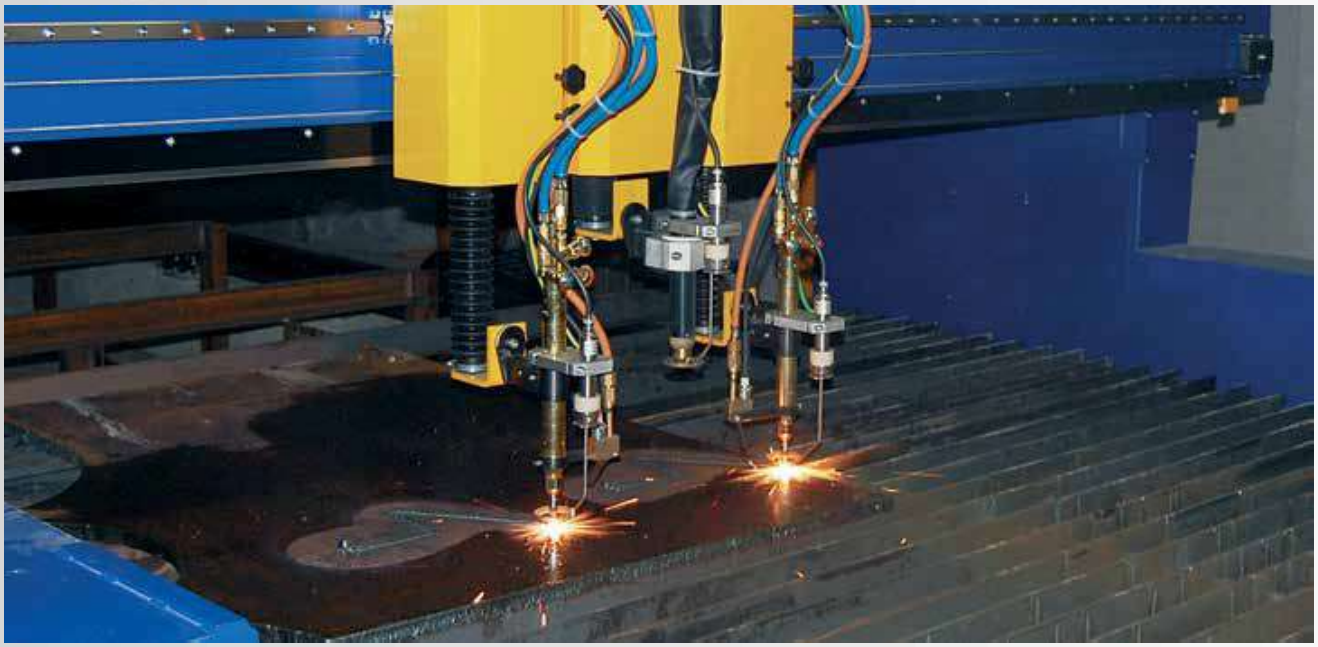


Model 133/198/98 Machine Torches

Harris machine cutting torches are designed to handle all types of machine cutting applications. Rugged and dependable, these torches provide up to 380 mm cutting capacity. Harris machine cutting torches are available in two tube and three tube design for all fuel gases at pressures as low as 0.015 bar.

General Features:

- Solid head for maximum strength;
- Standard 32 mm or 35 mm diameter barrel;
- All torches have inlet threads 9/16x18 UNF;
- Use with 6290 machine cutting tips (see page 81-82).

Model 133-2/133-2F

Features:

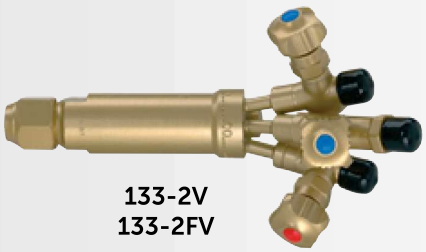
- Three tube valveless design for pipe bevelling, multiple bevelling and similar applications;
- Cutting capacity up to 200 mm.

133-2
133-2F

Model 133-2V/133-2FV

Features:

- Three tube with 3 valves;
- Cutting capacity up to 200 mm.



