

# CUTTING TIPS



## High Quality Gas Cutting Tips



### **Features & Benefits**

#### **Design**

Each Koike cutting tip is designed for proper gas efficiency and to provide the highest cutting accuracy possible.

#### **Safety**

All 100 series and Epoch series cutting tips are designed to help prevent damaging flashbacks and backfires into the torch.

#### **Quality**

Every cutting tip is checked for form, fit and function then fired and cycled to ensure that the preheat flame and jet oxygen are of Koike quality.

#### **Lifetime Torch Warranty**

Koike 100 series torches carry a lifetime warranty against a damaging sustained flashback while using genuine Koike cutting tips.

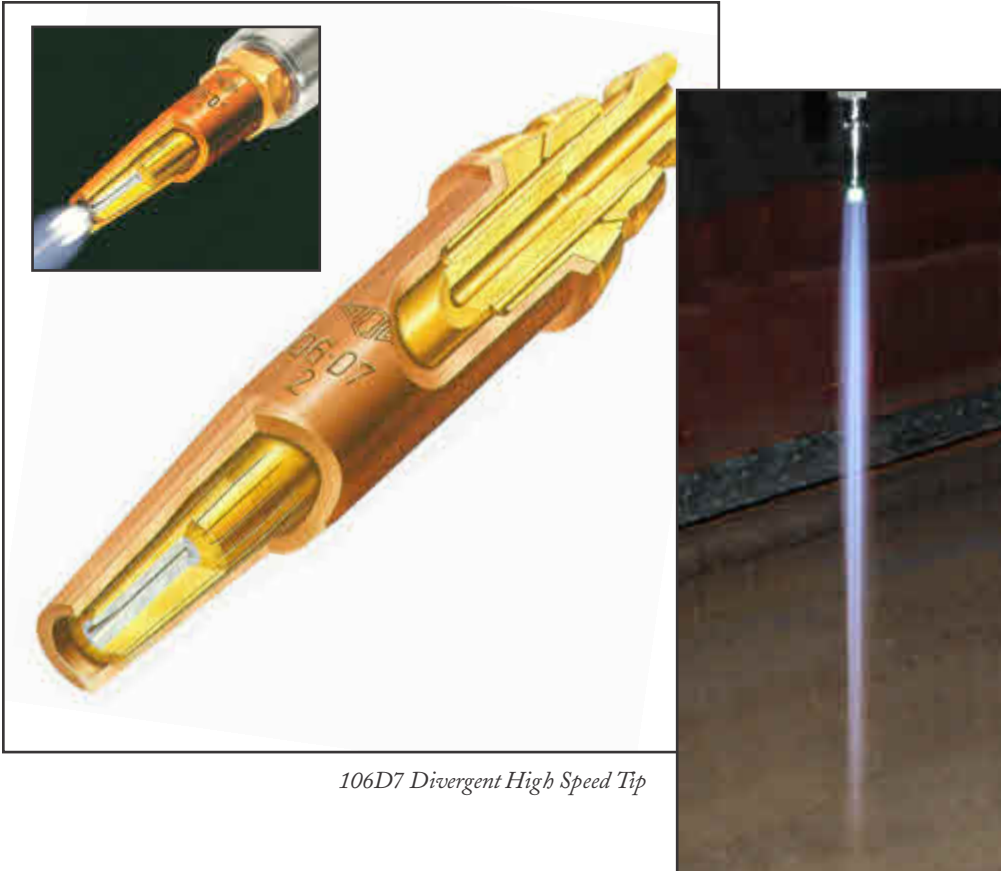
*(IK-82 torches excluded)*



**KOIKE ARONSON, INC.**



## GAS CUTTING TIPS



106D7 Divergent High Speed Tip

### How Koike Tips Achieve the Most Accurate Cutting

Koike enjoys a world-wide reputation as a leader in the field of gas cutting machines.

Koike's reputation is due in large part to their finely crafted gas cutting tips. Since a poor tip can ruin the performance of an excellent cutting machine, Koike has concentrated its efforts on research and development of gas cutting tips.

Koike's approach sets it apart from its competition by virtue of their commitment to continuously fund research and development of their cutting systems.

Koike's clients benefit from their long history of gas cutting manufacture, torch research and development, and experience cutting various materials with such innovations as test machines to check tip efficiency. Superior customer support means superior cutting tip performance.

If you want your cutting tips manufactured to rigorous standards so that they cut accurately, safely and economically, then Koike is your choice.



### High Quality Cuts

To ensure tip quality, Koike checks the surface obtained by real cutting and uses the following criteria to achieve a quality cutting surface:

- Even cutting surface (small kerf)
- No top slag
- Minimal upper edge melt
- No bottom slag

In addition to satisfying the previously mentioned criteria, Koike demands that its tips also meet the following conditions:

- Cutting operation with high speed
- A steady and safe cutting operation
- Cutting with efficient gas consumption

To achieve the above criteria and conditions a Koike tip must maintain superior oxygen cutting flow and an efficient yet, uniform pre-heat flame. To do this Koike researched:

- Various tip shapes and sizes of the inlet part of the cutting oxygen tip
- Pre-heat oxygen and fuel gas mixtures in the pipes, the gas mixing chamber, and the ejection outlet

As a result of this work Koike developed the divergent tip. The cutting outlet of this tip has a divergent shape to it. This tip is the result of extensive engineering design by the Koike engineering department.

