



2004 Nelson Stud Welding Stud and Ferrule Catalog

About this catalog:

This catalog is designed to be a user-friendly source of online information about the Nelson Stud Welding line of studs, anchors, pins, and the standard accessories used to weld them. Many features have been incorporated into the pages of this catalog to enable you, the customer, to find the information you need quickly and easily.

- Many studs, pins, anchors, and ferrules are featured to provide the greatest range of possible solutions to your stud welding applications.
- Text explanations have been added to clarify some of the potential uses of each stud.
- Suggestions for similar use studs will assist you in making the correct stud choice for your stud welding application.
- PDF format creates a quicker downloading, more informative catalog that is readable on both IBM and Macintosh platforms. Security features assure that the information you download from our web site is genuine Nelson information.
- Links embedded in each page take you right to the information you need, making the stud information more easily accessible.
- Bookmarks have been added to make navigation through the catalog quick and easy.
- Detailed ferrule and accessory information allows you to identify and specify the exact parts you need to execute the job.
- Clickable table of contents and indexes quickly locates the stud information you need.
- Studs are indexed by welding process and use in industry to make finding the stud you need faster and easier.
- Company contact information is provided on every specification sheet to make communication with Nelson Stud Welding faster than ever before!

We believe this is the easiest to use, most comprehensive catalog that Nelson Stud Welding has ever published. Your questions, comments, and suggestions are welcome and appreciated. Please follow the bookmark at left.

Thank you for choosing to download this catalog. We think you will find it the most useful and informative method to explore the Nelson Stud Welding product line.

NELSON STUD WELDING

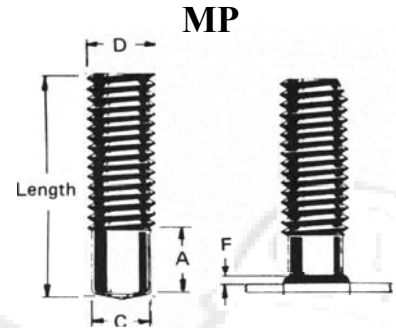
SPECIFICATION: Metric MP Partially Threaded Studs

Nelson Metric MP studs are the standard metric stud recommended for fastening applications on heavy gauge base materials where development of the full fastener strength is needed. The unthreaded section minimizes the weld flash diameter and height. It also reduces the possibility of stud hang up in the ferrule cavity if gun parts are slightly misaligned.

Nelson partially threaded studs have a pitch diameter weld base and are available in thread diameters of M6 through M24 with unlimited length.

Nelson MP studs are certified to AWS D1.1, TS16949, and ISO 9000:2000.

For similar function metric studs, see Nelson [MD Fully Threaded Metric Studs](#) and [MR Reduced Base studs](#). In the imperial line of Nelson studs, see [CFL Full Threaded studs](#), [CFP Small Diameter Threaded studs](#), [CJL Reduced Base studs](#), [HBL Full Base Diameter Threaded studs](#), [B5L 90° Bent Collar studs](#), [Banding Cable Hangers](#), [CrimpLok™ Cable Hangers](#), and [Watertight nuts](#).



When ordering, specify **Type, Diameter, Before Weld Length, Material, Quantity, and Part Number**

Example: MP M10 x 1.50 x 28mm; Mild Steel; 10,000 pieces; #101018221

Thread Size	Minimum Stud Length	Burn Off	C	A	Weld Flash Size		Flash Clearance	Required Standard Accessories			
					Diameter E	Height F		Ferrule	Grip	Chuck	Foot
M6 x 1.00	15.00	2.00	5.30	9.50	9.00	2.80	10.00	100101034	501001005	500001267	502001137
M8 x 1.25	16.00	3.00	7.10	11.00	9.90	2.80	10.90	100101035	501001006	500001009	502001137
M10 x 1.50	16.00	3.00	8.90	11.50	12.50	3.40	13.70	100101156	501001008	500001269	502001137
M12 x 1.75	24.00	3.00	10.70	14.00	14.50	4.50	16.00	100101032	501001009	500001206	502001137
M16 x 2.00	29.00	4.00	14.60	16.50	17.80	5.80	20.00	100101159	501001011	500001016	502001138
M20 x 2.50	35.00	4.00	18.20	19.00	27.00	6.30	28.60	100101133	501001015	500001272	502001003
M24 x 3.00	46.00	5.00	21.90	27.00	28.60	8.00	31.80	100101140	501001015	500001274	502001003

MATERIALS: Studs are available in Low Carbon Mild Steel and Stainless Steel. For specific grade information, physical and chemical properties, conforming standards, and information on stud plating and heat treating, please see [General Material Specifications](#).

