27MG Gridwall Fitting Double Tab	I.P.S. Size	Item Number
	3/4"	05459
	1"	06459

No. 50T Pipe/Tube Support 5/16" Holes	I.P.S. Size	Item Number
	1"	26850

No. 50TG Gridwall Fitting with 2 Tabs	I.P.S. Size	Item Number
	1"	26850

No. 75 Signage Clamp	I.P.S. Size	Item Number
	1"	06710

No. 94 Double Tab Bracket – Oval Slot	I.P.S. Size	Item Number
	1-1/2"	08780

No. 95 Single Tab Bracket – Oval Slot	I.P.S. Size	Item Number
	1-1/2"	08790

Accessories



Constructed of aluminum/magnesium alloy, Speed-Rail® Systems are manufactured with maximum flexibility and strength in mind to provide you with years of structural integrity for a wide variety of demanding applications.

- Fittings and pipes are shipped to site, assembled at project location.
- Rapid installation, ease of repair and reconfiguration.



- Set screws have a proprietary internal-external knurl cup design that prevents screws from backing out in the heaviest vibration conditions.
- Available in 3/4", 1", 1 1/4", 1 1/2", 2" IPS systems.

- Fittings are cast from ALMAG 535, aluminum - magnesium alloy - the most corrosion resistant casting alloy available today.
- Will work with any other metal, including steel, and will not suffer from "galvanic reaction corrosion".



Speed-Rail® queue line systems are used throughout the amusement industry in small to large parks.



Speed-Rail® with infill panel systems that meet IBC or other codes provide an "industrial chic" look.



For OSHA regulated areas, Speed-Rail® is the most frequently used product, often in conjunction with galvanized steel pipe.

For applications which require a sleek architectural design and finish.

- **Appearance** – Design of Interna-Rail® combines the clean look of welded rail with all the benefits of a mechanical system.
- **Strength** – Interna-Rail® systems can be designed to meet any building code. Please refer to Technical Section of Catalog, www.hollaender.com or call our engineers.



*Interna-Rail® with
2" Wire Mesh Infill Panels*



- **Durability** – The double tang set screw activated design provides a virtually maintenance free system which is inherently longer lasting than those which utilize adhesives and pop rivets.

- **Corrosion Resistance** – All Interna-Rail® aluminum fittings are supplied with a 215-R1 (M10C22A41) Anodized finish which provides an additional resistance to corrosion and staining. The hardware supplied with the product is stainless steel and anodized aluminum (mill finish fittings also available).

Due to the technical expertise required to successfully fabricate Interna-Rail, Hollaender reserves the right to only sell these fittings to qualified and certified partner fabricators. Components shown are cast aluminum, primarily suitable for industrial applications.

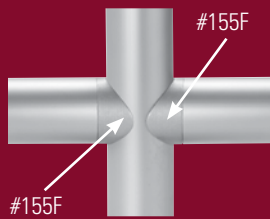
*Powder coated
Interna-Rail® with
infill panels, meeting
all IBC codes.*



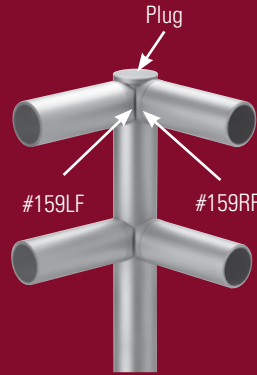
*Mid-rails and aisle rails using
Interna-Rail® are being used
in bleachers and stadiums
throughout the U.S.*

Due to the technical expertise required to successfully fabricate Intern-Rail, Hollaender reserves the right to only sell these fittings to qualified and certified partner fabricators. Components shown are cast aluminum, primarily suitable for industrial applications.

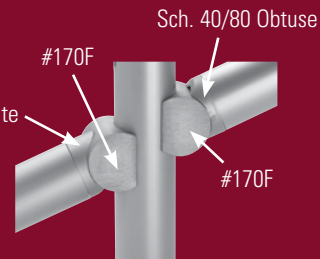
Typical Interna-Rail® System Assemblies and Fittings



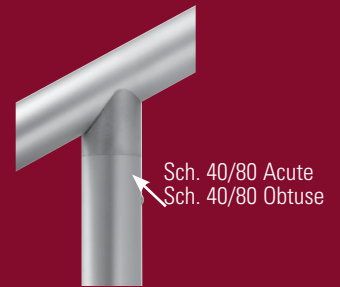
Typical Assembled Cross



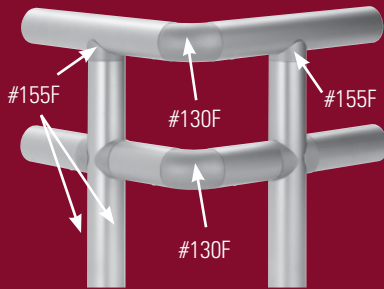
Typical Corner Post Assembly



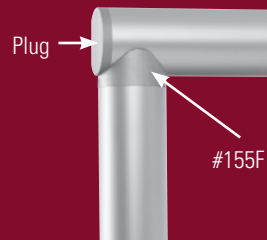
Typical Adjustable Angle Cross



Angle Tee



Corner Elbow Assembly

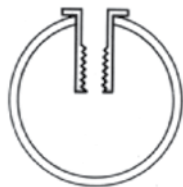


End Post with Cap



Typical Straight Tee

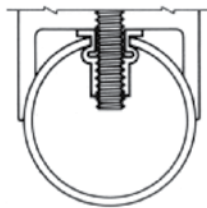
How the Tubular Rivet works.



After drilling hole, tubular rivet is inserted.

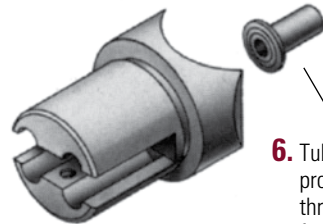


A header tool is then used to crimp the rivet inside the pipe wall.



Once in position, the fitting is connected to the vertical pipe with the use of a socket head cap screw.