133-2V
133-2FV

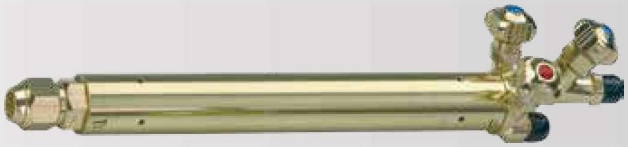
LOW PRESSURE "F" INJECTOR TYPE TORCHES (FOR MAXIMUM PERFORMANCE WITH ALTERNATIVE FUEL)				
PART NO.	Style	Weight (Kg)	Length (mm)	Barrel Ø (mm)
133-2F	3 tube	0.68	65	30
133-2F-28	3 tube	0.63	65	28
133-2FV	3 tube	1.07	65	30
133-2FV-28	3 tube	1.02	65	28

LOW PRESSURE TORCHES (FOR ACETYLENE)				
PART NO.	Style	Weight (Kg)	Length (mm)	Barrel Ø (mm)
133-2	3 tube	0.68	65	30
133-2-28	3 tube	0.62	65	28
133-2V	3 tube	1.05	65	30
133-2V-28	3 tube	1.02	65	28

Model 198-2T/198-2TF

Features:

- Quick opening cutting oxygen valve for immediate full flow;
- Separate preheat and cutting oxygen valves for high and low preheat control;
- Cutting capacity up to 380 mm;
- Use with 6290 cutting tips (see page 81-82).



198-2T
198-2TF

Model 198-2/198-2F

Features:

- Cutting capacity up to 200 mm;
- One inlet connection for oxygen and cutting oxygen.

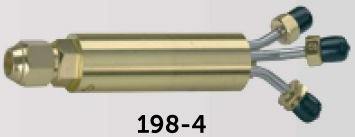
198-2
198-2F

Model 198-4/98-4

Features:

- Same characteristics as 198-2T but valveless.

198-2TR (with rack)



198-4
98-4

EQUAL PRESSURE "E" TYPE TORCHES (FOR ACETYLENE AND ALTERNATIVE FUELS)				
PART NO.	Style	Weight (Kg)	Length (mm)	Barrel Ø (mm)
198-2E	2 tube	1.30	250	32
198-2E-35	2 tube	1.41	250	35
198-2E-35R	2 tube & rack	1.47	250	35
198-2ER	2 tube	1.34	250	32
198-2TAE	3 tube	1.67	450	32
198-2TAE-30	3 tube	1.55	450	30
198-2TAE-35	3 tube	1.68	450	35
198-2TE	3 tube	1.33	250	32
198-2TE-30	3 tube	1.20	250	30
198-2TE-30R	2 tube & rack	1.26	250	30
198-2TE-35	3 tube	1.43	250	35
98-4BE	3 tube	0.73	200	35

LOW PRESSURE TORCHES (FOR ACETYLENE)				
PART NO.	Style	Weight (Kg)	Length (mm)	Barrel Ø (mm)
198-2	2 tube	1.30	250	32
198-2-30	2 tube	1.18	250	30
198-2-35	2 tube	1.39	250	35
198-2-35R	2 tube & rack	1.44	250	35
198-2A	2 tube	1.62	460	32
198-2T	3 tube	1.32	250	32
198-2T-30	3 tube	1.20	250	30
198-2T-30R	3 tube & rack	1.29	250	30
198-2TA	3 tube	1.67	460	32
198-2TA-30	3 tube	1.55	460	30
198-2TA-35	3 tube	1.78	460	35
198-2TA-35R	3 tube & rack	1.90	460	35
198-2TAR	3 tube & rack	1.75	460	32
198-2TR	3 tube & rack	1.38	250	32
198-4	3 tube	0.65	110	32
198-4B	3 tube G 1/4"	0.65	110	32
98-4	3 tube	0.73	110	35
98-4B	3 tube G 1/4"	0.73	110	35

LOW PRESSURE "F" INJECTOR TYPE TORCHES (FOR MAXIMUM PERFORMANCE WITH ALTERNATIVE FUELS)				
PART NO.	Style	Weight (Kg)	Length (mm)	Barrel Ø (mm)
198-2F	2 tube	1.28	250	32
198-2F-35	2 tube	1.38	250	35
198-2F-35R	2 tube & rack	1.44	250	35
198-2FR	2 tube & rack	1.34	250	32
198-2TAF	3 tube	1.64	460	32
198-2TAF-30	3 tube	1.55	460	30
198-2TAF-35	3 tube	1.78	460	35
198-2TAF-35R	3 tube & rack	1.90	460	35
198-2TAFR	3 tube & rack	1.76	460	32
198-2TF	3 tube	1.33	250	32
198-2TF-30	3 tube	1.20	250	30
198-2TF-30R	3 tube & rack	1.25	250	30
198-2TF-35	3 tube	1.43	250	35
198-2TF-35R	3 tube & rack	1.49	250	35
198-2TFR	3 tube & rack	1.39	250	32
198-4BF	3 tube	0.65	110	32
198-4F	3 tube	0.65	110	32
98-4BF	3 tube G 1/4"	0.73	110	35
98-4F	3 tube	0.73	110	35

Machine Cutting Tips

- Minimalize kerf;
- Increased cutting speeds, reduces heat input;
- High quality machine cuts, reduces afterwork;
- Used with low cost fuel gases.

