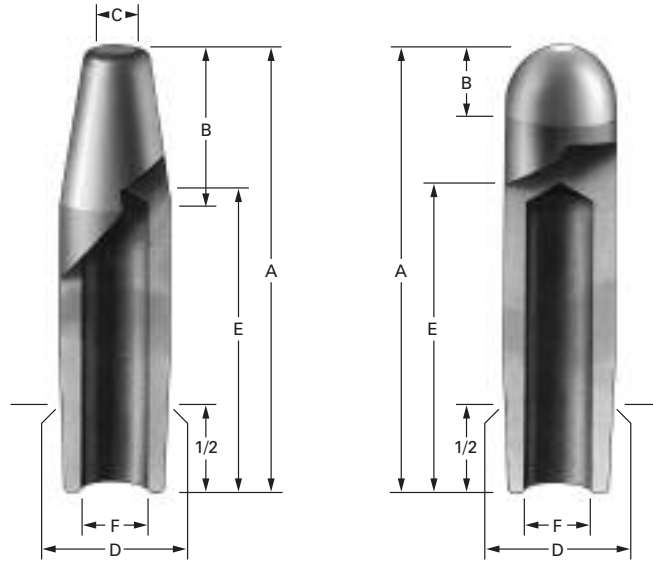


TUFFALOY STANDARD STRAIGHT TIPS

Straight tips from TUFFALOY are distinguished for their high conductivity and resistance to deformation, which are the two major requirements of resistance welding tips. Modern manufacturing methods and constant scientific quality control make the difference, starting with the alloying of pure copper, through bar extrusion, and the conversion of this high-quality bar stock into welding tips.

TUFFALOY ensures conformity to all standard dimensions. Before shipment, all tips must pass inspection by gage for uniform length, taper, and outline of point.



'A' POINTED NOSE

'B' DOME NOSE

A Overall Length	C Welding Face Dia.	D Gauging Dia.	E Water Hole Depth	F Water Hole Dia.
------------------------	---------------------------	----------------------	--------------------------	-------------------------

B Nose Length	RWMA CLASS 1		RWMA CLASS 2	
	Descrip- tion	Part No.	Descrip- tion	Part No.

B Nose Length	RWMA CLASS 1		RWMA CLASS 2	
	Descrip- tion	Part No.	Descrip- tion	Part No.

NO. 4 RW TAPER - 1/2" DIAMETER

1	3/16	.463	1/2	9/32
1-1/4	3/16	.463	3/4	9/32
1-1/2	3/16	.463	1	9/32
1-3/4	3/16	.463	1-1/4	9/32
2	3/16	.463	1-1/2	9/32
2-1/4	3/16	.463	1-3/4	9/32
2-1/2	3/16	.463	2	9/32
2-3/4	3/16	.463	2-1/4	9/32
3	3/16	.463	2-1/2	9/32
3-1/4	3/16	.463	2-3/4	9/32
3-1/2	3/16	.463	3	9/32
3-3/4	3/16	.463	3-1/4	9/32
4	3/16	.463	3-1/2	9/32

3/8	A-1404	131-1404	A-2404	132-2404
3/4	A-1405	131-1405	A-2405	132-2405
3/4	A-1406	131-1406	A-2406	132-2406
3/4	A-1407	131-1407	A-2407	132-2407
3/4	A-1408	131-1408	A-2408	132-2408
3/4	A-1409	131-1409	A-2409	132-2409
3/4	A-1410	131-1410	A-2410	132-2410
3/4	A-1411	131-1411	A-2411	132-2411
3/4	A-1412	131-1412	A-2412	132-2412
3/4	A-1413	131-1413	A-2413	132-2413
3/4	A-1414	131-1414	A-2414	132-2414
3/4	A-1415	131-1415	A-2415	132-2415
3/4	A-1416	131-1416	A-2416	132-2416