4. Socket head cap screw connects fitting to the installed tubular rivet with a hex wrench.

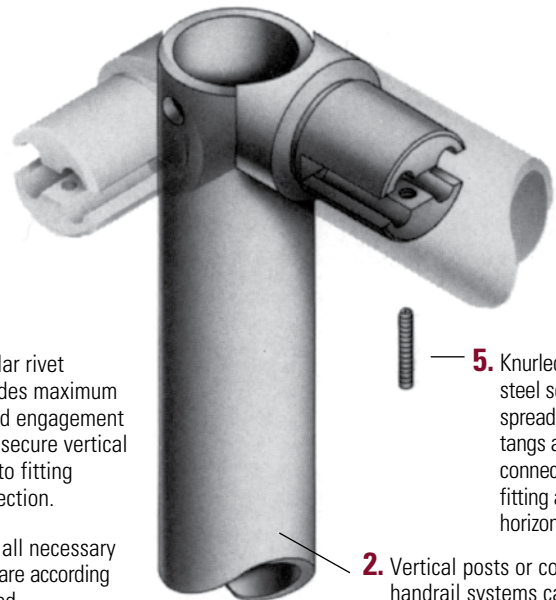


3. Fittings are supplied with all necessary modifications and hardware according to the configuration needed.

6. Tubular rivet provides maximum thread engagement for a secure vertical post to fitting connection.



1. End cap fits flush with fittings for a smooth appearance.



2. Vertical posts or complete handrail systems can be specified.

Due to the technical expertise required to successfully fabricate Interna-Rail, Hollaender reserves the right to only sell these fittings to qualified and certified partner fabricators. Components shown are cast aluminum, primarily suitable for industrial applications.

No. 62P Plastic Plug Sch. 40	I.P.S. Size	Item Number
	3/4"	10550
	1"	10560
	1-1/4"	10570
	1-1/2"	10580
	2"	10590



No. 130F Elbow	I.P.S. Size	Item Number
	1-1/4"	56016
	1-1/2"	58016
		

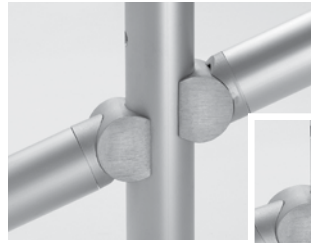

No. 140F Grout Cover Ring	I.P.S. Size	Item Number
	1-1/4"	56026
	1-1/2"	58026
		

No. 155F Tee	I.P.S. Size	Item Number
	1-1/4"	56036
	1-1/2"	58706
	2"	59706
		

No. 159LF Left Corner	I.P.S. Size	Item Number
	1-1/4"	56066
	1-1/2"	58726
		

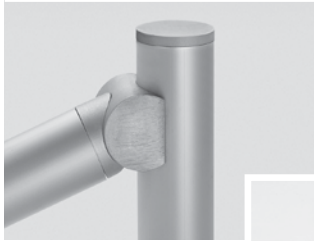
No. 159RF Right Corner	I.P.S. Size	Item Number
	1-1/4"	56076
	1-1/2"	58736
		

Plug	Item	I.P.S. Size	Item Number
	165 Sch. 80	1-1/2"	58136
	162 Sch. 40	1-1/4"	56086
	162 Sch. 40	1-1/2"	58086
	162 Sch. 40	2"	59086
			

No. 170F Trunion	I.P.S. Size	Item Number
	1-1/2"	58096
		

Due to the technical expertise required to successfully fabricate Interna-Rail, Hollaender reserves the right to only sell these fittings to qualified and certified partner fabricators. Components shown are cast aluminum, primarily suitable for industrial applications.

Sch. 40/80 Acute Angle Tee*	Item	I.P.S. Size	Item Number
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* #170F Trunion Required

171F	1-1/2" Sch. 40	58746
175F	1-1/2" Sch. 80	58786

Sch. 40/80 Obtuse Angle Tee*	Item	I.P.S. Size	Item Number
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* #170F Trunion Required

172F	1-1/2" Sch. 40	58756
176F	1-1/2" Sch. 80	58766

Sch. 40/80 Acute Tee	Item	I.P.S. Size	Item Number
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173	1-1/2" Sch. 40	58126
178	1-1/2" Sch. 80	58406

Sch. 40/80 Obtuse Tee	Item	I.P.S. Size	Item Number
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174	1-1/2" Sch. 40	58226
179	1-1/2" Sch. 80	58416

No. 185 Post Return Swivel	I.P.S. Size	Item Number
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1-1/2"	58166 (right)
1-1/2"	58176 (left)

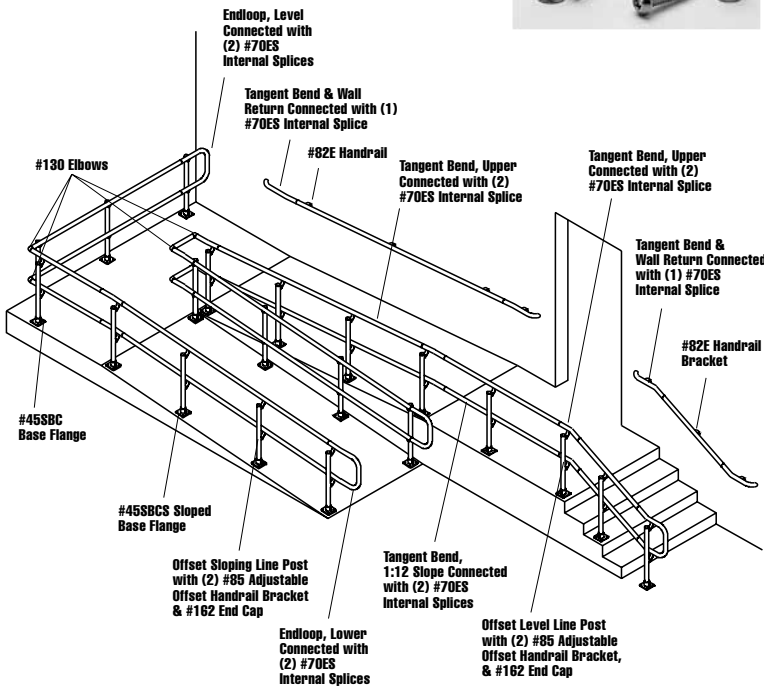
Due to the technical expertise required to successfully fabricate Interna-Rail, Hollaender reserves the right to only sell these fittings to qualified and certified partner fabricators. Components shown are cast aluminum, primarily suitable for industrial applications.

