

RADOX PLASMA & OXY FUEL CUTTING CNC MACHINE



Contact person: Tel: +98-21-2776 - 113 داخلی



RADOX has introduced the latest plasma cutting CNC machine called RADO SMART to industrial companies, which has been described in below.

RADO SMART CNC's are manufactured cooperating (technical cooperating) with KJELLBERG Company (Germany) in Iran and due to the capabilities and high precision of this type of CNC, can be adapted with all types of international plasma units.

Regarding **Plasma unit** of RADO SMART, with just a few settings the new plasma cutting units of the **Smart Focus 300** series achieve excellent results in the cutting range from 0.5 to 80 mm. Even under challenging conditions highest cutting quality and speed are realized.

Therefore we use our proven cutting technologies as for example Contour Cut for cutting mild steel. The optimized gas

Height control units (M4000 KJELLBERG (GERMANY)) have an enormous influence on the cutting quality, the lifetime of the consumables and the process stability. It is crucial for the quality of the cutting results to adjust the right

Controller of RADO SMART are the latest RADOX engineering and R&D department achievement.

Easy training and simple operating and user friendly are advantages of these type of RADOX controllers.

control units and torches protect the consumables; reduce the gas consumption and the costs per cutting meter.

SMART FOCUS 300 series of **KJELLBERG Company (GERMANY)** is LIKE LASER type and has the ability to cut materials underwater too. Under water ability reduce temperature effects on cutting surface and increase quality of cutting surface.

distance between plasma torch and work piece and to keep it constant. The used height control systems are dynamic and voltage-dependent in order to always ensure the optimum cutting height.

021-2776 (داخلی 113)



RADO SMART GENERAL TECHNICAL SPECIFICATION

CNC MODEL: LYNX	Height control:M4000 KJELLBERG(GERMANY)
Controller: RADOX C2	Plasma unit: SMART300 KJELLBERG(GERMANY)
Plasma marker	Under water plasma
Cutting thickness : 0.5mm-80mm	Cutting cost: 1/3 flame cut
Cutting speed: 9 times flame cut	Cutting surface quality: Excellent
Energy Guide for plasma cable, duct	Oxy fuel torch : For cutting up to a thickness of 300 mm
Ac Servo motor Double drive	Sheet Align ·Nesting·Piercing
Mono block structure	Sparker, LM guide, motor Z
5 axis CNC cutting head(optional)	Water tank(steam absorber)

Technical specification (RADO SMART)

CNC technical data	
Effective Cutting Width	2010 mm
Effective Cutting Length	6010 mm
Overall width	3800 mm
Overall length	7400 mm
Weight ~	4500 kg
Height	1950 mm
Flame cutting torch	(Max thickness=0.5~300 mm)
Max positioning speed	15000 mm/min
Positioning Accuracy	± 0.3 mm
Torch Vertical Movement	300 mm
X Motion	Linear motion Guide(LM guide)
Y Motion	Rack and Pinion-AC servo motor
Z axis	Screw-Lm Guide- servo motor
Rail machining of all axis	
Strong Industrial profiles structure , mono block structure	
Double drive (two AC servo motors in both (X) axis)	
Sparker	
CNC pipe cutter (optional)	
5 axis CNC beveller (optional)	
Gear box zero back lash planetary gear box for AC servo	

021-2776 (داخلی 113)



Water tank
Solenoid valves
Motor Z
Gauges specification: Working Range: 1-10 Bar
Regulator specification Working Range: 1-10 Bar
Encoder specification: P/R 2500
Rails Specification: Linear Motion Guide
AC Servo
Relay specification : 24 VDC
Flame bevel torch

RADOX C2 HIGH PERFORMANCE POSITION CONTROL

Axes	4 axes
Digital input	24 isolated NPN and PNP inputs
Digital output	16 open drain outputs with short circuit protector
Analog output	2 analog outputs
PWM output	2 PWM outputs with adjustable frequency
Pulse rate	500000 pulses per second
Command pulse type	Pulse-Direction
Acceleration range	50mm/s ² to 30000mm/s ²
Velocity profile type	S-Curve
Hardware buffer size	2000 blocks FIFO with time expander for safety
Handshaking time	20ms
Isolation type	Opt coupler
Data connection type	100Mb/s LAN – TCP Protocol
Data connection cable length	Up to 20m with UTP / Up to 50m with SFUTP
Hardware lock	24 time locks with internal clock
Power	16v...32v - 300mA
Dimension	24.4cm x 12.5cm
Control type	Open loop position control
Accessory	Wireless remote