1/4	B-1404	133-1404	B-2404	134-2404
1/4	B-1405	133-1405	B-2405	134-2405
1/4	B-1406	133-1406	B-2406	134-2406
1/4	B-1407	133-1407	B-2407	134-2407
1/4	B-1408	133-1408	B-2408	134-2408
1/4	B-1409	133-1409	B-2409	134-2409
1/4	B-1410	133-1410	B-2410	134-2410
1/4	B-1411	133-1411	B-2411	134-2411
1/4	B-1412	133-1412	B-2412	134-2412
1/4	B-1413	133-1413	B-2413	134-2413
1/4	B-1414	133-1414	B-2414	134-2414
1/4	B-1415	133-1415	B-2415	134-2415
1/4	B-1416	133-1416	B-2416	134-2416

NO. 5 RW TAPER - 5/8" DIAMETER

1-1/4	1/4	.613	3/4	3/8
1-1/2	1/4	.613	3/4	3/8
1-3/4	1/4	.613	1	3/8
2	1/4	.613	1-1/4	3/8
2-1/4	1/4	.613	1-1/2	3/8
2-1/2	1/4	.613	1-3/4	3/8
2-3/4	1/4	.613	2	3/8
3	1/4	.613	2-1/4	3/8
3-1/4	1/4	.613	2-1/2	3/8
3-1/2	1/4	.613	2-3/4	3/8
3-3/4	1/4	.613	3	3/8
4	1/4	.613	3-1/4	3/8

1/2	A-1505	131-1505	A-2505	132-2505
7/8	A-1506	131-1506	A-2506	132-2506
7/8	A-1507	131-1507	A-2507	132-2507
7/8	A-1508	131-1508	A-2508	132-2508
7/8	A-1509	131-1509	A-2509	132-2509
7/8	A-1510	131-1510	A-2510	132-2510
7/8	A-1511	131-1511	A-2511	132-2511
7/8	A-1512	131-1512	A-2512	132-2512
7/8	A-1513	131-1513	A-2513	132-2513
7/8	A-1514	131-1514	A-2514	132-2514
7/8	A-1515	131-1515	A-2515	132-2515
7/8	A-1516	131-1516	A-2516	132-2516

3/8	B-1505	133-1505	B-2505	134-2505
3/8	B-1506	133-1506	B-2506	134-2506
3/8	B-1507	133-1507	B-2507	134-2507
3/8	B-1508	133-1508	B-2508	134-2508
3/8	B-1509	133-1509	B-2509	134-2509
3/8	B-1510	133-1510	B-2510	134-2510
3/8	B-1511	133-1511	B-2511	134-2511
3/8	B-1512	133-1512	B-2512	134-2512
3/8	B-1513	133-1513	B-2513	134-2513
3/8	B-1514	133-1514	B-2514	134-2514
3/8	B-1515	133-1515	B-2515	134-2515
3/8	B-1516	133-1516	B-2516	134-2516

NO. 6 RW TAPER - 3/4" DIAMETER

2	9/32	.731	1-1/4	7/16
2-1/2	9/32	.731	1-3/4	7/16
3	9/32	.731	2-1/4	7/16
3-1/2	9/32	.731	2-3/4	7/16
4	9/32	.731	3-1/4	7/16

1	A-1608	131-1608	A-2608	132-2608
1	A-1610	131-1610	A-2610	132-2610
1	A-1612	131-1612	A-2612	132-2612
1	A-1614	131-1614	A-2614	132-2614
1	A-1616	131-1616	A-2616	132-2616

3/8	B-1608	133-1608	B-2608	134-2608
3/8	B-1610	133-1610	B-2610	134-2610
3/8	B-1612	133-1612	B-2612	134-2612
3/8	B-1614	133-1614	B-2614	134-2614
3/8	B-1616	133-1616	B-2616	134-2616

NO. 7 RW TAPER - 7/8" DIAMETER

2	5/16	.844	1-1/4	1/2
2-1/2	5/16	.844	1-3/4	1/2
3	5/16	.844	2-1/4	1/2
3-1/2	5/16	.844	2-3/4	1/2
4	5/16	.844	3-1/2	1/2

1-1/8	A-1708	131-1708	A-2708	132-2708
1-1/8	A-1710	131-1710	A-2710	132-2710
1-1/8	A-1712	131-1712	A-2712	132-2712
1-1/8	A-1714	131-1714	A-2714	132-2714
1-1/8	A-1716	131-1716	A-2716	132-2716