THREADS: Standard MP studs are available with up to 75mm of thread length in ISO 13918 6g series thread. Other thread pitch series, and thread lengths greater than 75mm are available as special order.

FLUX: All Nelson partially threaded MP studs have a solid flux load.

Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

NELSON STUD WELDING

*SPECIFICATION: Metric **NBL** No Thread Studs*

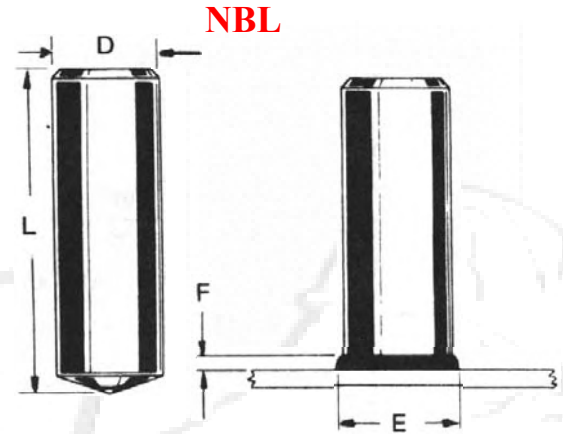


Nelson metric NBL studs are designed to be welded to heavy base materials and are used for a variety of applications. In the power generation market, they are used to anchor refractory to water walls and to facilitate heat transfer in coal burning furnaces. In forging applications, NBL studs are used as the tong hold on the ends of billets. They are also commonly used as locator pins, axles, pivot points, spacers, and stops.

Studs with diameters up to 24mm, and lengths 30mm can be specially designed for use in automatic fed stud welding equipment.

Special secondary operations, such as cross-drilling, grooving, heat treating, and pointing, can expand the application possibilities of Nelson NBL studs.

For similar function imperial studs, see Nelson **NBA Aluminum No Thread studs** and **NJL Reduced Base Unthreaded studs**.



When ordering, specify Type, Diameter, Before Weld Length, Material, Quantity, and Part Number

Example: NBL 10 x 20mm; Stainless Steel; 10,000 pieces; #101065913

Stud Diameter D	Minimum Stud Length L	Burn Off	Weld Flash Size		Flash Clearance	Ferrule	Required Standard Accessories		
			F	G			Grip	Grip	Foot
6	18	2	9.10	3	11.10	100101067	501001007	500001267	502001137
8	23	3	11	4	12.50	100101007	501001006	500001009	502001137
10	23	3	13	4	14.50	100101037	501001008	500001269	502001137
12	24	3	16	4.5	17.50	100101027	501001009	500001206	502001137
16	29	4	21	6	22.50	100101187	501001014	500001016	501001138
19	30	5	27	7	28.50	100101152	501001014	500001018	502001002
20	30	5	26	8	27.50	100101195	501001014	500001272	502001002
22	35	6	28	9	30.50	100101140	501001015	500001019	502001003
24	36	6	35	10	36.50	100101197	501001016	500001274	502001003

MATERIALS: Studs are available in Low Carbon Mild Steel and 18-8 Stainless Steel. Other materials are available by special order. For specific grade information and physical and chemical properties, conforming standards, and information on stud plating and heat treating, please see [General Material Specifications](#).

FLUX: All Nelson unthreaded studs have a solid flux load.

Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

NELSON STUD WELDING

SPECIFICATION: Metric TBL Internally Threaded Studs

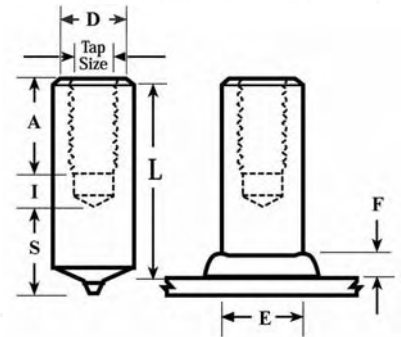
Nelson's internally threaded metric TBL studs are intended to be used on heavy base materials and serve as a means of attaching or anchoring components to a structure. When maximizing the stud diameter to tap ratio, the stud can also serve as a stand off post.

Standard TBL studs have internal metric ISO 6g threads.

The "D" dimension on fine threads is approximately 15 – 20 % less than for course threads. The "E" dimension is predicated on stud diameter, not tap size. Secondary bottom tapping or flat bottom drilling is available as a special order with significant price additions.

Reduced base studs are available but depth of tap drill point should not pass below shoulder of reduced diameter shoulder so that stud strength is not compromised.

