FLAME TECH®

SCORPION

BY FLAME TECH

GAS APPARATUS

EQUIPMENT CATALOG

Flame Technologies, Inc.
P.O. Box 1776
Cedar Park, TX 78630

www.flametechnologies.com

Phone: 512-219-8481

Updated 07/09/25.

Contents

Direct Replacement Cutting Tips

Currently there is no standard method among Original Equipment Manufacturers (OEM) to designate tip sizes. The following charts are designed to provide operational data for the user, regardless of OEM, by utilizing the common denominators, "Oxygen Orifice Drill Size" and "Metal Thickness." Using information you have available, the following charts can help find information you need.

You Know the Tip Size: Use the Cross Reference Chart to find drill size of OEM tip to be used, and then refer to Operation and Performance Chart to determine operating parameters. Check "Metal Thickness" column to be sure tip is correct size for the cut.

You Know the Metal Thickness: Use the Operational and Performance Chart to determine drill size needed to cut specific thickness of metal. Select OEM tip and size from Cross Reference Chart.

Standard Pressure Tip Size Cross-Reference: OEM Size to Oxygen Orifice Drill Size

O.E.M.		OXYGEN ORIFICE DRILL SIZES																			
	TIP STYLES	74	71	68	64	62	60	58	56	54	52	50	48	44	39	31	28	25	19	13
Airco®	144	–	–	00	–	0	–	–	1	2	3	–	4	5	6	–	–	–	–	–
	164	–	–	00	–	0	–	–	1	2	3	–	4	5	6	8	9	–	10	–
	261	00	–	0	–	–	1	–	2	3	–	–	–	5	7	8	–	–	10	–
	263	–	–	–	0	–	1	–	2	–	–	4	–	5	7	8	–	–	10	–
	AFS	–	–	68	65	–	60	–	56	54	52	–	49	44	38	31	29	–	19	–
	Stinger 200 Series	–	00	0	–	1	–	–	2	3	4	–	5	–	6	7	–	–	8	–
Harris®	NX	–	–	000	00	–	0	–	1	–	2	–	3	4	5	6	7	8	–	–
	NFF	–	–	–	–	–	–	–	1	2	3	–	4	–	5	6	–	–	–	–
	NH	–	–	–	–	–	–	–	–	–	–	–	–	–	5	6	7	8	–	–
	6290, 2490	–	–	00	00	–	0	–	1	–	2	–	3	4	–	–	–	–	–	–
	6290S, 2490S	–	–	–	–	–	–	–	1	–	2	–	3	4	5	6	–	–	–	–
Koike®	103	–	–	00	–	0	1	–	–	2	3	–	4	5	6	–	7	–	8	–
	106	–	–	00	–	0	1	–	–	2	3	–	4	5	6	–	7	–	8	–
	107	–	–	00	–	0	1	–	–	2	3	–	4	5	6	–	7	–	8	–
Meco®	LM	–	–	–	–	0	–	–	1	2	3	–	4	–	5	–	–	–	–	–
Oxweld®	1502	–	–	3	–	–	4	–	–	6	–	–	–	8	10	12	–	–	16	–
	1534	2	–	3	–	–	4	–	–	5	–	–	–	8	10	12	–	–	16	20
	1564	–	–	–	–	–	4	–	–	–	6	–	–	8	–	10	–	12	–	–
	1567	1/8	–	1/4	1/2	–	3/4	–	–	1	2	3	–	–	–	10	–	14	–	–
Purox®	4202	–	–	3	–	–	4	–	–	5	–	7	–	9	–	13	–	–	–	–
	4213	–	–	3	–	–	4	–	–	5	–	–	7	8	10	–	–	–	–	–
	4216	–	–	3	–	–	4	–	–	–	6	–	8	–	10	12	–	–	–	–
Rego®	KX105	–	–	68	–	62	–	–	56	53	51	–	46	42	35	30	–	25	18	–
Flame Tech® Scorpion®	All Styles	5/0	4/0	000	00	00½	0	0½	1	1½	2	2½	3	4	5	6	7	8	9	10
Smith®	SC40, 50, 60, 90	–	–	00	–	0	–	–	1	2	3	–	–	4	5	6	7	–	8	–
Victor®	GP (N, P)	–	000	00	–	–	0	–	1	2	–	3	3	4	5	6	7	–	8	10
	BT (N, P)	–	–	–	–	–	–	–	–	–	–	–	–	4	5	6	–	–	–	–
	HP (N, P)	–	–	–	–	–	–	–	1	2	–	3	3	4	5	6	7	–	8	10
	3GP (N, P)	–	000	00	–	–	0	–	1	2	–	3	3	4	5	–	–	–	–	–
	1-101	–	000	00	–	–	0	–	1	–	2	–	3	4	5	6	7	8	–	–
	3-101, 303M	–	–	00	–	–	0	–	1	–	2	–	3	4	5	6	–	–	–	–

High Pressure (Diverged) Tip Size Cross-Reference: OEM Size to Oxygen Orifice Drill Size

O.E.M.		OXYGEN ORIFICE DRILL SIZES														
	TIP STYLES	74	71	68	64	62	60	58	56	54	52	50	48	44	42	39
Airco®	361	0	–	1	2	–	–	–	3	4	6	–	8	–	–	–
	363	–	–	–	–	–	1	–	2	3	4	–	5	6	–	–
	AFH	–	–	68	65	–	60	–	56	54	52	–	49	44	38	–
	Stinger (375)	–	–	0	–	1	–	1	2	3	4	–	5	–	–	–
Harris®	VVC	5/0	–	4/0	000	–	0	0½	1	1½	2	2½	3	4	5	5½
Koike®	103D7	–	00	0	1	–	–	–	2	3	4	5	6	–	7	8
	106D7	–	00	0	1	–	–	–	2	3	4	5	6	–	7	8
	107D7	–	00	0	1	–	–	–	2	3	4	5	6	–	7	8
Oxweld®	1535	–	–	31	–	–	4	43	47	52	60	–	80	–	100	120
	1566	–	–	1/2	3/4	–	1	–	1½	2	4	–	5	8	10	14
Rego®	KX205	–	–	68	–	–	60	–	–	53	–	–		–	–	–
Flame Tech® Scorpion®	All Styles	5/0	4/0	000	00	00½	0	0½	1	1½	2	2½	3	4	5	6
Smith®	SC12A	00	–	0	1	–	–	2	3	4	–	6	6	8	–	–
Victor®	MTH (N, P)	–	000	00	–	–	0	–	1	–	2	–	3	4	5	–

**** MAPP gas is no longer produced. Flame Tech does not make MAPP specific tips. Propylene tips may be used if needed. ****

GENERAL OPERATION AND PERFORMANCE DATA FOR FLAME TECH® TIPS

Standard Pressure

METAL THICKNESS INCHES	TIP SIZE NUMBER	TIP SIZE CUTTING OXYGEN ORIFICE	DRILL CLEANER SIZE	WYPO CLEANER NUMBER	OXYGEN CUTTING P.S.I.	OXYGEN PREHEAT P.S.I.	** FUEL GAS P.S.I.	* SPEED I.P.M.	KERF WIDTH INCHES
1/8	5/0	74	75	7	20—30	5—9	2—5	18—26	0.035
3/16	4/0	71	72	8	30—40	5—9	2—5	18—25	0.04
1/4	000	68	69	10	30—40	5—9	3—5	17—24	0.05
3/8	00	64	65	14	35—45	5—10	3—5	17—23	0.06
1/2	1/2	62	63	15	35—45	5—10	3—6	16—22	0.06
5/8	0	60	61	15	35—45	5—10	3—6	15—20	0.07
3/4	1/2	58	59	17	35—50	5—10	3—6	15—19	0.07
1	1	56	57	18	35—50	5—10	3—6	14—18	0.08
1½	1½	54	55	22	40—55	10—17	4—8	12—16	0.09
2	2	52	53	24	40—55	10—17	4—8	10—14	0.1
2½	2½	50	51	26	40—55	10—17	5—9	9—13	0.11
3	3	48	49	28	45—60	10—17	6—10	8—11	0.11
4	4	44	45	32	50—65	10—17	6—10	7—10	0.13
5	4	44	45	32	50—65	10—17	6—10	6—9	0.13
6	5	39	36	42	60—75	10—17	8—12	5—8	0.15
8	6	31	32	44	60—85	30—43	9—15	4—6	0.19
10	7	28	29	–	30—60	30—43	9—15	3—5	0.22
12	8	25	26	–	25—55	30—43	9—15	3—4	0.24
14	9	19	20	–	25—55	30—43	9—15	2—3	0.26
15	10	13	14	–	25—50	30—43	10—18	2—3	0.34
16	11	9	10	–	25—50	30—43	10—18	1½—2 ½	0.37
18	12	5	6	–	25—45	30—43	10—18	1—2	0.4

The highlighted sizes will cover most applications.

** Acetylene not to exceed 15 P.S.I.

High Pressure (Diverged)

METAL THICKNESS INCHES	TIP SIZE NUMBER	TIP SIZE CUTTING OXYGEN ORIFICE	DRILL CLEANER SIZE	WYPO CLEANER NUMBER	OXYGEN CUTTING P.S.I.	OXYGEN PREHEAT P.S.I.	FUEL GAS P.S.I.	SPEED I.P.M.	KERF WIDTH INCHES
1/8	5/0	74	75	7	40—50	5—10	2—5	24—30	0.035
3/16	4/0	71	72	8	50—60	5—10	2—5	23—29	0.04
1/4	000	68	69	10	70—80	8—15	2—5	21—28	0.045
3/8	00	64	65	14	80—90	8—15	3—5	19—26	0.05
5/8	1/2	62	63	15	80—90	8—15	3—5	19—26	0.05
3/4	0	60	61	15	80—100	8—15	3—5	18—26	0.055
7/8	1/2	58	59	17	80—100	8—15	3—5	17—25	0.06
1	1	56	57	18	80—100	8—15	3—6	16—24	0.06
1 1/2	1	56	57	18	80—100	8—15	3—6	15—20	0.06
2	1 1/2	54	57	18	80—100	8—15	3—6	12—16	0.06
2 1/2	1 1/2	54	55	22	80—100	10—20	4—8	10—15	0.07
3	2	52	55	22	80—100	10—20	4—8	9—13	0.07
4	2	52	53	24	80—100	15—25	4—8	9—12	0.08
5	2 1/2	50	53	24	80—100	15—25	4—8	8—11	0.08
5 1/2	2 1/2	50	51	26	80—100	15—25	5—9	8—11	0.09
6	3	48	49	28	80—100	15—25	6—10	8—10	0.1
8	4	44	45	32	80—100	20—30	8—12	6—8	0.11
9	5H	42	43	34	80—100	25—35	8—12	5—7	0.13
10	6H	39	40	37	80—100	25—40	9—15	4—6	0.17

* NOTE: If using propylene, use high side range of this chart. If using natural gas use low side of range.

vData was compiled using mild steel as test material. This data should be used as a guide only. Your specific job may require slightly different pressures and speeds. However, the data will provide you with an excellent starting point if you begin on the low side and work up to the optimum speeds for maximum production. For thin plate through 3/8", slightly feathered or carburizing preheat flames are recommended. For heavy plate cutting, strong oxidizing preheat flames are recommended for piercing or starting the cut.

The data on this chart was gathered using a 3-hose torch. All pressures were measured at the regulator using 25' of 1/4" diameter hose for sizes 5/0 through 5 and 25' of 3/8" hose for sizes 6 and larger. For hose lengths longer than 25', the drop is about 3 PSI per 25'. Therefore, pressures at the regulator must be adjusted accordingly.

Values shown are for optimum results with FLAME TECH® tips. Check for the actual requirements of your torch in that they vary for equal pressure versus injector type design and from one OEM to another.

Professional-Grade Kits

V-STYLE HEAVY DUTY COMBO TORCH KITS

CAPACITY

Torch handle and cutting attachment can cut up to 8" and weld up to 3" with additional tips and nozzles.

KITS INCLUDE

- Oxygen & Fuel Regulators
  —CGA 300 available
- Torch Handle with Check Valves
  —also available with flashback arrestors (FBA)
- Cutting Attachment
- Cutting Tip
- Manual

OPTIONAL ITEMS & ACCESSORIES

- 1 to 3 Welding Nozzles
- Multi-Flame Heating Nozzle
- Accessories (see table) *
  - 1/4" x 15' Twin T-Grade Hose with "Size B" Connectors
  - Shade 5 Safety Glasses
  - Striker
  - Tip Cleaner

FTVHD-21

PN	GAS	CGA	CUT	HEAT	WELD	OXY	FUEL	HANDLE	CUT. ATT.	* ACC.	PACK
FTVHD-21	Acetylene	510	1-1-101	8-MFA	1-W, 3-W, 5-W	VHOR-21	VHAR-21	VTHH-21	VCAH-21	Included	Box
FTVHD-21CS	Acetylene	510	1-1-101	8-MFA	1-W, 3-W, 5-W	VHOR-21	VHAR-21	VTHH-21	VCAH-21	Included	Clamshell
FTVHD-21-300	Acetylene	300	1-1-101	8-MFA	1-W, 3-W, 5-W	VHOR-21	VHAR-21-300	VTHH-21	VCAH-21	Included	Box
FTVHD-21-FBA	Acetylene	510	1-1-101	8-MFA	1-W, 3-W, 5-W	VHOR-21	VHAR-21	VTHH-21-FBA	VCAH-21	Included	Box
FTVHD-21-FBA-300	Acetylene	300	1-1-101	8-MFA	1-W, 3-W, 5-W	VHOR-21	VHAR-21-300	VTHH-21-FBA	VCAH-21	Included	Box
FTVHDUK-21	Acetylene	510	1-1-101	—	3-W	VHOR-21	VHAR-21	VTHH-21	VCAH-21	Included	Box
FTVHDUK-21-300	Acetylene	300	1-1-101	—	3-W	VHOR-21	VHAR-21-300	VTHH-21	VCAH-21	Included	Box
FTVHDUK-21-FBA	Acetylene	510	1-1-101	—	3-W	VHOR-21	VHAR-21	VTHH-21-FBA	VCAH-21	Included	Box
FTVHDUK-21-FBA300	Acetylene	300	1-1-101	—	3-W	VHOR-21	VHAR-21-300	VTHH-21-FBA	VCAH-21	Included	Box
FTVSP-23	Acetylene	510	1-1-101	—	2-W	ORSP-23	ARSP-23	VTHH-21	VCAH-21	Included	Box
FTVSP-23-300	Acetylene	300	1-1-101	—	2-W	ORSP-23	ARSP-23-300	VTHH-21	VCAH-21	Included	Box
FTVHD-F1	Alt Fuel	510	1-GPN	—	—	VHOR-21	VHFR-21	VTHH-21	VCAH-21	—	Box
FTVHD-F1-FBA	Alt Fuel	510	1-GPN	—	—	VHOR-21	VHFR-21	VTHH-21-FBA	VCAH-21	—	Box
FTVHD-A1	Acetylene	510	1-1-101	—	—	VHOR-21	VHAR-21	VTHH-21	VCAH-21	—	Box
FTVHD-A1-300	Acetylene	300	1-1-101	—	—	VHOR-21	VHAR-21-300	VTHH-21	VCAH-21	—	Box
FTVHD-A1-FBA	Acetylene	510	1-1-101	—	—	VHOR-21	VHAR-21	VTHH-21-FBA	VCAH-21	—	Box
FTVHD-A1-FBA-300	Acetylene	300	1-1-101	—	—	VHOR-21	VHAR-21-300	VTHH-21-FBA	VCAH-21	—	Box

V-STYLE MEDIUM & LIGHT DUTY COMBO TORCH KITS

CAPACITY

Torch handle and cutting attachment can cut up to 5" and weld up to 1.25" with additional tips and nozzles.

KITS INCLUDE

- Oxygen & Fuel Regulators
  —CGA 300 available
- Torch Handle with Check Valves (MD kits)
- Cutting Attachment
- Cutting Tip
- Manual

FTVMD-22

OPTIONAL ITEMS & ACCESSORIES

- 1 to 3 Welding Nozzles
- Multi-Flame Heating Nozzle
- Accessories Set 1 (see table) *
  - 1/4" x 15' Twin T-Grade Hose with "Size B" Connectors
  - Shade 5 Safety Glasses
  - Striker
  - Tip Cleaner
- Accessories Set 2 (see table) *
  - 1/4" x 15' Twin T-Grade Hose with "Size B" Connectors
  - Shade 5 Safety Glasses
  - Striker

FTPTK-18

Medium Duty

PN	GAS	CGA	CUT	HEAT	WELD	OXY	FUEL	HANDLE	CUT. ATT.	* ACC.	PACK
FTVMD-22	Acetylene	510	0-3-101	8-MFA-1	0-W-1, 2-W-1, 4-W-1	VMOR-22	VMAR-22	VTHM-22	VCAM-22	Set 1	Box
FTVMD-22CS	Acetylene	510	0-3-101	8-MFA-1	0-W-1, 2-W-1, 4-W-1	VMOR-22	VMAR-22	VTHM-22	VCAM-22	Set 1	Clamshell
FTVMD-22-300	Acetylene	300	0-3-101	8-MFA-1	0-W-1, 2-W-1, 4-W-1	VMOR-22	VMAR-22-300	VTHM-22	VCAM-22	Set 1	Box
FTVMD-22-300CS	Acetylene	300	0-3-101	8-MFA-1	0-W-1, 2-W-1, 4-W-1	VMOR-22	VMAR-22-300	VTHM-22	VCAM-22	Set 1	Clamshell
FTVMDUK-20	Acetylene	510	0-3-101	—	0-W-1	VMOR-22	VMAR-22	VTHM-22	VCAM-22	Set 2	Box
FTVMDUK-20CS	Acetylene	510	0-3-101	—	0-W-1	VMOR-22	VMAR-22	VTHM-22	VCAM-22	Set 2	Clamshell
FTVMDUK-20-300	Acetylene	300	0-3-101	—	0-W-1	VMOR-22	VMAR-22-300	VTHM-22	VCAM-22	Set 2	Box
FTVMDUK-20-300CS	Acetylene	300	0-3-101	—	0-W-1	VMOR-22	VMAR-22-300	VTHM-22	VCAM-22	Set 2	Clamshell
FTVMDUK-20-F1	Alt Fuel	510	0-3-GPN	—	0-W-1	VMOR-22	VMFR-22	VTHM-22	VCAM-22	Set 2	Box
FTVMD-A1	Acetylene	510	0-3-101	—	—	VMOR-22	VMAR-22	VTHM-22	VCAM-22	—	Box
FTVMD-A1CS	Acetylene	510	0-3-101	—	—	VMOR-22	VMAR-22	VTHM-22	VCAM-22	—	Clamshell
FTVMD-A1-300	Acetylene	300	0-3-101	—	—	VMOR-22	VMAR-22-300	VTHM-22	VCAM-22	—	Box
FTVMD-A1-300CS	Acetylene	300	0-3-101	—	—	VMOR-22	VMAR-22-300	VTHM-22	VCAM-22	—	Clamshell

Light Duty

PN	GAS	CGA	CUT	HEAT	WELD	OXY	FUEL	HANDLE	CUT. ATT.	* ACC.	PACK
FTPTK-18	Acetylene	200	0-3-101	—	0-W-1	VLOR-18 †	VLAR-18 †	VTHM-22	VCAM-22	Set 2	Box
FTVLD-18CS	Acetylene	510	0-3-101	—	0-W-1	VLOR-18S ‡	VLAR-18S ‡	VTHM-22	VCAM-22	Set 2	Clamshell

† Rear Mount *‡ Side Mount*

V-STYLE HEAVY DUTY 21" STRAIGHT TORCH CUTTER KITS

KITS INCLUDE

- Oxygen & Fuel Regulators
  —CGA 300 available
- 21" Straight Torch with 90° Head
- Check Valves
- Cutting Tip
- Manual

FTVHD-CK-F1
with 6321-F90

6321 STRAIGHT TORCH FEATURES

—See page page 38 for more information

- Cutting Capacity Up to 8"
- 3-Tube Torch with 90° Head
  —Either Acetylene Only or Fuel Gas Only
- Includes Check Valves

FTVMD26-CK-A1
with 2621-90

2621-90 STRAIGHT TORCH FEATURES

—See page page 36 for more information

- Cutting Capacity Up to 8"
- 2-Tube Torch with 90° Head Uses Any Fuel Gas
- Includes Built-In Check Valves & Flashback Arrestors

FTVHD921-CK-F1
with 921-90

921-90 STRAIGHT TORCH FEATURES

—See page page 37 for more information

- Cutting Capacity Up to 5"
- 3-Tube Torch with 90° Head Uses Any Fuel Gas
- Includes Built-In Check Valves & Flashback Arrestors

Kits with Heavy Duty Regulators

PN	GAS	CGA	CUT	OXY	FUEL	TORCH
FTVHD-CK-F1	Alt Fuel	510	1-GPN	VHOR-21	VHFR-21	6321-F90
FTVHD-CK-A1	Acety.	510	1-1-101	VHOR-21	VHAR-21	6321-A90
FTVHD-CK-A1-300	Acety.	300	1-1-101	VHOR-21	VHAR-21-300	6321-A90
FTVHD26-CK-F1	Alt Fuel	510	1-GPN	VHOR-21	VHFR-21	2621-90
FTVHD26-CK-A1	Acety.	510	1-1-101	VHOR-21	VHAR-21	2621-90
FTVHD26-CK-A1-300	Acety.	300	1-1-101	VHOR-21	VHAR-21-300	2621-90
FTVHD921-CK-F1	Alt Fuel	510	1-GPN	VHOR-21	VHFR-21	921-90
FTVHD921-CK-A1	Acety.	510	1-1-101	VHOR-21	VHAR-21	921-90
FTVHD921-CKA1-300	Acety.	300	1-1-101	VHOR-21	VHAR-21-300	921-90

Kits with Medium Duty Regulators

PN	GAS	CGA	CUT	OXY	FUEL	TORCH
FTVMD-CK-A1	Acety.	510	1-1-101	VMOR-22	VMAR-22	6321-A90
FTVMD-CK-A1-300	Acety.	300	1-1-101	VMOR-22	VMAR-22-300	6321-A90
FTVMD26-CK-A1	Acety.	510	1-1-101	VMOR-22	VMAR-22	2621-90
FTVMD26-CK-A1-300	Acety.	300	1-1-101	VMOR-22	VMAR-22-300	2621-90
FTVMD921-CK-A1	Acety.	510	1-1-101	VMOR-22	VMAR-22	921-90
FTVMD921-CKA1-300	Acety.	300	1-1-101	VMOR-22	VMAR-22-300	921-90

H-STYLE HEAVY DUTY COMBO OR STRAIGHT TORCH CUTTER KITS

COMBO TORCH KIT CAPACITY

Torch handle and cutting attachment can cut up to 6" and weld up to 3" with additional tips and nozzles.