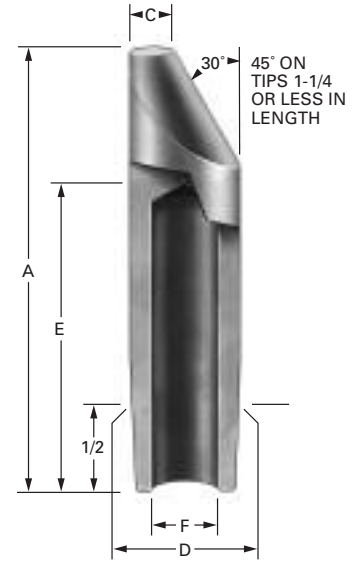
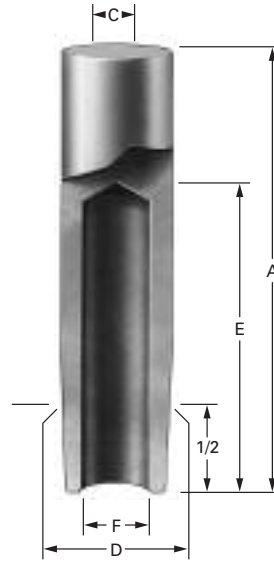
3/8	B-1708	133-1708	B-2708	134-2708
3/8	B-1710	133-1710	B-2710	134-2710
3/8	B-1712	133-1712	B-2712	134-2712
3/8	B-1714	133-1714	B-2714	134-2714
3/8	B-1716	133-1716	B-2716	134-2716



The bright shiny look of TUFFALOY tips is the result of a passivation process that eliminates excessive oxidation. It reflects the deep-down quality built into these tips and into all TUFFALOY products.

Only RWMA Class 1 (TUFFALOY 88) and Class 2 (TUFFALOY 77) tips are listed here. Class 3 alloy (TUFFALOY 55) tips are also available. For recommended uses of these alloys, see page 46.

To order Class 3 alloy tips, change description code to indicate it: see "Key to Description", page 4.



'C' FLAT NOSE

'D' OFFSET NOSE

A Overall Length	D Gauging Dia.	E Water Hole Depth	F Water Hole Dia.
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C Welding Face Dia.	RWMA CLASS 1		RWMA CLASS 2	
	Descrip- tion	Part No.	Descrip- tion	Part No.

C Welding Face Dia.	RWMA CLASS 1		RWMA CLASS 2	
	Descrip- tion	Part No.	Descrip- tion	Part No.

NO. 4 RW TAPER - 1/2" DIAMETER

1	.463	1/2	9/32
1-1/4	.463	3/4	9/32
1-1/2	.463	1	9/32
1-3/4	.463	1-1/4	9/32
2	.463	1-1/2	9/32
2-1/4	.463	1-3/4	9/32
2-1/2	.463	2	9/32
2-3/4	.463	2-1/4	9/32
3	.463	2-1/2	9/32
3-1/4	.463	2-3/4	9/32
3-1/2	.463	3	9/32
3-3/4	.463	3-1/4	9/32
4	.463	3-1/2	9/32

1/2	C-1404	135-1404	C-2404	136-2404
1/2	C-1405	135-1405	C-2405	136-2405
1/2	C-1406	135-1406	C-2406	136-2406
1/2	C-1407	135-1407	C-2407	136-2407
1/2	C-1408	135-1408	C-2408	136-2408
1/2	C-1409	135-1409	C-2409	136-2409
1/2	C-1410	135-1410	C-2410	136-2410
1/2	C-1411	135-1411	C-2411	136-2411
1/2	C-1412	135-1412	C-2412	136-2412
1/2	C-1413	135-1413	C-2413	136-2413
1/2	C-1414	135-1414	C-2414	136-2414
1/2	C-1415	135-1415	C-2415	136-2415
1/2	C-1416	135-1416	C-2416	136-2416

3/16	D-1404	137-1404	D-2404	138-2404
3/16	D-1405	137-1405	D-2405	138-2405
3/16	D-1406	137-1406	D-2406	138-2406
3/16	D-1407	137-1407	D-2407	138-2407
3/16	D-1408	137-1408	D-2408	138-2408
3/16	D-1409	137-1409	D-2409	138-2409
3/16	D-1410	137-1410	D-2410	138-2410
3/16	D-1411	137-1411	D-2411	138-2411
3/16	D-1412	137-1412	D-2412	138-2412
3/16	D-1413	137-1413	D-2413	138-2413
3/16	D-1414	137-1414	D-2414	138-2414
3/16	D-1415	137-1415	D-2415	138-2415
3/16	D-1416	137-1416	D-2416	138-2416

