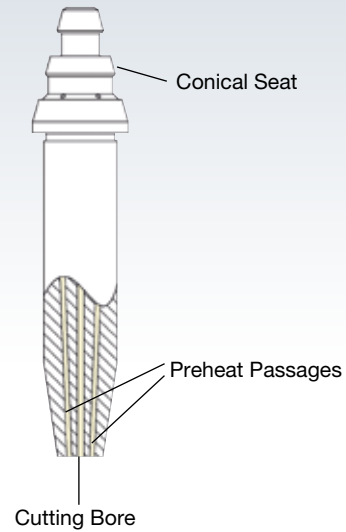


Nozzles

Cutting Nozzles

ANM and ANME

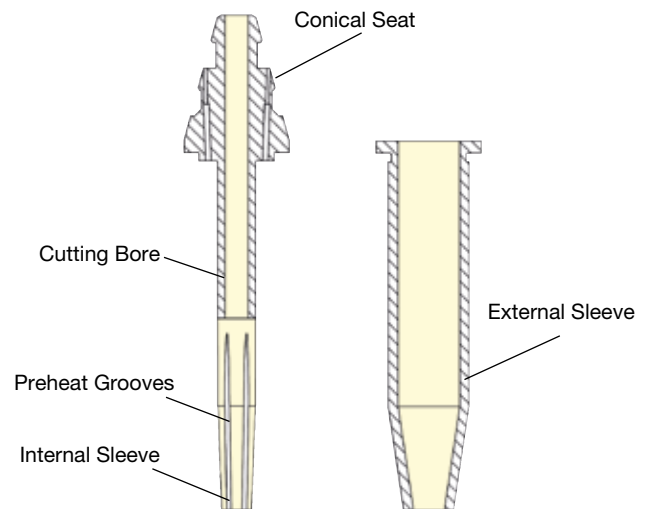
- Solid, one piece construction manufactured from high grade tellurium copper
- Always for use with acetylene
- Unique mandrel swaging process produces smooth and accurate gas passages giving the best conditions for optimum flame stability and efficiency.
- 'Diamond' turned seats guarantees the necessary metal-to-metal connection required for maximum backfire resistance



Acetylene nozzle mix cross section

PNM and PNME

- PNM's differ from ANM nozzles as different gas mixing criteria apply
- Two piece design consisting of a brass inner nozzle and a hollow copper outer sheath
- Turbulence must be created between the inner and outer parts of the nozzle to obtain adequate mixing of the propane and oxygen
- The volume of mixed Oxy-Propane needs to be more than double that of Oxy-Acetylene for the same useable heat
- This extra volume is achieved by very large channels that are present on the brass inner nozzle which conduct the greater volumes of gas



2 piece, propane nozzle mix cross section

Nozzle Operating Data

Important notes

- All operating data relating to consumption, usage and other such information is there as a guide
- Condition of goods, hose length and diameter, provision of non return valves, flashback arrestors and their fitness for use, will have an effect on the flows obtainable at the nozzle
- The condition of which the operating data is derived, is listed below each nozzle table

Cutting Nozzles

■ Acetylene Nozzle Mix – ANM and ANM-E (Extended)



ANM Cutting Nozzles Ordering Information

Metal Thickness		Nozzle Size in.	Part Number	Operating Pressure				Gas Consumption					
				Oxygen		Fuel Gas		Cutting Oxygen		Heating Oxygen		Fuel Gas	
mm	in.			bar	lbf/in ²	bar	lbf/in ²	L/M	ft ³ /H	L/M	ft ³ /H	L/M	ft ³ /H
3-6	1/4	1/32	0700016610	1.4	20	0.30	4	14.15	30	8.5	18	8.0	17
5-12	1/2	3/64	0700016611	2.1	30	0.35	5	30.7	65	10.4	22	9.4	20
10-75	1-3	1/16	0700016612	3.5	50	0.40	6	88.7	188	13.2	28	11.8	25
70-100	4	5/64	0700016613	3.1	45	0.31	4.5	121	256	14.6	31	13.2	28
90-150	6	3/32	0700016614	3.1	45	0.40	6	175	370	20.0	43	18.4	39
190-300	12	1/8	0700016615	6.2	90	0.45	6.5	434	920	26.0	55	23.5	50

Nozzle type ANM / ANME using 6.3mm x 10m fitted hose with resettable flashback arrestors in new condition.