For similar function imperial studs, see Nelson [CKL Collar studs](#), [NBL Unthreaded studs](#), [S6L Sprinkler studs](#), and [SBL Shoulder studs](#)



When ordering, specify Type, Diameter, Before Weld Length, Tap Size, Material, Quantity, and Part Number

Example: TBL M8 x 22.00mm, with 8mm Deep Tap; Mild Steel; 10,000 pieces; #101103481

Stud Diameter	Maximum Tap Size C	Minimum Values				Burn Off	Weld Flash		Flash Clearance	Required Standard Accessories			
		D	A	I	S		E	F		Ferrule	Grip	Chuck	Foot
6	M4 x 0.70	6.00	6.00	3.00	4.00	2.00	9.10	3.00	11.10	100101067	501001007	500001267	502001137
8	M5 x 0.80	8.00	8.00	3.00	4.00	3.00	11.00	4.00	12.50	100101007	501001006	500001009	502001137
10	M6 x 1.00	10.00	9.00	4.00	4.00	3.00	13.00	4.00	14.50	100101037	501001008	500001269	502001137
12	M8 x 1.25	12.00	12.00	5.00	5.00	3.00	16.00	4.50	17.50	100101027	501001009	500001206	502001137
16	M10 x 1.50	16.00	15.00	6.00	6.00	4.00	21.00	6.00	22.50	100101187	501001014	500001016	502001138
19	M12 x 1.75	19.00	18.00	7.00	6.00	5.00	27.00	7.00	28.50	100101152	501001014	500001018	502001002
20	M12 x 1.75	19.00	18.00	7.00	6.00	5.00	26.00	8.00	27.50	100101195	501001014	500001272	502001002
22	M16 x 2.00	22.00	24.00	8.00	7.00	6.00	28.00	9.00	30.50	100101140	501001015	500001019	502001003
24	M16 x 2.00	22.00	24.00	8.00	7.00	6.00	35.00	10.00	36.50	100101197	501001016	500001274	502001003

In the table above, E represents the weld diameter; F, the weld height; I, the imperfect thread depth; and S, the depth of the solid weld base.

MATERIALS: TBL and PBL studs are available in Low Carbon Mild Steel and 18-8 Stainless Steel. For specific grade information and physical and chemical properties, conforming standards, and information on stud plating and heat treating, please see [General Material Specifications](#).

THREADS: Standard metric threads meet ISO 6g.

FLUX: All standard Nelson internally threaded studs have a solid flux load.

Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

NELSON STUD WELDING

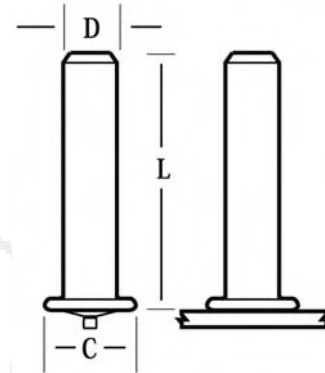
*SPECIFICATION: TFNC, TFNS, TFNA Metric
Flanged Unthreaded Capacitor Discharge Studs*

These unthreaded metric studs are designed to be welded to thin sheet material by the initial “gap” or “contact” method of stud welding using tip ignition capacitor discharge weld process. These applications generally provide a weld bond strength that is greater than the strength of the thin base material to which they are welded.

These studs have a flanged weld base that is about 2mm greater than the nominal stud diameter. The studs are fully threaded, and come in lengths up to 50mm.

For similar function studs, see Nelson [ANC Unthreaded Stored Arc® studs](#) and [TPC Tipped Insulation pins](#). In the imperial line of Nelson studs, see [TANC Auto-Feed Capacitor Discharge studs](#) and [TFNC Flanged Unthreaded Capacitor Discharge studs](#).

TFNC, TFNS, TFNA



When ordering, specify **Type, Description, Material, Quantity, and Part Number**

Example: TFNC 10-24 x 1”; Mild Steel; 10,000 pieces; #101208250

Stud Diameter D	Flange Diameter C	Minimum Length L	Required Standard Accessories	
			Chuck* Series 650 Style Gun	Chuck Assembly CD-Lite Gun
3.00	5.00	6.00	500001355	215500
4.00	6.00	6.00	500001361	215501
5.00	7.00	6.00	500001358	215502
6.00	8.00	8.00	500001362	215503
8.00	10.50	10.00	500001360	250104

* A backup pin or stud stop is required for use with these chucks. The list below shows part numbers and corresponding stud lengths for each pin length.

Back-up Pin Part Number	For Stud Lengths (millimeters)
500017017	6 – 16
500017018	20 – 30
500017019	32 – 40
500017020	45 – 55

MATERIALS: Studs are available in Low Carbon Mild Steel (TFNC), 18-8 Stainless Steel (TFNS), and 5356 Aluminum (TFNA). Some materials may be available by special order. For specific grade information and physical and chemical properties, conforming standards, and information on stud plating and heat treating, please see [General Material Specifications](#).