021-2776 (داخلي 113)



Plasma unit KJELLBERG (Germany) technical data	
Mains voltage	3x 400 V, 50 Hz
Cutting current	35 – 300 A
Marking current	10 – 50 A
Duty cycle	100 %
Cutting range	
- Maximum	80 mm
- Recommended	1 – 60 mm
- Piercing	40 mm
Marking gases	Ar, N2
Dimensions (L x W x H)	1,030 x 680 x 1,450 mm
Mass	488 kg
Plasma machine torch	PerCut 4000
Quick change head	PerCut 4000
Description data	
Smart Focus 300	400V/50H
Primary cable	4*50 qmm 5m, w/o plug
Work piece cable	70mm ² 5m
Control cables power source	– PGE
Gas supply – gas control	
Control cable	25 pol. 1,5m
Gas hose Air	G1/4" 6m
Gas hose O2	G1/4" 6m, free of oil
Gas hose Ar	G1/4" 6m
Gas hose H2	G3/8" left hand 6m
Gas hose N2/H2	G3/8" left hand 6m
Gas supply – manual	
PGE-300 plasma gas controller	all gases
PBA-300 plasma torch connection unit	
PZL-300 Hose and cables set	15m
Consisting of:	
Water inlet hose	15m
Water returns hose	15m
Supply cable	15m
Control cable 7-pol.	15m
Control cable 8-pol.	15m
Cathode cable	50qmm 15m M10
Gas hose PG1 air/N2	G1/4"-1/8" 15m
Gas hose PG2 O2/N2	G1/4" L-G1/8" 15m
Gas hose PG3 H2	G3/8" L-G1/8" 15m
Gas hose SGM12*1	G1/8" 15m
Gas hose KG Air/N2	G1/8" 15m



021-2776 (داخلي 113)



Plasma machine torches:
 Snaft –Per cut 4000-440A/C/1,5m
 Quick-change head Per Cut 4000
 Lubricant for O2 LC 40 Fluid 25 ml
 Toolkit for Per Cut 2xx/4xx
 Consisting of:
 Torch tool –Per Cut 440-450
 Gas guide puller Per Cut 440-450
 Socket wrench f .cooling tube
 Coolant Kjellfrost -15 C
 Plasma cutting machine – CNC
 Plug X102
 Interface 25-pot. Plug
 Plug X104 for interface
 Interface 4-pol.plug(X104)
 Height control M4000 BAS
 Linear Drive Cable for B1000/M4000/10m
 Control cable 10m M4000-Smart/Hi Fo X102
 Control cable 10m M4000-Smart/Hi Fo x107
 Isolation bush 50,8/58x70
 Box 126x96x169 cm with Certificate
 Wooden box 121x86x71cm w. certificate
 1 x manual instruction + Dec. Of confirm.engl

Height control M4000 KJELLBERG(GERMANY)

M4000 BAS

Height control unit for Hi Focus, Smart Focus, Fine Focus, Cut Fire and PA-S power sources with a working load of up to 12 kg, lifting up to 220 mm

Height control M4000 BAS

Serial no: 11824609/160031

Linear Drive cable for B1000/M4000/10m

Control cable 10m M4000-smart/Hifo X104

Isolation bush 50,8/58x70

Box 126x96x169 cm with certificate



021-2776 (داخلي 113)



Kjellberg
FINSTERWALDE

Welding Hardfacing Drying
PLASMA CUTTING

SMART
FOCUS



Smart Focus Pure Energy

Smart Focus 130, 200, 300, 400
Plasmascheiden von 1 bis 100 mm
Plasma cutting from 1 to 100 mm



kjellberg.de

021-2776 (داخلي 113)