NO. 5 RW TAPER - 5/8" DIAMETER

1-1/4	.613	3/4	3/8
1-1/2	.613	3/4	3/8
1-3/4	.613	1	3/8
2	.613	1-1/4	3/8
2-1/4	.613	1-1/2	3/8
2-1/2	.613	1-3/4	3/8
2-3/4	.613	2	3/8
3	.613	2-1/4	3/8
3-1/4	.613	2-1/2	3/8
3-1/2	.613	2-3/4	3/8
3-3/4	.613	3	3/8
4	.613	3-1/4	3/8

5/8	C-1505	135-1505	C-2505	136-2505
5/8	C-1506	135-1506	C-2506	136-2506
5/8	C-1507	135-1507	C-2507	136-2507
5/8	C-1508	135-1508	C-2508	136-2508
5/8	C-1509	135-1509	C-2509	136-2509
5/8	C-1510	135-1510	C-2510	136-2510
5/8	C-1511	135-1511	C-2511	136-2511
5/8	C-1512	135-1512	C-2512	136-2512
5/8	C-1513	135-1513	C-2513	136-2513
5/8	C-1514	135-1514	C-2514	136-2514
5/8	C-1515	135-1515	C-2515	136-2515
5/8	C-1516	135-1516	C-2516	136-2516

1/4	D-1505	137-1505	D-2505	138-2505
1/4	D-1506	137-1506	D-2506	138-2506
1/4	D-1507	137-1507	D-2507	138-2507
1/4	D-1508	137-1508	D-2508	138-2508
1/4	D-1509	137-1509	D-2509	138-2509
1/4	D-1510	137-1510	D-2510	138-2510
1/4	D-1511	137-1511	D-2511	138-2511
1/4	D-1512	137-1512	D-2512	138-2512
1/4	D-1513	137-1513	D-2513	138-2513
1/4	D-1514	137-1514	D-2514	138-2514
1/4	D-1515	137-1515	D-2515	138-2515
1/4	D-1516	137-1516	D-2516	138-2516

NO. 6 RW TAPER - 3/4" DIAMETER

2	.731	1-1	7/16
2-1/2	.731	1-3/4	7/16
3	.731	2-1/4	7/16
3-1/2	.731	2-3/4	7/16
4	.731	3-1/4	7/16

3/4	C-1608	135-1608	C-2608	136-2608
3/4	C-1610	135-1610	C-2610	136-2610
3/4	C-1612	135-1612	C-2612	136-2612
3/4	C-1614	135-1614	C-2614	136-2614
3/4	C-1616	135-1616	C-2616	136-2616

9/32	D-1608	137-1608	D-2608	138-2608
9/32	D-1610	137-1610	D-2610	138-2610
9/32	D-1612	137-1612	D-2612	138-2612
9/32	D-1614	137-1614	D-2614	138-2614
9/32	D-1616	137-1616	D-2616	138-2616

NO. 7 RW TAPER - 7/8" DIAMETER

2	.844	1-1/4	1/2
2-1/2	.844	1-3/4	1/2
3	.844	2-1/4	1/2
3-1/2	.844	2-3/4	1/2
4	.844	3-1/2	1/2

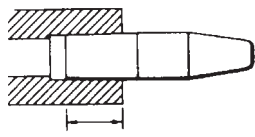
7/8	C-1708	135-1708	C-2708	136-2708
7/8	C-1710	135-1710	C-2710	136-2710
7/8	C-1712	135-1712	C-2712	136-2712
7/8	C-1714	135-1714	C-2714	136-2714
7/8	C-1716	135-1716	C-2716	136-2716

5/16	D-1708	137-1708	D-2708	138-2708
5/16	D-1710	137-1710	D-2710	138-2710
5/16	D-1712	137-1712	D-2712	138-2712
5/16	D-1714	137-1714	D-2714	138-2714
5/16	D-1716	137-1716	D-2716	138-2716