Handrail system is designed to meet the requirements of the Americans with Disabilities Act.

- ADA handrail can be purchased as individual fittings and pipe or assembled components.
- Designed to allow for easy site assembly and installation of handrail on both new constructions or alterations.
- All hardware is stainless steel and anodized aluminum.
- Handrail bracket (#85) can be rotated to any angle (within the #85A splice) for ramps or stairs.



- Provides for 1-1/2" clearance between handrail and post or wall.
- The underslung, rounded design creates a continuous gripping surface with no sharp edges.
- System can be supplied mill, anodized or powder coated.
- End Loops, Wall Returns, Flanges, Elbows, Splices and Tangent Bends available.
- Grabrail meets both ADAAG and UFAS codes.



Typical ADA Railing Installation

No. 85 Adj. Handrail Bracket Kit	I.P.S. Size	Item Number
	1-1/2"	08945 

No. 87 Architectural Handrail Bracket (Post)	I.P.S. Size	Item Number
NEW! 	1-1/2"	31106

No. 88 Architectural Handrail Bracket (Wall)	I.P.S. Size	Item Number
NEW! 	1-1/2"	31046

2-Rail Offset Sloping Post	I.P.S. Size	Item Number
	1-1/2"	42195 
(2) #85 Required. Sold Separately.		

End Loop	I.P.S. Size	Item Number
	1-1/2"	49101 
(2) #70ES Required. Sold Separately.		

Tangent Bend	I.P.S. Size	Item Number
	1-1/2"	49201 

(2) #70ES Required. Sold Separately.

Wall Return Bend	I.P.S. Size	Item Number
	1-1/2"	49301 

(1) #70ES Required. Sold Separately.



The solution for all your demanding safety rail requirements.

- Pre-Assembled Kits - Assemble in 3 minutes and install in 15 minutes.
- Choose from 3 standard safety rail kits - Corner, Straight and Extension.
- Instructions, Hex Key, Base Flanges & Test Results showing OSHA compliance all included in the box.
- Saves time and labor by enhancing assembly in initial installations, disassembly when installation changes and retrofitting of old installations.
- Supplied standard with steel pipe powder coated OSHA safety yellow and fittings black powder coated.




Bumble-Bee® systems are easily installed around machinery and other OSHA regulated areas.


- Rugged
- Dependable
- Flexible
- Virtually Maintenance Free
- Quick & Easy
- Rail sections can be installed without the need of skilled labor and expensive equipment

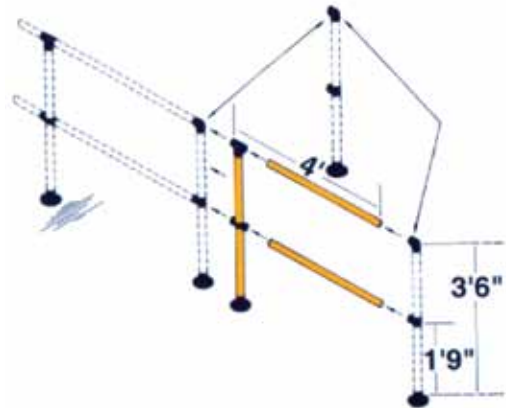
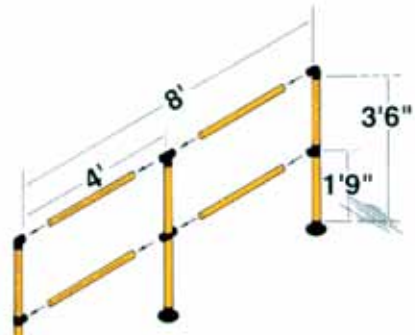
No. 50111 Corner Section Kit, Steel	I.P.S. Size	Item Number
	1-1/2"	50111


No. 50211 Straight Section Kit, Steel	I.P.S. Size	Item Number
	1-1/2"	50211


No. 50311 Extension Kit, Steel	I.P.S. Size	Item Number
	1-1/2"	50311

No. 50950 Safety Rail Gate, Steel	I.P.S. Size	Item Number
	1-1/2"	50950
		Posts sold separately.

No. 50511 Yellow Steel Top Rail 47"	I.P.S. Size	Item Number
	1-1/2"	50511



No. 50411 Yellow Steel Mid Rail 46"	I.P.S. Size	Item Number
	1-1/2"	50411

No. 50911 Yellow Steel Post 40"	I.P.S. Size	Item Number
	1-1/2"	50911

No. 50700 #9 Flat Black Side Outlet El.	I.P.S. Size	Item Number
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1-1/2"	50700
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No. 50710 #11E Flat Blk. Side Outlet Tee-E	I.P.S. Size	Item Number
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1-1/2"	50710
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No. 50720 #5 Flat Black Tee	I.P.S. Size	Item Number
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1-1/2"	50720
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No. 50730 #5E Flat Black Tee-E	I.P.S. Size	Item Number
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1-1/2"	50730
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No. 50740 #7E Flat Black Cross-E	I.P.S. Size	Item Number
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1-1/2"	50740
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No. 50750 #3 Flat Black Elbow	I.P.S. Size	Item Number
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1-1/2"	50750
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No. 50760 #42 Fit. Blk. Rnd. Base Flange	I.P.S. Size	Item Number
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1-1/2"	50760
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Speed-Rail® and Interna-Rail® with infill panel systems that meet IBC or other codes provide an “industrial chic” look. In addition, Hollaender®’s panel retention system, using panel retainers attached to the rail system with self-tapping screws, can accept any thickness of material infill panel and still meet structural codes. The great variety of pipe finishes (mill or anodized, powder coat in several colors) and infill panels (picket, perforated metal, wire mesh, glass, horizontal rails) make these systems “designer friendly”.