COMBO TORCH KITS INCLUDE

- Torch Handle with Check Valves
- Cutting Attachment
- Oxygen & Fuel Regulators
  —CGA 300 available
- Cutting Tip
- Manual

FTHSP-30

OPTIONAL ITEMS & ACCESSORIES

- Welding Nozzle
- Accessories (see table) *
  - 1/4" x 15' Twin T-Grade Hose with "Size B" Connectors
  - Shade 5 Safety Glasses
  - Striker
  - Tip Cleaner

Combo Torch Kits with Heavy Duty Regulators

PN	GAS	CGA	CUT	WELD	MIXER	OXY	FUEL	HANDLE	CUT. ATT.	* ACC.	PACK
FTHSP-30	Acetylene	510	6290-1	23-A-90-3	E-43	HHOR-30	HHAR-30	HTHH-30	HCAH-30	Included	Box
FTHSP-30-300	Acetylene	300	6290-1	23-A-90-3	E-43	HHOR-30	HHAR-30-300	HTHH-30	HCAH-30	Included	Box
FTHHD-A1	Acetylene	510	6290-1	—	—	HHOR-30	HHAR-30	HTHH-30	HCAH-30	—	Box
FTHHD-A1-300	Acetylene	300	6290-1	—	—	HHOR-30	HHAR-30-300	HTHH-30	HCAH-30	—	Box

CUTTER KITS INCLUDE

- 21" 3-Tube Straight Torch with 90° Head up to 8" Cutting Capacity
- Check Valves
- Oxygen & Fuel Regulators
  —CGA 300 available
- Cutting Tip
- Manual

FTHHD-CK-A1

21" Torch Cutter Kits with Heavy Duty Regulators

PN	GAS	CGA	CUT	OXY	FUEL	TORCH	PACK
FTHHD-CK-A1	Acetylene	510	6290-1	HHOR-30	HHAR-30	6221-A90	Box
FTHHD-CK-A1-300	Acetylene	300	6290-1	HHOR-30	HHAR-30-300	6221-A90	Box

Regulation & Flow Control

OEM COMPATIBLE SINGLE STAGE CYLINDER REGULATORS

- Forged brass body & bonnet for maximum strength
- Oxygen with safety relief valve for safe operation
- Sintered metal inlet filter to trap impurities
- Easy to read dual scale gauges with hardy acrylic screw-on lens

MAX CYLINDER PRESSURE

- Acetylene: 400 psi
- Alt. Fuel Gas: 400 psi
- Oxygen: 3000 psi

Box Packaging

Clamshell Packaging

	DUTY	GAS	INLET	OUTLET	DELIVERY RANGE	CGA 510 MODELS		CGA 300 MODELS	
						BOX	CLAMSHELL	BOX	CLAMSHELL
V-Style	Heavy	Acetylene	CGA 510 / 300	CGA “B” LH	2–15 PSI	VHAR-21	VHAR-21CS	VHAR-21-300	VHAR-21-300CS
	Heavy	Alt. Fuel	CGA 510	CGA “B” LH	2–40 PSI	VHFR-21	VHFR-21CS	—	—
	Heavy	Oxygen	CGA 540	CGA “B”	5–125 PSI	VHOR-21	VHOR-21CS	—	—
	Medium	Acetylene	CGA 510 / 300	CGA “B” LH	2–15 PSI	VMAR-22	VMAR-22CS	VMAR-22-300	VMAR-22-300CS
	Medium	Alt. Fuel	CGA 510	CGA “B” LH	2–40 PSI	VMFR-22	VMFR-22CS	—	—
	Medium	Oxygen	CGA 540	CGA “B”	5–125 PSI	VMOR-22	VMOR-22CS	—	—
	Med./Heavy	Acetylene	CGA 510 / 300	CGA “B” LH	2–15 PSI	ARSP-23	—	ARSP-23-300	—
	Med./Heavy	Oxygen	CGA 540	CGA “B”	5–125 PSI	ORSP-23	—	—	—
	Light	Acetylene	CGA 200	CGA “B” LH	2–15 PSI	VLAR-18	—	—	—
	Light	Oxygen	CGA 540	CGA “B”	5–60 PSI	VLOR-18	—	—	—
	Light	Acetylene	CGA 200	CGA “B” LH	2–15 PSI	VLAR-18S	—	—	—
	Light	Oxygen	CGA 540	CGA “B”	5–60 PSI	VLOR-18S	—	—	—
H-Style	Heavy	Acetylene	CGA 510 / 300	CGA “B” LH	2–15 PSI	HHAR-30	—	HHAR-30-300	—
	Heavy	Oxygen	CGA 540	CGA “B”	5–125 PSI	HHOR-30	—	—	—

OXY-FUEL MEDIUM DUTY REGULATOR SET

- Set of 1 Each Oxygen and Fuel Gas Regulators
- Lower Price Point than Individual Regulators
- Victor® Compatible
- VMAR-22 or VMAR-22-300 or VMFR-22
- VMOR-22

PART NUMBERS (CS ONLY)

- VMORAR-CS (acetylene CGA 510)
- VMORAR-300CS (acetylene CGA 300)
- VMORFR-CS (alternative fuel gas CGA 510)

FLOW GAUGE REGULATORS

- Easy to read 2-inch, dual-scale gauges
- Safety relief valve to protect equipment
- Sintered metal inlet filter to trap impurities
- Forged brass body with nickel-chrome plating on bonnet
- Argon cylinder fitting: CGA 580
- CO_2 cylinder fitting: CGA 320

IDEAL FOR

- MIG/TIG operations—where flowmeters are not ideal
- Designed for small to medium operations, with flow of 8–45 SCFH
- Small to medium (.025–.045 Ø) operations

BOX PN
FTFG-25-AR (Argon)
FTFG-25-CD (CO_2)

CLAMSHELL PN
FTFG-25-ARCS (Argon)
FTFG-25-CDCS (CO_2)

ARGON & CO2 GAS FLOW CONTROL

- Preset pressure output at 50 PSI, machined brass body, polycarbonate flow tube and outer cover are impact resistant for maximum durability
- Compact lightweight construction
- Designed for MIG & TIG applications providing accurate regulation of gas flow
- Dual scale gauge with impact resistant polycarbonate lens for durability

SINGLE FLOWMETER REGULATORS

- Economic combination regulator and flowmeter in one unit
- Inlet CGA 580
- Max Inlet 3000 PSI
- Preset Output 50 PSI
- Outlet 5/8"–18RH Female
- Flow Range 10–60 SCFH

BOX PN
100-FL-AR-60-580 (Argon)
100-FL-CD-60-320 (CO2)

CLAMSHELL PN
100-FL-AR-60-580C (Argon)
100-FL-AR-60-580H
(Argon w/10-foot single hose)

DUAL FLOWMETER REGULATOR

- Same general specifications as single flowmeter regulators, except it has two flowmeters
- Comparable to Victor® DFM 150 Series

PN: 200-FL-AR-60-580 (BOX ONLY)

FLOWMETER

- Outlet 5/8"–18RH Female
- Flow Range 10–60 SCFH
- Inlet 1/4" NPT Male
- Max Inlet Pressure 50 PSIG
- Not for Cylinder Use!

PN: 50-FM-AR-CD-60 (BOX ONLY)

SPECIALTY REGULATORS (BOXED ONLY)

INERT GAS MEDIUM DUTY—MDR-IN-350-580

- Comparable to Victor® TPR250 Series
- 15–350 PSI Delivery
- ¼" - 37° Flare Outlet
- 2" Guages
- CGA 580 Inlet
- 3,000 PSI Max Inlet

INERT GAS HIGH PRESSURE—HPPR-IN-700-580

- Piston Style Regulator
- 50–700 PSI Delivery
- ¼" - 37° Flare Outlet
- 2" Guages
- CGA 580 Inlet
- 3,000 PSI Max Inlet

INERT GAS HIGH FLOW—
HDR600-IN-350-580 (350 MAX PSI, CGA 580)
HDR600-IN-350-680 (350 MAX PSI, CGA 680)

- Comparable to Victor® SR600 Series
- ¼" Swagelok Outlet
- 2½" Gauges
- 3,000 PSI Max Inlet

HDR600-IN-550-580 (550 MAX PSI, CGA 580)
HDR600-IN-550-680 (550 MAX PSI, CGA 680)

- ¼" Swagelok Outlet
- 2½" Gauges
- 5,500 PSI Max Inlet

DELUXE HELIUM BALLOON FILLER—H580BF

- Cylinder contents gauge
- Rugged all brass body
- “Piston Type” mechanism
- Plastic hand tight CGA 580 inlet connection
- Drilled and tapped for tie hook and string cutter

Torch Handles & Cutting Attachments

VICTOR® COMPATIBLE MEDIUM & HEAVY DUTY

BOX PACKAGING

CLAMSHELL PACKAGING

CUTTING ATTACHMENTS

- Double O-ring to form a perfect gas-tight seal
- Head & body are forged brass for longer life
- Two stainless steel tubes and lever for strength

TORCH HANDLES

- Tough extruded brass handle for durability
- Stainless steel needle valves for accurate adjustment

PN	DESCRIPTION	PACKAGING
VCAH-21	Heavy Duty Cutting Attachment	Box
VCAH-21CS	Heavy Duty Cutting Attachment	Clamshell
VTHH-21	Heavy Duty Torch Handle	Box
VTHH-21CS	Heavy Duty Torch Handle	Clamshell
VCAM-22	Medium Duty Cutting Attachment	Box
VCAM-22CS	Medium Duty Cutting Attachment	Clamshell
VTHM-22	Medium Duty Torch Handle	Box
VTHM-22CS	Medium Duty Torch Handle	Clamshell

MEDIUM DUTY TORCH HANDLE & CUTTING ATTACHMENT SET

- Set of 1 Each Medium Duty Torch Handle & Cutting Attachment
- Lower Price Point than Individual Items
- Always Includes Free Size Zero Medium Duty Cutting Tip
- Free Item Included (subject to change)
- Victor® Compatible

SPECIFICATIONS

- VTHM-22 with Check Valves
- VCAM-22
- 0-3-101
- Extra Free Item (subject to change)

PN: VMCATH-CS (CS ONLY)

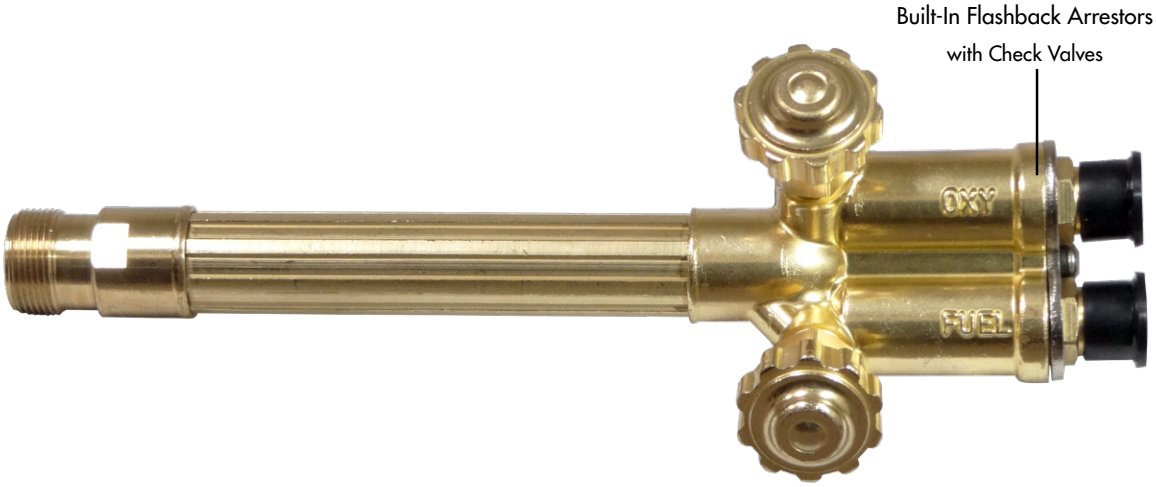
HD TORCH HANDLE WITH BUILT-IN FLASHBACK ARRESTORS

- Heavy Duty Torch Handle
- Built-In Flashback Arrestors with Check Valves
- Replaceable FBA/Check Valve Cartridge Set
- Retainer Prevents FBA Cartridges from Backing Out When Removing Hose

SPECIFICATIONS

- Compatible with Victor® Series 1 cutting tips
- Solid Brass Forged Head
- Heavy-Duty Stainless Tubes
- Universal Mixer for Use with Any Fuel Gas
- **Replace with Flame Tech flashback arrestor/check valve cartridges *only*.**
- DO NOT use other brand cartridges, as they may not seal correctly and cause gas leaks.

PN: VTHH-21-FBA (BOX ONLY)



Do NOT use this torch without the built-in flashback arrestor cartridges!

Use only Flame Tech branded flashback arrestor cartridges!

Flashback Arrestor/Check Valves Cartridges
Fuel: 77100010, Oxygen: 77100020

500,000 BTU PROPANE TORCH

- 6-Pack Floor Display
- Each Torch is Individually Clamshelled for Resale to End Users
- 10' Hose with P.O.L. Safety Valve
- Comfort Grip Handle
- Striker Included
- 500,000 BTU
- CGA 510
- Requires Standard 20 lb. Propane Gas Cylinder (not included)

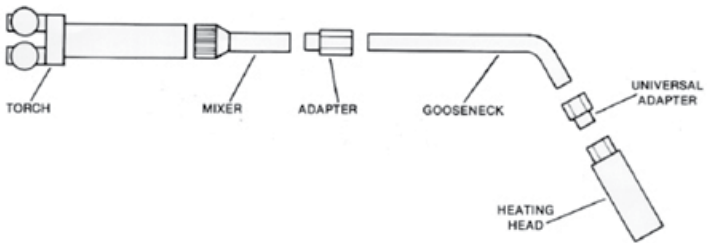
PN: FT-PROP-TORCH (6-PACK DISPLAY BOX)

Foam Handle
for Comfort

P.O.L. Safety Valve

Heating & Welding/Brazing Components

INFERNO™ HEATING EQUIPMENT



PNG HEATING HEADS

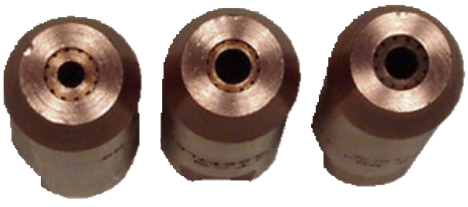
Inferno™ Propane, Natural Gas (PNG) Heads are designed to operate with propane or natural gas. Shells are machined from solid copper bar stock. Internals are machined from brass which is press fit and pinned to prevent separation during backfire. A wide selection of sizes delivers from 200,000 to 1,200,000 BTU's.

HD HEATING HEADS

Inferno™ Heavy Duty (HD) Heads are designed to operate with MPS gas, propylene, propane and natural gas. A wide selection of sizes delivers from 20,000 to 1,200,000 BTU's. HD heads are machined from solid bar stock. Internals are press fit and pinned with a large brass pin to prevent separation during backfire.

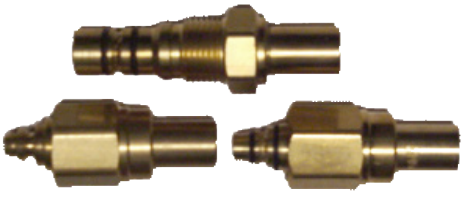
SPOT HEATING HEADS

Inferno™ Spot Heads are designed to operate with MPS gas, propylene, propane and natural gas. Spot heads are designed to provide a very concentrated flame. This new tool is useful for specialized heating, bending and washing applications. A wide selection of sizes delivers from 70,000 to 513,000 BTU's.



MAGNUM MIXERS

Flame Tech Magnum™ mixers are designed for use with Victor®, Harris®, Airco®, Purox®, and Smith® torches. Using the "Magnum" mixer eliminates the need for mixer to gooseneck adapters and provides greater flow than original manufacturers' mixers.



HEATING HEADS

⚠ Large heating assemblies require high volumes of gas to keep flames burning properly or a flashback will occur. Use a manifold system of sufficient size to supply the necessary gas volume. Consult your gas supplier for withdrawal rates for other fuel gases. Refer to the chart below for recommended pressure settings and consumption data.

If a flashback occurs, immediately close the OXYGEN Valve first, and then close the Fuel Valve.