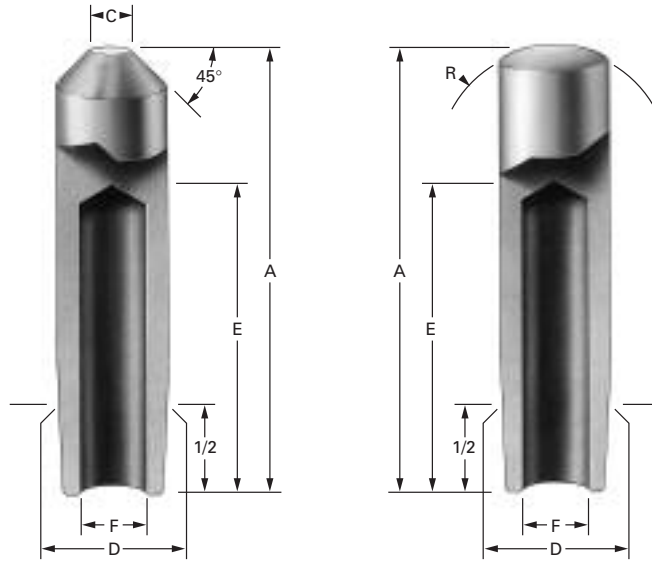
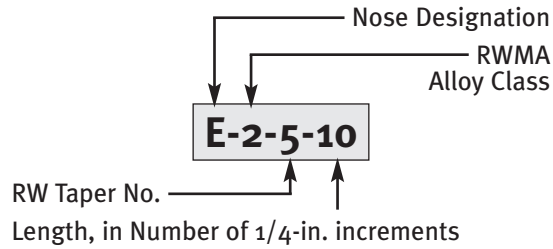
TUFFALOY STANDARD STRAIGHT TIPS

TAPER ENGAGEMENT



TIP SIZE	LENGTH
4 RW	1/2-in.
5 RW	3/4-in.
6 RW	7/8-in.
7 RW	1-1/8-in.

KEY TO DESCRIPTION



'E' TRUNCATED CONE

'F' RADIUS FACED

A Overall Length	D Gauging Dia.	E Water Hole Depth	F Water Hole Dia.
------------------------	----------------------	--------------------------	-------------------------

NO. 4 RW TAPER - 1/2" DIAMETER

1	.463	1/2	9/32
1-1/4	.463	3/4	9/32
1-1/2	.463	1	9/32
1-3/4	.463	1-1/4	9/32
2	.463	1-1/2	9/32
2-1/4	.463	1-3/4	9/32
2-1/2	.463	2	9/32
2-3/4	.463	2-1/4	9/32
3	.463	2-1/2	9/32
3-1/4	.463	2-3/4	9/32
3-1/2	.463	3	9/32
3-3/4	.463	3-1/4	9/32
4	.463	3-1/2	9/32

C Welding Face Dia.	RWMA CLASS 1		RWMA CLASS 2	
	Descrip- tion	Part No.	Descrip- tion	Part No.

3/16	E-1404	140-1404	E-2404	140-2404
3/16	E-1405	140-1405	E-2405	140-2405
3/16	E-1406	140-1406	E-2406	140-2406
3/16	E-1407	140-1407	E-2407	140-2407
3/16	E-1408	140-1408	E-2408	140-2408
3/16	E-1409	140-1409	E-2409	140-2409
3/16	E-1410	140-1410	E-2410	140-2410
3/16	E-1411	140-1411	E-2411	140-2411
3/16	E-1412	140-1412	E-2412	140-2412
3/16	E-1413	140-1413	E-2413	140-2413
3/16	E-1414	140-1414	E-2414	140-2414
3/16	E-1415	140-1415	E-2415	140-2415
3/16	E-1416	140-1416	E-2416	140-2416

R Nose Radius	RWMA CLASS 1		RWMA CLASS 2	
	Descrip- tion	Part No.	Descrip- tion	Part No.