6290-NH

6290-VVC
Plated Shell

6290-VVC High Speed Oxy-Propane Cutting Tip Chart - Plated Shell

PART NO.	PLATE THICKNESS (mm)	CUTTING SPEED (mm/min)	CUTTING OX PRESSURE (bar)	PREHEAT OX PRESSURE (High[1] - Low) (bar)	CUTTING OX FLOW (l/h)	PREHEAT OX FLOW (High - Low) (l/h)	PREHEAT FUEL FLOW (High - Low) (l/h)	HEATING POWER (High - Low) (Kcal/h)	KERF WIDTH (mm)
6290-5/0VVC	1 - 4	750 - 550	4.0	0.7 - 0.4	650	1410 - 900	350 - 230	7800 - 5100	1.3
6290-4/0VVC	4 - 6	700 - 520	2.5	1.0 - 0.5	1130	1410 - 900	350 - 230	7800 - 5100	1.5
6290-3/0VVC	6 - 9	650 - 480	5.0	2.5 - 0.7	2260	2800 - 1200	700 - 300	15600 - 6700	1.8
6290-00VVC	9 - 12,5	630 - 450	5.0	2.5 - 0.7	2540	2800 - 1200	700 - 300	15600 - 6700	1.8
6290-0VVC	12,5 - 20	600 - 400	6.0	2.5 - 0.7	3530	2800 - 1200	700 - 300	15600 - 6700	2.0
6290-0½VVC	20 - 35	550 - 360	7.0	2.5 - 0.7	4000	2800 - 1200	700 - 300	15600 - 6700	2.0
6290-1VVC	35 - 60	480 - 220	7.0	2.5 - 0.7	5560	2800 - 1200	700 - 300	15600 - 6700	2.3
6290-1½VVC	60 - 75	310 - 200	6.5	2.5 - 0.7	7070	2800 - 1200	700 - 300	15600 - 6700	2.8
6290-2VVC	75 - 100	280 - 190	6.5	2.5 - 0.7	8000	2800 - 1300	700 - 330	15600 - 7400	3.0
6290-2VVC	100 - 125	240 - 180	7.0	2.5 - 0.7	9000	2800 - 1300	700 - 330	15600 - 7400	3.0
6290-2½VVC	125 - 150	200 - 160	6.5	2.5 - 0.7	11170	2800 - 1300	700 - 330	15600 - 7400	3.3
6290-3VVC	150 - 175	180 - 150	7.0	2.5 - 0.7	12000	2800 - 1300	700 - 330	15600 - 7400	3.5
6290-4VVC	175 - 200	180 - 150	6.5	2.5 - 0.7	14850	3000 - 1300	750 - 330	16700 - 7400	4.0
6290-5VVC	200 - 225	150 - 130	6.0	2.8 - 0.7	16410	3000 - 1510	750 - 380	16700 - 8500	5.0
6290-5½VVC	225 - 250	130 - 110	6.0	2.8 - 0.7	16980	3000 - 1630	750 - 410	16700 - 9100	6.4
6290-5NH	225 - 250	130 - 110	4.0	2.8 - 0.7	16980	3000 - 1880	750 - 470	16700 - 10500	6.4
6290-6NH	250 - 275	130 -110	4.0	2.8 - 0.7	19520	3000 - 1880	750 - 470	16700 - 10500	6.4
6290-7NH	275 - 300	120 - 100	4.5	3.5 - 0.7	23340	3580 - 2510	900 - 630	20100 - 14000	6.4
6290-8NH	300 - 380	110 - 90	4.5	3.5 - 0.7	26170	3580 - 2510	900 - 630	20100 - 14000	7.6

(1) For a fast start, necessary when performing piercing and/or cutting thickness over 200 mm, use "high preheat".
For thickness up to 200 mm, switch from high to low preheat - just cut, it has started.
- All pressures are measured at torch inlet. - Use minimum 0.3 (bar) fuel gas pressure
for equal pressure torches. - Use maximum 0.2 (bar) fuel gas pressure for injector equipment.