Structural Applications

- Pipe Sizes for Hollaender® Fittings

- Ask the Hollaender® Engineers

- How to Specify:

1. Hollaender® Slip-On Structural Pipe Fittings
2. Hollaender® Interna-Rail® Mechanical Handrail Systems
3. Hollaender® A.D.A. Railing Systems

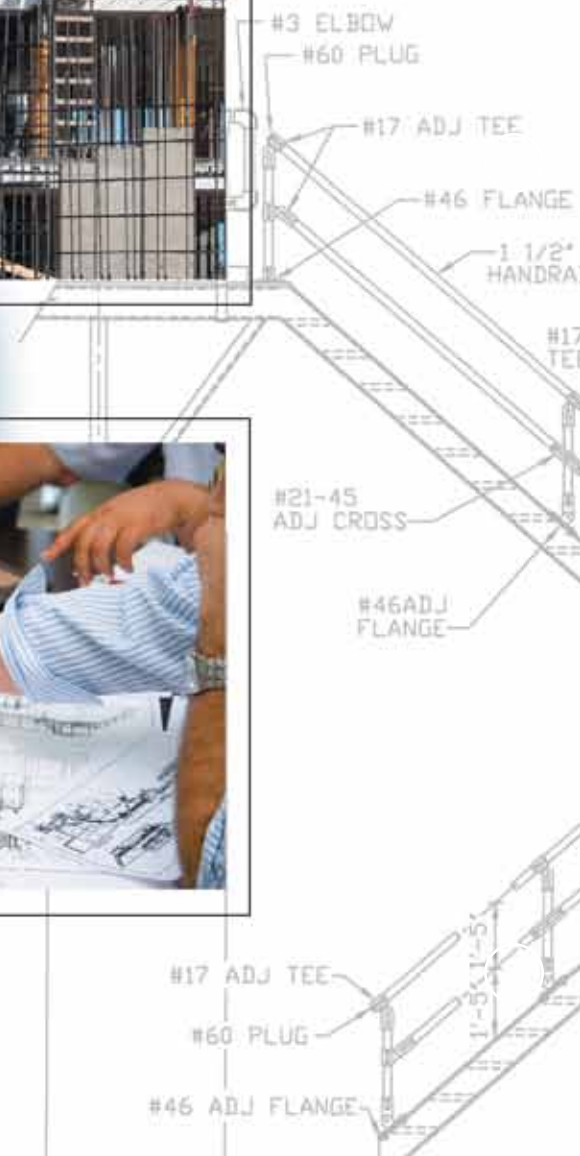


- Aluminum-Magnesium Alloy 535.0 Data

- Building Codes

- Guardrail and Handrail Structural Design

- Safety Analysis Sheet



Pipe Sizes

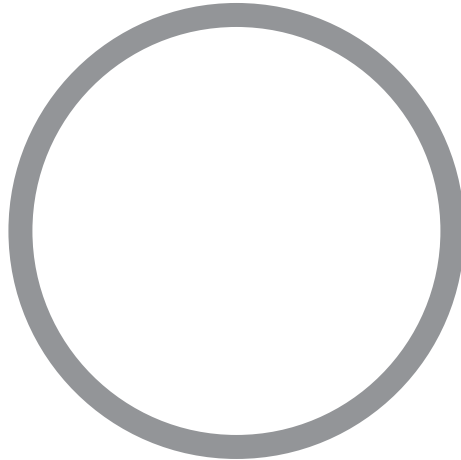
for Hollaender® Fittings

Hollaender® structural fittings are designed to be used with IPS pipe sizes. The correct pipe sizes are shown in the chart to the right.

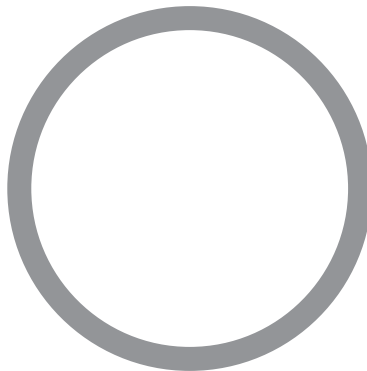
Pipe Size Chart

This chart is designed to print at the proper scale so that you can check your pipe against the chart and make sure it's the right size.

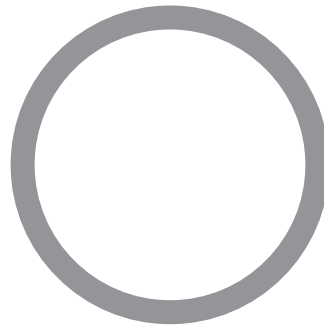
Fitting	Inside Diameter	
	I.D. (in.)	I.D. (mm)
Fitting Size		
3/4"	1.070	27.2
1"	1.335	33.909
1 1/4"	1.680	42.672
1 1/2"	1.925	48.895
2"	2.40	60.96



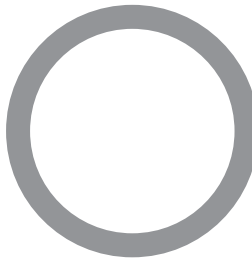
2" IPS
(2.375", 60mm O.D.)



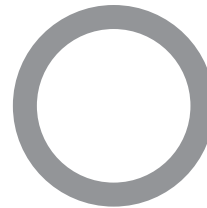
1-1/2" IPS
(1.900", 48mm O.D.)



1-1/4" IPS
(1.660", 42mm O.D.)



1" IPS
(1.315", 33mm O.D.)



3/4" IPS
(1.05", 26mm O.D.)

Technical Information

QA

ask the Hollaender® Engineers...

Q: Can the Hollaender® aluminum fittings be used with steel and stainless steel pipe?

A: Although most aluminum alloys will corrode when combined with a dissimilar metal (i.e. steel, black iron, stainless steel), the aluminum/magnesium alloy 535 which Hollaender® uses to manufacture all cast fittings is the most corrosive resistant casting alloy available and can be used with any type of metal.

Q: Have Hollaender® Fittings been tested in corrosive environments?

A: Yes, Hollaender® standard fittings have been tested for 1000 hrs. of salt spray (per ASTM B117 specifications) after which the set screws could still be removed and retightened. In addition, Hollaender® fittings' corrosion resistance to Hydrazine Fuel has also been tested by the United States Air Force prior to the products' use at Cape Canaveral Air Force Station and the Kennedy Space Center. Not only have our products been tested in the laboratory, but they have also stood the test of time for over forty years in some of the most corrosive environments including: chemical plants, offshore oil rigs, waste water treatment plants, pulp & paper mills, etc.

Q: If I have an extremely corrosive environment, are there any additional coatings or features that are available for the fittings to insure that the installation performs and continues to look good for a long time?