Koike uses a unique patented stainless steel lining to ensure the divergent tip technology was developed to process small holes of non-ferrous metal.

Koike's commitment to research and design of gas cutting tips is demonstrated in the high quality of its finished product.

## Koike Tips Increase Cutting Safety

Since gas welding and cutting operations are particularly vulnerable to explosions and other unwanted accidents, any small flame and flash-up must be avoided.

Consequently, Koike is committed to ensure safe cutting operations for its clients. In the area relating to tip design, significant attention has been paid to the prevention of backfire.

Backfire can be classified in to three types:

1. Backfire: Pre-heat oxygen flows back into the torch
2. Flashback: The flame flashes at the tip edge
3. Sustained Flashback: Flows back to the gas mixing point of the tip and melts it

The most dangerous of these are the flashback and sustained flashback. Koike has resolved these two conditions through its rigorous research and design process. With regards to flashback, Koike has developed the venturi effect of the tip for fuel. Conventional middle-pressure tips may force the backflow of pre-heat oxygen into the fuel gas which introduces mixing gas into

the mixing tube. This is usually encountered with difficult situations concerning the torch itself or with the sheet being cut. The flashback occurs when the fuel is supplied. Koike's solution to this is to provide the venturi effect to the cutting tip. This is done by means of the high-speed pre-heat oxygen. Fuel Gas is sucked into the tip in order to prevent the mixing gas in the torch pipe, and thus flashback during ignition is prevented.

The sustained flashback might occur when the tip is clogged up with slag during the cutting operation. Koike has found that the ideal proportion of the diameter between pre-heat oxygen, fuel gas and gas mixing chamber will produce an extinguishing effect of the flame when the tip is clogged up. The sustained flashback as well as the backfire is thus prevented.

Prevention of backfire is one of the examples of how Koike strives for better products, sparing nothing in its research, design and manufacturing.

## Koike Tips - A Wide Variety to Fit Your Needs

### LPG GAS - Koike's Standard

106	Standard tip
106HC	Standard tip for hand cutting and portable cutting
106D7	Divergent high speed tip
106M	Heavy pre-heat oxygen tip
106M7	Heavy pre-heat oxygen tip (divergent high-speed type)
106Q7	Divergent high speed tip (only for one quick torch)
406NT	Standard tip (only for IK-82)
EPOCH	Out mixing type tip (only for Epoch torch)

### LPG GAS - Victor™ and Oxweld™ Type

2VKP7	Divergent high speed tip (only for Victor™ type torch)
KP7	Divergent high speed tip (only for Oxweld™ type torch)

### ACETYLENE - Koike's Standard

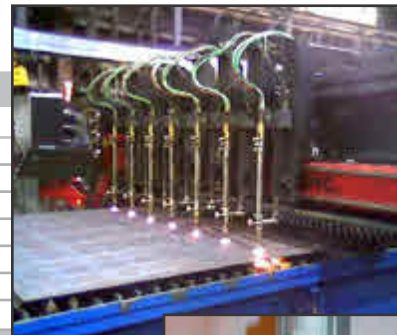
102	Standard tip
102HC	Standard tip for hand cutting and portable cutting
102D7	Divergent high speed tip
402ST	Standard tip (only for IK-82)

### FOR MAPP™, HPG™ AND CHEMTANE2™ - Koike's Standard

103	Standard tip
103D7	Divergent high speed tip


### FOR NATURAL GAS - Koike's Standard

107	Standard tip
107D7	Divergent high speed tip



# LPG GAS CUTTING TIPS - Koike's Standard

## 106 • Standard Tip




Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	Oxygen Preheat* PSIG	Fuel PSIG	Ke rf Width
1/8	00	27	20	20	2.8	0.04
1/4	0	24	30	30	2.8	0.05
3/8	0	22	30	30	2.8	0.06
1/2	1	21	40	40	2.8	0.07
3/4	2	18	45	45	3.6	0.08
1	2	17	45	45	3.6	0.08
1 1/2	3	14	45	45	3.6	0.09
2	4	12.5	45	45	4.3	0.11
2 1/2	5	11	55	55	4.3	0.12
3	5	10	55	55	4.3	0.12
4	6	8	55	55	5.7	0.14
5	6	7	55	55	5.7	0.14
6	7	6	65	65	5.7	0.16
8	7	5	65	65	5.7	0.17
10	8	3	65	65	5.7	0.23
12	8	2	65	65	5.7	0.27