THREADS: Standard external metric threads meet ISO 6g.

Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

NELSON STUD WELDING

SPECIFICATION: TFTC, TFTS, TFTA Metric Flanged Capacitor Discharge Studs

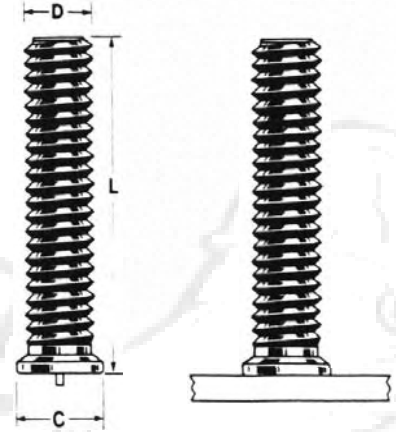
These threaded metric studs are designed to be welded to thin sheet material by the initial “gap” or “contact” method of stud welding using tip ignition capacitor discharge weld process. These applications generally provide a weld bond strength that is greater than the strength of the thin base material to which they are welded.

These studs have a flanged weld base that is about 2mm greater than the nominal stud diameter. The studs are fully threaded, and come in lengths up to 50mm.

For similar function studs, see Nelson [ANC Unthreaded Stored Arc® studs](#) and [TPC Tipped Insulation pins](#). In the imperial line of Nelson studs, see [TATC Auto-Feed Capacitor Discharge studs](#) and [TFNC Flanged Unthreaded Capacitor Discharge studs](#).

Check Standard Stock

TFTC, TFTS, TFTA



When ordering, specify Type, Description, Material, Quantity, and Part Number

Example: TFTC M4 x 16mm; Mild Steel; 10,000 pieces; #101217117

Thread Size	Stud Diameter D	Flange Diameter C	Minimum Length L	Required Standard Accessories	
				Chuck* Series 650 Style Gun	Chuck Assembly CD-Lite Gun
M3 x 0.50	3.00	5.00	6.00	500001355	215500
M4 x 0.70	4.00	6.00	6.00	500001361	215501
M5 x 0.80	5.00	7.00	6.00	500001358	215502
M6 x 1.00	6.00	8.00	8.00	500001362	215503
M8 x 1.25	8.00	10.50	10.00	500001360	250104

* A backup pin or stud stop is required for use with these chucks. The list below shows part numbers and corresponding stud lengths for each pin length.

Back-up Pin Part Number	For Stud Lengths (millimeters)
500017017	6 – 16
500017018	20 – 30
500017019	32 – 40
500017020	45 – 55

MATERIALS: Studs are available in Low Carbon Mild Steel (TFTC), 18-8 Stainless Steel (TFTS), and 5356 Aluminum (TFTA). Some materials may be available by special order. For specific grade information and physical and chemical properties, conforming standards, and information on stud plating and heat treating, please see [General Material Specifications](#).

THREADS: Standard external metric threads meet ISO 6g.

Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

NELSON STUD WELDING

FERRULE SPECIFICATION

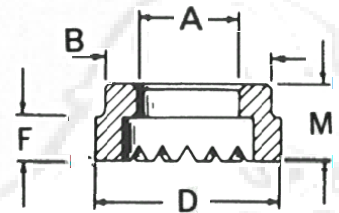
Ceramic ferrules are an essential part of the standard drawn arc stud welding process. They are designed to encircle the weld stud to protect the weld arc and limit it to a specific area of the base material. They also contain the molten weld metal and act as a mold to give a uniform shape to this metal, also called the weld flash. The term, weld flash, is used to distinguish the weld metal at the base of a stud from the weld metal deposited by other arc welding processes, which is called weld fillet.

Standard Ferrules

These studs are intended for welding round studs perpendicular to flat surfaces.

*Full Base – These standard ferrules are standard ferrules supplied with full weld base **NBL, TBL, H4L, S3L, and D2L** studs.*

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
#6	0.138	0.281	0.375	0.234	0.390	100101001
#8	0.164	0.291	0.375	0.234	0.390	100101002
#10	0.187	0.305	0.390	0.234	0.390	100101003
1/4	0.250	0.505	0.640	0.286	0.437	100101067
5/16	0.312	0.445	0.578	0.234	0.390	100101007
3/8	0.375	0.650	0.795	0.228	0.390	100101099
7/16	0.437	0.585	0.703	0.234	0.422	100101009
1/2	0.500	0.785	0.875	0.228	0.390	100101114
9/16	0.562	0.785	1.030	0.328	0.515	100101011
5/8	0.625	1.030	1.150	0.339	0.526	100101187
3/4	0.750	1.030	1.215	0.469	0.656	100101152
13/16	0.813	1.210	1.735	0.260	0.464	100101178
7/8	0.875	1.210	1.413	0.545	0.732	100101140
1	1.000	1.406	1.610	0.633	0.820	100101045
1-1/8	1.125	1.541	1.765	0.503	0.815	100101143
1-1/4	1.250	2.015	2.015	1.030	1.030	100101146



To determine the ferrule grips, ferrule holders, or ferrule tubes that can be used with specific ferrule types, look at the neck diameter (inside diameter) of the ferrule, then look in the accessories catalog for ferrule grips, holders, or tubes to match that inside diameter.