** Heating heads marked with an asterisk must be used with 3/8" ID hose and a heavy duty torch handle.*

PNG: for use with natural gas/propane

MODEL	HEAD SIZE	NATURAL GAS/PROPANE PRESSURE (PSI) MIN–MAX	OXYGEN PRESSURE (PSI) MIN–MAX	NATURAL GAS/PROPANE CONSUMPTION (CFH) MIN–MAX	OXYGEN CONSUMPTION (CFH) MIN–MAX	BTU PER HOUR
PNG	10	2-10	30-45	55-110	180-210	CFH (Gas) × BTU per cu. ft. (see BTU info)
PNG	20*	2-12	40-60	90-180	310-330	
PNG	30*	2-15	60-80	170-260	450-600	
PNG	40*	2-10	80-100	240-290	550-800	See BTU chart
PNG	50*	10-25	90-110	280-450	780-980	

HD: for use with any commercial fuel gas except acetylene

MODEL	HEAD SIZE	NATURAL GAS/PROPANE PRESSURE (PSI) MIN–MAX	OXYGEN PRESSURE (PSI) MIN–MAX	NATURAL GAS/PROPANE CONSUMPTION (CFH) MIN–MAX	OXYGEN CONSUMPTION (CFH) MIN–MAX	BTU PER HOUR
HD	1	5-10	40-60	70-100	100-180	CFH (Gas) × BTU per cu. ft. (see BTU info)
HD	2*	10-15	50-70	100-150	200-300	
HD	3*	15-25	70-100	150-200	350-460	
HD	4*	20-35	90-120	250-350	600-800	See BTU chart
HD	5*	30-50	100-150	400-500	900-1150	

SPOT: for use with any commercial fuel gas except acetylene

MODEL	HEAD SIZE	NATURAL GAS/PROPANE PRESSURE (PSI) MIN–MAX	OXYGEN PRESSURE (PSI) MIN–MAX	NATURAL GAS/PROPANE CONSUMPTION (CFH) MIN–MAX	OXYGEN CONSUMPTION (CFH) MIN–MAX	BTU PER HOUR
SPOT	1	5-15	40-55	70-150	120-300	CFH (Gas) × BTU per cu. ft.
SPOT	2*	7-20	45-65	80-175	150-350	
SPOT	3*	10-25	50-80	100-200	200-400	

APPROXIMATE GROSS BTUS PER CUBIC FOOT

Natural Gas=1000 Propane=2498 Propylene=2371

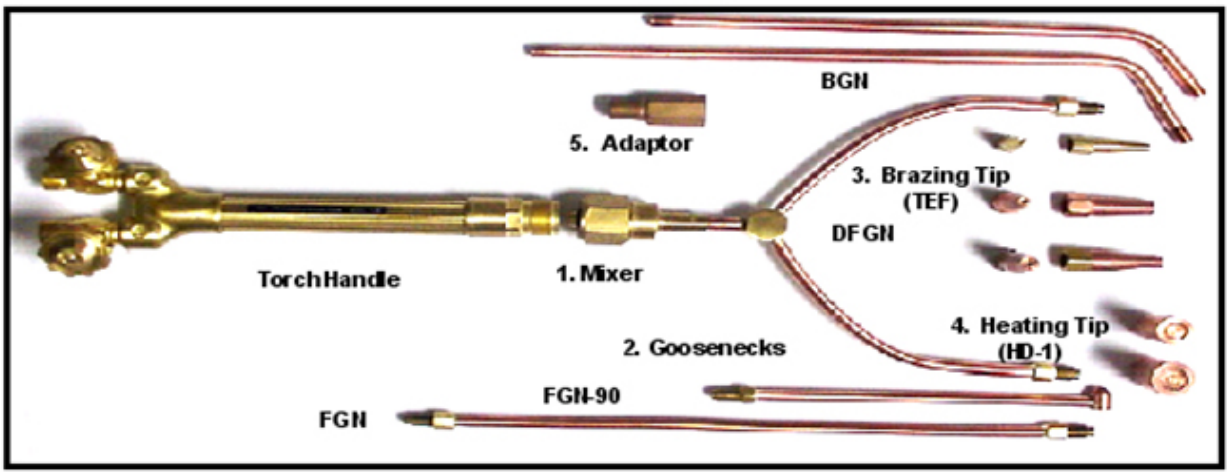
Goosenecks For Heating Heads

Flame Tech® stainless steel goosenecks fit Flame Tech® "Magnum" mixers and Victor® 1/2" mixers without the need for an adaptor. Other OEM mixers will require adaptors. All PNG, HD and SPOT heating heads screw onto the 1/2–20 end of Flame Tech® goosenecks.

Available in lengths of 12, 16, 18, 24, 28, 36, 48, 60, 72 and 96 inches.

Gooseneck heating assemblies are available for many OEMs. Assemblies include a mixer, for the requested OEM type available, an adaptor to the gooseneck (if needed), the gooseneck of specified length and the heating head. Adaptors are available for Flame Tech® heating heads to fit onto many OEM goosenecks. See the price book for more details.

LIGHT DUTY BRAZING



This brazing & heating equipment enhances the use of fuel gas for applications that previously required acetylene. The same philosophy we use for our heavy duty heating equipment is used in the design of this equipment. The special fuel gas mixers, designed for use with all the popular OEM torch handles, utilize the same accessories. This standardizes purchasing, reduces inventory, makes the components more cost effective and gives the craftsman tremendous flexibility. NOT FOR USE WITH ACETYLENE.

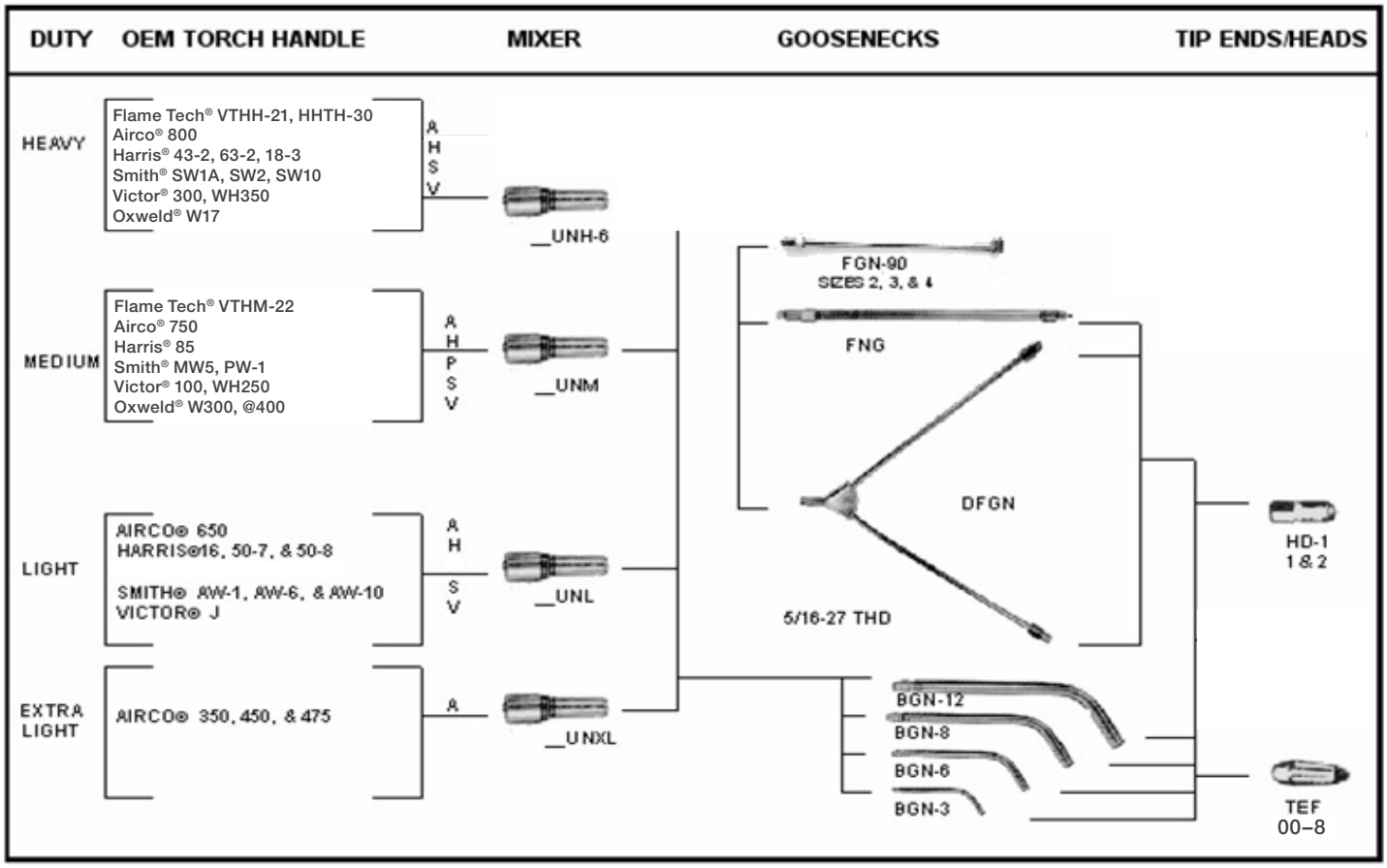
- MIXER – Designed to enhance the performance of all Fuel Gases. Available for all popular torches.
- GOOSENECKS – The wide variety of gooseneck accessories cover most applications.
- BRAZING TIPS – The TEF (Tip End Fuel) gas brazing tips were designed to overcome most of the problems encountered while brazing with fuel gases. These TEF tips will flow from 25 to 50 percent more gas than single orifice welding tips designed for acetylene before becoming unstable and blowing away from the tip.
- HEATING TIPS – The HD-1-1 or HD-1-2 series heating tips allow the use of fuel gases with minimum & light duty torches for heating applications that previously required acetylene. The HD-1-1 or HD-1-2 head will yield from 120,000 to 375,000 BTUs per hour, which covers the smallest to the largest traditional multi-flame acetylene heating assemblies.
- ADAPTORS – 5/16-27 thread to 1/4" tubing allows for customized goosenecks to fit individual needs.

Mixer & Accessories by Torch Handle

	MIXERS				
TORCH HANDLE	AIRCO	HARRIS	PUROX/OXWELD	SMITH	VICTOR
Heavy Duty	A-UNH-10	H-UNH-10	O-UNH-10	S-UNH-10	V-UNH-10
Heavy Duty	A-UNH-6	H-UNH-6	O-UNH-6	S-UNH-6	V-UNH-6
Medium Duty	A-UNM	H-UNM	P-UNM	S-UNM	V-UNM
Light Duty	A-UNL	H-UNL	(discontinued)	S-UNL	V-UNL
Extra Light Duty	A-UNXL	NONE	NONE	NONE	NONE

ACCESSORIES	
BGNH	Bent Gooseneck Heavy Duty Lengths: 8" & 12"
TEF	Tip End Fuel. Sizes: 8 & 10
BGN	Bent Gooseneck: 3", 6", 8", 12"
TEF	Tip End Fuel
HD-1	Heating Heads: Sizes 1 & 2
DFGN	Dual Flex Gooseneck: 6"
FGN	Flexible Gooseneck: 11"
FGN-90	Flexible Gooseneck with 90°Head. Length: 6"

LIGHT DUTY BRAZING



FLAME TECH TEF: (Tip End Fuel Gas) brazing and heating nozzle cross refference & flow data

PN	ACETYLENE EQUIVALENT	DRILL SIZE	TEF SIZE	FUEL GAS (PSI)	OXYGEN (PSI)	FUEL GAS FLOW (CFH)*
TEF-00	000	75 (.022")	00	3-6	3-6	2-7
TEF-0	00	70 (.028")	0	3-6	3-6	4-9
TEF-1	0	65 (.035")	1	3-6	4-8	6-12
TEF-2	1	60 (.040")	2	3-6	5-10	9-18
TEF-3	2	56 (.046")	3	4-8	8-15	10-20
TEF-4	3	53 (.060")	4	5-10	10-25	12-24
TEF-5	4	49 (.073")	5	6-12	15-30	10-40
TEF-6	5	43 (.084")	6	7-14	20-40	30-75
TEF-7	6	36 (.106")	7	9-18	30-50	60-120
TEF-8	7	30 (.128")	8	12-24	40-70	90-180
HD-1-1	MFA-12	n/a	HD-1-1	5-10	40-60	70-100
HD-1-2	MFA-15	n/a	HD-1-2	10-15	50-70	100-150

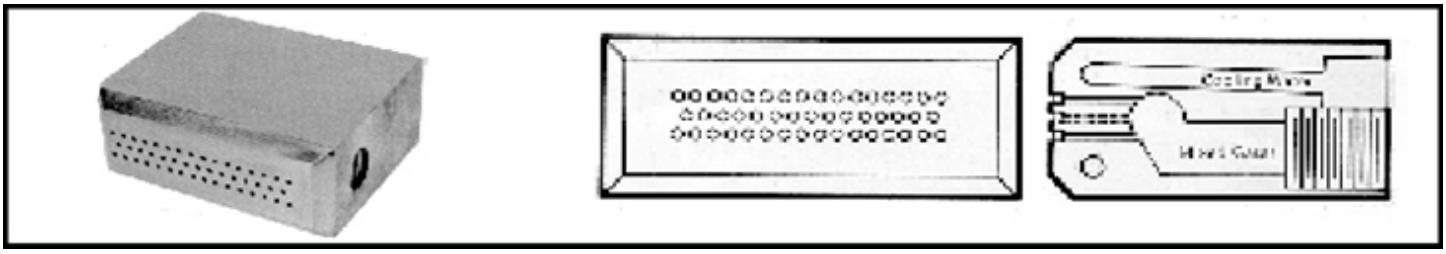
The highlighted sizes will cover most applications.

** Oxygen consumption (CFH) is about 2.0 times the fuel gas under neutral flame conditions.*

STANDARD FLAME HARDENING HEADS

WATER-COOLED HEADS FOR FLAME TECH GOOSENECKS

Water is circulated through the head for cooling purposes only. Quenching of the work piece must come from another source. Internal threads are provided at the back of each head for mounting purposes.

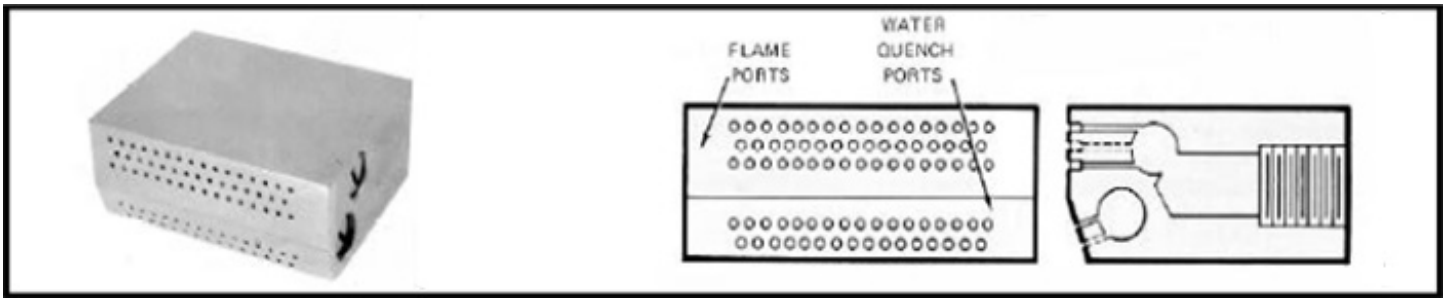


FUEL GAS INLET IS 1/4" NPT: WATER INLET IS 1/8" NPT (NOTE: To mount on a Flame Tech Gooseneck, use UAD-10 adaptor.)

ITEM NUMBER	HEATING AREA WIDTH	HEAD SIZE	NUMBER OF FLAME PORTS	OXYGEN FLOW (CFH)	FUEL FLOW (CFH)
WC 10	1"	1 x 2 x 1 3/4"	23	130-155	35-50
WC 15	1 ½"	1 x 2 x 2 1/4"	35	200-235	50-80
WC 20	2"	1 x 2 x 2 3/4"	47	270-315	70-110
WC 25	2 ½"	1 x 2 x 3 1/4"	59	340-400	80-135
WC 30	3"	1 x 2 x 3 3/4"	71	400-475	110-165
WC 35	3 ½"	1 x 2 x 4 1/4"	83	475-560	125-190
WC 40	4"	1 x 2 x 4 3/4"	95	550-640	140-220

WATER-QUENCHING HEADS TO FIT FLAME TECH GOOSENECKS

Water is provided to quench the work piece as well as cooling the head. Internal threads are provided at the back and at each side of the head for mounting purposes.



FUEL GAS INLET IS 1/4" NPT: WATER INLET IS 1/8" NPT (NOTE: To mount on a Flame Tech Gooseneck, use UAD-10 adaptor.)

PN	HEATING AREA WIDTH	HEAD SIZE	NUMBER OF FLAME PORTS	OXYGEN FLOW (CFH)	FUEL FLOW (CFH)
WQ 10	1"	1 x 2 x 1 3/4"	23	130-155	35-50
WQ 15	1 ½"	1 x 2 x 2 1/4"	35	200-235	50-80
WQ 20	2"	1 x 2 x 2 3/4"	47	270-315	70-110
WQ 25	2 ½"	1 x 2 x 3 1/4"	59	340-400	80-135
WQ 30	3"	1 x 2 x 3 3/4"	71	400-475	110-165
WQ 35	3 ½"	1 x 2 x 4 1/4"	83	475-560	125-190
WQ 40	4"	1 x 2 x 4 3/4"	95	550-640	140-220

NON-STANDARD FLAME HARDENING HEADS

Non-standard heads for any flame hardening application and gas are quoted on an individual basis. Submit customer drawing and specifications of head and/or work piece to be hardened. Our on-staff engineering department is available to help design specialty products to meet customer needs.

ABOUT FLAME HARDENING

WHAT IS FLAME HARDENING

Flame hardening includes any process that uses an oxy-fuel gas flame to heat carbon or alloy steel, tool steel, cast iron or a hardenable stainless steel above a certain "critical" temperature. A rapid quench follows, causing the material to harden to some depth below its surface. Flame hardening works in a depth range of 1/64 to 1/4 inch. The success of any flame hardening process depends on several variables, including the type of iron or steel selected, the fuel, the design and operation of the flame head, the quenching medium and how it's used.

WHY USE FLAME HARDENING

It is a rapid, economical method for selectively hardening specific areas on the surface of a part. The process is applied only to the flame hardenable materials, principally carbon and alloys steels, certain stainless steels and cast irons. Flame hardening differs from other heat treating processes because only the surface, and a thin layer of the work piece below the surface, are hardened.

Flame hardening is more economical than induction hardening, because equipment and maintenance costs are lower. Operating costs are about the same for both methods depending on the size of the production run and work piece configuration. It is also more versatile than induction hardening.

EXAMPLES FOR SELECTING FLAME HARDENING

Parts are too large for conventional furnace heating and quenching. Typical examples include large gears, machine ways, large dies and mill rolls.

Only a small segment of a work piece requires heat treatment, because heating the entire part would be detrimental.

DIFFERENT QUENCHING PROCESSES

Cooling speed during the quenching depends on the type and temperature of quenching medium used and how fast it is agitated.

Self-quenching is the slowest method and produces the lowest surface hardness. Self-quenching occurs when a part has a sufficiently large, cool mass to draw heat away from the surface, causing the part to quench itself.

Forced air is a mild quench that rapidly cools the work piece with minimum risk of surface cracking, especially in higher-carbon steels.

Oil and soluble-oil mixtures give relatively high hardness without too severe of a cooling rate.

Water is a severe quenchant, and brine is even more severe. They produce high hardness, but also may cause surface cracking if not used carefully. Water gives a higher hardness than oil when surface cracking is not likely to be a problem—as it is in very high carbon steels.

Heating & Welding/Brazing Assemblies

Oxy-Acetylene

STYLE	SIZE	PN
MFA For use with Flame Tech® VTHH-21 heavy duty torch handle or Victor® HD handle.	4	4-MFA
	6	6-MFA
	8	8-MFA
	10	10-MFA
	12	12-MFA
	15	15-MFA
MFA-1 For use with Flame Tech® VTHM-22 medium duty torch handle or Victor® MD handle.	2	2-MFA-1
	4	4-MFA-1
	6	6-MFA-1
	8	8-MFA-1

Natural Gas

STYLE	SIZE	PN
MFN For use with Flame Tech® VTHH-21 heavy duty torch handle or Victor® HD torch handle. **3/8" hose is required*	8	8-MFN
	10	10-MFN
	12*	12-MFN
	15*	15-MFN
MFN-1 For use with Flame Tech® VTHM-22 medium duty torch handle or Victor® MD torch handle.	6	6-MFN-1
	8	8-MFN-1

WARNING: *MFN & MFN-1 heating nozzles are for alternative fuel gases only; they are not for use with acetylene.*

Gas Specifications

TIP SIZE	OXYGEN (PSI)	OXYGEN (SCFH)	ACETYLENE (PSI)	ACETYLENE (SCFH)	ALT. FUEL GAS (SCFH)	ALT. FUEL GAS (PSI)
2	4-8	3-10	4-8	3-9	–	–
4	8-12	7-22	6-10	6-20	–	–
6	10-15	15-44	8-12	15-50	5.5–20	2–10
8	20-30	33-88	10-15	30-80	10–35	10–15
10	30-40	44-110	12-15	40-100	20–80	12–20
12	50-60	66-165	12-15	60-150	30–160	13–25
15	50-60	99-244	12-15	90-220	50–200	13–25

NOTE: Oxygen consumption (SCFH) is 1.1 times that of acetylene, under neutral flame conditions.
Oxygen consumption (SCFH) is about 2.0 times that of alt. fuel gases, under neutral flame conditions.