A: The standard material is highly corrosive resistant, however, for the most extreme environments, we recommend that the fittings be anodized and that stainless steel set screws be used. The anodizing process creates a coating, which is not only harder and more corrosive resistant than the base metal, but also provides significant resistance to staining.

Q: Should the fittings be used in a chlorine rich environment?

A: No. The chlorine aggressively attacks the aluminum, which can result in significant deterioration of our product. Our recommendation would be to use reinforced fiberglass railing in this environment.

Q: If Superman and a Speed-Rail® fitting were both placed in a vat of Hydrazine Fuel, which one would last longer?

A: According to the test reports, the fitting of aluminum would outlast the man of steel.

Q: What does IPS mean?

A: IPS stands for "Iron Pipe Size" – A standard which was originally developed for fluid transfer has also become the standard for handrail systems, both steel and aluminum.

Q: What determines the wall thickness of my pipe?

A: One of two terms will tell you the wall thickness of your pipe, either the "Schedule" or "Gauge." If you are using true IPS sizes, the wall thickness is determined by the schedule – the higher the schedule, the thicker the wall, i.e. 1-1/2" schedule 80 has a thicker wall than 1-1/2" schedule 40. For gauge sizes, the lower the number, the thicker the wall, i.e. 1.90" diameter 11 gauge is thicker than 1.90" diameter 12 gauge.

Q: What wall thickness should be used with Hollaender® fittings?

A: The actual wall thickness you select will depend upon the type of system you are assembling, however, the wall thickness should never be less than the minimums listed below.

Steel Pipe – Schedule 10 or 14 Gauge

Aluminum – Schedule 40 or 10 Gauge

Q: What pipe materials can I use with Hollaender® fittings?

A: Any metal pipe (including galvanized steel, stainless, black iron, aluminum, etc.) can be used with our slip-on fittings as long as it is sized properly (see above). Plastic, FRP and thin wall sleaving should never be used unless a reinforcing dowel is also used inside the pipe.

How to Specify

How to Specify Hollaender® Slip-On Structural Pipe Fittings:

The (handrail/guardrail, rack, or pipe structure) shall be constructed with (Speed-Rail®, Speed-Rail® II, Nu-Rail®, Rackmaster®, or Mend-A-Rail®) slip-on/bolt-on structural pipe fittings, as regularly manufactured by The Hollaender® Manufacturing Company, 10285 Wayne Avenue, Box 156399, Cincinnati, Ohio 45215-6399, of high-tensile aluminum-magnesium alloy 535.0 manufactured in compliance with ASTM B26, cast from high-purity ingot 535.2 that conforms to ASTM B179. All fittings shall be securely fastened to the pipe with internal/external, reverse knurl, cup point, hexagon socket set screws that conform to FF-S-200, and ANSI/ASME B18.3-1986 Type C/G. Set screws made of alloy steel shall conform to ASTM F912, and zinc plating shall be JS-600. Austenitic grade stainless steel set screws shall be 302 alloy. (The following federal specifications were re-written to incorporate high-tensile aluminum-magnesium slip-on structural fittings: Corps of Engineers Guide Specification, Military Construction, CEGS-05500; Corps of Engineers, Civil Works Construction Guide Specification, CW-05502; and Navy Facilities Guide Specification, NFGS-05500.)

How to Specify Hollaender® Interna-Rail® Mechanical Handrail Systems:

The pipe handrail/guardrail shall be constructed with mechanically fastened, flush-fit Interna-Rail® aluminum or stainless steel fitting system as regularly manufactured by The Hollaender® Manufacturing Company, 10285 Wayne Avenue, Box 156399, Cincinnati, Ohio 45215-6399. The fitting shall be externally connected to the pipe by means of an anodized aluminum, tubular rivet nut, and an austenitic 302 alloy stainless steel, socket head cap screw with a stainless steel lock washer. The fitting shall be internally connected to the pipe by means of an internal double tang, expanded by an austenitic 302 alloy stainless steel, internal/external, reverse knurl, cup point, hexagon socket set screw. Pop rivets, sheet metal screws, and adhesives shall not be an acceptable fastening method. The fittings shall be machined of solid aluminum bar stock of alloy 6063-T6

conforming to ASTM B221, or austenitic stainless steel bar stock of 303 alloy conforming to ASTM A582, or machined castings of high-tensile aluminum-magnesium alloy 535.0 manufactured in compliance with ASTM B26, cast from high-purity ingot 535.2 conforming to ASTM B179. Flanges (if required) shall be sand cast from high-tensile aluminum- magnesium alloy 535.0, and fastened directly to the pipe by means of an internal/external, reverse knurl, cup point, hexagon socket set screw (flanges which include a bearing plate will not be accepted). Aluminum fittings with an anodized finish shall be clear satin anodized with a 0.7 mil thickness that meets the Aluminum Association specification of AAM10C22A41.

How to Specify Hollaender® A.D.A. Railing System:

The pipe handrail/guardrail shall be constructed with mechanically fastened, smooth and continuous A.D.A. Railing System of aluminum fittings as regularly manufactured by The Hollaender® Manufacturing Company, 10285 Wayne Avenue, Box 156399, Cincinnati, Ohio 45215-6399. The design of the handrail bracket shall provide a 1-1/2" clearance between the post and the rail, and allow for adjustment of the rail to match the angle of the ramp or stairs. Handrail brackets and pipe fittings shall provide a continuous, uninterrupted gripping surface with no sharp edges or projections. The bracket shall be externally connected to the post by means of an anodized aluminum, tubular rivet nut, and an austenitic 302 alloy stainless steel, hexagon socket, button head, cap screw. The bracket shall be connected to the underside of the rail by means of two stainless steel, flat countersunk head, Type F self-tapping screws that conform to ANSI/ASME- B18.6.4. Pipe fittings shall be internally connected to the pipe by means of an internal double tang, expanded by an austenitic 302 alloy stainless steel, internal/external, reverse knurl, cup point, hexagon socket set screw. Pop rivets, sheet metal screws, and adhesives shall not be an acceptable fastening method. The brackets and fittings shall be of high-tensile aluminum-magnesium alloy 535.0 manufactured in compliance with ASTM B26, cast from high-purity ingot 535.2 conforming to ASTM B179.