Pressure & consumption rates are based using the nozzle size listed next to it cutting the thickest material in the metal thickness column.

Acetylene cylinders must be manifolded when consumption rates of Acetylene exceed 16.5 litres per minute (35ft³/H).

ANM-E Cutting Nozzles Ordering Information

Metal Thickness		Nozzle Size in.	Part Number	Operating Pressure				Gas Consumption					
				Oxygen		Fuel Gas		Cutting Oxygen		Heating Oxygen		Fuel Gas	
mm	in.			bar	lbf/in ²	bar	lbf/in ²	L/M	ft ³ /H	L/M	ft ³ /H	L/M	ft ³ /H
3-6	1/4	1/32	0700016616	1.4	20	0.30	4	14.15	30	8.5	18	8.0	17
5-12	1/2	3/64	0700016617	2.1	30	0.35	5	30.7	65	10.4	22	9.4	20
10-75	1-3	1/16	0700016618	3.5	50	0.40	6	88.7	188	13.2	28	11.8	25
70-100	4	5/64	0700016619	3.1	45	0.31	4.5	121	256	14.6	31	13.2	28
90-150	6	3/32	0700016620	3.1	45	0.40	6	175	370	20.0	43	18.4	39
190-300	12	1/8	0700016621	6.2	90	0.45	6.5	434	920	26.0	55	23.5	50

Nozzle type ANM / ANME using 6.3mm x 10m fitted hose with resettable flashback arrestors in new condition.

Pressure & consumption rates are based using the nozzle size listed next to it cutting the thickest material in the metal thickness column.

Acetylene cylinders must be manifolded when consumption rates of Acetylene exceed 16.5 litres per minute (35ft³/H).

Both ANM and ANM-E nozzles can be used with the NM cutting torches.

■ Acetylene Nozzle Mix – AFN

AFN Cutting Nozzles Ordering Information

Metal Thickness		Nozzle Size in.	Part Number	Operating Pressure				Gas Consumption					
				Oxygen		Fuel Gas		Cutting Oxygen		Heating Oxygen		Fuel Gas	
mm	in.			bar	lbf/in ²	bar	lbf/in ²	L/M	ft ³ /H	L/M	ft ³ /H	L/M	ft ³ /H
3-6	1/4	1/32	0700144735	2.0	30	0.14	2	18.8	25	4.2	9	3.8	8
6-20	1/2	3/64	0700144736	2.0	30	0.20	3	23.5	50	4.2	9	3.8	8

Nozzle type AFN using 6.3mm x 10m fitted hose with resettable flashback arrestors in new condition.

Pressure & consumption rates are based using the nozzle size listed next to it cutting the thickest material in the metal thickness column.

Acetylene cylinders must be manifolded when consumption rates of Acetylene exceed 16.5 litres per minute (35ft³/H).

AFN cutting nozzles are suitable for use with ESAB DH Torch.

Cutting Nozzles



■ Propane Nozzle Mix – PNM and PNM-E (Extended)



PNM Cutting Nozzles Ordering Information

Metal Thickness		Nozzle Size in.	Part Number	Operating Pressure				Gas Consumption					
				Oxygen		Fuel Gas		Cutting Oxygen		Heating Oxygen		Fuel Gas	
mm	in.			bar	lbf/in ²	bar	lbf/in ²	L/M	ft ³ /H	L/M	ft ³ /H	L/M	ft ³ /H
3-6	1/4	1/32	0700016622	2.0	30	0.20	3	14.15	30	22.6	48	5.7	12
5-12	1/2	3/64	0700016623	2.0	30	0.20	3	30.6	65	25.5	54	6.6	14
10-75	1-3	1/16	0700016624	3.4	50	0.30	4	99	210	41.5	88	10.4	22
70-100	4	5/64	0700016625	3.4	50	0.30	4	113	240	41.5	88	10.4	22
90-150	6	3/32	0700016626	4.1	60	0.40	6	160	340	56.6	120	14.2	30
190-300	12	1/8	0700016627	6.2	90	0.62	9	425	900	75.0	160	18.9	40

Nozzle type PNM / PNME using 6.3mm x 10m fitted hose with resettable flashback arrestors in new condition.
Pressure & consumption rates are based using the nozzle size listed next to it cutting the thickest material in the metal thickness column.