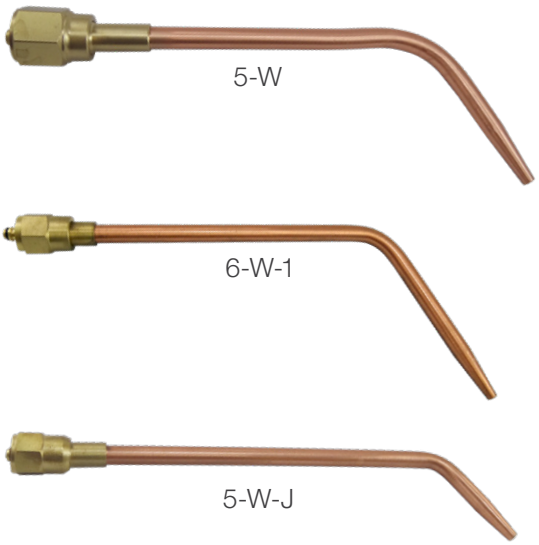
OXY-ACETYLENE WELDING ASSEMBLIES

Available Models

STYLE	SIZE	PN
W For use with Flame Tech® VTHH-21 heavy duty torch handle or Victor® HD handle.	000	000-W
	00	00-W
	0	0-W
	1	1-W
	2	2-W
	3	3-W
	4	4-W
	5	5-W
W-1 For use with Flame Tech® VTHM-22 medium duty torch handle or Victor® MD handle.	00	00-W-1
	0	0-W-1
	1	1-W-1
	2	2-W-1
	3	3-W-1
	4	4-W-1
	5	5-W-1
	6	6-W-1
W-J For use with J-Torch.	000	000-W-J
	00	00-W-J
	0	0-W-J
	1	1-W-J
	2	2-W-J
	3	3-W-J
	4	4-W-J
	5	5-W-J

Sizing Chart

METAL THICKNESS				OXYGEN	ACETYLENE	ACETYLENE
MIN	MAX	TIP SIZE	DRILL SIZE	(PSI)	(PSI)	(SCFH)
—	1/32"	000	75 (.022)	3–5	3–5	1–2
1/16"	3/64"	00	70 (.028)	3–5	3–5	1.5–3
1/32"	5/64"	0	65 (.035)	3–5	3–5	2–4
3/64"	3/32"	1	60 (.040)	3–5	3–5	3–6
1/6"	1/8"	2	56 (.056)	3–5	3–5	5–10
1/8"	3/16"	3	53 (.060)	4–7	3–5	8–18
3/16"	1/4"	4	49 (.073)	5–10	4–7	10–25
1/4"	1/2"	5	43 (.089)	6–12	5–8	15–35
1/2"	3/4"	6	36 (.106)	7–14	6–9	25–45



Safety Accessories

WHAT ARE FLASHBACK ARRESTORS

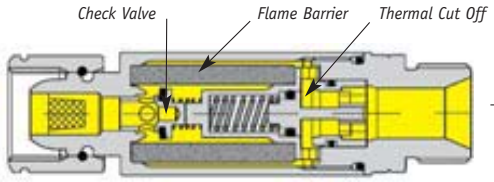
Flashback Arrestors prevent reverse flow of gases with built-in check valves and extinguishes flashback fire with a stainless steel sintered element.

HOW FLASHBACK ARRESTORS WORK

Torch Type
(GG)

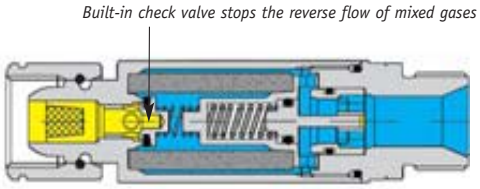
Regulator Type
(DGN)

High Volume Type for
In-Line and Point of
Supply
(SIMAX 3 & 5)



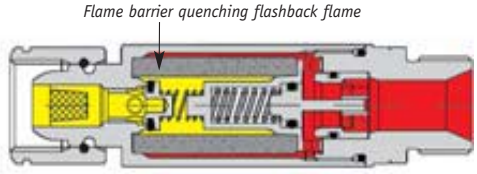
Normal Gas Flow →

Normal gas flow shown in yellow flowing through the flashback arrestor to torch, hose, or pipeline.



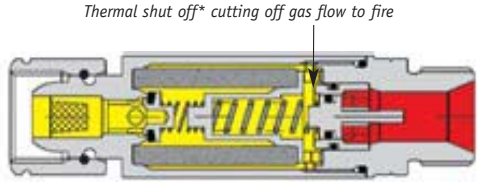
Reverse Gas Flow ←

Here the reverse flow of an explosive mixture of gases depicted in blue is stopped by the flashback arrestor's built in check valve. Reverse flow of gases is often caused by operator error, improper gas pressures, faulty or defective equipment, and/or obstruction at or after the point where gases mixed.



Flashback ←

The next step is the ignition of the mixed gases called a flashback shown here in red. The flashback causes a rapid flame propagation upstream to the equipment and gas supply. Here it is stopped by the flame barrier. Flashback can cause serious personal injury and/or equipment damage.



Hose Burn Back ←

Hose burn back shown here in red is an oxygen enriched fire or fuel gas decomposition in the hose or pipeline which flows back to the equipment and gas supply. In the illustration the hose burn back is stopped by the thermal cut off.

** Regulator and Point of Supply (in line) arrestors only*

TORCH & REGULATOR FLASHBACK ARRESTORS

Prevent reverse flow of gases with built-in check valves. Extinguishes flashback fire with sintered element.

- GG/DGN Series: For use up to size 6 cutting tip.
- DG91UA/DG91N Series: For use up to size 12 cutting tip.
- Quality Manufactured – internal valve and spring made from stainless steel for longer life.
- 100% flame tested.
- Conforms to OSHA Regulations

STANDARD FLOW (UP TO SIZE 6 CUTTING TIP)

GG Airflow

INLET PRESSURE (PSI)	AIRFLOW (CFH)
7.3	100.0
14.5	197.0
21.8	309.0
36.3	521.0
72.7	929.0

DGN Airflow

INLET PRESSURE (PSI)	AIRFLOW (CFH)
7.3	141.0
14.5	268.0
21.8	390.0
36.3	651.0
72.7	1153.0

Torch Type
"GG" (0901-0021)

Regulator Type
"DGN" (0901-0038)

Chrome plated casing for improved corrosion resistance—longer lasting!
(Set only. Individuals not chromed.)

HIGH FLOW (UP TO SIZE 12 TIP)

DG91N & DG91UA Airflow

INLET PRESSURE (PSI)	AIRFLOW (CFH)
7.3	231.0
14.5	465.0
21.8	725.0
36.3	1041.0
72.7	1933.0

Torch Type
(DG91UA)

Regulator Type
(DG91N)

IN LINE AND POINT OF SUPPLY—DEMAX SERIES

The DEMAX Flame Tech Flash Arrestors are ideal for high volume gas flow applications in pipelines, manifolds and regulators. The DEMAX includes an inlet filter, reverse flow check valve, flame barrier, and thermal cut off in one compact brass body.

APPROVAL & SPECIFICATIONS

- Meets ANSI Z49.1 1999 Safety Guide Lines, OSHA, NFPA Guide Lines.
- UL Listed 23Y5.

SAFETY ELEMENTS

- One Inlet Filter Included (100 micron)
- Reverse Flow Check Valve
- Flame Barrier
- Thermal Cut-Off

MATERIALS

- BODY: Brass, Alloy 360
- INTERNALS: Brass
- FLAME BARRIER: Stainless Steel
- ELASTOMERS: Neoprene (NPR)

PART NUMBERS

- 0901-7000 Fuel Gas, 1" Female NPT Inlet/Outlet, DEMAX Style
- 0901-7001 Oxygen, 1" Female NPT Inlet/Outlet, DEMAX Style

DEMAX Air Flow

INLET PRESSURE (PSI)	AIRFLOW (CFH)
4.6	265
14.6	920
21.9	1593
36	2100
72	4000
109	6125
145	8200
290	13,000

Working Pressure

GAS	PSI
ACETYLENE	15
HYDROGEN	50
LPG	50
OXYGEN	143

IN LINE AND POINT OF SUPPLY—SIMAX SERIES

The (SIMAX) Flame Tech Flash Arrestor series provide a full range of dry type (no water or fluid to check or replenish) flashback, gas reverse flow, and hose burn back protection in a compact economical package. SIMAX series flashback arrestors are approved safety devices under ANSI Z49.1999 safety guidelines and help meet OSHA, NFPA, and other strict industry Safety standards (see listings of approvals and specifications below). They are ideal for high volume gas flow applications in pipelines and manifolds. SIMAX units available in sizes 3, 5 & 8 with optional pipe away relief valve assemblies.

APPROVAL & SPECIFICATIONS

- UL Listed 23Y5, ISO 5175, BS 6158, EN 730 (BAM / DIN), AS 4603

SAFETY ELEMENTS

- Inlet filter (100 micron)
- Reverse Flow Check Valve
- Flame Barrier
- Thermal Cut Off Valve

MATERIALS

- BODY: Brass, Alloy 360
- INTERNALS: Brass
- FLAME BARRIER: Stainless Steel
- ELASTOMERS: Neoprene (NPR)

Fuel Gas
(SIMAX-3 Style)

Oxygen
(SIMAX-5 Style)

Gas Type Conversion Factors

GAS TYPE	FACTOR
ACETYLENE	1.05
BUTANE	0.70
HYDROGEN	3.79
PROPYLENE	0.82
METHANE/NATURAL GAS	1.34
OXYGEN	0.95
PROPANE	0.80

Air Flow (CFH)

PSI	21.9	36.5	73	145.9	286
BAR	1.5	2.5	5	10	20
SIMAX-3	1904	2618	5202	9860	20400
SIMAX-5	3060	4352	8670	16150	33150
SIMAX-8	5168	5670	13872	26180	53040

QUICK CONNECTORS

- All brass construction with durable stainless steel coupling pins to reduce breakage and wear; meets ISO 7289, EN561 standards
- Automatic gas cut off upon disconnect
- Push-to-Pull release meets OSHA requirements for shipyard usage; helps prevent accidental disconnect that can happen with standard quick connects
- Double O-ring seal
- Color coded for gas service

Torch Type: DKG/D1 CGA "B" Size, 9/16" UNF Fuel Gas & Oxygen

PN	TYPE	GAS	DESCRIPTION
0901-8100	Torch (DKG/D1)	Fuel Gas Only	Complete Device
0901-8101	Torch (DKG/D1)	Oxygen Only	Complete Device
0901-0092	Torch (DKG/D1)	Oxy-Fuel Set	Set of Complete Devices
0901-0003	Torch (DKG/D1)	Fuel Gas Only	Pin Only
0901-0008	Torch (DKG/D1)	Oxygen Only	Pin Only

Regulator Type: DKG/D4 CGA "B" Size, 9/16" UNF Fuel Gas & Oxygen

PN	TYPE	GAS	DESCRIPTION
0901-8200	Regulator (DKG/D4)	Fuel Gas Only	Complete Device
0901-8202	Regulator (DKG/D4)	Oxygen Only	Complete Device
0901-0094	Regulator (DKG/D4)	Oxy-Fuel Set	Set of Complete Devices

Torch Connectors

Spare D1 Pin (sold separately)

Regulator Connectors

Inline Filters

For installation in the oxygen & gas supply lines to protect flash arrestors, regulators and equipment against contaminants. Aids in increasing the service life of downstream fittings and equipment.

Requires complete disconnection from pipe to change cartridges.
One replacement cartridge required per filter.

- Brass Body
- Exchangeable Sintered Brass Cartridges
- 80 Micron Filtering
- 580 PSI Max Working Pressure
  (withstands up to 600 PSI)

CONNECTIONS

- 1" NPTF / 1" NPTF Standard
- Custom connections available

OXYGEN MODEL USABLE GASES

- Oxygen
- Inert

FUEL MODEL USABLE GASES

- Acetylene
- Natural Gas
- Propane
- Alternate Fuel Gases

OXYGEN FILTER

Complete Assembly P/N: 0901-6515
Replacement Cartridge P/N: 0901-6335

FUEL GAS FILTER

Complete Assembly P/N: 0901-6500
Replacement Cartridge P/N: 0901-6330

REPLACEMENT CARTRIDGES FOR DISCONTINUED FILTER MODELS

Replacement Oxygen Cartridge P/N: 0901-5335
Replacement Fuel Gas Cartridge P/N: 0901-5330

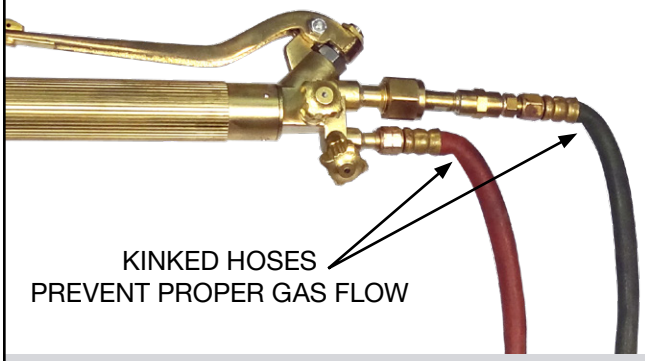
"T" style filter assemblies with removable canisters are discontinued.
Replacement cartridges may still be purchased.

Discontinued Models

Heavy Duty T-Grade Hose

STOP STARVING YOUR TORCHES!

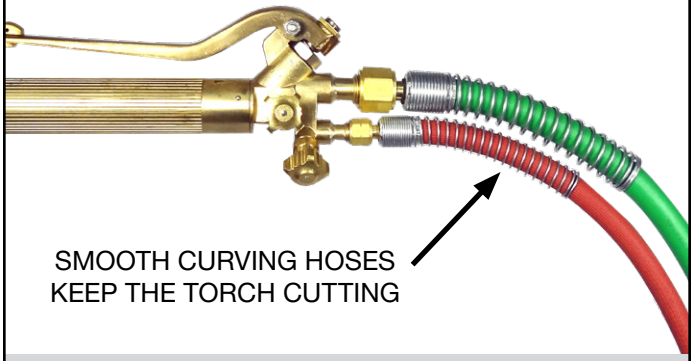
PROBLEM



STANDARD HOSE

Cutting failures occur when hoses are kinked and gases can not flow properly. Extensive kinking shortens hose life by creating cracks and dangerous gas leaks.

SOLUTION



SCORPION™ HD HOSE

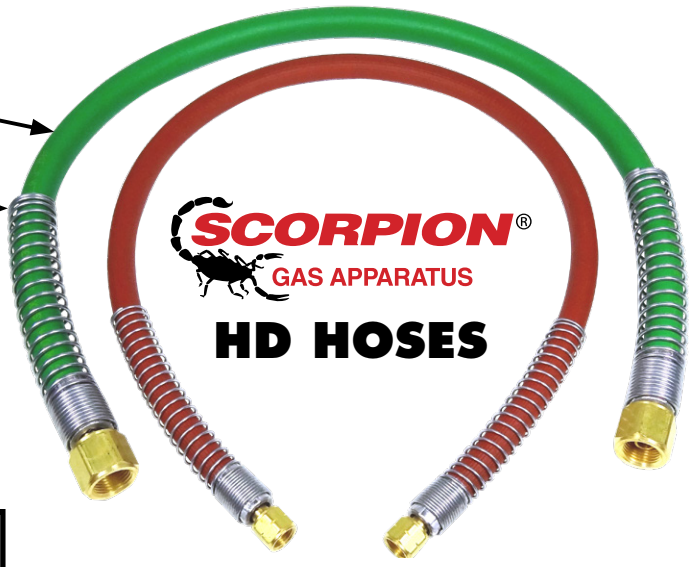
Ensure full flow of gases and improve cutting performance with a longer lasting, heavy duty hose. SCORPION™ Heavy Duty Hoses are tough and won't let you down.

Outer sleeve available for protection against high temperatures and extreme conditions.

Ask your sales rep!

Heavy Duty Mill Grade Material
Hoses Last 2–3x Longer

Strain Relief Devices
Prevent Kinking & Cracking



Readily availalbe lengths: 25', 50', 100'

Readily available sizes: 1/4" twin, 3/8" twin, 3/8" single oxygen or fuel, 1/2" single oxygen or fuel

ASK US ABOUT CUSTOM LENGTHS & BULK HOSE

SCORPION™ HD HOSE

STOCK SIZES (CUSTOM AVAILABLE)

LENGTH	GAS TYPE	CONNECTION	NO OUTER SLEEVE PART NO.	 WITH OUTER SLEEVE PART NO.
Twin Hose T-Grade 1/4"				
25 ft.	Oxy/Fuel	CGA B RH/LH	71801425	71801425-S
50 ft.	Oxy/Fuel	CGA B RH/LH	71801450	71801450-S
100 ft.	Oxy/Fuel	CGA B RH/LH	71814100	71814100-S
Single Hose T-Grade 3/8"				
25 ft.	Oxygen	CGA B RH	71838251	71838251-S
25 ft.	Fuel	CGA B LH	71838250	71838250-S
50 ft.	Oxygen	CGA B RH	71838501	71838501-S
50 ft.	Fuel	CGA B LH	71838500	71838500-S
100 ft.	Oxygen	CGA B RH	71838100	71838100-S
100 ft.	Fuel	CGA B LH	71800384	71800384-S
Twin Hose T-Grade 3/8"				
25 ft.	Oxy/Fuel	CGA B RH/LH	71800027	71800027-S
50 ft.	Oxy/Fuel	CGA B RH/LH	71800032	71800032-S
100 ft.	Oxy/Fuel	CGA B RH/LH	71800385	71800385-S
Single Hose T-Grade 1/2"				
25 ft.	Oxygen	CGA C RH	71800028	71800028-S
50 ft.	Oxygen	CGA C RH	71812500	71812500-S
100 ft.	Oxygen	CGA C RH	71800121	71800121-S

All hoses in the chart include strain relief devices.

Custom hose sizes/lengths available.

Outer sleeves are resistant to high temperatures, fire, abrasion and chemicals.

Please call Flame Tech for availability and pricing of custom hoses.