Full Base – Thin Wall – These special order ferrules are available for full base studs to accommodate special situations or fixturing.

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
1/4	0.250	0.380	0.455	0.265	0.390	100101006
3/8	0.375	0.505	0.640	0.234	0.390	100101008
1/2	0.500	0.650	0.795	0.250	0.438	100101010
5/8	0.625	0.785	1.030	0.328	0.515	100101012

*Full Base – Low Profile, F-139 – These ferrules are available for **short studs***

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
#10	0.187	0.305	0.390	0.125	0.250	100101063
1/4	0.250	0.370	0.455	0.125	0.250	100101077
5/16	0.312	0.505	0.596	0.125	0.250	100101030
3/8	0.375	0.585	0.675	0.125	0.250	100101031
7/16	0.437	0.650	0.740	0.125	0.281	100101032
1/2	0.500	0.785	0.875	0.174	0.330	100101033
1/2	0.500	0.921	1.030	0.125	0.312	100101119
5/8	0.625	0.921	1.030	0.187	0.375	100101126
3/4	0.750	1.210	1.413	0.203	0.390	100101133
3/8	0.375	0.785	0.875	0.160	0.281	100101101
1/2	0.500	1.062	1.187	0.125	0.281	100101122

Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

Threaded Pitch Diameter, F-239 – These studs are used with **CPL** type studs.

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
1/4-20	0.215	0.380	0.455	0.125	0.250	100101034
5/16-18	0.275	0.445	0.535	0.125	0.250	100101035
3/8-16	0.330	0.505	0.595	0.139	0.264	100101036
7/16-14	0.388	0.585	0.675	0.173	0.329	100101037
1/2-13	0.448	0.650	0.740	0.206	0.362	100101038
5/8-11	0.562	0.785	0.905	0.277	0.433	100101039
3/4-10	0.680	1.030	1.150	0.339	0.526	100101040
7/8-9	0.797	1.210	1.330	0.406	0.593	100101041
1-8	0.915	1.406	1.526	1.474	0.661	100101042

Full Threaded, F-107 - These studs are used with **CFL** type studs.

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
5/16-18	0.312	0.445	0.578	0.281	0.437	100101024
3/8-16	0.375	0.505	0.640	0.281	0.437	100101025
7/16-14	0.437	0.585	0.703	0.281	0.469	100101026
1/2-13	0.500	0.650	0.795	0.281	0.469	100101027
5/8-11	0.625	0.785	1.030	0.390	0.579	100101028
3/4-10	0.750	1.030	1.180	0.390	0.595	100101029

Collar Studs, F-172 - These studs are used with **CKL** type studs.

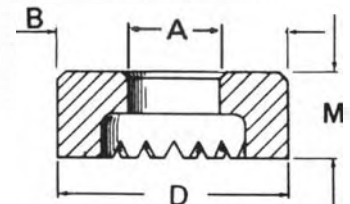
Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
#10-24, 32	0.187	0.650	0.740	0.090	0.195	100101060
1/4-20	0.215	0.785	0.875	0.095	0.235	100101066
5/16-18	0.275	0.785	0.875	0.095	0.235	100101073
3/8-16	0.330	0.785	0.875	0.095	0.250	100101083
1/2-13	0.448	0.921	1.030	0.125	0.250	100101118

Reduced Base, F-106 - These studs are used with **CJL** and **NJL** type studs.

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
#10	0.187	0.305	0.305	0.234	0.390	100101015
1/4	0.250	0.380	0.455	0.175	0.390	100101016
5/16	0.312	0.445	0.578	0.281	0.437	100101017
3/8	0.375	0.505	0.640	0.281	0.437	100101018
1/2	0.500	0.650	0.795	0.327	0.515	100101020
5/8	0.625	0.785	1.030	0.391	0.579	100101021
3/4	0.750	0.921	1.100	0.391	0.595	100101022

Aluminum Studs, F-250 - These studs are used with **HBA**, **CKA**, **TBA** and **NBA** type studs.