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Oxygen	Fuel Gas	Consumption Ni/hr Cutting Oxygen	Preheat Oxygen	Cutting Fuel Gas	Speed mm/min
5	00	1.5	0.2	690	1180	310	660
5 - 10	0	2.0	0.2	1200	1180	310	660 - 550
10 - 15	1	2.5	0.2	2100	1180	310	550 - 490
15 - 30	2	3.0	0.25	3400	1370	360	490 - 400
30 - 40	3	3.0	0.25	4300	1370	360	400 - 350
40 - 50	4	3.5	0.3	6500	1860	490	350 - 320
50 - 100	5	4.0	0.3	11000	1860	490	320 - 200
100 - 150	6	4.0	0.3	15000	3040	800	200 - 150
150 - 250	7	4.5	0.4	22000	3720	980	150 - 80
250 - 300	8	4.5	0.4	28000	3720	980	80 - 45

## 106HC • Standard Tip (for hand cutting and portable cutting)



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	Oxygen Preheat* PSIG	Fuel PSIG	Ke rf Width
1/8	00	27	20	20	2.8	0.04
1/4	0	24	30	30	2.8	0.05
3/8	0	22	30	30	2.8	0.06
1/2	1	21	40	40	2.8	0.07
3/4	2	18	45	45	3.6	0.08
1	2	17	45	45	3.6	0.08
1 1/2	3	14	45	45	3.6	0.09
2	4	12.5	45	45	4.3	0.11
2 1/2	5	11	55	55	4.3	0.12
3	5	10	55	55	4.3	0.12
4	6	8	55	55	5.7	0.14
5	6	7	55	55	5.7	0.14
6	7	6	65	65	5.7	0.16
8	7	5	65	65	5.7	0.17
10	8	3	65	65	5.7	0.23
12	8	2	65	65	5.7	0.27

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Oxygen	Fuel Gas	Consumption Ni/hr Cutting Oxygen	Preheat Oxygen	Cutting Fuel Gas	Speed mm/min
5	00	1.5	0.2	690	1180	310	660
5 - 10	0	2.0	0.2	1200	1180	310	660 - 550
10 - 15	1	2.5	0.2	2100	1180	310	550 - 490
15 - 30	2	3.0	0.25	3400	1370	360	490 - 400
30 - 40	3	3.0	0.25	4300	1370	360	400 - 350
40 - 50	4	3.5	0.3	6500	1860	490	350 - 320
50 - 100	5	4.0	0.3	11000	1860	490	320 - 200
100 - 150	6	4.0	0.3	15000	3040	800	200 - 150
150 - 250	7	4.5	0.4	22000	3720	980	150 - 80
250 - 300	8	4.5	0.4	28000	3720	980	80 - 45

## 106D7 • Divergent High Speed Tip



Inches


Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	Oxygen Preheat* PSIG	Fuel PSIG	Ke rf Width
1/8	00	31.5	100	20	2.8	0.03
1/4	0	29	100	30	2.8	0.04
3/8	0	27	100	30	2.8	0.05
1/2	1	25	100	40	2.8	0.05
3/4	2	22	100	45	3.6	0.06
1	2	20	100	45	3.6	0.07
1 1/2	3	18	100	45	3.6	0.08
2	4	16	100	45	4.3	0.10
2 1/2	5	14	100	55	4.3	0.11
3	5	12.5	100	55	4.3	0.11
4	6	10	100	55	5.7	0.13
5	6	9	100	55	5.7	0.14
6	7	7	100	65	5.7	0.14
8	7	5.5	100	65	5.7	0.18
10	8	4	100	65	5.7	0.20
12	8	3	100	65	5.7	0.24

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Oxygen	Fuel Gas	Consumption Ni/hr Cutting Oxygen	Preheat Oxygen	Cutting Fuel Gas	Speed mm/min
5	00	7.0	0.2	750	1180	310	750
5 - 10	0	7.0	0.2	1100	1180	310	750 - 680
10 - 15	1	7.0	0.2	2500	1180	310	680 - 600
15 - 30	2	7.0	0.25	3800	1370	360	600 - 500
30 - 40	3	7.0	0.25	5400	1370	360	500 - 450
40 - 50	4	7.0	0.3	7300	1860	490	450 - 400
50 - 100	5	7.0	0.3	10000	1860	490	400 - 260
100 - 150	6	7.0	0.3	14000	3040	800	260 - 180
150 - 250	7	7.0	0.4	22000	3720	980	180 - 100
250 - 300	8	7.0	0.4	35000	3720	980	100 - 70

\*Preheat oxygen pressure for 3 base torch only

## 106M • Standard Tip • Heavy Preheat Oxygen Tip



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	Oxygen Preheat* PSIG	Fuel PSIG	Ke rf Width
1/8	00	27	20	20	2.8	0.04
1/4	0	24	30	30	2.8	0.05
3/8	0	22	30	30	2.8	0.06
1/2	1	21	40	40	2.8	0.07
3/4	2	18	45	45	3.6	0.08
1	2	17	45	45	3.6	0.08
1 1/2	3	14	45	45	3.6	0.09
2	4	12.5	45	45	4.3	0.11
2 1/2	5	11	55	55	4.3	0.12
3	5	10	55	55	4.3	0.12
4	6	8	55	55	5.7	0.14
5	6	7	55	55	5.7	0.14
6	7	6	65	65	5.7	0.16
8	7	5	65	65	5.7	0.17
10	8	3	65	65	5.7	0.23
12	8	2	65	65	5.7	0.27