Machine Cutting Torches

MCT200 SERIES

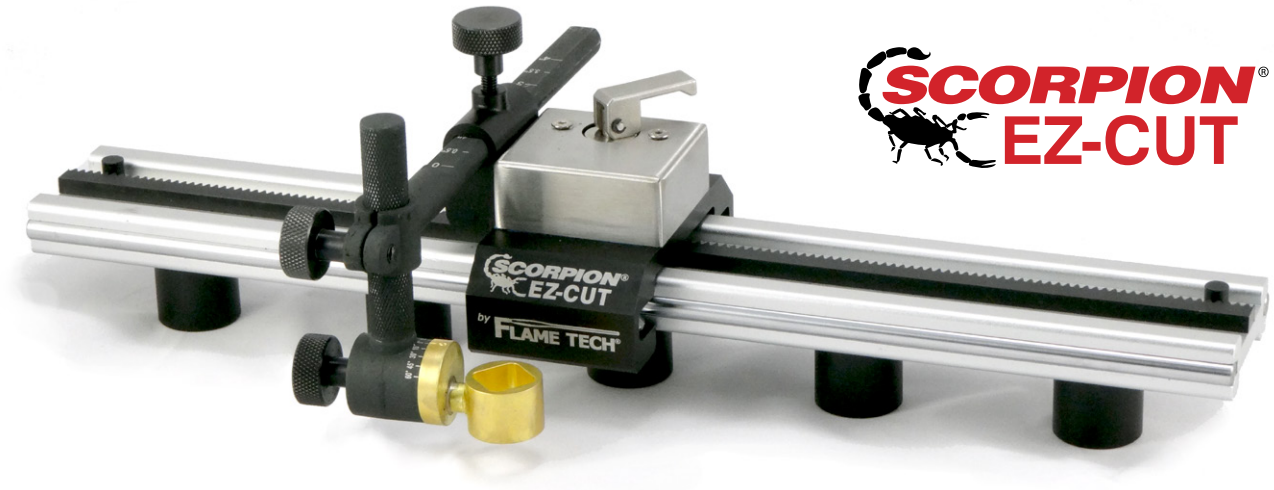
PN	BARREL LENGTH	QTY HOSES	GEAR RACK LENGTH	CUTTING RANGE
MCT200-5	5-1/2"	2	n/a	8"
MCT200-5	5-1/2"	2	n/a	8"
MCT200-5R	5-1/2"	2	4-1/2"	8"
MCT200-5R	5-1/2"	2	4-1/2"	8"
MCT200-10	10"	2	n/a	8"
MCT200-10	10"	2	n/a	8"
MCT200-10R	10"	2	7"	8"
MCT200-10R	10"	2	7"	8"

MCT300 SERIES

PN	BARREL LENGTH	QTY HOSES	GEAR RACK LENGTH	CUTTING RANGE	DESCRIPTION
MCT300-10F	10"	3	n/a	12"	Alternative Fuel Gas
MCT300-10FR	10"	3	7"	12"	Alternative Fuel Gas

Scorpion EZ-CUT

Straight & Clean Torch Cuts. Every Time.

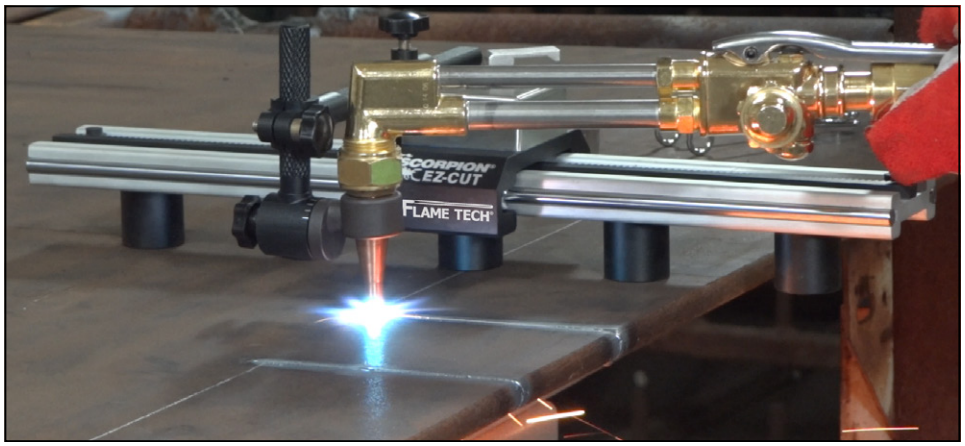


- Consistent push or pull cutting with pre-set mechanized speed controller.
- Reduces grinding and rework.
- Bevel cut up to 60°.
- Strong magnets allow operation on horizontal or vertical surfaces.
- Available in 15"–48" cutting lengths.
- No electricity required.

PN	DESCRIPTION
FTEZ-15	EZ-CUT Complete Assembly with Case, 15" Cut Length
FTEZ-24T	EZ-CUT *Track Section Only*, 24" Cut Length
FTEZ-36T	EZ-CUT *Track Section Only*, 36" Cut Length
FTEZ-48T	EZ-CUT *Track Section Only*, 48" Cut Length

Tracks are interchangeable, but not connectable.

See the video at **http://www.flametechnologies.com/index.php/products/videos**



Heavy Duty Hand Cutting Torches

Designed for rugged environments and customized the way you want it.

Hand cutting torches suggested for scrap yards, mills and foundries.

6500 SERIES CUTS UP TO 8" OF STEEL

7500 SERIES CUTS UP TO 14" OF STEEL

8600 SERIES CUTS UP TO 36" OF STEEL

9600 SERIES CUTS UP TO 48" OF STEEL

LADLE SKULLS

SCRAP COILS

HC48L SERIES CUTS UP TO 48" OF STEEL

SAFER, LIGHTER & STRONGER

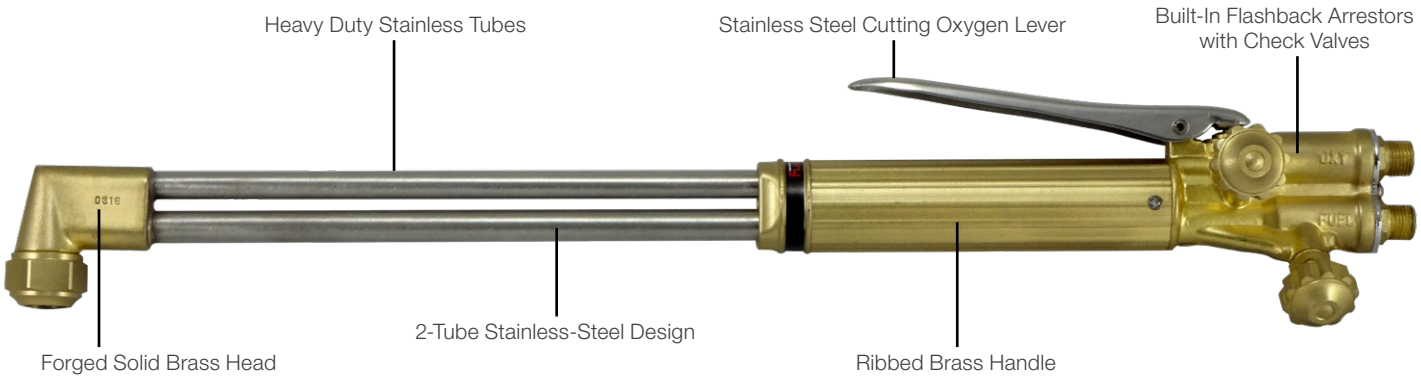
See our complete selection of acetylene & alternate fuel gas tips.
Ask about our famous Scorpion® Tips!

2621-90

Cuts Up to 8", for Use with Any Gas, Compatible with Victor® Series 1 Cutting Tips

Flame Tech's Scorpion 2621-90 torch is designed for heavy duty hand held applications for the fabshop, foundry or scrap yard environment where up to 8" cutting is required.

The universal mixer provides optimal performance with any fuel gas.



- Built-In Flashback Arrestors & Check Valves
  Replace with Flame Tech flashback arrestor/check valve cartridges only.
  DO NOT *use other brand cartridges, as they may not seal correctly and cause gas leaks.*
- Solid Bronze Forged Head
  Long life, resists distortion from abuse
- Universal Mixer
  Optimal performance with any fuel gas
- Compatible with Victor® Series 1 cutting tips
- Two Light Weight Stainless Steel Tubes
  Maximum design strength—¼ lb. per foot lighter than competitors
- Spring-Return Cutting Oxygen Lever

Do NOT use this torch without the built-in flashback arrestor cartridges!

Use only Flame Tech branded flashback arrestor cartridges!

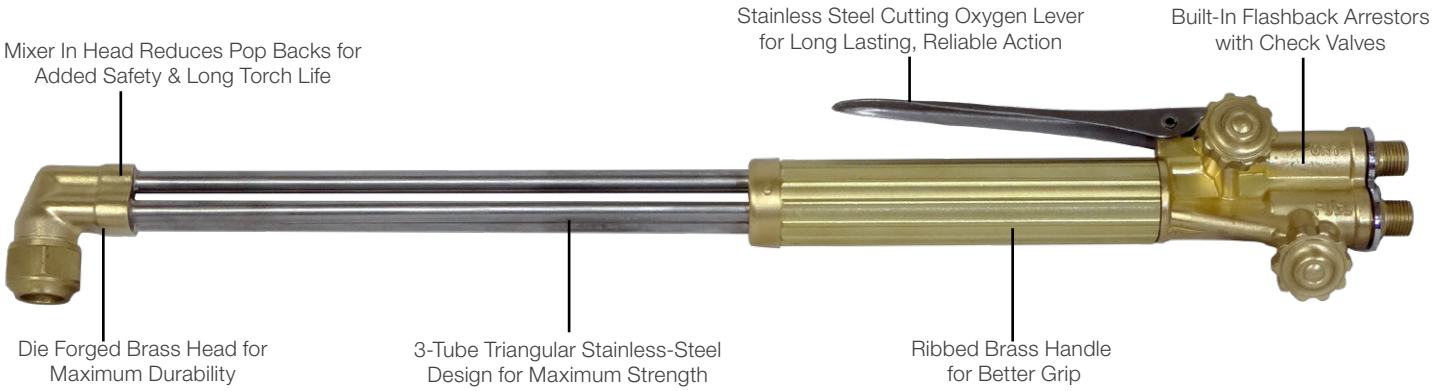
Flashback Arrestor/Check Valves Cartridges
Fuel: 77100010, Oxygen: 77100020

921-90

Cuts Up to 5", for Use with Any Gas, Compatible with Victor® Series 1 Cutting Tips

Flame Tech's Scorpion 921-90 torch is designed for heavy duty hand held applications for the fabshop, foundry or scrap yard environment where up to 5" cutting is required.

Universal mixer provides optimal performance with any fuel gas.



- Built-In Flashback Arrestors & Check Valves
  Replace with Flame Tech flashback arrestor/check valve cartridges only.
  DO NOT *use other brand cartridges, as they may not seal correctly and cause gas leaks.*
- Solid Bronze Forged Head
  Long life, resists distortion from abuse
- Universal Mixer
  Optimal performance with any fuel gas
- Compatible with Victor® Series 1 cutting tips
- Three Light Weight Stainless Steel Tubes
  Maximum design strength—¼ lb. per foot lighter than competitors
- Spring-Return Cutting Oxygen Lever

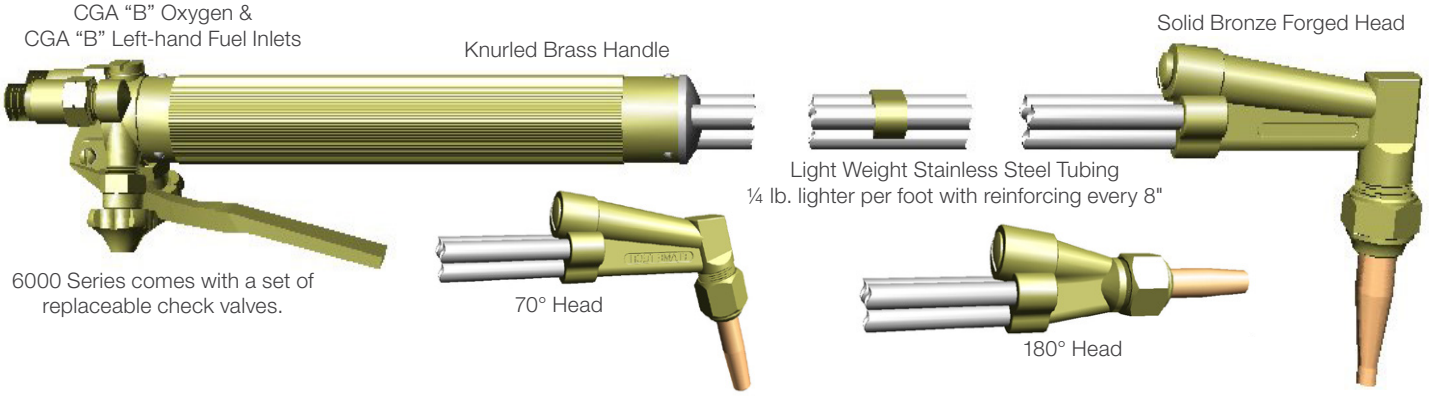
Do NOT use this torch without the built-in flashback arrestor cartridges!

Use only Flame Tech branded flashback arrestor cartridges!

Flashback Arrestor/Check Valves Cartridges
Fuel: 77100010, Oxygen: 77100020

6000 SERIES

Cuts Up to 8", Model Specifies Gas Type, Compatible with Harris®, Victor® or Oxweld® Style Tips



FEATURES

- Solid Bronze Forged Head
  Long life, resists distortion from abuse
- Injector/Mixer in Head
  Reduces burn back in tubes; safer than tube mixing designs
- Replaceable External Check Valves Included
  Flame Tech® recommends flash arrestors style GG/DGN
- Three Light Weight Stainless Steel Tubes
  Maximum design strength—¼ lb. per foot lighter than competitors

BENEFITS

- Reduced Flashback Compared to Tube Mix
- Maximum Strength, Greater Rigidity
- Low Maintenance, Longer Lasting
- Spring-Return Cutting Oxygen Lever

PART NUMBERING

- First 2 digits are the OEM type
  62: Harris®, 63: Victor®, 64: Oxweld®
- Second 2 digits are the overall length in inches
- Letter after the dash is the fuel gas type
  A: Acetylene, F: Alternative Fuel Gas
- Number at the end is head angle in degrees
  ** Flame Tech does not offer 180° heads for use with acetylene*

See price book for other models or call for a custom quote.

SCRAPPER TORCHES

6000 series torches are available with longer tubes for scraping jobs—generally 36 and 48 inches. Custom lengths are available.

Common Models

PN	OEM	LENGTH (IN)	FUEL	HEAD (DEG)
6218-F70	Harris®	18	Alt Fuel	70
6218-F90	Harris®	18	Alt Fuel	90
6221-A90	Harris®	21	Acetylene	90
6221-F180	Harris®	21	Alt Fuel	180
6221-F90	Harris®	21	Alt Fuel	90
6321-A90	Victor®	21	Acetylene	90
6321-F90	Victor®	21	Alt Fuel	90
6327-A90	Victor®	27	Acetylene	90
6327-F90	Victor®	27	Alt Fuel	90
6421-F90	Oxweld®	21	Alt Fuel	90

» SEE PAGE 41 FOR SCRAPPER TIP INFORMATION

CAUTION
ALWAYS USE
FLASHBACK ARRESTORS
(purchased separately)

6500 SERIES

Cuts Up to 8", Gas Type Depends on Tip, Compatible with Airco® Style Tips

This heavy duty torch series is a designed for rugged environments. It features a safe, tip-mix design that allows for any fuel gas type. Use of Flame Tech's "A-Scrapper" or Airco® compatible cutting tips is ideal for heavy cutting in scrap yards and steel mill operations. When using these tips, it can cut up to 8" of steel.

FEATURES

- Solid Bronze Forged Head
  Long life, resists distortion from abuse
- Heavy Duty Tip-Mixing Torch
  Same torch can be used with any fuel gas
- Replaceable External Check Valves Included
  Flame Tech® recommends flash arrestors style GG/DGN
- Three Light Weight Stainless Steel Tubes
  Maximum design strength—¼ lb. per foot lighter than competitors

PART NUMBERING

- First 2 digits are the model series
- Second 2 digits are the overall length in inches
- Number after the dash is head angle in degrees
  ** Flame Tech does not offer 180° heads for use with acetylene*

See price book for other models or call for a custom quote.

BENEFITS

- Reduced Flashback Compared to Tube Mix
- Maximum Strength, Greater Rigidity
- Low Maintenance, Longer Lasting
- Uses common CGA "B" size oxygen supply and LH CGA "B" size fuel supply to minimize the hose and regulator requirements
- Spring-Return Cutting Oxygen Lever

Common Models

PN	OEM	LENGTH (IN)	HEAD (DEG)
6521-180	Airco®	21	180
6521-70	Airco®	21	70
6521-90	Airco®	21	90
6527-90	Airco®	27	90

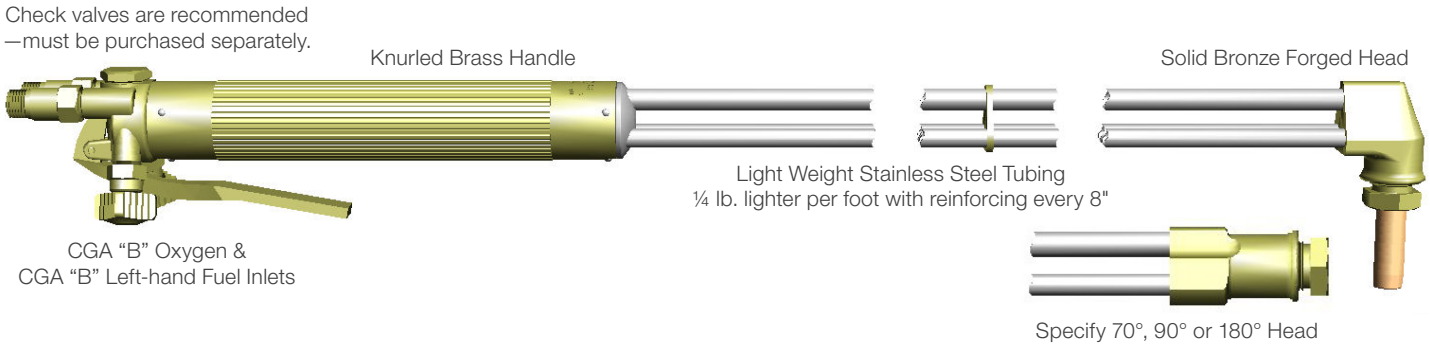
» SEE PAGE 41 FOR SCRAPPER TIP INFORMATION

CAUTION
ALWAYS USE
FLASHBACK ARRESTORS
(purchased separately)

7500 SERIES

Cuts Up to 14", Gas Type Depends on Tip, Compatible with Airco® Style Tips

Flame Tech's 7500 Hand Cutting Torch is a heavy duty torch designed for rugged environments. This torch features a safe, tip-mix design. The 7500 series torch uses Flame Tech's "A-Scrapper" or Airco® compatible cutting tips, and is ideal for heavy cutting in scrap yards and steel mill operations. This heavy duty torch when using these tips can hand cut up to 14" of steel.



FEATURES

- Solid Bronze Forged Head
  Long life, resists distortion from abuse
- Heavy Duty Tip-Mixing Torch
  Same torch can be used with any fuel gas
- Uses Replaceable External Check Valves (additional)
  Flame Tech® recommends flash arrestors style GG/DGN
- Three Light Weight Stainless Steel Tubes
  Maximum design strength—¼ lb. per foot lighter than competitors
- Uses common CGA "B" size oxygen supply and LH CGA "B" size fuel supply to minimize the hose and regulator requirements

BENEFITS

- Reduced Flashback Compared to Tube Mix
- Maximum Strength, Greater Rigidity
- Low Maintenance, Longer Lasting
- Spring-Return Cutting Oxygen Lever

PART NUMBERING

- First 2 digits are the model series
- Second 2 digits are the overall length in inches
- Number after the dash is head angle in degrees
  ** Flame Tech does not offer 180° heads for use with acetylene.*

See price book for other models or call for a custom quote.