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height Overall M	Ferrule Part Number
3/16	0.187	0.750	0.750	0.250	100101046
1/4	0.250	0.750	0.750	0.250	100101047
5/16	0.312	0.750	0.750	0.250	100101048
3/8	0.375	1.000	1.000	0.385	100101049
7/16	0.437	1.000	1.000	0.385	100101050
1/2	0.500	1.000	1.000	0.385	100101051



Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

Special Ferrules ****Internal Use Only****

These studs are intended for welding round studs to flat surfaces.

Low Profile

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
1/2	0.500	0.785	0.875	0.125	0.281	100101115

Special Collar

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
1/2-13	0.448	1.062	1.187	0.125	0.281	100101122
1/2-13	0.448	1.030	1.187	0.125	0.281	100101239
3/4-10	0.680	1.030	1.150	0.296	0.483	100101135

Special Short CFL, Full Threaded

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
3/8-16	0.375	0.505	0.615	0.132	0.250	100101083

Non-Skid, Heavy Duty

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
5/16	0.312	0.650	0.795	0.228	0.390	100101184
1/2-13	0.448	0.785	0.905	0.114	0.362	100101202

Short, Heavy Duty

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
3/8	0.375	0.650	0.795	0.125	0.250	100101225

3/4 Special, Small Vent

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
3/4	0.750	1.030	1.215	0.469	0.656	100101232

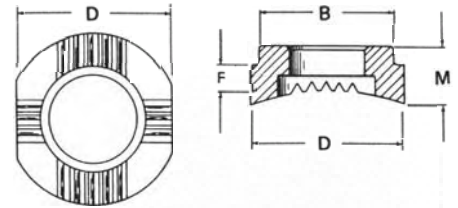
Special

Nominal Stud Size	Inside Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number
10 ga.	0.134	0.260	0.260	0.385	0.385	100101233

Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

Special Concave Ferrules for Welding to Curved Surfaces

For many applications, studs must be welded to the outside of curved surfaces of cylinders, tubes, pipes, or formed metal parts. In order to achieve good weld results when stud welding to a convex surface, the ferrule must fit both the stud diameter and the curve of the base material.



Below is a partial listing of ferrules that Nelson can provide for welding to curved surfaces.

Standard Concave Ferrules

Nominal Stud Size	Inside Diameter A	Weld Surface Curve Diameter	Effective Height F	Grip Neck Diameter B	Major Diameter D	Ferrule Part Number
1/4	0.250	3/8	0.380	0.380	0.555	100102005
5/16	0.312	3/8	0.250	0.505	0.595	100102054
0.330	0.330	1/2	0.303	0.585	0.703	100102051
3/8	0.375	3/4	0.235	0.785	0.875	100102093
3/8	0.375	7/8	0.312	0.505	0.585	100102012
3/8	0.375	7/8	0.437	0.505	0.640	100102046
3/8	0.375	1-3/4	0.343	0.505	0.640	100102091
3/8	0.375	3	0.343	0.505	0.640	100102092
1/2	0.500	1-1/4	0.312	0.785	0.875	100102025
1/2	0.500	1-5/8	0.437	0.650	0.806	100102023
1/2	0.500	3	0.437	0.650	0.806	100102019
1/2	0.500	3	0.437	0.785	0.875	100102021
1/2	0.500	3	0.680	0.650	0.796	100102081
1/2	0.500	3-1/2	0.250	1.615	1.615	100102090
0.590	0.590	1-7/8	0.493	0.785	1.030	100102082
5/8	0.625	3/4	0.495	0.785	1.030	100102095
5/8	0.625	1	0.515	0.785	1.030	100102029
5/8	0.625	2	0.495	0.785	1.030	100102030
5/8	0.625	4	0.320	1.615	1.615	100102096
5/8	0.625	4	0.515	0.785	1.030	100102032
5/8	0.625	3-3/4	0.340	1.615	1.615	100102084
0.680	0.680	1	0.437	1.030	1.140	100105007
3/4	0.750	2-9/16	0.532	1.030	1.187	100102038
7/8	0.875	3-3/4	0.465	1.615	1.615	100102086
1	1.000	3	0.813	1.406	1.615	100102087

*Concave Ferrules for Reduced Base Studs**

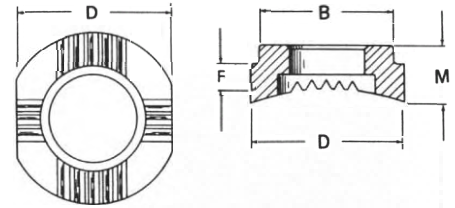
Nominal Stud Size	Inside Diameter A	Reduced Base Diameter	Weld Surface Curve Diameter	Effective Height F	Grip Neck Diameter B	Outer Diameter D	Ferrule Part Number
11/16	0.688	7/16	1-1/8	0.990	0.875	0.406	100102039
11/16	0.688	7/16	2	0.990	0.875	0.426	100102050
13/16	0.813	9/16	2	0.562	1.062	1.180	100102066
13/16	0.813	9/16	2-3/4	0.562	1.062	1.180	100102072

* Reduced weld base diameters are often needed on pipe and port fittings.

Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

Special Concave Ferrules for Welding to Curved Surfaces

For many applications, studs must be welded to the outside of curved surfaces of cylinders, tubes, pipes, or formed metal parts. In order to achieve good weld results when stud welding to a convex surface, the ferrule must fit both the stud diameter and the curve of the base material.



Below is a partial listing of ferrules that Nelson can provide for welding to curved surfaces.

Standard Concave Ferrules

Nominal Stud Size	Inside Diameter A	Weld Surface Curve Diameter	Effective Height F	Grip Neck Diameter B	Major Diameter D	Ferrule Part Number
1/4	0.250	3/8	0.380	0.380	0.555	100102005
5/16	0.312	3/8	0.250	0.505	0.595	100102054
0.330	0.330	1/2	0.303	0.585	0.703	100102051
3/8	0.375	3/4	0.235	0.785	0.875	100102093
3/8	0.375	7/8	0.312	0.505	0.585	100102012
3/8	0.375	7/8	0.437	0.505	0.640	100102046
3/8	0.375	1-3/4	0.343	0.505	0.640	100102091
3/8	0.375	3	0.343	0.505	0.640	100102092
1/2	0.500	1-1/4	0.312	0.785	0.875	100102025
1/2	0.500	1-5/8	0.437	0.650	0.806	100102023
1/2	0.500	3	0.437	0.650	0.806	100102019
1/2	0.500	3	0.437	0.785	0.875	100102021
1/2	0.500	3	0.680	0.650	0.796	100102081
1/2	0.500	3-1/2	0.250	1.615	1.615	100102090
0.590	0.590	1-7/8	0.493	0.785	1.030	100102082
5/8	0.625	3/4	0.495	0.785	1.030	100102095
5/8	0.625	1	0.515	0.785	1.030	100102029
5/8	0.625	2	0.495	0.785	1.030	100102030
5/8	0.625	4	0.320	1.615	1.615	100102096
5/8	0.625	4	0.515	0.785	1.030	100102032
5/8	0.625	3-3/4	0.340	1.615	1.615	100102084
0.680	0.680	1	0.437	1.030	1.140	100105007
3/4	0.750	2-9/16	0.532	1.030	1.187	100102038
7/8	0.875	3-3/4	0.465	1.615	1.615	100102086
1	1.000	3	0.813	1.406	1.615	100102087

*Concave Ferrules for Reduced Base Studs**

Nominal Stud Size	Inside Diameter A	Reduced Base Diameter	Weld Surface Curve Diameter	Effective Height F	Grip Neck Diameter B	Outer Diameter D	Ferrule Part Number
11/16	0.688	7/16	1-1/8	0.990	0.875	0.406	100102039
11/16	0.688	7/16	2	0.990	0.875	0.426	100102050
13/16	0.813	9/16	2	0.562	1.062	1.180	100102066
13/16	0.813	9/16	2-3/4	0.562	1.062	1.180	100102072

* Reduced weld base diameters are often needed on pipe and port fittings.

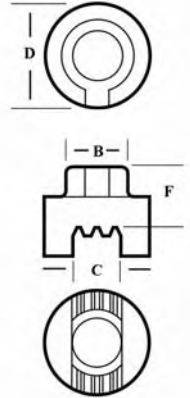
Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

NELSON STUD WELDING

FERRULE SPECIFICATIONS: *Welding to Edges of Base Plates*

Over the years, Nelson Stud Welding has developed several ferrules that permit welding of full base studs to the edges of plate or bars that are the same thickness as the stud diameter.

These ferrules are constructed with ears or tabs, which extend down over the sides of the base material, and with vents and a cavity that is limited to the base material thickness. Due to the limited base material width, the weld cavities are run along the edge for a distance greater than the normal flash diameter used for welding studs perpendicular to flat plates. This special ferrule design allows development of full stud strength when welding to the edges of plates or bars.



Stud Diameter A	Base Material Thickness C	Ferrule Neck Diameter B	Major Diameter D	Effective Height F	Overall Height M	Ferrule Part Number
1/4	1/4	0.380	0.555	0.468	0.468	100101223
3/8	3/8	0.650	0.795	0.562	0.577	100101204
1/2	1/2	0.785	1.030	0.625	0.640	100101205

The neck diameters of the ferrules are shown to assist in the selection of ferrule tube, ferrule holders, and foot plates.