2	F-1404	141-1404	F-2404	141-2404
2	F-1405	141-1405	F-2405	141-2405
2	F-1406	141-1406	F-2406	141-2406
2	F-1407	141-1407	F-2407	141-2407
2	F-1408	141-1408	F-2408	141-2408
2	F-1409	141-1409	F-2409	141-2409
2	F-1410	141-1410	F-2410	141-2410
2	F-1411	141-1411	F-2411	141-2411
2	F-1412	141-1412	F-2412	141-2412
2	F-1413	141-1413	F-2413	141-2413
2	F-1414	141-1414	F-2414	141-2414
2	F-1415	141-1415	F-2415	141-2415
2	F-1416	141-1416	F-2416	141-2416

NO. 5 RW TAPER - 5/8" DIAMETER

1-1/4	.613	3/4	3/8
1-1/2	.613	3/4	3/8
1-3/4	.613	1	3/8
2	.613	1-1/4	3/8
2-1/4	.613	1-1/2	3/8
2-1/2	.613	1-3/4	3/8
2-3/4	.613	2	3/8
3	.613	2-1/4	3/8
3-1/4	.613	2-1/2	3/8
3-1/2	.613	2-3/4	3/8
3-3/4	.613	3	3/8
4	.613	3-1/4	3/8

1/4	E-1505	140-1505	E-2505	140-2505
1/4	E-1506	140-1506	E-2506	140-2506
1/4	E-1507	140-1507	E-2507	140-2507
1/4	E-1508	140-1508	E-2508	140-2508
1/4	E-1509	140-1509	E-2509	140-2509
1/4	E-1510	140-1510	E-2510	140-2510
1/4	E-1511	140-1511	E-2511	140-2511
1/4	E-1512	140-1512	E-2512	140-2512
1/4	E-1513	140-1513	E-2513	140-2513
1/4	E-1514	140-1514	E-2514	140-2514
1/4	E-1515	140-1515	E-2515	140-2515
1/4	E-1516	140-1516	E-2516	140-2516

2	F-1515	141-1505	F-2505	141-2505
2	F-1506	141-1506	F-2506	141-2506
2	F-1507	141-1507	F-2507	141-2507
2	F-1508	141-1508	F-2508	141-2508
2	F-1509	141-1509	F-2509	141-2509
2	F-1510	141-1510	F-2510	141-2510
2	F-1511	141-1511	F-2511	141-2511
2	F-1512	141-1512	F-2512	141-2512
2	F-1513	141-1513	F-2513	141-2513
2	F-1514	141-1514	F-2514	141-2514
2	F-1515	141-1515	F-2515	141-2515
2	F-1516	141-1516	F-2516	141-2516

NO. 6 RW TAPER - 3/4" DIAMETER

2	.731	1-1/4	7/16
2-1/2	.731	1-3/4	7/16
3	.731	2-1/4	7/16
3-1/2	.731	2-3/4	7/16
4	.731	3-1/4	7/16

9/32	E-1608	140-1618	E-2608	140-2608
9/32	E-1610	140-1610	E-2610	140-2610
9/32	E-1612	140-1612	E-2612	140-2612
9/32	E-1614	140-1614	E-2614	140-2614
9/32	E-1616	140-1616	E-2616	140-2616

4	F-1608	141-1608	F-2608	141-2608
4	F-1610	141-1610	F-2610	141-2610
4	F-1612	141-1612	F-2612	141-2612
4	F-1614	141-1614	F-2614	141-2614
4	F-1616	141-1616	F-2616	141-2616

NO. 7 RW TAPER - 7/8" DIAMETER

2	.844	1-1/4	1/2
2-1/2	.844	1-3/4	1/2
3	.844	2-1/4	1/2
3-1/2	.844	2-3/4	1/2
4	.844	3-1/2	1/2

5/16	E-1708	140-1708	E-2708	140-2708
5/16	E-1710	140-1710	E-2710	140-2710
5/16	E-1712	140-1712	E-2712	140-2712
5/16	E-1714	140-1714	E-2714	140-2714
5/16	E-1716	140-1716	E-2716	140-2716

6	F-1708	141-1708	F-2708	141-2708
6	F-1710	141-1710	F-2710	141-2710
6	F-1712	141-1712	F-2712	141-2712
6	F-1714	141-1714	F-2714	141-2714
6	F-1716	141-1716	F-2716	141-2716