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Oxygen	Fuel Gas	Consumption Ni/hr Cutting Oxygen	Preheat Oxygen	Cutting Fuel Gas	Speed mm/min
5	00	1.5	0.2	690	1710	450	660
5 - 10	0	2.0	0.2	1200	1710	450	660 - 550
10 - 15	1	2.5	0.2	2100	1710	450	550 - 490
15 - 30	2	3.0	0.2	3400	2470	650	490 - 400
30 - 40	3	3.0	0.2	4300	2470	650	400 - 350
40 - 50	4	3.5	0.2	6500	2470	650	350 - 320
50 - 100	5	4.0	0.25	11000	2890	760	320 - 200
100 - 150	6	4.0	0.25	15000	3570	940	200 - 150
150 - 250	7	4.5	0.3	22000	3990	1050	150 - 80
250 - 300	8	4.5	0.3	28000	3990	1050	80 - 45

# 106M7

- Divergent High Speed Tip
- Heavy Preheat Oxygen Tip



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	Oxygen Preheat*	Fuel PSIG	Ke rf Width
1/8	00	31.5	100	20	2.8	0.04
1/4	0	29	100	30	2.8	0.05
3/8	0	27	100	30	2.8	0.06
1/2	1	25	100	40	2.8	0.07
3/4	2	22	100	45	2.8	0.08
1	2	20	100	45	2.8	0.08
1 1/2	3	18	100	45	2.8	0.09
2	4	16	100	45	2.8	0.11
2 1/2	5	14	100	55	3.6	0.12
3	5	12.5	100	55	3.6	0.12
4	6	10	100	55	3.6	0.14
5	6	9	100	55	3.6	0.14
6	7	7	100	65	4.3	0.16
8	7	5.5	100	65	4.3	0.17
10	8	4	100	65	4.3	0.23
12	8	3	100	65	4.3	0.27

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup>		Consumption NI/hr			Speed mm/min
		Oxygen	Fuel Gas	Cutting Oxygen	Preheat Oxygen	Fuel Gas	
5	00	7.0	0.2	750	1710	450	750
5 - 10	0	7.0	0.2	1100	1710	450	750 - 680
10 - 15	1	7.0	0.2	2500	1710	450	680 - 600
15 - 30	2	7.0	0.2	3800	2470	650	600 - 500
30 - 40	3	7.0	0.2	5400	2470	650	500 - 450
40 - 50	4	7.0	0.2	7300	2470	650	450 - 400
50 - 100	5	7.0	0.25	10000	2890	760	400 - 260
100 - 150	6	7.0	0.25	14000	3570	940	260 - 180
150 - 250	7	7.0	0.3	22000	3990	1050	180 - 100
250 - 300	8	7.0	0.3	35000	3990	1050	100 - 70

# 106Q7

- Divergent High Speed Tip
- (only for quick torch)



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	Oxygen Preheat*	Fuel PSIG	Ke rf Width
1/4	0	29	100	30	2.8	0.04
3/8	0	27	100	30	2.8	0.05
1/2	1	25	100	40	2.8	0.05
3/4	2	22	100	45	3.6	0.06
1	2	20	100	45	3.6	0.07
1 1/2	3	18	100	45	3.6	0.08
2	4	16	100	45	4.3	0.10
2 1/2	5	14	100	55	4.3	0.11
3	5	12.5	100	55	4.3	0.11

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup>		Consumption NI/hr			Cutting Speed mm/min
		Oxygen	Fuel Gas	Cutting Oxygen	Preheat Oxygen	Fuel Gas	
5 - 10	0	7.0	0.2	1100	1180	310	750 - 680
10 - 15	1	7.0	0.2	2500	1180	310	680 - 600
15 - 30	2	7.0	0.25	3800	1370	360	600 - 500
30 - 40	3	7.0	0.25	5400	1370	360	500 - 450
40 - 50	4	7.0	0.3	7300	1860	490	450 - 400
50 - 100	5	7.0	0.3	10000	1860	490	400 - 260

# 406NT

- Standard Tip
- (only for IK-82)



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	Oxygen Preheat*	Fuel PSIG	Ke rf Width
1/4	0	2.4	30	30	2.8	0.05
3/8	0	22	30	30	2.8	0.06
1/2	1	21	40	40	2.8	0.07
3/4	2	18	45	45	2.8	0.08
1	2	17	45	45	2.8	0.08
1 1/2	3	14	45	45	2.8	0.09
2	4	12.5	45	45	2.8	0.11
2 1/2	5	11	55	55	2.8	0.12
3	5	10	55	55	2.8	0.12
4	5	8	55	55	2.8	0.14