Common Models

PN	OEM	LENGTH (IN)	HEAD (DEG)
7536-180	Airco®	36	180
7536-90	Airco®	36	90
7548-180	Airco®	48	180
7548-90	Airco®	48	90
7572-180	Airco®	72	180

» SEE PAGE 41 FOR SCRAPPER TIP INFORMATION

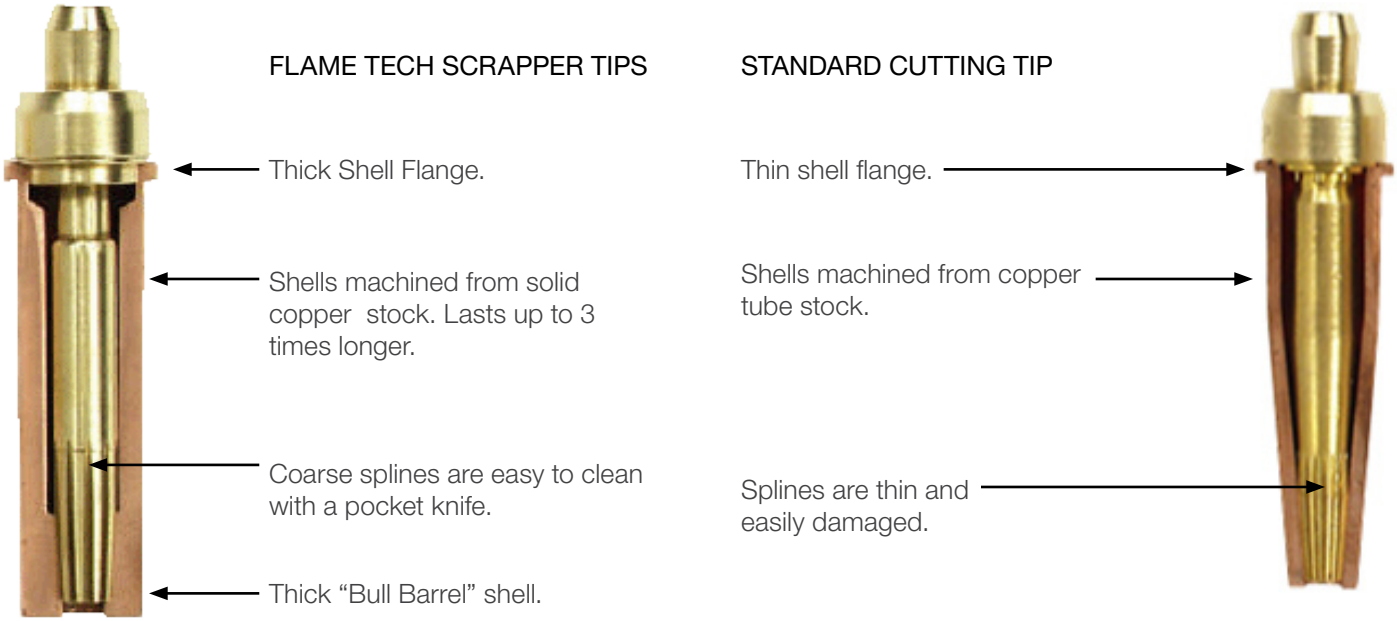
CAUTION
ALWAYS USE
FLASHBACK ARRESTORS
(purchased separately)

FLAME TECH® SCRAPPER TIPS

2621-90, 6000, 6500 & 7500 Series Torches

SEE THE DIFFERENCE YOURSELF WITH FLAME TECH'S FAMOUS "SCRAPPER" CUTTING TIPS

- Larger preheats reduce start time and help to "maintain the cut."
- Coarse "V" internal splines do not clog easily and can be cleaned with a pocket knife.
- Ideal for working on rusty, scaly, painted surfaces.
- Compatible with standard OEM torches.



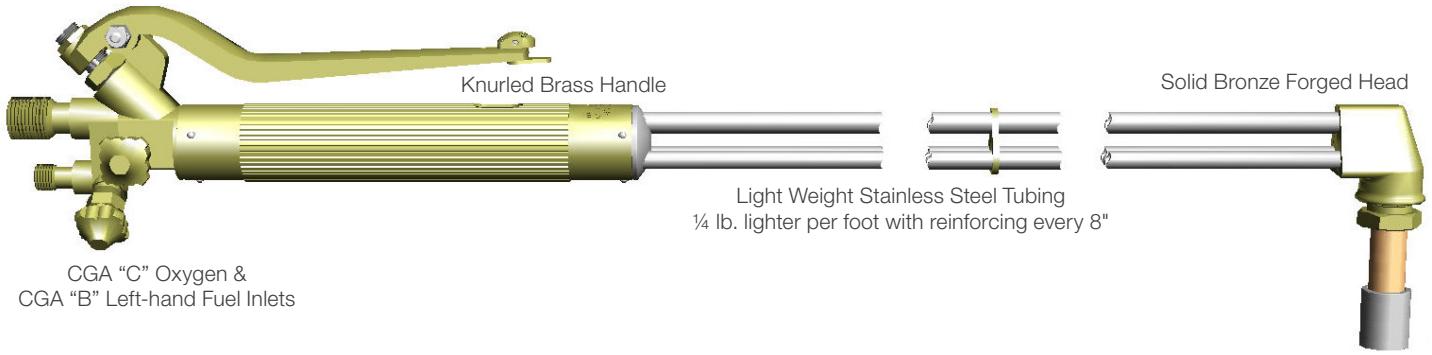
METAL THICKNESS (INCHES)	TIP SIZE	DRILL SIZE	CUTTING OXYGEN PSI	CUTTING OXYGEN SCFH	FUEL GAS PSI	FUEL GAS SCFH	SPEED IPM	KERF WIDTH
2	2	52	40–50	150–200	6–12	12–65	10–14	.10
3	3	48	40–50	150–200	6–12	12–65	8–11	.11
4	4	44	40–50	210–250	6–12	12–65	7–10	.13
6	5	39	45–55	300–360	6–12	12–65	5–8	.15
8	6	31	55–65	450–500	6–12	12–65	4–6	.19
9	7	28	55–65	450–500	6–12	22–110	3–5	.22
10	8	25	60–70	750–850	10–18	22–110	3–4	.24
12	10	13	45–60	1000–1200	10–18	22–110	2–3	.34
14	12	5	40–55	1150–1350	10–18	22–110	1–2	.40

8600 SERIES

Cuts Up to 36", Uses Bi-Metal & Tri-Metal Tip Series

Flame Tech's 8600 Hand Cutting Torch is a heavy duty torch designed for rugged environments. This torch features a safe, tip-mix design. The 8600 series torch uses Flame Tech's proprietary BI-METAL or TRI-METAL cutting nozzles, and is ideal for heavy cutting in scrap yards and steel mill operations. This heavy duty torch, when using the BI-METAL or TRI-METAL 80 series nozzles, can hand cut up to 36" of steel.

Check valves are recommended
—must be purchased separately.



FEATURES

- Solid Bronze Forged Head
  Long life, resists distortion from abuse
- Heavy Duty Tip-Mixing Torch
  Same torch can be used with any fuel gas
- Uses Flame Tech® Designed Bi-Metal or Tri-Metal 80 Series Nozzles
- Uses Replaceable External Check Valves(additional)
  Flame Tech® recommends flash arrestors style GG/DGN
- Three Light Weight Stainless Steel Tubes
  Maximum design strength—¼ lb. per foot lighter than competitors
- For alternative fuel only – NOT FOR ACETYLENE
- Uses CGA "C" size oxygen supply and LH CGA "B" size fuel supply to minimize the hose and regulator requirements.

CAUTION
ALWAYS USE
FLASHBACK ARRESTORS
(purchased separately)

BENEFITS

- Reduced Flashback Compared to Tube Mix
- Maximum Strength, Greater Rigidity
- Low Maintenance, Longer Lasting
- Spring-Return Cutting Oxygen Lever

PART NUMBERING

- First 2 digits are the model series
- Second 2 digits are the overall length in inches
- Number after the dash is head angle in degrees
  ** Flame Tech does not offer 180° heads for use with acetylene.*

See price book for other models or call for a custom quote.

Common Models

PN	OEM	LENGTH (IN)	HEAD (DEG)
8648-180	Flame Tech®	48	180
8672-180	Flame Tech®	72	180
8684-180	Flame Tech®	84	180
8696-180	Flame Tech®	96	180
8696-90	Flame Tech®	96	90

»SEE PAGE 43 FOR 80 SERIES BI-METAL & TRI-METAL TIP INFORMATION

80 SERIES BI-METAL & TRI-METAL TIP-MIX CUTTING NOZZLES

HOSE & REGULATOR REQUIREMENTS

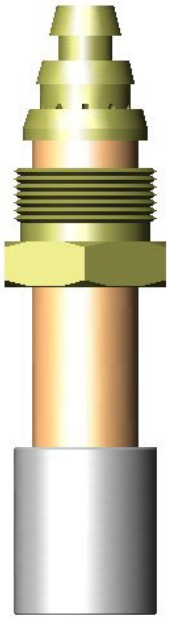
When cutting over 20", use 1/2" ID hose.

Oxygen supply and oxygen regulator must be capable of flows mentioned on cutting tip chart shown below.

Brass seat for longer life and better structural integrity. Brass increases quality over copper in the drilling of the seat mixer.

Copper barrel for better transference and dissipation of heat away from the cutting zone.

Stainless wear ring for longer life.



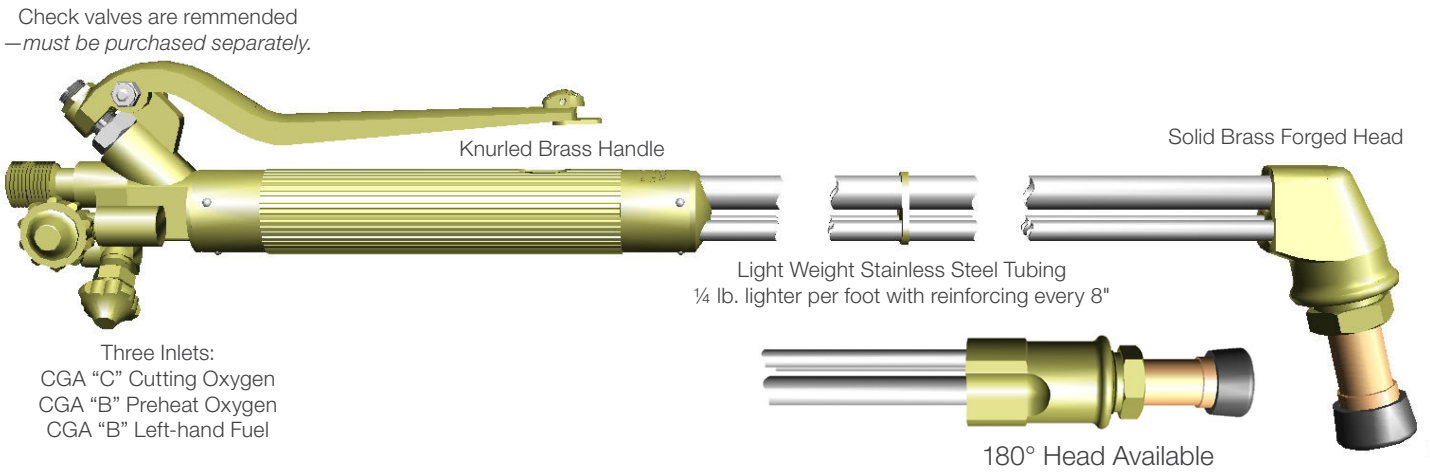
CAUTION
ALWAYS USE
FLASHBACK ARRESTORS
(purchased separately)

80 SERIES NOZZLES				GAS PRESSURE (PSI)		GAS CONSUMPTION (CFH)	
SIZE	BI-METAL PN	TRI-METAL PN	METAL THICKNESS	OXYGEN	FUEL GAS	OXYGEN	FUEL GAS
12	BM80-12	TM80-12	10–12	60–100	5–15	750–1650	80–120
16	BM80-16	TM80-16	12–16	60–100	5–15	1000–1950	80–120
20	BM80-20	TM80-20	16–20	60–100	5–15	1600–2500	100–160
24	BM80-24	TM80-24	20–24	60–100	5–15	1800–3000	100–160
36	BM80-36	TM80-36	24–36	60–100	5–15	2100–3600	100–160

9600 SERIES

Cuts Up to 48", Uses Bi-Metal & Tri-Metal Tip Series

Flame Tech's 9600 Hand Cutting Torch is a heavy duty torch designed for rugged steel mill environments. This heavy duty torch features a safe, tip-mix design. The 9600 series torch uses the Flame Tech's BI-METAL or TRI-METAL nozzles can hand cut up to 48" of steel. 9600 Series torches are available with 70 or 180 degree heads.



FEATURES

- Solid Bronze Forged Head
  Long life, resists distortion from abuse
- Heavy Duty Tip-Mixing Torch
  Same torch can be used with any fuel gas
- Uses Flame Tech® Designed Bi-Metal or Tri-Metal 90 Series Nozzles
- Uses Replaceable External Check Valves(additional)
  Flame Tech® recommends flash arrestors style GG/DGN
- Three Light Weight Stainless Steel Tubes
  Maximum design strength—¼ lb. per foot lighter than competitors
- For alternative fuel only – NOT FOR ACETYLENE
- Uses CGA "C" size oxygen supply and LH CGA "B" size fuel supply to minimize the hose and regulator requirements.

CAUTION
ALWAYS USE
FLASHBACK ARRESTORS
(purchased separately)

BENEFITS

- Reduced Flashback Compared to Tube Mix
- Maximum Strength, Greater Rigidity
- Low Maintenance, Longer Lasting
- Spring-Return Cutting Oxygen Lever, Standard
  —Optional ball valve lever available, instead of spring-return.

PART NUMBERING

- First 2 digits are the model series
- Second 2 digits are the overall length in inches
- Number after the dash is head angle in degrees
  ** Flame Tech does not offer 180° heads for use with acetylene.*

See price book for other models or call for a custom quote.

Common Models

PN	OEM	LENGTH (IN)	HEAD (DEG)	FEATURE
9660-180	Flame Tech®	60	180	
9660-180V	Flame Tech®	60	180	Ball Valve Lever
9672-180	Flame Tech®	72	180	
9672-180V	Flame Tech®	72	180	Ball Valve Lever

»SEE PAGE 45 FOR 90 SERIES BI-METAL & TRI-METAL TIP INFORMATION

90 SERIES BI-METAL & TRI-METAL TIP-MIX CUTTING NOZZLES

HOSE & REGULATOR REQUIREMENTS

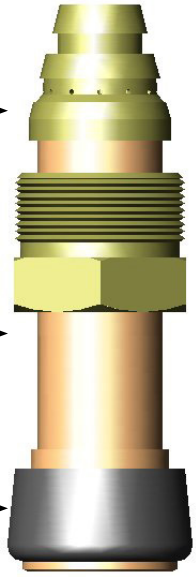
When cutting over 20", use 1/2" ID hose.

Oxygen supply and oxygen regulator must be capable of flows mentioned on cutting tip chart shown below.

Brass seat for longer life and better structural integrity. Brass increases quality over copper in the drilling of the seat mixer.

Copper barrel for better transference and dissipation of heat away from the cutting zone.

Stainless wear ring for longer life.



CAUTION
ALWAYS USE
FLASHBACK ARRESTORS
(purchased separately)

90 SERIES NOZZLES				GAS PRESSURE (PSI)			GAS CONSUMPTION (CFH)	
SIZE	BI-METAL PN	TRI-METAL PN	METAL THICKNESS	OXYGEN	PRE-HEAT OXYGEN	FUEL GAS	OXYGEN	FUEL GAS
24	BM90-24	TM90-24	18–24	50–75	25–50	13–25	2200–3400	80–160
30	BM90-30	TM90-30	24–30	50–75	25–50	13–25	2200–3800	80–160
36	BM90-36	TM90-36	30–36	50–75	25–50	13–25	2300–4400	80–160
48	BM90-48	TM90-48	36–48	50–75	25–50	13–25	2400–5000	80–160

HIGH CAPACITY CUTTING NOZZLES—HC SERIES TORCHES

2-285N CUTTING NOZZLE

2-285N series nozzles are made from two pieces, with a solid copper shell & a brass internal, designed for fast starts and lower gas consumption. For use with propane or natural gas only—**Not for use with acetylene!**

NOZZLE			GAS PRESSURE (PSI)			GAS CONSUMPTION (CFH)		
PN	CUTTING OXYGEN DIA.	METAL THICKNESS	CUTTING OXYGEN	FUEL GAS	PRE-HEAT OXYGEN	CUTTING OXYGEN	FUEL GAS	PRE-HEAT OXYGEN
.250-2-285N	.250	14"–20"	25–45	15–20	25–50	1500–2400	60–120	250–400
.312-2-285N	.312	20"–26"	25–45	15–20	25–50	2300–3500	60–120	250–400
.375-2-285N	.375	26"–34"	20–40	15–20	25–50	2300–3900	60–120	250–400
.437-2-285N	.437	34"–48"	20–40	15–20	25–50	2400–4500	60–120	250–400

1808 CUTTING NOZZLE

1808 series nozzles are single piece solid copper nozzles. The single piece solid copper design allows for rapid heat transfer and longer rugged life. For use with propane or natural gas only—**Not for use with acetylene!**

NOZZLE			GAS PRESSURE (PSI)		GAS CONSUMPTION (CFH)		CLEANING DRILL SIZE	
PN	SIZE	METAL THICKNESS	OXYGEN	NATURAL GAS	OXYGEN	NATURAL GAS	PREHEAT	CUTTING
1808-30	30	20"–40"	50	21	4500	330	#50	19/64"
1808-40	40	40"–50"	50	23	7000	360	#49	"X"
1808-50	50	OVER 50"	50	24	9000	375	#47	1/2"

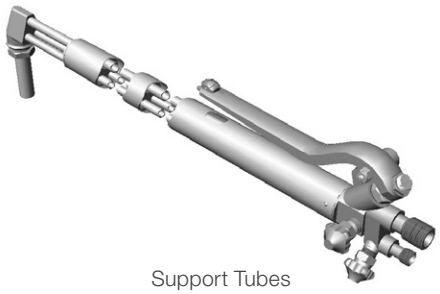
CAUTION
ALWAYS USE
FLASHBACK ARRESTORS
(purchased separately)

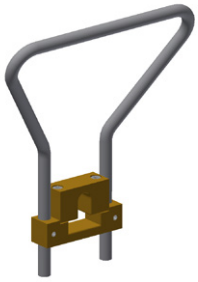
CUTTING TORCH SKID ASSEMBLIES & ACCESSORIES


6000 Skid

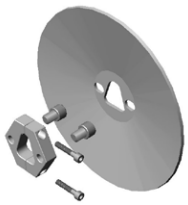

7500 & 8600 Skid


9500 Skid


Support Tubes


Steady Grip


Slag Shield


Heat Shield

PN	DESCRIPTION
84925003	SKID ASSEMBLY FOR 9500 & 9600 SERIES TORCHES
84901011	SKID CLAMP ONLY FOR 9500 & 9600 SERIES TORCHES
84925002	SKID ASSEMBLY FOR 6500, 8600 & 7500 SERIES
84901010	SKID CLAMP ONLY FOR 6500, 8600 & 7500 SERIES TORCHES
84980001	SKID ASSEMBLY FOR 6000 SERIES TORCHES, EXCEPT 6500
84901012	SKID CLAMP ONLY FOR 6000 SERIES TORCHES, EXCEPT 6500
84901005	SKID ONLY FOR 6000, 7500, 8500, 8600, 9500 & 9600 TORCHES
84901013	SKID ONLY FOR EC TORCH - WIDE
84901007	CLAMP ONLY FOR EC TORCH - WIDE
84901009	SKID ONLY FOR 34" LONG FOR EC-L TORCH
84901015	CLAMP ONLY FOR EC 34 FOR EC-L TORCH
83900002	SLAG SHIELD
93001129	SUPPORT TUBE
82700005	HEAT SHIELD ASSEMBLY
82700002	HEAT SHIELD CLAMP ONLY FOR 82700005
82700001	HEAT SHIELD ONLY FOR 82700005
84901027	STEADY GRIP FOR 7500/8600 SERIES TORCH HANDLES

Heavy Duty Line & Station Equipment

FLAME TECH® LINE REGULATORS & STATION REGULATORS SERIES

Flame Tech® Line Regulators (FTLR) series provide reliable, precise pressure control in the most demanding applications. They have a fully balanced design which virtually eliminates delivery pressure fluctuations due to inlet pressure variations.

Features include forged brass body & spring chamber, EPDM diaphragm & seals, stainless steel valve spring, and 360 brass internal parts.

