

Cost analysis HiFocus 360i

	plasma gas	swirl gas
HiFocus mild steel	oxygen	oxygen or air or nitrogen
HiFinox CrNi 1-6 mm	nitrogen/hydrogen	nitrogen
HiFocus CrNi	argon + hydrogen	nitrogen
HiFocus Aluminium	air	nitrogen
HiFocus Aluminium	argon + hydrogen	nitrogen

Version	Date	valid up to:
1	02.11.2006	31.12.2007



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Cost analysis HiFocus 360i Mild steel
Plasma gas: Oxygen
Swirl gas: Oxygen + Nitrogen or Air

2007-03-20

Material	Thickness [mm]	Cutting current [A]	Technology	Speed [mm/min]	Select thickness [0 or 1]
1.0330 St12	1	35	HiFocus	2400	0
1.0330 St12	2	35	HiFocus	1600	0
1.0037 St37	6	90	HiFocus+	2600	0
1.0037 St37	10	130	HiFocus+	2600	0
1.0037 St37	10	160	HiFocusF	2600	0
1.0037 St37	15	280	HiFocusF+	2800	0
1.0037 St37	20	280	HiFocusF+	1800	0
1.0037 St37	30	280	HiFocusF+	1000	0
1.0037 St37	40	280	HiFocusF+	500	0
1.0037 St37	20	360	HiFocusF+	2300	0
1.0037 St37	25	360	HiFocusF+	1700	0
1.0037 St37	30	360	HiFocusF+	1450	0
1.0037 St37	40	360	HiFocusF+	1000	1
1.0037 St37	50	360	HiFocusF+	600	0
1.0037 St37	60	360	HiFocusF+	450	0

INPUT MASK

Nur einmal die "1" vergeben

Investment costs : 54 078,40 [EUR]

Writing off time: 5,00 [years]

Interest rate: 8,00 [%]

Number of shifts: 1,00 [piece]

Level of utilization: 60,00 [%]

Maintenance charges: 3,00 [% of investment costs]

Number of working days per year: 210,00 [piece]

Working hours per year for daily x hours per shift: 1 596,00 [h]

Personnel costs incl. extras: 25,00 [EUR/h]

Costs for electric energy: 0,13 [EUR/kWh]

Price gas 50 l cylinder (200 bar)

air (PG1)

oxygen (PG2)

(PG3)

oxygen (WG1)

air/nitrogen (WG2)

Consumption plasma gases (PG)

air (PG1)

oxygen (PG2)

(PG3)

oxygen (WG1)

air/nitrogen (WG2)

Consumption swirl gases (WG)

oxygen (WG1)

air/nitrogen (WG2)

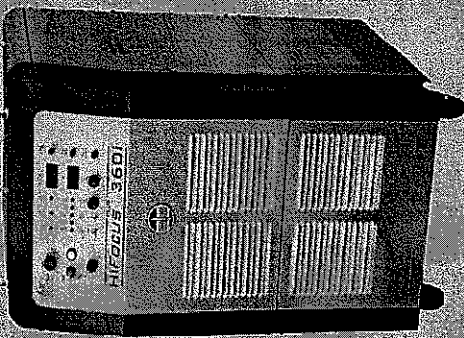
for example 11 034 402 S85B
(List price of standard equipment)

Plasma source: HiFocus 360i with automatic Gas console PerCut 370-2

Torch: O₂

Plasma gas: O₂ oder N₂ oder Air

Swirl gas: O₂ oder N₂ oder Air



Costs consumables (list prices)	Total length of outer contour	565,50	[mm]	Factor per set [piece]	Factor per hour [piece]	Costs per hour [€]
	Total length of inner contour	178,50	[mm]			
	Number of inner contours (piercings)	1	[piece]			
	Cathode	25,50	[EUR]			
	Nozzle	13,40	[EUR]			
	Swirl-gas cap	16,50	[EUR]			
Gas guiding cap	Swirl-gas cap	49,90	[EUR]	0,0150	0,001	0,06
	Nozzle cap	48,10	[EUR]	0,0150	0,001	0,06
RESULT						
Costs plasma gas (PG)	Total cutting length	744,00	[mm]	Factor per set [piece]	Factor per hour [piece]	Costs per hour [€]
	Standing expenses per year	12 876,00	[EUR]			
	Cutting time per year	958,00	[h]			
	Standing expenses per cutting hour	13,44	[EUR/h]			
	Personnel costs per cutting hour	25,00	[EUR/h]			
	Total cutting time	45,00	[sec]			
	Cutting time incl. machine-handling time	51,00	[sec]			
	(Theoretic) plasma ignitions per hour	85	[ignitions/h]			
	Need consumable sets per hour	0,085	[set]			
	Electric energy costs per hour	9,42	[EUR/h]			
	air (PG1)		[EUR/h]			
	oxygen (PG2)	3,10	[EUR/h]			
	(PG3)		[EUR/h]			
	oxygen (WG1)	1,42	[EUR/h]			
Costs swirl gas (WG)	air/nitrogen (WG2)		[EUR/h]			
	Summary gas costs	4,52	[EUR/h]			
	Costs consumables	4,76	[EUR/h]			
	Maintenance charges	1,02	[EUR/h]			
	Costs machine per hour	58,16	[EUR/h]			
	Costs per cutting meter	0,97	[EUR/m]			
	Number of parts per hour	42	[piece/h]			
	Costs per part	1,38	[EUR/piece]			