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup>		Consumption NI/hr			Speed mm/min
		Oxygen	Fuel Gas	Cutting Oxygen	Preheat Oxygen	Fuel Gas	
5 - 10	0	2.0	0.2	1200	1640	410	450 - 500
10 - 15	1	2.5	0.2	2100	1640	410	400 - 450
15 - 30	2	3.0	0.2	3200	1640	410	350 - 400
30 - 40	3	3.0	0.2	4200	1640	410	300 - 350
40 - 50	4	3.5	0.2	6800	2160	540	250 - 300
50 - 100	5	4.5	0.2	11000	2160	540	200 - 250

# EPOCH-300

- For Thick Plate Cutting
- Post-mixing type tip (Epoch torch only)



Inches


Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	Oxygen Preheat*	Fuel PSIG	Ke rf Width
4	300	10	60	7	4.3	0.23
8	300	6.5	65	7	4.3	0.31
12	300	5	70	10	7.1	0.39

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup>		Consumption NI/hr			Cutting Speed mm/min
		Oxygen	Preheat Oxygen	Fuel Gas	Cutting Oxygen	Preheat Oxygen	
100	300	4.0	0.5-0.6		0.3-0.4	27	3.3-4.0
	2.3-2.7	250-290					
200	300	4.5	0.5-0.6		0.3-0.4	30	3.3-4.0
	2.3-2.7	170-190					
300	300	5.0	0.6-0.7		0.4-0.5	32	4.0-4.8
	2.7-3.1	130-150					

# LPG GAS CUTTING TIPS - *Other Manufacturer's Standard*

## 2VKP7 • Divergent High Speed Tip (only for Victor® type torch)




Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen PSIG Cutting	Preheat*	Fuel PSIG	Ke rf Width
1/8	00	31.5	100	20	1.4 - 4.3	0.03
1/4	0	29	100	30	2.9 - 4.3	0.04
3/8	0	27	100	30	2.9 - 4.3	0.05
1/2	1	25	100	40	2.9 - 4.3	0.05
3/4	2	22	100	45	2.9 - 4.3	0.06
1	2	20	100	45	2.9 - 4.3	0.07
1 1/2	3	18	100	45	2.9 - 4.3	0.08
2	4	16	100	45	2.9 - 5.7	0.10
2 1/2	5	14	100	55	2.9 - 5.7	0.11
3	5	12.5	100	55	2.9 - 5.7	0.11
4	6	10	100	55	5.0 - 7.1	0.13
5	6	9	100	55	5.0 - 7.1	0.14
6	7	7	100	65	5.0 - 7.1	0.14
8	7	5.5	100	65	5.0 - 7.1	0.18
10	8	4	100	65	5.0 - 7.1	0.20
12	8	3	100	65	5.0 - 7.1	0.24

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Cutting	Speed Gas	Plate	Tip	O
5	00	7.0	0.1 - 0.25		750	
5 - 10	0	7.0	0.1 - 0.25		750 - 680	
10 - 15	1	7.0	0.1 - 0.25		680 - 600	
15 - 30	2	7.0	0.1 - 0.25		600 - 500	
30 - 40	3	7.0	0.1 - 0.25		500 - 450	
40 - 50	4	7.0	0.15 - 0.3		450 - 400	
50 - 100	5	7.0	0.15 - 0.3		400 - 260	
100 - 150	6	7.0	0.15 - 0.3		260 - 180	
150 - 250	7	7.0	0.20 - 0.4		180 - 110	
250 - 300	8	7.0	0.15 - 0.3		110 - 100	

## OKP7 • Divergent High Speed Tip (only for Oxweld® type torch)



Inches


Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen PSIG Cutting	Preheat*	Fuel PSIG	Ke rf Width
1/8	00	31.5	100	20	1.4 - 4.3	0.03
1/4	0	29	100	30	2.9 - 4.3	0.04
3/8	0	27	100	30	2.9 - 4.3	0.05
1/2	1	25	100	40	2.9 - 4.3	0.05
3/4	2	22	100	45	2.9 - 4.3	0.06
1	2	20	100	45	2.9 - 4.3	0.07
1 1/2	3	18	100	45	2.9 - 4.3	0.08
2	4	16	100	45	2.9 - 5.7	0.10
2 1/2	5	14	100	55	2.9 - 5.7	0.11
3	5	12.5	100	55	2.9 - 5.7	0.11
4	6	10	100	55	5.0 - 7.1	0.13
5	6	9	100	55	5.0 - 7.1	0.14
6	7	7	100	65	5.0 - 7.1	0.14
8	7	5.5	100	65	5.0 - 7.1	0.18
10	8	4	100	65	5.0 - 7.1	0.20
12	8	3	100	65	5.0 - 7.1	0.24