Aluminum-Magnesium Alloy 535.0 Sand Castings

Chemical Composition and Physical Properties

Chemical Composition Limits per ASTM B 26-98

Si	Fe	Cu	Mn	Mg	Ti	Other	Al
0.15	0.15	0.05	0.10-0.25	6.2-7.5	0.01-0.25	0.15	Remainder

Typical Mechanical Properties

Temper	Ultimate Strength (ksi)	Yield Strength (ksi)	Elongation (% in 2 in.)	Shear Strength (ksi)	Compressive Yield Strength (ksi)	Brinell Hardness	Endurance Limit (ksi)
F	40	20	13	27.45	23.5	70	10
	(35 min.)	(18 min.)	(9 min.)			(70 min.)	ASTM B26-98

- Thermal Conductivity (@ 77F, SI units): 0.24 cal/cm*s*K
- Heat Treatment – Achieves its physical and mechanical properties as-cast (F). This eliminates the time and cost of heat treating.
- Machinability – Excellent machinability as-cast, excellent surface finish, and high dimensional stability.
- Corrosion Resistance – Highest of any cast alloy. It can be anodized for additional corrosion protection to a 0.7 mil thickness (215R1).
- Finishing – Produces an excellent surface finish by burnishing or polishing. Anodizes well to a clear-satin finish due to the minimal amount of silicon in the alloy.
- Weldability – It can be welded by any of the inert gas processes, T.I.G. or M.I.G., using filler rod of 5356 or 5183.

Load Capacity of Fitting Set Screws When Properly Torqued

Std. IPS Size Steel Pipe Schedule 40

Fitting Size	Torque Ft. Lbs.	No. Screws	Push Out
3/4"	13	1	1000 lbs.
	13	2	1900 lbs.
1"	14	1	1200 lbs.
	14	2	1800 lbs.
1-1/4"	14	1	1800 lbs.
	14	2	2000 lbs.
1-1/2"	17	1	1850 lbs.
	17	2	2350 lbs.
2"	17	1	1925 lbs.
	17	2	3200 lbs.

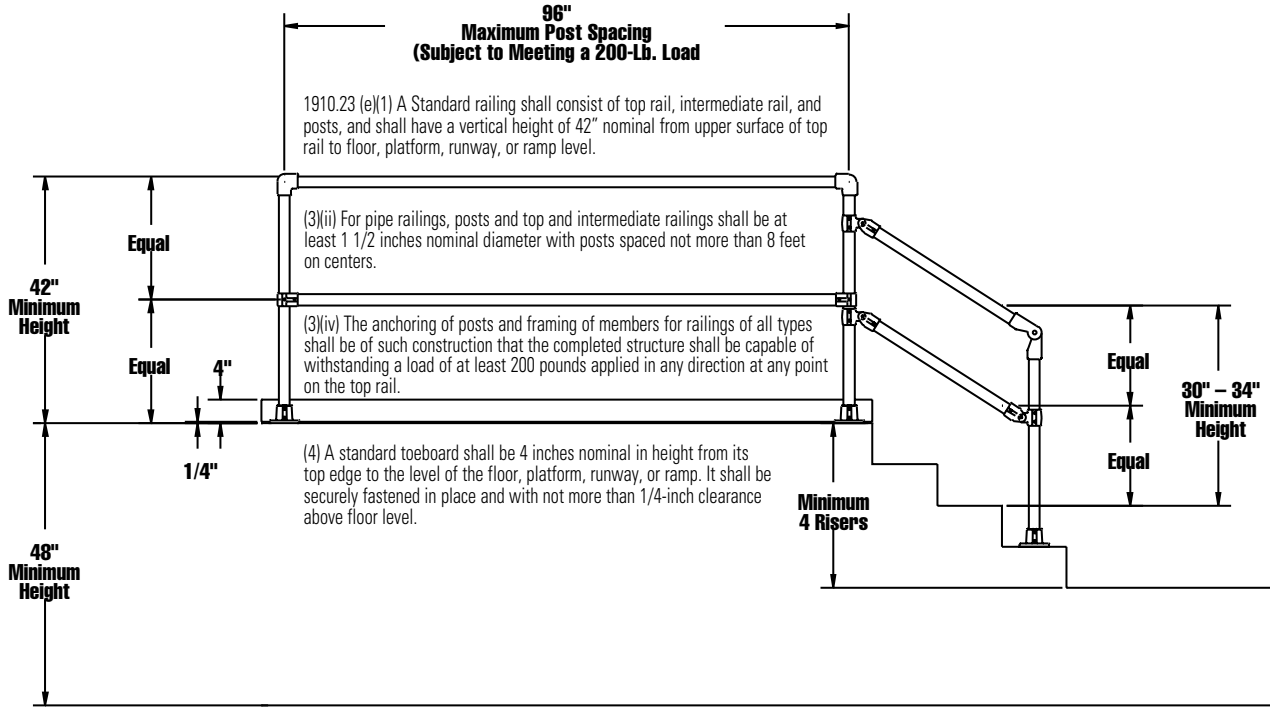
Above data compiled by an independent laboratory using the following test procedures: Standard I.P.S.-sized pipe within the vertical barrel of the test fittings, to the torque shown above. A 30,000 lb. Universal Testing Machine applied vertical load to the pipe member in an attempt to produce pipe slippage. Load capacities listed above are based on a safety factor of 2:1.