The 3/8" and the 1/2" ferrules have standard necks, while the neck of the 1/4" ferrule has an orientation key on the neck. The key on the 1/4" ferrule requires either bending up one of the narrow gripping tines on the standard 1/4" ferrule grip, #501001005, or the use of a special 1/4" grip, #501008005, which has two notches in it to accept the key on the neck of the ferrule, as well as the two normal gripping tines.

The #100101223 ferrule has the orientation key because it was designed for use with a production unit, where the ferrule must be aligned with the base material. The 3/8" and 1/2" ferrules without the key on the neck were designed for use with hand held guns, where the gun can be turned to align the ferrule with the base material.

These ferrules are designed for use with Nelson full base diameter studs. This includes **H4L, S3L, D2L, NBL, TBL**, and other stud styles having full diameter weld bases.

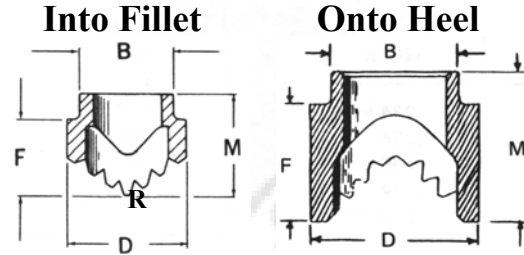
Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

NELSON STUD WELDING

FERRULE SPECIFICATIONS: *Special Ferrule for Welding Into Fillets and Onto Heels*

Studs often need to be welded to the inside or outside of angles. The radius of the tip of these ferrules is important. The radius of the ferrules needs to match the radius on the angle to which the studs are to be welded in order to properly shield the weld arc and prevent the loss of metal.

If the radius and the angle cannot be determined, it is better to select the ferrule with the larger radius since it is less detrimental to have a gap at the center of the angle than along both edges of the angle.



Into Fillet – inside corner of 90° angle

Stud Diameter A	Radius R	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number	Split Ferrule Grips	
							2"	3"
1/4	0.125	0.380	0.578	0.350	0.500	100106001	501004003	501004010
3/8	0.250	0.505	0.640	0.375	0.480	100106002	501004006	501004011
1/2	0.375	0.650	0.795	0.500	0.688	100103011	501004008	501004013
5/8	0.375	0.785	1.030	0.687	0.875	100106005	501004009	-
1/2	0.250	0.650	0.687	0.795	0.500	100103009	501004008	501004013
3/4	0.750	1.030	1.218	0.687	0.875	100103012	501004014	-
3/4	0.375	1.030	1.218	0.562	0.937	100106004	501004014	-

Onto Heel – outside corner of 90° angle

Stud Diameter A	Neck Diameter B	Major Diameter D	Height to Neck F	Height Overall M	Ferrule Part Number	Split Grip
1/4	0.380	0.555	0.125	0.380	100102005	501003005
3/8	0.585	0.703	0.550	0.706	100105001	501003008
1/2	0.785	1.030	0.625	0.812	100105002	501003010
5/8	0.785	1.030	0.703	0.891	100101003	501003010
3/4	1.030	1.215	0.844	1.031	100105005	501003014
7/8	1.210	1.410	0.938	0.938	100105006	501003015

Visit our website www.NelsonStudWelding.com for a list of our standard stock products.

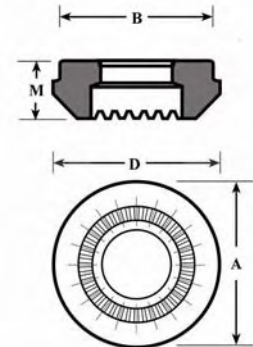
NELSON STUD WELDING

FERRULE SPECIFICATIONS: *Special Ferrules for Stripping Straight Off Headed Studs*

Welding of concrete anchors and shear connectors into holes through concrete, masonry, or wood, is a special application of Nelson studs. For these applications, a ferrule is needed with a neck diameter that is larger than the head on the stud. This allows the gun to be stripped straight off the welded studs.

The ferrules listed below have gripping neck diameters that are larger than the heads of the concrete anchors or shear anchors.

The 3/8" and 1/2" ferrules can also be used as Low Profile ferrules with special Collar studs that have full diameter weld bases.



Stud Diameter A	Stud Head Diameter	Ferrule Gripping Neck Diameter B	Major Diameter D	Overall Height M	Ferrule Part Number
3/8	0.750	0.785	0.875	0.281	100101101
1/2	1.000	1.062	1.187	0.281	100101122
5/8	1.250	1.406	1.531	0.531	100101182
3/4	1.250	1.406	1.531	0.656	100101228
7/8	1.375	1.406	1.531	0.732	100101215

* The neck diameters of the ferrules are shown to assist in the selection of ferrule tube, ferrule holders, and foot plates.

Visit our website www.NelsonStudWelding.com for a list of our standard stock products.