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Cutting	Speed Gas	Plate	Tip	O
5	00	7.0	0.1 - 0.25		750	
5 - 10	0	7.0	0.1 - 0.25		750 - 680	
10 - 15	1	7.0	0.1 - 0.25		680 - 600	
15 - 30	2	7.0	0.1 - 0.25		600 - 500	
30 - 40	3	7.0	0.1 - 0.25		500 - 450	
40 - 50	4	7.0	0.15 - 0.3		450 - 400	
50 - 100	5	7.0	0.15 - 0.3		400 - 260	
100 - 150	6	7.0	0.15 - 0.3		260 - 180	
150 - 250	7	7.0	0.20 - 0.4		180 - 110	
250 - 300	8	7.0	0.15 - 0.3		110 - 100	

# NATURAL GAS CUTTING TIPS - *Koike's Standard*

## 107 • Divergent High Speed Tip




Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen PSIG Cutting	Preheat*	Fuel PSIG	Ke rf Width
1/8	00	27	20	20	2.1	0.04
1/4	0	24	30	30	2.1	0.05
3/8	0	22	30	30	2.1	0.06
1/2	1	21	40	40	2.1	0.07
3/4	2	18	45	45	2.1	0.08
1	2	17	45	45	2.1	0.08
1 1/2	3	14	45	45	2.1	0.09
2	4	12.5	45	45	2.1	0.11
2 1/2	5	11	55	55	2.1	0.12
3	5	10	55	55	2.1	0.12
4	6	8	55	55	2.1	0.14
5	6	7	55	55	2.1	0.14
6	7	6	65	65	2.1	0.16
8	7	5	65	65	2.1	0.17
10	8	3	65	65	2.1	0.23
12	8	2	65	65	2.1	0.27

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Oxygen	Fuel Gas	Consumption Ni/hr Cutting Oxygen	Preheat Oxygen	Cutting Fuel Gas	Speed mm/min
5	00	1.5	0.15	690	1000	600	660
5 - 10	0	2.0	0.15	1200	1000	600	660 - 550
10 - 15	1	2.5	0.15	2100	1200	700	550 - 490
15 - 30	2	3.0	0.15	3400	1200	700	490 - 400
30 - 40	3	3.0	0.15	4300	1350	800	400 - 350
40 - 50	4	3.0	0.15	6500	1350	800	350 - 320
50 - 100	5	4.0	0.15	11000	1700	1000	320 - 200
100 - 150	6	4.0	0.15	15000	1700	1000	200 - 150

## 107D7 • Divergent High Speed Tip



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen PSIG Cutting	Preheat*	Fuel PSIG	Ke rf Width
1/8	00	31.5	100	20	2.1	0.03
1/4	0	29	100	30	2.1	0.04
3/8	0	27	100	30	2.1	0.05
1/2	1	25	100	40	2.1	0.05
3/4	2	22	100	45	2.1	0.06
1	2	20	100	45	2.1	0.07
1 1/2	3	18	100	45	2.1	0.08
2	4	16	100	45	2.1	0.10
2 1/2	5	14	100	55	2.1	0.11
3	5	12.5	100	55	2.1	0.11
4	6	10	100	55	2.1	0.13
5	6	9	100	55	2.1	0.14
6	7	7	100	65	2.1	0.14
8	7	5.5	100	65	2.1	0.18
10	8	4	100	65	2.1	0.20
12	8	3	100	65	2.1	0.24

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Oxygen	Fuel Gas	Consumption Ni/hr Cutting Oxygen	Preheat Oxygen	Cutting Fuel Gas	Speed mm/min
5 - 10	0	7.0	0.15	1100	1350	800	750 - 680
10 - 15	1	7.0	0.15	2500	1500	900	680 - 600
15 - 30	2	7.0	0.15	3800	1500	900	600 - 500
30 - 40	3	7.0	0.15	5400	1700	1000	500 - 450
40 - 50	4	7.0	0.15	7300	1700	1000	450 - 400
50 - 100	5	7.0	0.15	10000	850	1100	400 - 260
100 - 150	6	7.0	0.2	14000	2200	1300	260 - 180

# ACETYLENE CUTTING TIPS

## 102 • Standard Tip



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	PSIG Preheat	Fuel PSIG	Ke rf Width
1/8	00	27	20	20	2.8	0.04
1/4	0	24	30	30	2.8	0.05
3/8	0	22	30	30	2.8	0.06
1/2	1	21	40	40	2.8	0.07
3/4	2	18	45	45	2.8	0.08
1	2	17	45	45	2.8	0.08
1 1/2	3	14	45	45	2.8	0.09
2	4	12.5	45	45	3.6	0.11
2 1/2	5	11	55	55	4.3	0.12
3	5	10	55	55	4.3	0.12
4	6	8	55	55	5.0	0.14
5	6	7	55	55	5.0	0.14
6	7	6	65	65	5.7	0.16
8	7	5	65	65	5.7	0.17
10	8	3	65	65	5.7	0.23
12	8	2	65	65	5.7	0.27