ANLAGEN
UNITS

**Plasmaschneiden
von 1 bis 100 mm**

**Plasma Cutting
from 1 to 100 mm**



Vorteile
Höchstes Schnittqualität
Hohe Schnittgeschwindigkeit
Geringe Nachverarbeitungsleistung
Belastungs- & verschleißarm
Geringe Schnittkosten

Advantages
Highest cutting quality
High cutting speed
High performance/low wear
Low noise & low cost
Lowest cutting costs

Einfach gut schneiden

Mit den kompakten Anlagen der Smart Focus-Reihe werden mit nur wenigen Einstellungen exzellente Schnittergebnisse im Materialdickenbereich von 1 bis 100 mm erzielt – selbst unter anspruchsvollen Bedingungen. Das Markieren, Fäsen- und Unterwasser-Plasmaschneiden ist mit den Smart Focus-Anlagen ebenfalls möglich – made in Germany.

Simply good cutting

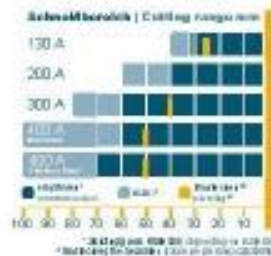
With just a few settings the compact plasma cutting units of the Smart Focus series achieve excellent results in the cutting range from 1 to 100 mm – even under most challenging conditions. The Smart Focus units can also be used for marking, bore and underwater cutting – made in Germany.

Baustahlschneiden mit Contour Cut & Silent Cut

Mit der bewährten Contour Cut-Technologie werden in Baustahl kleine Konturen, schmale Stege und Lücken im Verhältnis 1:1 von Durchmesser zu Materialstärke in ausgezeichneter Qualität geschnitten. Mit Contour Cut Speed können Konturen bis zu 90 % schneller geschnitten werden. Als Weiterentwicklung der Contour Cut-Technologie reduziert die neue Silent Cut-Technologie im Stromärmerbereich von 60 bis 160 A den Schalldruckpegel beim Schneiden um bis zu 15 dB(A). Möglich wird dies durch neue Verschleißteile und die Verwendung der Silent Cut-Schneidatmosphäre – beibehaltener Schnittqualität.

Mild steel cutting with Contour Cut & Silent Cut

With the well-proven Contour Cut technology, small contours, narrow webs and holes with a diameter to material thickness ratio of 1:1 can be cut in excellent quality in mild steel. Contour Cut Speed allows the cutting of contours with a speed that is up to 90 % faster. As a further development of Contour Cut the new Silent Cut technology reduces the sound pressure level up to 15 dB(A) during cutting. This is made possible by new consumables and the use of the Silent Cut cutting database – with similar cut quality.



contour cut
SPEED

silent cut



021-2776 (113 داخلی)



KOMPONENTEN
COMPONENTS

Moderne Komponenten
Modern Components

Brenner & Gassteuerung – intelligente Technik

Für die Smart Focus-Reihe stehen weiterhin manuelle oder automatische Gassteuerungen zur Verfügung, die beste Schneidergebnisse mit höchster, reproduzierbarer Qualität erzielen. Die manuelle Gassteuerung PGE-300 ermöglicht jetzt das Schneiden mit Luft als Plasmagas.

Die Brenner PerCut 2000 und PerCut 4000 sind in Aufbau und Funktionsweise im Vergleich zu den Vorgängermodellen verbessert worden und ermöglichen präzise Schnitte und höchste Schneidgeschwindigkeiten. Ihre einzigartige Flüssigkeitskühlung bis in die Brenner Spitze garantiert höchste Lebensdauer der Verschleißteile, reduziert den Gasverbrauch und damit auch die Schnittkosten.

Torch & gas control – intelligent redevelopment

Either manual or automated gas supply units are available for the Smart Focus series. With these the user achieves best cutting results with highest, reproducible quality. The manual gas supply unit PGE-300 now allows for plasma cutting with air as plasma gas.

The new torches PerCut 2000 and PerCut 4000 have been improved compared to the preceding models. They provide precise cuts and highest cutting speeds. Their unique cooling system up to the torch tip guarantees longest consumable life and reduces the gas consumption and costs per cutting metre.