Aluminum IPS Size Pipe Schedule 40

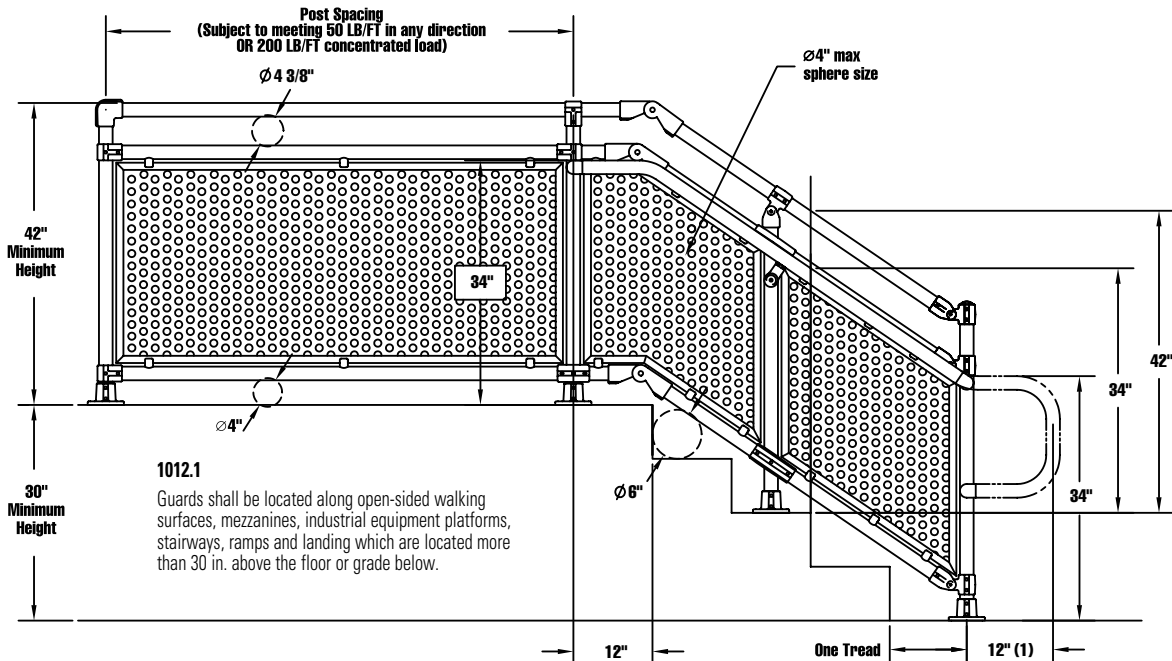
Fitting Size	Torque Ft. Lbs.	No. Screws	Push Out
1-1/4"	10	1	937 lbs.
	10	2	1006 lbs.
1-1/2"	12	1	950 lbs.
	12	2	1020 lbs.

Above data compiled by an independent laboratory using the following procedures: A 30,000 lb. Universal Testing Machine applied vertical load to the pipe member in an attempt to produce pipe slippage through the vertical barrel of the fitting. Load capacities listed above are based on a safety factor of 100%.

O.S.H.A. Standard Pipe Railing 1910.23 Guarding floor and wall openings and holes.



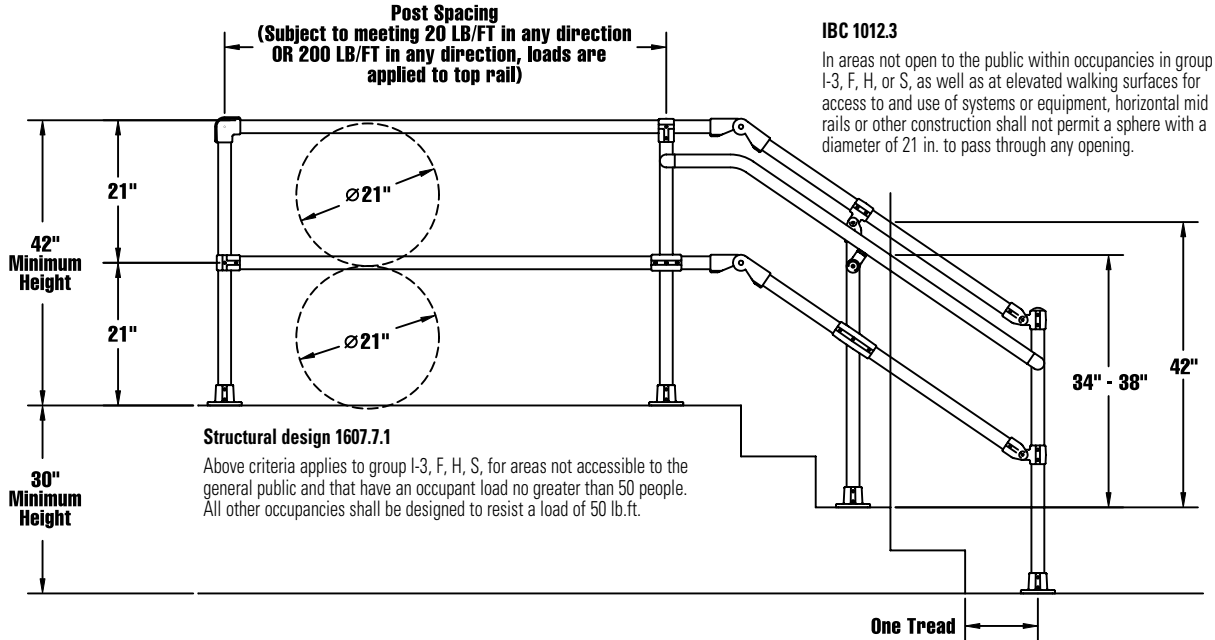
International Building Code - 2009 - Guards for public access areas.



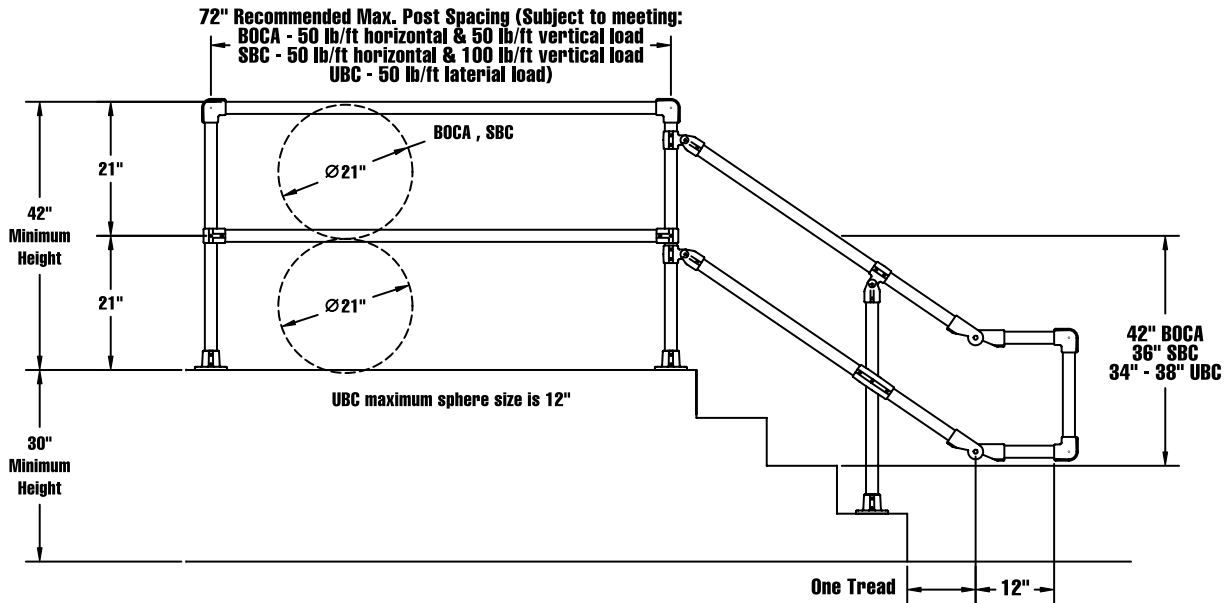
Note (1) Extended grab rail may be required, consult local codes