PNM-E Cutting Nozzles Ordering Information

Metal Thickness		Nozzle Size in.	Part Number	Operating Pressure				Gas Consumption					
				Oxygen		Fuel Gas		Cutting Oxygen		Heating Oxygen		Fuel Gas	
mm	in.			bar	lbf/in ²	bar	lbf/in ²	L/M	ft ³ /H	L/M	ft ³ /H	L/M	ft ³ /H
3-6	1/4	1/32	0700016628	2.0	30	0.20	3	14.15	30	22.6	48	5.7	12
5-12	1/2	3/64	0700016629	2.0	30	0.20	3	30.6	65	25.5	54	6.6	14
10-75	1-3	1/16	0700016630	3.4	50	0.30	4	99	210	41.5	88	10.4	22
70-100	4	5/64	0700016631	3.4	50	0.30	4	113	240	41.5	88	10.4	22
90-150	6	3/32	0700016632	4.1	60	0.40	6	160	340	56.6	120	14.2	30
190-300	12	1/8	0700016633	6.2	90	0.62	9	425	900	75.0	160	18.9	40

Nozzle type PNM / PNME using 6.3mm x 10m fitted hose with resettable flashback arrestors in new condition.
Pressure & consumption rates are based using the nozzle size listed next to it cutting the thickest material in the metal thickness column.

Both PNM and PNM-E nozzles can be used with the NM cutting torches.

Bulldog Cutting Nozzles Ordering Information

Metal Thickness			Model Number	Cutting Oxygen Pressure		Preheat Oxygen LPM	Fuel Pressure		Part Number
mm	in.	swg		BAR	LPM		BAR	LPM	
63.5	2.5	20	VBN-3	2.7-3.4	70-94	11-66	0.4-0.8	6-30	6700C0710
203.2	8	12	VBN-6	3.8-4.5	212-236	11-66	0.4-0.8	6-30	6700C0713
304.8	12	8	VBN-10	3.1-3.8	472-566	21-113	0.7-1.2	10-52	6700C0716

Welding Nozzles

■ Swaged and lightweight welding nozzles



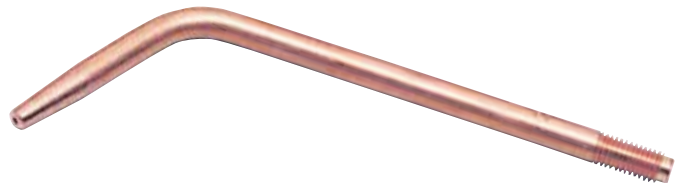
Welding Nozzles (Swaged) Ordering Information

Metal Thickness			Nozzle Size in.	Part Number	Operating Pressure				Gas Consumption			
mm	in.	swg			Acetylene		Oxygen		Acetylene		Oxygen	
					bar	lbf/in ²	bar	lbf/in ²	L/M	ft ³ /H	L/M	ft ³ /H
0.9	-	20	1	0700016660	0.14	2	0.14	2	0.47	1	0.47	1
1.2	-	18	2	0700016661	0.14	2	0.14	2	0.94	2	0.94	2
2.0	-	14	3	0700016662	0.14	2	0.14	2	1.42	3	1.65	3.5
2.6	-	12	5	0700016663	0.21	3	0.21	3	2.36	5	2.83	6
3.2	1/8	10	7	0700016664	0.21	3	0.21	3	3.30	7	3.77	8
4.0	3/32	8	10	0700016665	0.28	4	0.28	4	4.70	10	5.20	11
5.0	3/16	6	13	0700016666	0.28	4	0.28	4	6.60	14	7.10	15
6.5*	1/4	3	18	0700016667	0.35	5	0.35	5	8.50	18	9.40	20
8.2*	5/16	0	25	0700016668	0.40	6	0.40	6	11.80	25	12.70	27

Nozzle type Swaged using 6.3mm x 10m fitted hose with resettable flashback arrestors in new condition.

For use with WH443 NM shank.