Flame Tech® Station Regulators (FTSR) are comprised of a FTLR base unit, plus a specified configuration of inlet & outlet, fittings, and gauge. See FTSR chart below for details.
Warning: Max inlet pressure 400 PSI. Not for use on cylinders!

FTLR base unit

FTLR Line Regulators

PN	DELIVERY PRESSURE RANGE PSIG)	INLET & OUTLET (FNPT)
FTLR12A	0–55	1/2"
FTLR12B	50–135	1/2"
FTLR12C	125–225	1/2"
FTLR34A	0–55	3/4"
FTLR34B	50–135	3/4"
FTLR34C	125–225	3/4"
FTLR1A	0–55	1"
FTLR1B	50–135	1"
FTLR1C	125–225	1"

Warning: *Max inlet pressure 400 PSI. Not for use on cylinders!*

FTSR12C

FTSR Station Regulators

PN	INLET	MAX INLET PRES. (PSI)	OUTLET	DEL. PRES. RANGE (PSI)	FTLR MODEL	GAUGE MODEL
FTSR12A	CGA 025 "C" LH	580	CGA 023 "B" LH	0–55	FTLR12A	87980214
FTSR12B	CGA 024 "C" RH	580	CGA 022 "B" RH	50–135	FTLR12B	87980302
FTSR12C	CGA 024 "C" RH	580	CGA 024 "C" RH	125–200	FTLR12C	87980210

Warning: *Max inlet pressure 400 PSI. Not for use on cylinders!*

GAUGES

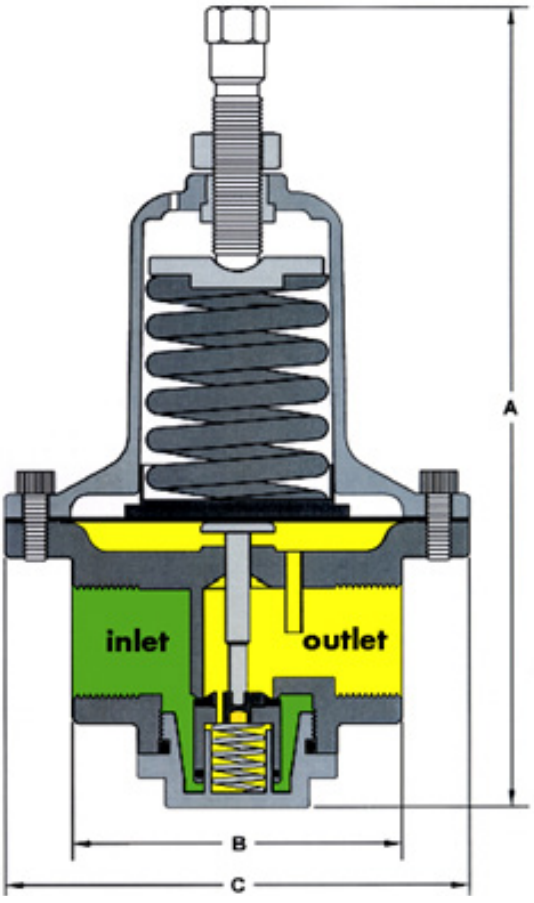
87980210

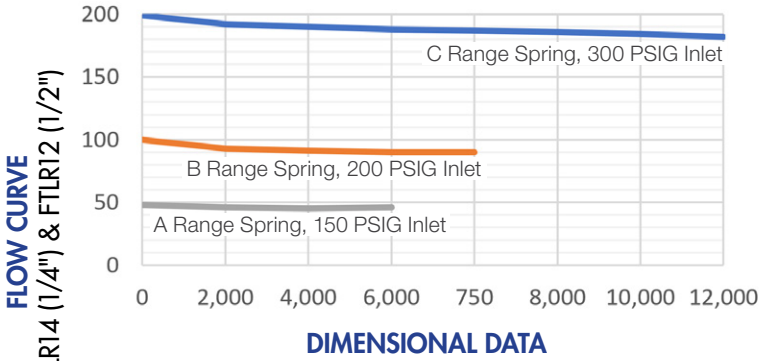
2" diameter, 1/4" NPT

Gauges are sold separately from FTLR base units.
Specified gauges are included with FTSR models.

P/N	PRESSURE RANGE
87980214	0–60 PSI
87980302	0–200 PSI
87980210	0–400 PSI

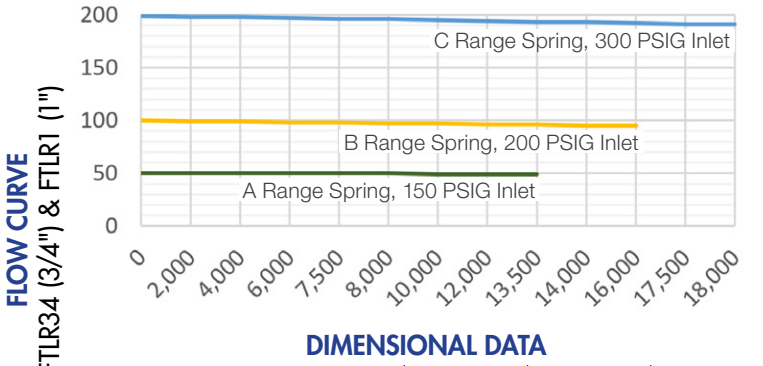
DIMENSION & PERFORMANCE DATA





DIMENSIONAL DATA

SIZE	A	B	C
¼", ⅜" & ½" 2BSPT & 4BSPT	5 11/16"	2 25/32"	3 3/16"



DIMENSIONAL DATA

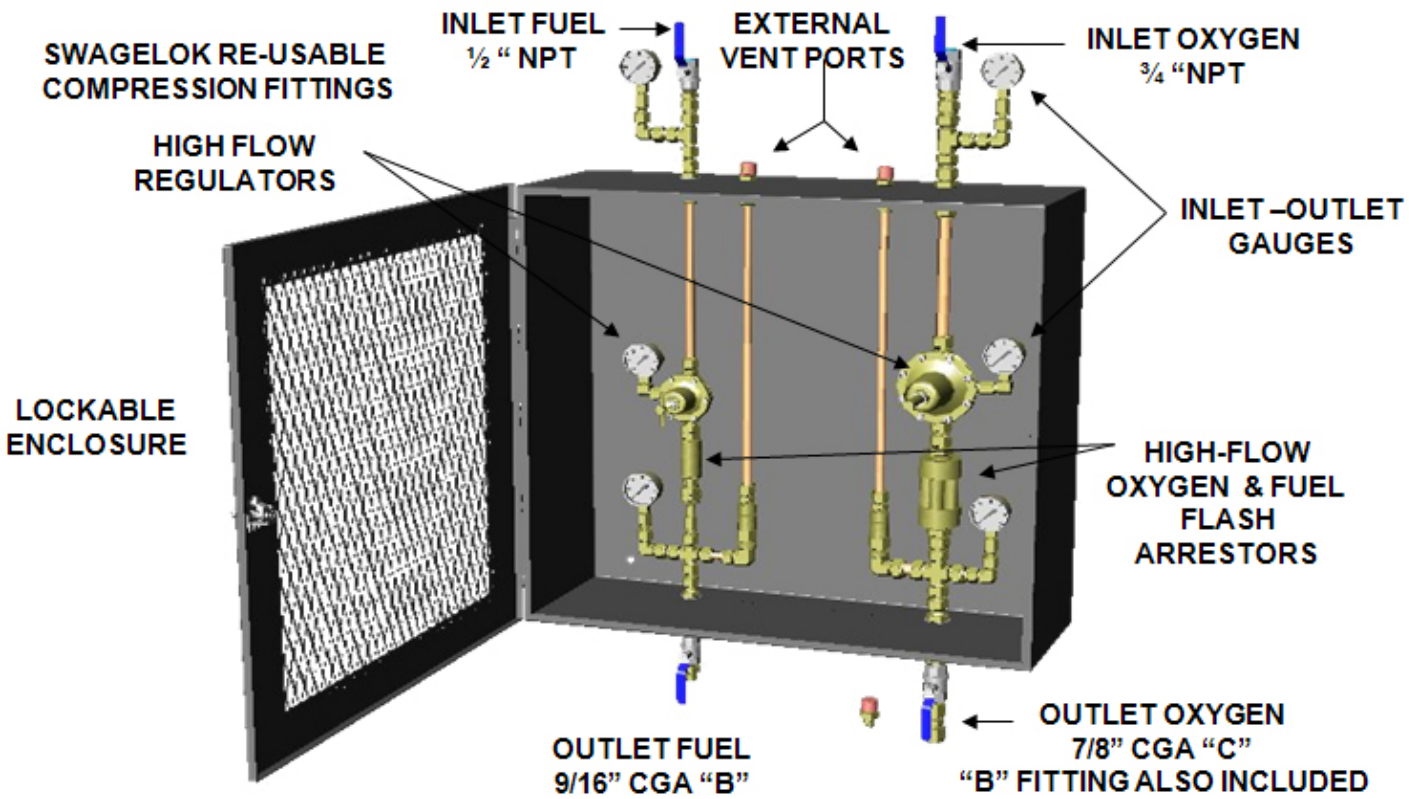
SIZE	A	B	C
¾" & 1" 6BSPT & 8BSPT	8 7/8"	3 11/32"	4 11/16"

Drop Station Regulator Enclosures

2 HOSE OPERATION (DSE-2)

The DSE-2 contains one high flow preheat/cutting oxygen regulator and one high flow fuel gas regulator. The DSE-2 also contains one DG91N (fuel) and one DEMAX (oxygen) Flash Arrestors as well as shutoff ball valves mounted outside the DSE-2 enclosure. Relief valves with an external vent port are connected to the fuel and oxygen lines. Swagelok re-usable compression fittings are used throughout the system to eliminate Teflon thread tape and to allow quick replacement of failed components. A lockable enclosure with an expanded-metal viewport allows operators to view the pressure gauges while allowing ventilation of the cabinet for safety purposes. Outlet valves come with end caps. The standard connector configuration for the DSE-2 is as follows:

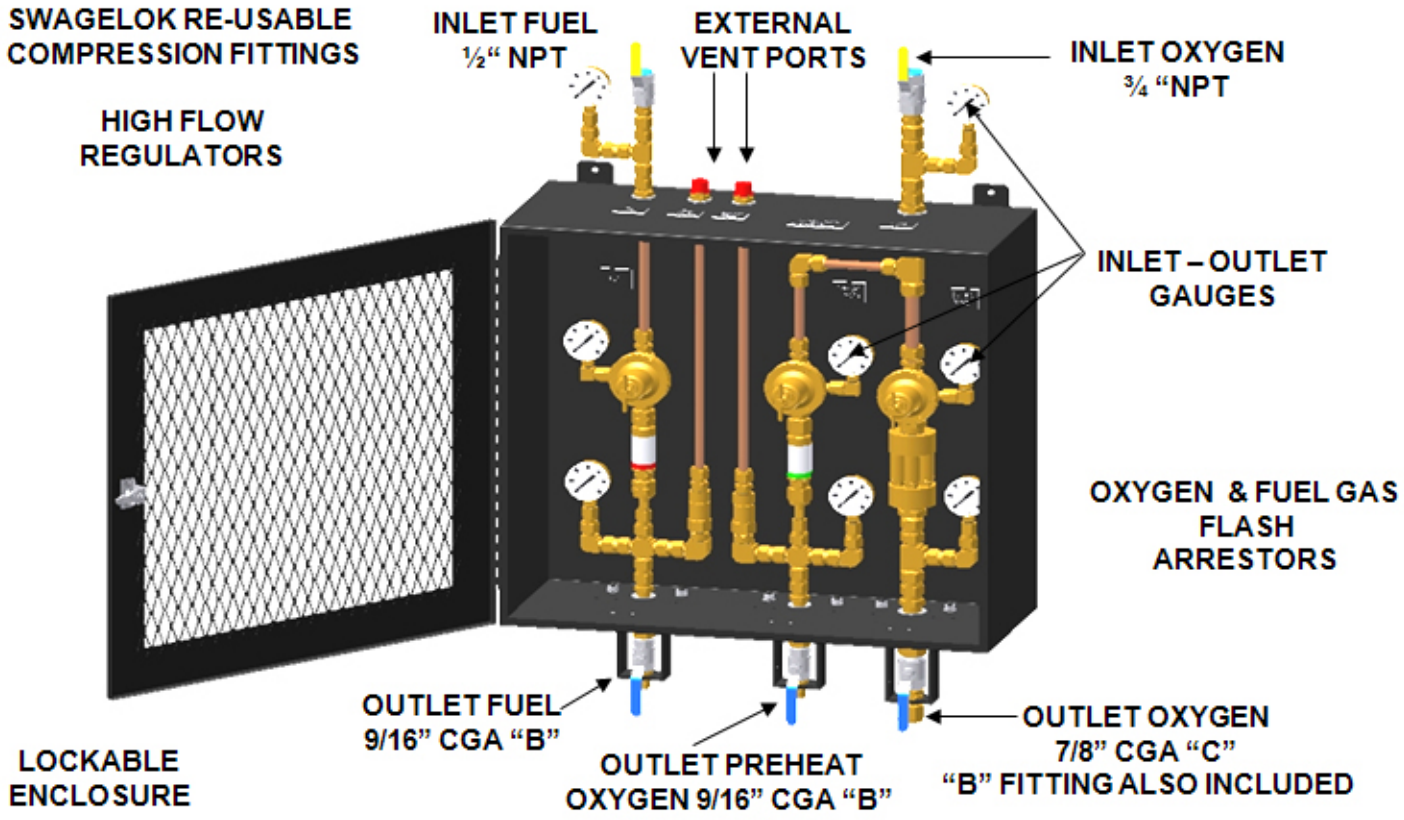
- ¾" NPT Female oxygen inlet connection
- CGA “B” Male (9/16-18 UNF) oxygen outlet connection
- CGA “C” Male (7/8-14 UNF) adapter fitting is included with the DSE-2 to allow connections to CGA “C” hose fittings.
- ½" NPT Female fuel gas inlet connection
- CGA “B” LH Male (9/16-18 LH UNF) fuel gas outlet connection



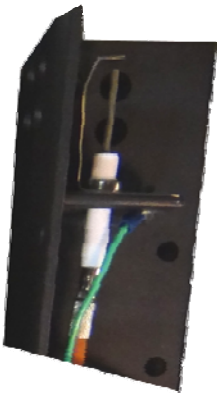
3 HOSE OPERATION (DSE-3)

The DSE-3 contains one high flow cutting oxygen regulator, one high flow pre-heat oxygen regulator and one high flow fuel gas regulator. The DSE-3 also contains two DG91N Flash Arrestors (one pre-heat oxygen, one fuel) and one each DEMAX Cutting Oxygen Flash Arrestor as well as shutoff ball valves mounted outside the DSE-3 enclosure. Relief valves with external vent ports are connected to the fuel line and pre-heat oxygen lines. Swagelok re-usable compression fittings are used throughout the system to allow quick replacement of failed components. A lockable enclosure with an expanded-metal viewport allows operators to view the pressure gauges while allowing ventilation of the cabinet for safety purposes. Multiple pressure gauges provide readings on supply pressures, regulator pressures, and post-flash arrestor pressures to provide accurate readings throughout the system. The standard connector configuration for the DSE-3 is as follows:

- ¾" NPT Female oxygen inlet connection
- CGA "C" Male (7/8-14 UNF) cutting oxygen outlet connection
- CGA "B" Male (9/16-18 UNF) pre-heat oxygen outlet connection
- ½" NPT Female fuel gas inlet connection
- CGA "B" LH Male (9/16-18 LH UNF) fuel gas outlet connection



DROP STATION ENCLOSURE WITH REMOTE IGNITION (DSE-2-S)



Remote Igniter

Remote Ignition Control Box

Drop Station Strand, Strut Mount

TWO HOSE OPERATION (DSS-2)

STANDARD FEATURES

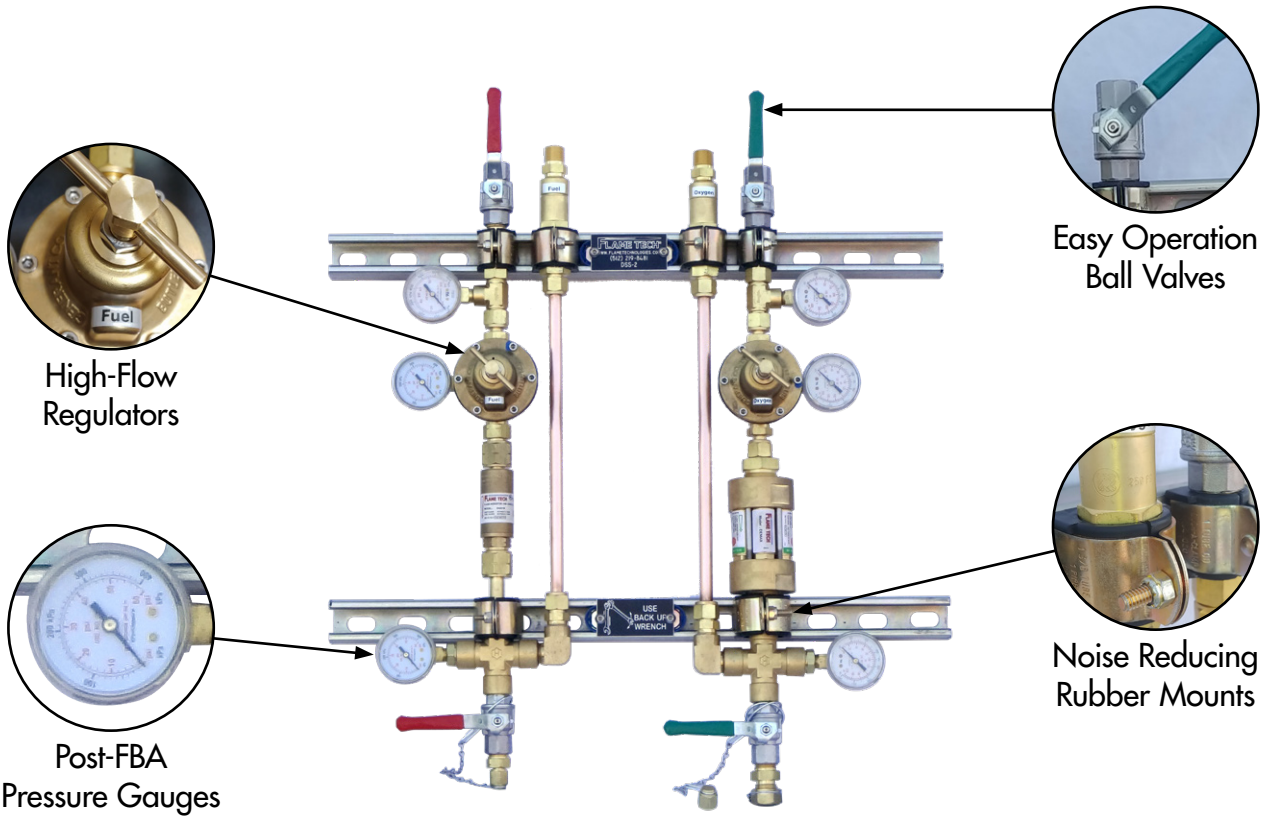
- 1-5/8" standard strut channel rails for easy mounting on new or existing structures
- 1/2" NPT inlets
- Ball valve inlets and outlets for easy operation
- Gauges show pressure drop across flash arrestors. Indicates when replacement is needed
- Swagelok® compression fittings allows for easy repair of individual components
- Rubber strut clamps securely isolate piping from strut channel

OXYGEN STRAND

- High flow FTLR12C preheat/cutting oxygen regulator
- DEMAX oxygen flash arrestor
- 250 psi safety relief valve with NPT vent pipe connection
- CGA "C" male (7/8"-14 UNF) oxygen outlet connection
- Optional CGA "B" male (9/16"-18 UNF) oxygen outlet fitting included

FUEL STRAND

- High flow FTLR12A fuel gas regulator
- DG91N fuel flash arrestor
- 75 psi safety relief valve with NPT vent pipe connection
- CGA "B" LH male (9/16"-18 LH UNF) fuel gas outlet connection



MANIFOLDS & GAS FLOW SYSTEMS

Flame Tech manufactures a complete line of standard and Customized Manifold Stations for Steel Mill and Foundry applications. When was the last time you checked your manifold for accuracy and safety requirements?