34" All codes shown on these pages are interpretations. Be sure to consult local codes, since many use variations of all these codes. The codes themselves change continuously, current data is available on www.intlcode.org and www.access-board.gov.

International Building Code - 2003 - Guards for areas not open to public access, elevated walking surface.



BOCA (1999), SBC (1997), UBC (1997) Codes for areas not open to public access, elevated walking surface.



OPENING LIMITATIONS FOR BOCA/SBC/UBC

BOCA 1021.3 – At elevated walking surfaces for access to and utilization of mechanical and other systems, and in occupancies in Use Groups I-3,F, H-2,H-3, S (other than public garages and open parking structures), and along open sided floor areas located less than 30 in. above the floor or grade below, guards shall have balusters or panels such that a sphere of diameter 21 in. cannot pass through any opening.

SBC: For following sections: Section 1020 Business – 1020.3, Group A, E, R occupancy, Section 1022.4, Factory – Industrial – Group F, Section 1023 – Hazardous, Group H, Section 1024 – Institutional, Group I, Section 1025 – Mercantile, Group M, Section 1027, Storage, Group S – In areas not accessible to the public, guards shall have balusters or panels such that a sphere of diameter 21 in. cannot pass through any opening.

UBC 509.3 – The open space between intermediate rails or ornamental pattern in areas of commercial and industrial-type occupancies which are not accessible to the public may be such that a sphere 12 in. in diameter cannot pass through.

All codes shown on these pages are interpretations. Be sure to consult local codes, since many use variations of all these codes. The codes themselves change continuously, current data is available on www.intlcode.org and www.access-board.gov.

Guardrail & Handrail Structural Design

Table 1 - Mechanical Properties of Pipe

Material	Minimum Tensile Strength (psi)	Minimum Yield Strength (psi)	Allowable Yield Strength* (psi)	Modulus of Elasticity (ksi)
Aluminum 6063-T6 Pipe ASTM429	30,000	25,000	18,000**	10,100
Aluminum 6061-T6 Pipe ASTM429	38,000	35,000	24,000***	10,100
Aluminum 6005-T5 Pipe ASTMB221	38,000	35,000	24,000***	10,100
Carbon Steel Structural Tubing ASTM A500 Grade B	58,000	42,000	30,000	
Carbon Steel Pipe ASTM A53 Type F Grade B	48,000	30,000	21,600	
Type E Grade B	60,000	35,000	25,000	
Hollaender® Tubular Dowel 6061-T6	38,000	35,000	24,000	10,100

*The allowable yield strength of aluminum pipe in bending is defined by the Aluminum Association to be (1.17 x Minimum Yield Strength) / 1.65.

**Reduce to 8,000 within 1 inch of weld

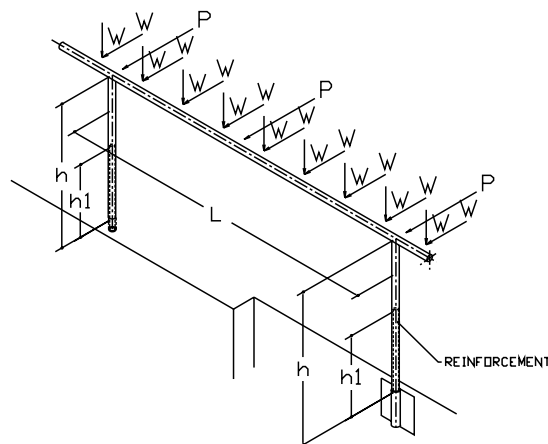
***Reduce to 14,000 within 1 inch of weld

Table 2 - Section Properties of Pipe and Reinforcing Dowel

Nominal Pipe Size (ips)	OD (in.)	ID (in.)	Wall Thickness	Area (in. ²)	I (in. ⁴)	S (in. ³)
Schedule 10						
1-1/2"	1.900	1.682	0.109	0.613	0.247	0.260
2"	2.375	2.157	0.109	0.776	0.499	0.420
Schedule 40						
1-1/4"	1.660	1.380	0.140	0.669	0.195	0.235
1-1/2"	1.900	1.610	0.145	0.800	0.310	0.326
2"	2.375	2.067	0.154	1.075	0.666	0.561
Schedule 80						
1-1/4"	1.660	1.278	0.191	0.882	0.242	0.291
1-1/2"	1.900	1.500	0.200	1.068	0.391	0.412
2"	2.375	1.939	0.218	1.477	0.868	0.731
Hollaender Tubular Dowel	1.600	1.250	0.175	0.783	0.201	0.252

Outside Diameter (OD), Inside Diameter (ID), Moment of Inertia (I), Section Modulus (S)

Railing System Dimensions and Loads



Quality with Ease

The Hollaender® Manufacturing Company

- Proven performance for over 65 years
- Single source for all handrail and fitting needs
- Technologically advanced manufacturer, CAD/CAM & CNC
- World-class engineering group
- State-of-the-art aluminum foundry
- New product innovator



Hollaender
Your Handrail Source.

The Hollaender®
Manufacturing Company

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