RASOR™

Fine Plasma Cutting Technology

KOMATSU

Cutting Technologies Division
Komatsu America Industries LLC

SUPERIOR CUT QUALITY FROM GAUGE TO 1" THICK MATERIAL

With Rasor™, smooth, square edges, minimal bevel angle, narrow kerf widths, and tight tolerances are simple and easy to achieve using our preprogrammed guidelines.

INCREASED PRODUCTION RATES

Komatsu's patented fine plasma torch uses a magnetic field to constrict the plasma column. This combined with swirling assist gas technology provides superior cut quality and minimal bottom dross formation. This tightly focused plasma column creates a high energy density arc that enables Rasor™ Fine Plasma to provide much higher cutting speeds than other precision plasma systems.

LOWER OPERATING COSTS

Lower operating costs are achieved through a combination of higher cut speeds and significantly lower plasma gas usage. At 3-18 scfh of oxygen usage per hour, fine plasma uses two-thirds less gas than other precision plasma systems. Similar savings can be achieved when cutting other materials such as aluminum and stainless steel.

LEADING EDGE PLASMA UNIT

The Komatsu transistor inverter power unit with programmable controller provides stable and continuous duty D.C. output. Variable pilot and output current make this system infinitely flexible to meet material thickness and cutting conditions. Closed loop cooling system features keep torch cool there by increasing consumable components life.

TORCH HEIGHT CONTROL (THC)

Komatsu's proprietary industry leading THC controls torch to work piece distance with superior accuracy. Initial pierce height sensing device prevents the torch from ever making contact with the work piece preventing contaminants from entering torch components. The torch and height control system is protected by our unique 360 degree hemispherical collision detection system.

RASOR™ *Fine Plasma provides*

G940-II
TORCH AND PLASMA UNIT

The G940-II cuts mild steels up to 1/4" at 100% duty cycle and 3/8" at 30% duty cycle. The system is capable of cutting stainless steel and aluminum in gauge through .1875. Other system features include:

- Liquid cooled (on demand) system improves torch and consumable life
- Proprietary torch height control measures voltage to ± .1 volts
- Only 3 nozzles (.4mm, .6mm, .7mm) required throughout cutting range.
- Variable amperage control 3-40 amps.
- 3-16 CFH O_2 minimizes hourly operating costs.

Optional Features:

Rasor Auto Arc - Controls pilot and main current control to minimize set up time

Rasor Writer - Automated change over process from cutting cycle to Argon marking your parts using single torch technology

Quicksilver nozzles and electrodes available

G940-II

Item / Model		G940-II
Power supply unit	Rated input voltage	208V/230V (3 phase)
	Rated frequency	50/60Hz common
	Rated input	11KVA
	Rated output current	40A
	Range of output current	3-40A
	No-load voltage	280V
	Rating duty	100%
	External interface	Built-in
Torch	Continuous allowable current	40A
	Cooling method	Liquid cooled

Dimensions and weight

Power supply unit	D26" x W18" x H24" 176 lbs.
Gas-Cooling unit	D22" x W18" x H24" 99 lbs. (dry)

Torch body not actual size

higher cutting performance

G9120-II
TORCH AND PLASMA UNIT

The G9120-II cuts mild steels from gauge to 1" in mild steel. The system will also cut stainless steel and aluminum from gauge to 3/4" thickness. No other precision plasma process offers the same range of flexibility. Other system features included are:

- 100% duty cycle throughout thickness range.
- Liquid cooled (on demand) system improves torch and consumable life.
- Proprietary Torch Height Control measures voltage to ± .1 volts.
- Only 4 (.6, .8, 1.1, 1.3) nozzles required throughout entire cutting range.
- Viable amperage control 3-120 amps.
- 3-18 CFH O_2 minimizes hourly operating costs.

Optional Features:

Rasor Auto Arc - Controls pilot and main current control to minimize set up time

Rasor Writer - Automated change over process from cutting cycle to Argon marking your parts using single torch technology

Quicksilver nozzles and electrodes available

G9120-II

Item / Model		G9120-II
Power supply unit	Rated input voltage	208V/230V (3 phase)
	Rated frequency	50/60Hz common
	Rated input	22KVA
	Rated output current	120A
	Range of output current	3-120A
	No-load voltage	330V
	Rating duty	100%
	External interface	Built-in
Torch	Continuous allowable current	120A
	Cooling method	Liquid cooled

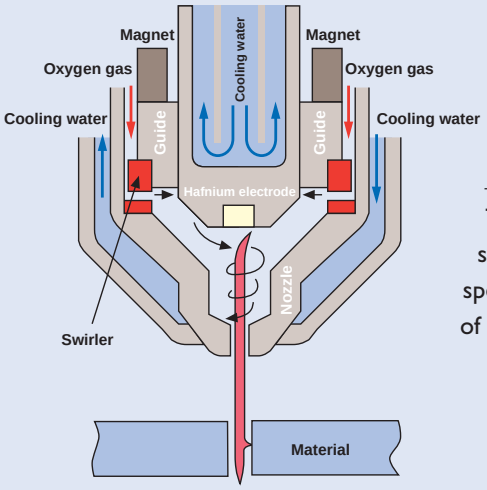
Dimensions and weight

Power supply unit	D26" x W18" x H24" 207 lbs.
Gas unit	D8" x W18" x H19" 33 lbs.
Cooling unit	D18" x W18" x H24" 84 lbs. (dry)