 = input arrays



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Cost analysis HiFocus 360i CrNi-steel
Plasma gas: Nitrogen/Hydrogen
Swirl gas: Nitrogen

2007-03-20

Material	Thickness [mm]	Cutting current [A]	Technology	Speed [mm/min]	Select thick- ness [0 or 1]
1.4301 CrNi	1	35	HiFinox	7000	0
1.4301 CrNi	2	55	HiFinox	3600	0
1.4301 CrNi	3	60	HiFinox	2600	0
1.4301 CrNi	4	60	HiFinox	2400	0
1.4301 CrNi	5	60	HiFinox	2200	1
1.4301 CrNi	6	60	HiFinox	1800	0

INPUT MASK

Nur einmal die "1" vergeben

Investment costs

Writing off time

Interest rate

Number of shifts

Level of utilization

Maintenance charges

Number of working days per year

Working hours per year for daily x hours per shift

Personnel costs incl. extras

Costs for electric energy:

nitrogen (PG1)

nitrogen/hydrogen (95%/5%) (PG2)

(PG3)

nitrogen (WG1)

nitrogen (WG2)

Consumption plasma gases (PG)

nitrogen/hydrogen (95%/5%) (PG2)

(PG3)

nitrogen (WG1)

nitrogen (WG2)

Consumption swirl gases (WG)

for example 11.034.402.S85B
(List price of standard equipment)

Plasma source:

HiFocus 360i
with automatic
Gas console
PerCut 370-2

Torch:
F5
N₂

Plasma gas:

Swirl gas:

54 078,40	[EUR]
5,00	[years]
8,00	[%]
1,00	[piece]
60,00	[%]
3,00	[% of investment costs]
210,00	[piece]
1 596,00	[h]
25,00	[EUR/h]
0,13	[EUR/kWh]
20,00	[EUR]
25,00	[EUR]
	[EUR]
20,00	[EUR]
20,00	[EUR]
	[l/min]
28,91	[l/min]
	[l/min]
27,65	[l/min]
19,36	[l/min]

Costs consumables (list prices)	Total length of outer contour:	800,00	[mm]
	Total length of inner contour:	100,00	[mm]
	Number of inner contours (piercings)	2	[piece]
	Cathode	19,90	[EUR]
	Nozzle	13,40	[EUR]
	Swirl-gas cap	16,50	[EUR]
Gas guiding cap	Gas guiding cap	44,25	[EUR]
	Nozzle cap	48,10	[EUR]
RESULT	Total cutting length:	900,00	[mm]
	Standing expenses per year:	12 876,00	[EUR]
	Cutting time per year:	958,00	[h]
	Standing expenses per cutting hour:	13,44	[EUR/h]
	Personnel costs per cutting hour:	25,00	[EUR/h]
	Total cutting time:	25,00	[sec]
	Cutting time incl. machine-handling time	34,00	[sec]
	(Theoretic) plasma ignitions per hour:	191	[ignitions/h]
	Need consumable sets per hour:	0,099	[set]
	Electric energy costs per hour:	1,25	[EUR/h]
	nitrogen (PG1):		[EUR/h]
	nitrogen/hydrogen (95%/5%) (PG2):	4,34	[EUR/h]
Costs plasma gas (PG)	(PG3):		[EUR/h]
	nitrogen (WG1):	3,32	[EUR/h]
	nitrogen (WG2):	2,32	[EUR/h]
	Summary gas costs:	9,98	[EUR/h]
Costs swirl gas (WG)	Costs consumables:	5,02	[EUR/h]
	Maintenance charges:	1,02	[EUR/h]
	Costs machine per hour:	55,70	[EUR/h]
	Costs per cutting meter:	0,42	[EUR/m]
	Number of parts per hour:	64	[piece/h]
	Costs per part:	0,87	[EUR/piece]