* Please note: Requires HD Mixer



DH Welding Nozzles (Lightweight Swaged) Ordering Information

Metal Thickness			Nozzle Size in.	Part Number	Operating Pressure				Gas Consumption			
mm	in.	swg			Acetylene		Oxygen		Acetylene		Oxygen	
					bar	lbf/in ²	bar	lbf/in ²	L/M	ft ³ /H	L/M	ft ³ /H
0.9	-	20	1	0700016670	0.14	2	0.14	2	0.47	1	0.47	1
1.2	-	18	2	0700016671	0.14	2	0.14	2	0.94	2	0.94	2
2.0	-	14	3	0700016672	0.14	2	0.21	3	1.42	3	1.42	3
2.6	-	12	5	0700016673	0.21	3	0.28	4	2.36	5	2.83	6
3.2	1/8	10	7	0700016674	0.21	3	0.35	5	3.30	7	4.72	10
4.0	3/32	8	10	0700016675	0.28	4	0.35	5	4.72	10	5.20	11
5.0	3/16	6	13	0700016676	0.35	5	0.48	7	6.13	13	7.10	15
6.5	1/4	3	18	0700016677	0.41	6	0.55	8	8.50	18	9.40	20
8.2	5/16	0	25	0700016678	0.55	8	0.69	10	11.80	25	12.70	27

Nozzle type Swaged using 6.3mm x 10m fitted hose with resettable flashback arrestors in new condition.

For use with DH Combination Torch.

Process Nozzles



■ Propane Super Heating

Propane Super Heating Nozzles Ordering Information

Nozzle size	Part Number	Propane pressure		Oxygen pressure		Propane consumption		Oxygen consumption		Heat Output (approx)	
		bar	lbf/in ²	bar	lbf/in ²	L/M	ft ³ /H	L/M	ft ³ /H	W	Btu/H
1H	0700016650	0.14	2	0.7	10	13.8	29	58	121	244800	72,000
		0.49	7	2.1	30	32	65	122	255	554200	163,000
2H	0700016651	0.21	3	1.1	15	20	41	80	168	346800	102,000
		0.56	8	2.5	35	35	75	145	304	639200	188,000
3H	0700016652	0.28	4	1.8	25	35	75	138	290	622200	183,000
		1.10	15	5.0	70	68	144	275	575	1227400	361,000
4H	0700016653	0.35	5	2.5	35	45	94	177	370	802400	236,000
		1.30	18	5.7	80	77	162	310	650	1380400	406,000
5H	0700016654	0.85	12	3.5	50	53	112	212	444	955400	281,000
		2.10	30	8.7	125	117	246	467	985	2101200	618,000

Flame size and heat output of these nozzles vary considerably with the pressure setting used. Heat output figures are quoted for based on combination torches. 20% higher figures can be obtained using an NM type cutter with a super heating adaptor. Two typical figure sets given for each type of nozzle.

For use with the WH443 NM shank with propane mixer (p/n – 0700017244) and bent neck (p/n – 0700157553). ESAB NM cutters with the adaptor (p/n – 0700017688).

■ Acetylene Heating

Acetylene Heating Nozzles Ordering Information



Nozzle size	Part Number	Acetylene pressure		Oxygen pressure		Acetylene consumption		Oxygen consumption		Heat Output (approx)	
		bar	lbf/in ²	bar	lbf/in ²	L/M	ft ³ /H	L/M	ft ³ /H	W	Btu/H
AHT 25	0700016641	0.35	4	0.4	4	18	36	18.3	40	176800	57,000
AHT 50	0700016642	0.43	6	0.4	6	30	63	33	70	309400	91,000
AHT 100	0700016643	0.49	7	0.7	10	45	96	50	106	472600	139,000

For use with the WH443 NM shank with the HD acetylene mixer (p/n – 0700017243) and bent neck (p/n – 0700143884).

■ Acetylene Gouging



Gouging – AGNM Acetylene Nozzles Ordering Information

Max groove width		Nozzle Size in.	Part Number	Operating Pressure				Gas Consumption						
				Oxygen		Acetylene		Cutting Oxygen		Heating Oxygen		Acetylene		
mm	in.		bar	lbf/in ²	bar	lbf/in ²	L/M	ft ³ /H	L/M	ft ³ /H	L/M	ft ³ /H	L/M	ft ³ /H
8	5/16	13	0700016640	4.00	60	0.50	7	61.00	130	16.50	35	15.00	32	
11	7/16	19	0700126810	5.00	75	0.50	7	156	330	31	66	28	60	

AGNM nozzles can be used with the NM ST443 cutting torch and CA444 combination torch.