Torch body not actual size

Superior Cut Quality

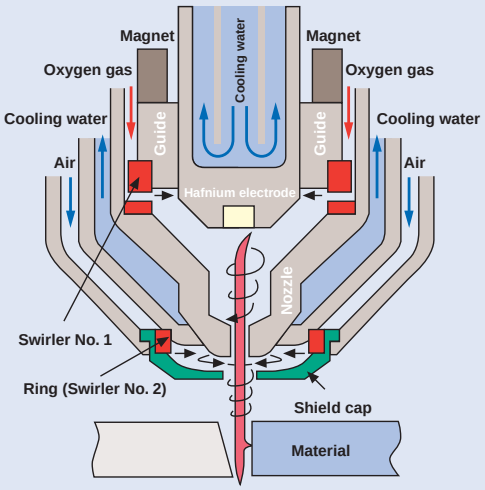
40A



VORTEX GAS FLOW

The special design of the nozzle shape and swirl ring create a high speed vortex of plasma gas flow out of the torch, generating a very dense and stable oxygen plasma arc.

120A

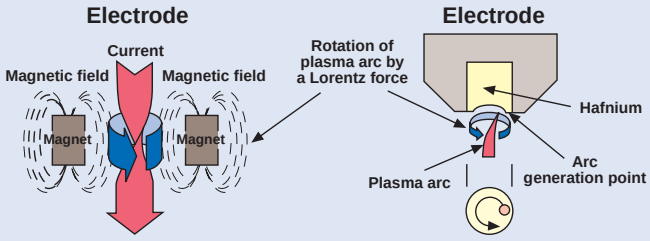


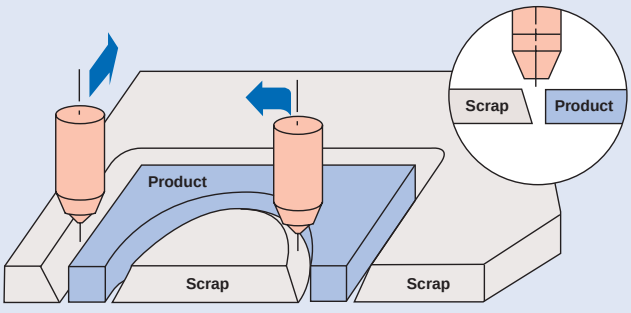
MAGNETIC FIELD

The Komatsu Rasor™ Fine Plasma process is the only process to utilize a revolutionary new technology that spins the plasma arc column through the use of the Lorentz forces created by a magnetic field. This focuses and tightens the plasma beam as well as rotating the arc generation point on the electrode. The result is better arc stability and longer consumable life.

DUAL GAS SWIRL

The dual vortices of the plasma and assist gases generate a square edge on the product side using the 120 amp output





40 Amp Cut Speeds

MILD STEEL			
Plasma Gas	Assist Gas	Thickness	Cut Speed Inches per Minute
O_2	No Assist	24GA	200
O_2	No Assist	22GA	180
O_2	No Assist	20GA	150
O_2	No Assist	18GA	140
O_2	No Assist	16GA	130
O_2	No Assist	14GA	120
O_2	No Assist	11GA	110
O_2	No Assist	7GA	60
O_2	No Assist	1/4"	45
STAINLESS STEEL			
Plasma Gas	Assist Gas	Thickness	Cut Speed Inches per Minute
N_2	N_2	18GA	120
N_2	N_2	16GA	100
N_2	N_2	14GA	100
O_2	No Assist	11GA	85
O_2	No Assist	7GA	50
ALUMINUM			
Plasma Gas	Assist Gas	Thickness	Cut Speed Inches per Minute
N_2	N_2	16GA	130
N_2	N_2	14GA	120
N_2	Air	11GA	100
O_2	No Assist	7GA	50

120 Amp Cut Speeds

MILD STEEL			
Plasma Gas	Assist Gas	Thickness	Cut Speed Inches per Minute
O_2	Air	11GA	300
O_2	Air	7GA	200
O_2	Air	1/4"	170
O_2	Air	3/8"	140
O_2	Air	1/2"	100
O_2	Air	5/8"	80
O_2	Air	3/4"	60
O_2	Air	1"	25
STAINLESS STEEL			
Plasma Gas	Assist Gas	Thickness	Cut Speed Inches per Minute
N_2	Air	1/8"	100
N_2	N_2 + Lpg	3/16"	80
N_2	N_2 + Lpg	1/4"	70
N_2	N_2 + Lpg	3/8"	45
N_2	N_2 + Lpg	1/2"	40
N_2	N_2 + H_2	5/8"	40
N_2	N_2 + H_2	3/4"	30
ALUMINUM			
Plasma Gas	Assist Gas	Thickness	Cut Speed Inches per Minute
N_2	Air	1/8"	150
N_2	N_2 + Lpg	3/16"	120
N_2	N_2 + Lpg	1/4"	100
N_2	N_2 + Lpg	3/8"	60
N_2	N_2 + Lpg	1/2"	50
N_2	N_2 + H_2	5/8"	40
N_2	N_2 + H_2	3/4"	30

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