Metric

\*Preheat oxygen pressure for 3 base torch only

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Oxygen	Fuel Gas	Consumption Ni/hr Oxygen	Preheat Oxygen	Cutting Fuel Gas	Speed mm/min
5	00	1.5	0.2	690	410	370	660
5 - 10	0	2.0	0.2	1200	410	370	660 - 550
10 - 15	1	2.5	0.2	2100	480	430	550 - 490
15 - 30	2	3.0	0.2	3400	480	430	490 - 400
30 - 40	3	3.0	0.2	4300	480	430	400 - 350
40 - 50	4	3.5	0.25	6500	550	500	350 - 320
50 - 100	5	4.0	0.3	11000	690	630	320 - 200
100 - 150	6	4.0	0.35	15000	770	700	200 - 150
150 - 250	7	4.5	0.4	22000	1060	960	150 - 80
250 - 300	8	4.5	0.4	28000	1060	960	80 - 45

## 102HC • For Hand Cutting and Portable Cutting



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	PSIG Preheat	Fuel PSIG	Ke rf Width
1/8	00	27	20	20	2.8	0.04
1/4	0	24	30	30	2.8	0.05
3/8	0	22	30	30	2.8	0.06
1/2	1	21	40	40	2.8	0.07
3/4	2	18	45	45	2.8	0.08
1	2	17	45	45	2.8	0.08
1 1/2	3	14	45	45	2.8	0.09
2	4	12.5	45	45	3.6	0.11
2 1/2	5	11	55	55	4.3	0.12
3	5	10	55	55	4.3	0.12
4	6	8	55	55	5.0	0.14
5	6	7	55	55	5.0	0.14
6	7	6	65	65	5.7	0.16
8	7	5	65	65	5.7	0.17
10	8	3	65	65	5.7	0.23
12	8	2	65	65	5.7	0.27

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Oxygen	Fuel Gas	Consumption Ni/hr Oxygen	Preheat Oxygen	Cutting Fuel Gas	Speed mm/min
5	00	5.0	0.2	850	520	470	700
5 - 10	0	5.0	0.2	1600	520	470	700-625
10 - 15	1	5.0	0.2	2400	600	550	625-550
15 - 30	2	5.0	0.2	3600	600	550	550-475
30 - 40	3	5.0	0.2	4800	600	550	475-425
40 - 50	4	5.0	0.2	5600	750	680	425-350
50 - 100	5	5.0	0.25	8800	860	780	350-250
100 - 150	6	5.0	0.3	13500	950	860	250-175
150 - 250	7	5.0	0.3	24000	1330	1210	175-90
250 - 300	8	5.0	0.4	31000	1600	1450	90-60

## 102D7 • Divergent High Speed Tip



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	PSIG Preheat*	Fuel PSIG	Ke rf Width
1/8	00	31.5	100	20	2.8	0.03
1/4	0	29	100	30	2.8	0.04
3/8	0	27	100	30	2.8	0.05
1/2	1	25	100	40	2.8	0.05
3/4	2	22	100	45	2.8	0.06
1	2	20	100	45	2.8	0.07
1 1/2	3	18	100	45	2.8	0.08
2	4	16	100	45	2.8	0.10
2 1/2	5	14	100	55	3.6	0.11
3	5	12.5	100	55	3.6	0.11
4	6	10	100	55	4.3	0.13
5	6	9	100	55	4.3	0.14
6	7	7	100	65	4.3	0.14
8	7	5.5	100	65	4.3	0.18
10	8	4	100	65	5.7	0.20
12	8	3	100	65	5.7	0.24

Metric

\*Preheat oxygen pressure for 3 base torch only

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Oxygen	Fuel Gas	Consumption Ni/hr Oxygen	Preheat Oxygen	Cutting Fuel Gas	Speed mm/min
5	00	7.0	0.2	750	520	470	750
5 - 10	0	7.0	0.2	1100	520	470	750 - 680
10 - 15	1	7.0	0.2	2500	600	550	680 - 600
15 - 30	2	7.0	0.2	3800	600	550	600 - 500
30 - 40	3	7.0	0.2	5400	600	550	500 - 450
40 - 50	4	7.0	0.2	7300	750	680	450 - 400
50 - 100	5	7.0	0.25	10000	860	780	400 - 260
100 - 150	6	7.0	0.3	14000	950	860	260 - 180
150 - 250	7	7.0	0.3	22000	1330	1210	180 - 100
250 - 300	8	7.0	0.4	35000	1600	1450	100 - 70

## 402ST • Standard Tip (only for IK-82)



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	PSIG Preheat	Fuel PSIG	Ke rf Width
1/4	0	24	30	30	2.8	0.05
3/8	0	22	30	30	2.8	0.06
1/2	1	21	40	40	2.8	0.07
3/4	2	18	45	45	2.8	0.08
1	2	17	45	45	2.8	0.08
1 1/2	3	14	45	45	2.8	0.09
2	4	12.5	45	45	3.6	0.11
2 1/2	5	11	55	55	4.3	0.12
3	5	10	55	55	4.3	0.12
4	5	8	55	55	4.3	0.14