Brenner / Torch	PerCut 2000, 4000
Schneidwerkzeugkopf / Cutting torch head	PerCut 4000
Eingangsrohr / Brenner / Clamping diameter	100 mm / 2 inch
Filtergasart / Plasma gases	O ₂ , Ar, N ₂ , H ₂ , He
Mischgasart / Mixing gases	Ar, N ₂
Werkstoffart / Steel grades	D, X, Y, TP, AP

PerCut 2000, 4000, 3000, 2000, 1300, 1000, 500, 300, 200, 130, 100, 50, 30, 20, 13, 10, 5, 3, 2, 1



PerCut Brenner: auch für Farbschmelze 10-50° (PerCut Brenner: also for laser cutting up to 50°)



Werkzeuge mit langer Lebensdauer / Consumables with long lifetime



Gassteuerung manuell PGE-300, auch für Luft / PGE-300, auch für Luft / Manual gas control PGE-300, also for air

Einsatzgebiete

- Metal- & Maschinenbau
- Leichtmetalle
- Stahl- & Hohlblech
- Alu- & Blechbau
- Kraftzeug- & Kranbau
- Reinigungs- & Lötarbeiten
- Stahl- & Automobilbau

Application areas

- Metal construction & engineering
- Tool shop production
- Steel & roll construction
- Plant & tank construction
- Commercial vehicle & crane construction
- Pipeline & vessel construction
- Shipbuilding & automotive engineering



Kjellberg
FINSTERWALDE

PLASMASCHNEIDEN

SMART
FOCUS

Technische Daten Technical data	Smart Focus 130	Smart Focus 200	Smart Focus 300	Smart Focus 400
Nennspannung Nomin voltage	3~400 V 50 Hz	3~400 V 50 Hz	3~400 V 50 Hz	3~400 V 50 Hz
Sicherung, trips Fuses, slow	50 A	60 A	125 A	100 A
Anschlußleistung Connected load	max. 20 kVA	max. 31 kVA	max. 70 kVA	max. 116 kVA
Schneidstrom Cutting current	35 – 130 A	35 – 200 A	35 – 300 A	35 – 400 A
Waldstrom Welding current	10 – 50 A	10 – 50 A	10 – 50 A	10 – 50 A
Einschaltzyklus Duty cycle*	100 %	100 %	100 %	100 %
Abmessung (LxBxH) Dimensions (LxWxH)	1030 x 573 x 1260 mm	1030 x 690 x 1490 mm	1030 x 690 x 1490 mm	1030 x 690 x 1490 mm
Netto / Netw	260 kg	300 kg	400 kg	503 kg

* Index Spannung und Frequenz abhängig von Netzspannung und Frequenz im Land.
* Index voltage and frequency according to country.

000019

Auszug Schneidtafel | Extract operating data

Draht Thickness mm	Baustahl / Mild steel		Edelstahl / Stainless steel		Aluminium / Aluminium	
	A	mm/min	A	mm/min	A	mm/min
1	35	2600	65	5500	65	4500
2	35	1800	65	4000	65	4000
5	60	3100	65	2000	65	2100
6	60	2000	130	1600	130	3500
8	130	2000	130	1500	130	1400
10	130	2600	130	1400	130	1300
12	180	2400	130	1200	130	1200
15	260	2600	300	1300	300	1600
20	300x60	1080x100	300x60	850x120	300x60	1200x900
30	300x60	1080x100	300x60	600x60	300x60	600x600
40	300x60	1200x100	300x60	570x50	300x60	1200x600
50	300x60	400x60	300x60	460x60	300x60	800x1200
60	300x60	200x50	300x60	410x60	300x60	650x1000
70	300x60	150x50	300x60	280x60	300x60	480x600
80	300x60	100x50	300x60	250x50	300x60	480x600
100	400	160	400	180	400	250



kjellberg.de

Kontakt | Contact

Kjellberg Finsterwalde Plasma und Maschinen GmbH
Dacia-Kjellberg-Str. 20 | 03238 Finsterwalde | Germany | T: +49 3531 900-0 | F: +49 3531 500-295
Mail: vertrieb@kjellberg.de | Copyright © 2010 Kjellberg Finsterwalde

021-2776 (داخلی، 113)



Produktionsfoto: Kjellberg Finsterwalde