MANIFOLDS

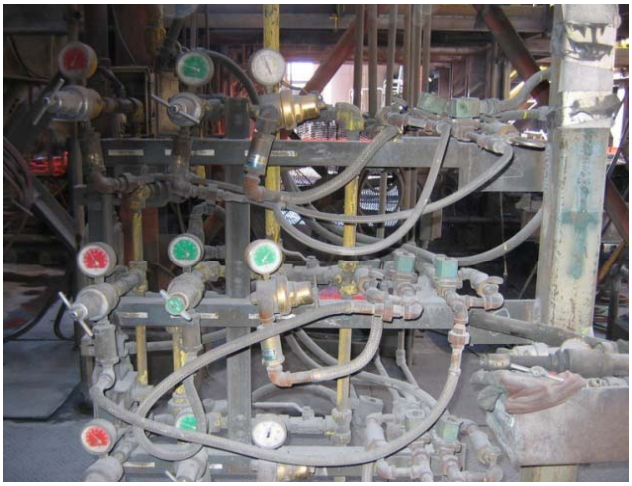
Flame Tech's manifold systems regulate pressures and flows of fuel gas and oxygen from the main supply to the cutting torches. Flame Tech's systems are designed for new applications, retrofit of existing systems, or turn-key replacements.

GAS MIZER™

LOWER GAS CONSUMPTION

Manifolds incorporating our "GAS MIZER" option manage Fuel Gas and Oxygen flow, which reduce gas consumption during torch stand-by mode. 70+% reduction in gas consumption has been realized in many applications saving from $10K to several $100K for Steel Mill caster operations and emergency cut-off stations.

DOES YOUR CASTER GAS CONTROL PANEL LOOK LIKE THIS?



BEFORE

PHOTO OF TYPICAL CASTER REGULATOR CONTROL SYSTEM

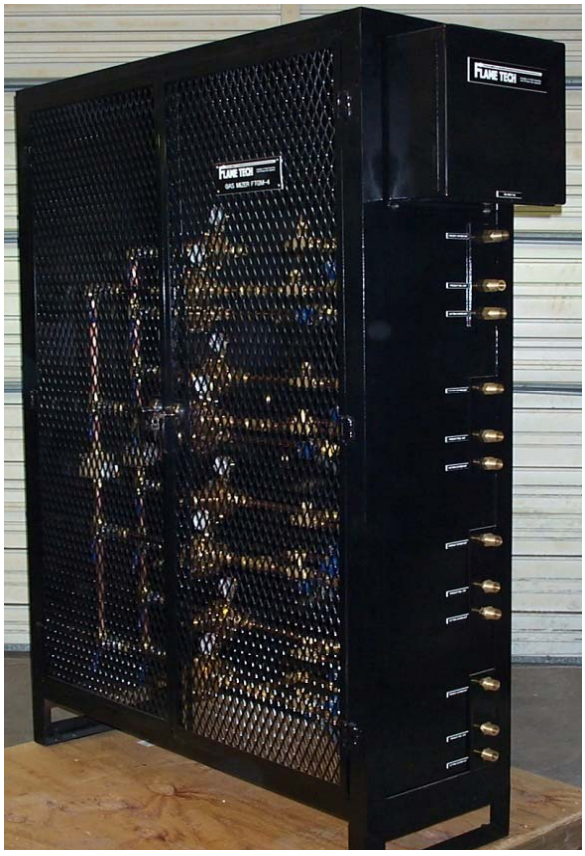
WHEN IT COULD LOOK LIKE THIS!

AFTER

PHOTO FEATURES FLAME TECH 4-TORCH GAS MIZER FTGM-4

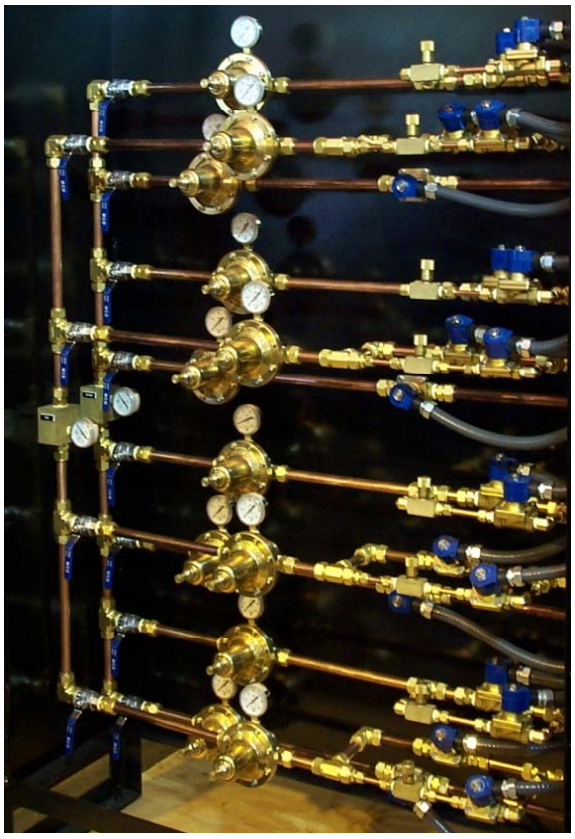
Every installed part is cleaned for oxygen service and meets OSHA and UL requirements

4-Torch GAS MIZER™ FTGM-4



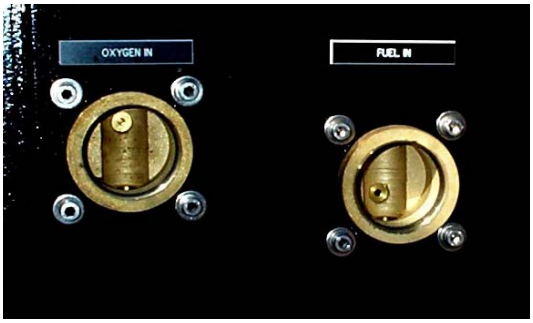
Expanded Metal Doors allow viewing of gages without opening locked doors

¾”NPT outlet connections grouped by torch



All brass and copper components for long life. Swagelok reusable fittings for quick component replacement

Control Panel pre-wired and tested



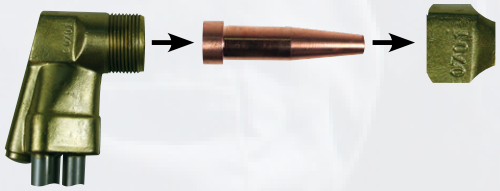
1-1/2” NPT Inlet Connections for Oxygen and Fuel

Every installed part is cleaned for oxygen service and meets OSHA and UL requirements

INFERNO-X
EXOTHERMIC TORCH ADAPTER

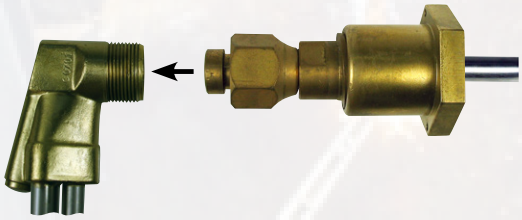
One Torch. Two Applications.

Oxy-Fuel Cutting Torch



1. Remove the cutting tip and tip nut from the oxy-fuel torch.

Exothermic Cutting Torch



2. Insert the Inferno-X adapter into the oxy-fuel torch.

3. Now the oxy-fuel torch becomes an exothermic torch, using the oxy-fuel torch's cutting oxygen.

BENEFITS

Patented Torch Adapter:
Patented adapter allows for existing oxy-fuel torches to be used as an exothermic torch.

Adapter for Most Torches:
Patented adapters are available for H-Style, V-Style, A-Style or S-Style cutting torches.

Cuts through almost anything:
Cut through steel, stainless, iron, brick, concrete, aluminum, and much more.

Single O_2 Source—Space Saver:
Using the cutting torch oxygen source eliminates the need for a dedicated oxygen supply, as is required with a conventional exothermic torch.

INFERNO-X
EXOTHERMIC TORCH ADAPTER

Flame Tech's Inferno-X is a patented adapter that allows a standard oxy-fuel cutting torch to be used both as a standard cutting torch using cutting tips *~or~* as an exothermic torch using burning bars.

Inferno-X is a money saver, as it uses existing torches & cutting oxygen tanks. It also saves space, since there is no need to keep additional dedicated torches and oxygen tanks for exothermic cutting applications.

Adapters are available for most major OEM torches and Flame Tech's torches.

DO NOT use battery spark ignition with Inferno-X products. Another torch or tube igniters (sold in boxed quantities) may be used to ignite Inferno-X products.

Inferno-X does not require an additional torch. Flame Tech is able to supply a torch for this product, if you do not already have one. Download our equipment catalog at our web site or contact our customer service department via the toll free numbers listed below for additional details about available torches.

Complete Kits

PN	DESCRIPTION
INF-X-V-KIT	Inferno-X kit to convert V-Style torches
INF-X-A-KIT	Inferno-X kit to convert A-Style torches
INF-X-H-KIT	Inferno-X kit to convert H-Style torches
INF-X-S-KIT	Inferno-X kit to convert S-Style torches

Each of the above kits includes:
1 adapter; 3 collets (3/8", 1/4" & 3/16"); 6 washers for 3/8" & 1/4", 1 washer for 3/16", 1 shield (not shown)

Replacement Parts

PN	DESCRIPTION
78058001	Adapter, V-Style
78058002	Adapter, A-Style
78058003	Adapter, H-Style
78058004	Adapter, S-Style
78058021	Collet, 3/8
78058022	Collet, 1/4
78058023	Collet, 3/16
88058025	Burning Bar Tube Igniter, Box of 6
78058030	Washer, Rubber, 1/4" X 3/8"
78058033	Washer, Rubber, 3/16"
78058041	Inferno-X Adapter Shield
78058051	Buring Bar, 3/16 X 21 3/4" 25 Pieces
78058061	Burning Bar, 1/4" X 21-3/4" 25 Pieces
78058081	Burning Bar, 3/8" X 18" 40 Pieces
78058085	Burning Bar, 3/8" X 36" 20 Pieces
78058091	Buring Bar, 3/8" X 48" 50 Pieces

Carbon Arc Gouging

STORM torch

BY GOUGE TECH®
a Division of Flame Technologies, Inc.

STORM TORCH (ST4000)

Utilizing superior designs and quality craftsmanship, the Storm Torch™ is the best choice when choosing an arc gouging torch. Storm Torch® works with the normal motions and angles of the wrist and arm to enable easy, comfortable metal removal while arc gouging. This quality tool delivers performance and reliability. Combined with Gouge Tech® high performance hollow carbon Lightning Rods™, the Storm Torch™ is the optimal performer!

Natural 15° Torch Angle
Greater Operator Comfort

360° Swivel Cable
Less Cable Twist

Positive Grip Handle
Less Strain On Operator

Balanced Weight
Optimum Cable and Torch Weight to Minimize Fatigue

High Quality Cable Hose
Best Quality Cable Hose Offers High Heat and Abrasion Resistance

Rugged Construction
Overall Rugged Construction for the Harsh Environment

STORM torch

ACCEPTS
- Pointed Carbons: 5/32" (4mm) to 1/2" (13mm)
- Flat Carbons: 3/8" (10mm) to 5/8" (16mm)

AMPERAGE
- Maximum 1000 Amps

COMPRESSED AIR
- Pressure: 80 PSI (5.6 Kg/cm2)
- Flow Rate: 28 cfm (0.79 m^3/min)

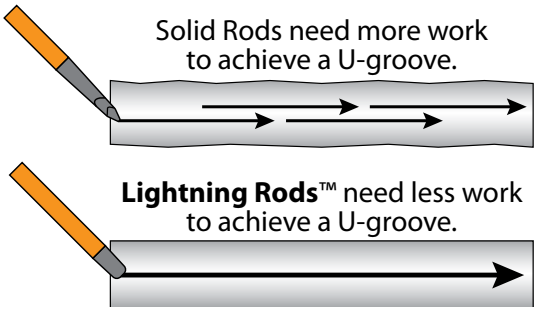
TORCH & CABLE WEIGHT
- 5.4 lbs. (2.4 Kg)

Lightning Rods™

Hollow Core

FASTER & MORE EFFICIENT

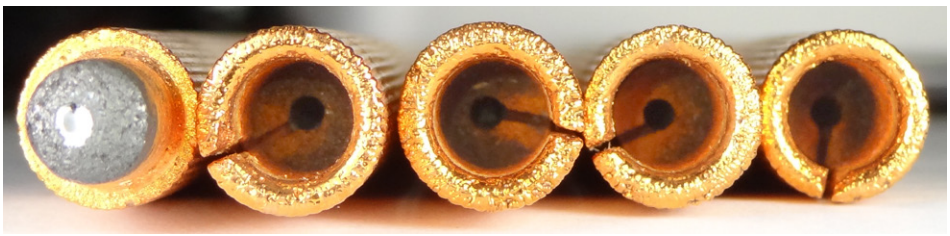
Compared to solid rods, Lightning Rods can carry a 15–20% increased current due to the **thicker copper coating, high-density carbon and the hollow core**. This has shown to provide smooth arc stability on all metals and allows 40% faster removal than solid rods. The hollow core design prevents the formation of a fragile pointed tip. Solid rods form this pointed tip, which falls off into the gouge and requires rework to clean up. With Lightning Rods, there is no carbon dropped, so the operator does not need to spend time reworking the metal. Lightning Rods create a smooth U-groove instead of a V-groove, easily making clean looking work.



Jointed Hollow Core

SAFETY

Lightning Rods are quieter and produce less smoke than standard solid carbon rods. The hollow core is plugged at one end to keep smoke from siphoning back to the operator. Since Lightning Rods are able to operate faster and smoother, operators are less likely to tire from the repetitious movements that are required of standard solid rods.



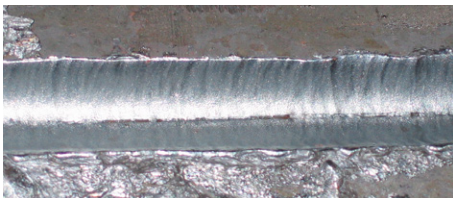
The plugged end (shown on the left) is pointed towards the operator, to prevent smoke from blowing back.

LONGER LASTING & MORE EFFICIENT

Lightning Rods use high density carbon surrounded by a thicker layer of copper shell. Standard rods normally contain a more porous carbon—about 28% less. Lightning Rods provide enhanced arc stability and increased current over the rod for faster metal removal, while consuming the rod at a slower rate. This faster removal process allows the user to make a smooth continuous forward motion, rather than running the rod back and forth, thus saving time.

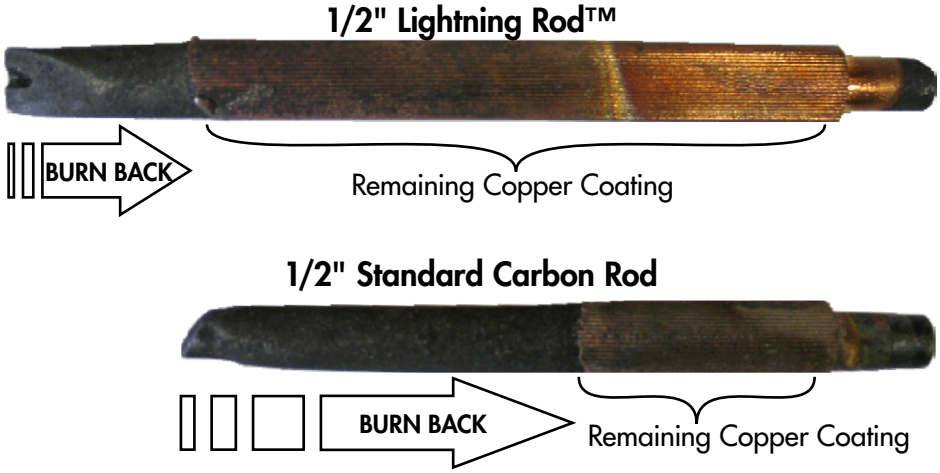
Jointed Lightning Rods are designed with straight joint connections so that joints fit tighter and allow for more efficient current transfer. Other jointed rods use tapered connections, which fit loosely and have a tendency to heat up and prematurely break off during the gouging process.

In the graph below, a Lightning Rod and a standard carbon rod were run at the same amperage, for the same length of time. Less of the Lightning Rod was used in the job and less of its copper has burned back, allowing for more efficient use of the remaining length of rod.



"As smooth as silk."

Less Smoke



FULLY AUTOMATIC APPLICATIONS

Lightning Rods operate faster and smoother. This allows machines to operate more efficiently by moving in one continuous direction, rather than wasting time and energy from "scrubbing" repeatedly. The lower smoke production from Lightning Rods can help keep machines a bit cleaner.

MANUAL APPLICATIONS

Lightning Rods burn cleaner and produce less smoke and are quieter than solid carbon rods. The hollow core design allows Lightning Rods to operate faster and smoother than standard copper rods. Less mess and labor allows workers to be more efficient.

Machine Application

LIGHTNING ROD™ CONTAINER TYPES

Cartons—Smallest Order Size

Our carbon rods are sold by the carton. Cartons contain multiple shelf-ready boxes (consumer packages) of rods.

Cases—Cost-Effective Size

Standard rods are available in cases (containing multiple cartons), which are more cost-effective than buying individual cartons. Jointed rods are not available in cases.

SIZES AND PACKAGING CHARTS

Standard Rods

SIZES		PART NUMBER	RODS/ BOX	CARTON PACKAGING			CASE PACKAGING		
				BOXES/ CARTON	RODS/ CARTON	WEIGHT (LBS.)	CARTONS/ CASE	RODS/ CASE	WEIGHT (LBS.)
5/32" × 12"	(4.0mm × 305mm)	GT532X12	100	5	500	9	4	2,000	38
3/16" × 12"	(4.8mm × 305mm)	GT316X12	50	5	250	7	8	2,000	55
1/4" × 12"	(6.4mm × 305mm)	GT14X12	50	5	250	12	4	1,000	48
5/16" × 12"	(7.9mm × 305mm)	GT516X12	50	5	250	16	4	1,000	64
3/8" × 12"	(9.5mm × 305mm)	GT38X12	50	5	250	17	2	500	39
1/2" × 12"	(12.7mm × 305mm)	GT12X12	50	5	250	39	Not Available		

Jointed Rods

SIZES		PART NUMBER	RODS/ BOX	CARTON PACKAGING			CASE PACKAGING		
				BOXES/ CARTON	RODS/ CARTON	WEIGHT (LBS.)	CARTONS/ CASE	RODS/ CASE	WEIGHT (LBS.)
3/8" × 17"	(9.5mm × 431mm)	GTJ38X17	50	6	300	44			
1/2" × 17"	(12.7mm × 431mm)	GTJ12X17	50	4	200	48	Not Available		
3/4" × 17"	(19.1mm × 431mm)	GTJ34X17	Discontinued		Discontinued				

Flame Tech Warranty

This warranty is extended solely to the original purchaser.

If a **Flame Tech®** product fails because of defect in material or workmanship under normal use and maintenance within one year from date of shipment by us, we will, at our option and after inspection, repair or replace the defective product or repay the full purchase price you paid us.

In order for this warranty to apply, you must return the defective product to us within one year from the date we shipped it to you. Please be sure to properly identify the complaint regarding the returned product. All products must receive an (RMA) Return Material Authorization number from the factory prior to the return. Products will not be accepted without an RMA.

FLAME TECH®

Innovators of High Production,
Cost Effective Gas Equipment

Place an Order
Orders@FlameTechnologies.com
512-219-8481

Post-Sales Support
CustomerService@FlameTechnologies.com

Flame Technologies
P.O. Box 1776
Cedar Park, TX 78630
www.FlameTechnologies.com