6290-VVC High Speed Oxy-Methane and Natural Gas Cutting Tip Chart - Plated Shell

PART NO.	PLATE THICKNESS (mm)	CUTTING SPEED (mm/min)	CUTTING OX PRESSURE (bar)	PREHEAT OX PRESSURE (High[1] - Low) (bar)	CUTTING OX FLOW (l/h)	PREHEAT OX FLOW (High - Low) (l/h)	PREHEAT FUEL FLOW (High - Low) (l/h)	HEATING POWER (High - Low) (Kcal/h)	KERF WIDTH (mm)
6290-5/0VVC	1 - 4	610 -510	3.0	1.0 - 0.6	420	1410 - 850	710 - 430	6200 - 3700	1.3
6290-4/0VVC	4 - 6	560 - 510	3.5	1.0 - 0.7	1130	1410 - 1000	710 - 500	6200 - 4400	1.5
6290-3/0VVC	6 - 9	560 - 450	5.0	2.5 - 0.7	2260	2540 - 1000	1270 - 500	11000 - 4400	1.8
6290-00VVC	9 - 12,5	510 - 460	5.0	2.5 - 0.7	2540	2540 - 1000	1270 - 500	11000 - 4400	1.8
6290-0VVC	12,5 - 20	460 - 330	6.5	2.5 - 0.7	3530	2540 - 1000	1270 - 500	11000 - 4400	2.0
6290-0½VVC	20 - 35	410 - 350	7.0	2.5 - 0.9	4000	2540 - 1130	1270 - 570	11000 - 5000	2.0
6290-1VVC	35 - 60	380 - 330	7.0	2.5 - 0.9	5560	2540 - 1130	1270 - 570	11000 - 5000	2.3
6290-1½VVC	60 - 75	300 - 230	7.0	2.5 - 0.9	7070	2540 - 1130	1270 - 570	11000 - 5000	2.8
6290-2VVC	75 - 100	300 - 180	7.0	2.5 - 0.9	9000	2540 - 1130	1270 - 570	11000 - 5000	3.0
6290-2½VVC	125 - 150	200 - 150	7.0	2.5 - 0.9	11170	2540 - 1130	1270 - 570	11000 - 5000	3.3
6290-3VVC	150 - 175	180 - 125	7.0	2.5 - 0.9	12000	2830 - 1130	1420 - 570	12400 - 5000	3.5
6290-4VVC	175 - 200	180 - 125	7.0	2.5 - 0.9	14850	2830 - 1130	1420 - 570	12400 - 5000	4.0
6290-5VVC	200 - 225	150 - 100	6.5	2.8 - 1.2	16410	2830 - 1510	1420 - 760	12400 - 6600	5.0
6290-5½VVC	225 - 250	125 - 100	6.5	2.8 - 1.3	16980	2830 - 1630	1420 - 820	12400 - 7100	6.4
6290-5NH	225 - 250	125 - 100	4.0	2.8 - 1.5	16980	2830 - 1880	1420 - 940	12400 - 8200	6.4
6290-6NH	250 - 275	120 - 100	4.0	2.8 - 1.5	19520	2830 - 1880	1420 - 940	12400 - 8200	6.4
6290-7NH	275 - 300	110 - 100	4.5	3.5 - 2.0	23340	2830 - 2510	1420 - 1260	12400 - 11000	6.4
6290-8NH	300 - 380	100 - 75	4.5	3.5 - 2.0	26170	2830 - 2510	1420 - 1260	12400 - 11000	7.6

(1) For a fast start, necessary when performing piercing and/or cutting thickness over 200 mm, use "high preheat".
For thickness up to 200 mm, switch from high to low preheat - just cut, it has started.
- All pressures are measured at torch inlet. - Use minimum 0.3 (bar) fuel gas pressure
for equal pressure torches. - Use maximum 0.2 (bar) fuel gas pressure for injector equipment.

Machine Cutting Tips

- Minimalize kerf;
- Increased cutting speeds, reduces heat input;
- High quality machine cuts, reduces afterwork;
- Used with low cost fuel gases.