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup> Oxygen	Fuel Gas	Consumption Ni/hr Oxygen	Preheat Oxygen	Cutting Fuel Gas	Speed mm/min
5 - 10	0	2.0	0.2	1200	380	340	450 - 500
10 - 15	1	2.5	0.2	2100	485	440	400 - 450
15 - 30	2	3.0	0.2	3200	485	440	350 - 400
30 - 40	3	3.0	0.2	4200	550	500	300 - 350
40 - 50	4	3.5	0.25	6800	640	580	250 - 300
50 - 100	5	4.0	0.3	11000	730	660	200 - 250

# MAPP™, HPG™ AND CHEMTANE2™ - Koike's Standard

## 103

• Divergent High Speed Tip



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	Oxygen Preheat*	Fuel PSIG	Ke r f Width
1/8	00	27	20	20	2.9	0.04
1/4	0	24	30	30	2.9	0.05
3/8	0	22	30	30	2.9	0.06
1/2	1	21	40	40	2.9	0.07
3/4	2	18	45	45	3.6	0.08
1	2	17	45	45	3.6	0.08
1 1/2	3	14	45	45	3.6	0.09
2	4	12.5	45	45	5.0	0.11
2 1/2	5	11	55	55	5.0	0.12
3	5	10	55	55	5.0	0.12
4	6	8	55	55	5.0	0.14
5	6	7	55	55	5.0	0.14
6	7	6	65	65	5.0	0.16
8	7	5	65	65	5.0	0.17
10	8	3	65	65	5.0	0.23
12	8	2	65	65	5.0	0.27

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup>		Consumption NI/hr		Cutting Fuel Gas	Speed mm/min
		Oxygen	Fuel Gas	Oxygen	Preheat Oxygen		
5	00	1.5	0.2	690	800	460	660
5 - 10	0	2.0	0.2	1200	800	460	660 - 550
10 - 15	1	2.5	0.2	2100	800	460	550 - 490
15 - 30	2	3.0	0.25	3400	900	500	490 - 400
30 - 40	3	3.0	0.25	4300	900	500	400 - 350
40 - 50	4	3.5	0.35	6500	1200	660	350 - 320
50 - 100	5	4.0	0.35	11000	1200	660	320 - 200
100 - 150	6	4.0	0.35	15000	2200	1280	200 - 150
150 - 250	7	4.5	0.35	22000	2200	1280	150 - 80
250 - 300	8	4.5	0.35	28000	2200	1280	80 - 45

## 103D7

• Divergent High Speed Tip



Inches

Plate Thickness	Tip No.	Cutting Speed in/min	Oxygen Cutting	Oxygen Preheat*	Fuel PSIG	Ke r f Width
1/8	00	31.5	100	20	2.9	0.03
1/4	0	29	100	30	2.9	0.04
3/8	0	27	100	30	2.9	0.05
1/2	1	25	100	40	2.9	0.05
3/4	2	22	100	45	3.6	0.06
1	2	20	100	45	3.6	0.07
1 1/2	3	18	100	45	5.0	0.08
2	4	16	100	45	5.0	0.10
2 1/2	5	14	100	55	5.0	0.11
3	5	12.5	100	55	5.0	0.11
4	6	10	100	55	5.0	0.13
5	6	9	100	55	5.0	0.14
6	7	7	100	65	5.0	0.14
8	7	5.5	100	65	5.0	0.18
10	8	4	100	65	5.0	0.20
12	8	3	100	65	5.0	0.24

Metric

Plate Thickness	Tip No.	Pressure kg/cm <sup>2</sup>		Consumption NI/hr		Cutting Fuel Gas	Speed mm/min
		Oxygen	Fuel Gas	Oxygen	Preheat Oxygen		
5	00	7.0	0.2	750	800	460	750
5 - 10	0	7.0	0.2	1100	800	460	750 - 680
10 - 15	1	7.0	0.2	2500	800	460	680 - 600
15 - 30	2	7.0	0.25	3800	900	500	600 - 500
30 - 40	3	7.0	0.25	5400	900	500	500 - 450
40 - 50	4	7.0	0.35	7300	1200	660	450 - 400
50 - 100	5	7.0	0.35	10000	1200	660	400 - 260
100 - 150	6	7.0	0.35	14000	2200	1280	260 - 180
150 - 250	7	7.0	0.35	22000	2200	1280	180 - 100
250 - 300	8	7.0	0.35	35000	2200	1280	100 - 70

## Perfect Manufacturing System To Produce A Quality Tip

Koike offers its clients precision tips that are safe while at the same time capable of reducing cost of the cutting operation. Each tip is produced according to Koike's precise 4-step system:

A committed research department

A talented design department

A fully automated and state-of-the-art manufacturing facility

An inspection group that makes sure Koike's finished product is within strict tolerances before it goes to the client.

All Koike tips are manufactured to the most rigorous standards, and tailored to meet any requirements its clients may have.

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