6290-VAX
Plated Shell

6290-VPM
Plated Shell

6290-NHM

6290-VAX High Speed Oxy-Acetylene Cutting Tip Chart - Plated Shell

PART NO.	PLATE THICKNESS (mm)	CUTTING SPEED (mm/ min)	CUTTING OX PRESSURE (bar)	CUTTING OX FLOW (l/h)	PREHEAT OX FLOW (l/h)	ACETYLENE FLOW (l/h)	HEATING PO-WER (Kcal/h)
6290-1VAX	0 - 8	650	2.5 - 4.0	850 -1250	400	350	4740
6290-2VAX	8 - 15	600	5.0	2400	450	420	5690
6290-3VAX	15 - 35	550	7.0	4000	500	440	5960
6290-4VAX	35 - 75	450	7.0	5000	580	500	6780
6290-5VAX	75 - 150	300	5.0	9000	660	600	8130
6290-6VAX	150 - 200	150	6.5	13500	600	800	10840

Use maximum 0.2 (bar) fuel gas pressure for injector equipment
Use minimum 0.3 (bar) fuel gas pressure for equilibrated pressure torches

6290-VPM High Speed Oxy-MAPP®, Tetrene and Propylene Cutting Tip Chart - Plated Shell

PART NO.	PLATE THICKNESS (mm)	CUTTING SPEED (mm/ min)	CUTTING OX PRESSURE [1] (bar)	PREHEAT OX PRESSURE (High - Low) (bar)	PREHEAT OX FLOW (Low Pressure) (l/h)	CUTTING OX FLOW (l/h)	PREHEAT FUEL FLOW [2] (l/h)	HEATING POWER (Low) (Kcal/h)	KERF WIDTH (mm)
6290-0VPM	1 - 4	750	3.0	0.8 - 0.5	600	810	300	6300	1.3
6290-1VPM	4 - 8	700	3.5	0.8 - 0.5	1200	810	300	6300	1.5
6290-2VPM	8 - 15	620	5.0	1.7 - 0.5	2400	840	330	6930	1.8
6290-3VPM	15 - 35	550	7.0	1.7 - 0.5	4200	900	360	7560	2.0
6290-4VPM	35 - 75	450	7.0	1.7 - 0.7	5100	1020	400	8390	2.5
6290-5VPM	75 - 150	300	7.0	1.7 - 0.7	8400	1080	420	8820	3.0
6290-6VPM	150 - 200	150	7.0	2.0 - 0.7	14400	1140	450	9450	4.0
6290-7NHM	200 - 300	125	4.0	0.7 - 2.5	22300	1140	450	9450	6.9

(1) Cutting oxygen pressure are measured at torch inlet
(2) Preheat flows are calculated for propylene/oxygen at 2,6/1 ratio
Use minimum 0.3 (bar) fuel gas pressure for equal pressure torches
Use maximum 0.2 (bar) fuel gas pressure for injector equipment

CLEANING INSTRUCTIONS: The wire brush included with tip cleaner E-9 should be used for cleaning preheat slots and for removing spatter from the tip face. When cleaning the preheat slots, do not brush across the slots as this motion can damage the slots. Always brush along the length of the slot to remove dirt or spatter.

E-9 TIP
Two Piece Cleaners

Machine Cutting Accessories

TH-98 Twin Tip Adapter
Adjustable twin adapter for 2 cuts simultaneously using one torch. Adjust from 30 mm to 305 mm wide (special widths available on request) "O" ring sealed. Large capacity (up to 200 mm to each tip).

BV-98-2 Bevelling Head
Use with natural gas or propane only. Increase speed and quality of bevel cuts. 6290 cutting tips can be used. Use specially designed 1390-3H replacement heating tip for optimum results.

96-DC Oxygen Saver
Dual control oxygen saver for 3 hose torches. Fits to oxygen line. Moving the lever adjusts the flame from an extreme flame for piercing and quick starts to a soft small flame for economy and quality. Advantages are reduced oxygen and gas consumption, very high cut quality, square edges, slag-free cuts with fast starts.
Not recommended for acetylene.

C-98-V2 Flash Check Valve for Cutting Oxygen Inlet On Three Hose Torches
Stops reverse flow of gases.
Recommended when cutting oxygen valve is remote from torches.
Cutting capacity up to 200 mm.

S-98-C Adjustable Tip Adapter
Allows adjustment of tip to any angle without moving the torch "O" ring sealed. Large capacity (up to 200 mm), calibrated 90°.

88-6 Check Valves
Reverse flow check valves for preheat only. Help prevent dangerous reverse flow mixing of gas in hose and regulators (see page 95 for complete check valve information).