Factor per set [piece]	1,0000	Factor per hour [piece]	0,099	Costs per hour [€]	1,97
	2,0000		0,198		2,66
	0,1500		0,015		0,25
	0,0150		0,001		0,07
	0,0150		0,001		0,07

= input arrays
 = output arrays



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Cost analysis HiFocus 360i Aluminium
Plasma gas: Air
Swirl gas: Nitrogen

2007-03-20

Material	Thickness [mm]	Cutting current [A]	Technology	Speed [mm/min]	Select thick- ness [0 or 1]
3.3536 AlMg3	1	35	HiFocus	3800	0
3.3536 AlMg3	2	35	HiFocus	2600	0
3.3536 AlMg3	3	35	HiFocus	2300	0
3.3536 AlMg3	4	45	HiFocus	1500	1
3.3536 AlMg3	5	50	HiFocus	1400	0
3.3536 AlMg3	6	50	HiFocus	1300	0
3.3536 AlMg3	8	50	HiFocus	1100	0

INPUT MASK

Nur einmal die "1" vergeben

Investment costs:
Writing off time:
Interest rate:
Number of shifts:
Level of utilization:
Maintenance charges:
Number of working days per year:
Working hours per year for daily x hours per shift:
Personnel costs incl. extras:
Costs for electric energy:
Price gas 50 l cylinder (200 bar):
Consumption plasma gases (PG):
Consumption swirl gases (WG):

for example 11 034 402 S85B
(List price of standard equipment)

Plasma source:
Torch:
Plasma gas:
Swirl gas:

HiFocus 360i
with automatic
Gas console
PerCut 370-2
Air
N₂

54 078,40 [EUR]
5,00 [years]
8,00 [%]
1,00 [piece]
60,00 [%]
3,00 [% of investment costs]
210,00 [piece]
1 596,00 [h]
25,00 [EUR/h]
0,13 [EUR/kWh]
10,00 [EUR]
10,00 [EUR]
[EUR]
20,00 [EUR]
25,00 [EUR]
0,00 [l/min]
40,67 [l/min]
0,00 [l/min]
27,65 [l/min]
0,00 [l/min]

	Total length of outer contour	800.00 [mm]			
	Total length of inner contour	100.00 [mm]			
	Number of inner contours (piercings)	2 [piece]			
Costs consumables (list prices)	Cathode:	19.90 [EUR]	Factor per set [piece]	Factor per hour [piece]	Costs per hour [€]
	Nozzle:	13.40 [EUR]	1,0000	0.073	1.46
	Swirl-gas cap:	16.50 [EUR]	2,0000	0.146	1.96
	Gas guiding cap:	44.25 [EUR]	0,1500	0.011	0.18
	Nozzle cap:	48.10 [EUR]	0,0150	0.001	0.05
			0,0150	0.001	0.05
RESULT					
	Total cutting length:	900.00 [mm]			
	Standing expenses per year:	12 876.00 [EUR]			
	Cutting time per year:	958.00 [h]			
	Standing expenses per cutting hour:	13.44 [EUR/h]			
	Personnel costs per cutting hour:	25.00 [EUR/h]			
	Total cutting time:	36.00 [sec]			
	Cutting time incl. machine-handling time:	45.00 [sec]			
	(Theoretic) plasma ignitions per hour:	144 [ignitions/h]			
	Need consumable sets per hour:	0,073 [set]			
	Electric energy costs per hour:	1.05 [EUR/h]			
Costs plasma gas (PG)	air (PG1)	0.00 [EUR/h]			
	air (PG2)	2.44 [EUR/h]			
	(PG3)	0.00 [EUR/h]			
	nitrogen (WG1)	3.32 [EUR/h]			
Costs swirl gas (WG)	(WG2)	0.00 [EUR/h]			
	Summary gas costs:	5.76 [EUR/h]			
	Costs consumables:	3.70 [EUR/h]			
	Maintenance charges:	1.02 [EUR/h]			
	Costs machine per hour:	49.96 [EUR/h]			
	Costs per cutting meter:	0.56 [EUR/m]			
	Number of parts per hour:	48 [piece/h]			
	Costs per part:	1.04 [EUR/piece]			

= input arrays



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Cost analysis HiFocus 360i Aluminium
Plasma gas: Argon + Hydrogen
Swirl gas: Nitrogen

2007-03-20

Material	Thickness [mm]	Cutting current [A]	Technology	Speed [mm/min]	Select thickness [0 or 1]
3.3536 AlMg3	8	130	HiFocus F	3200	0
3.3536 AlMg3	8	130	HiFocus F	2200	0
3.3536 AlMg3	10	130	HiFocus F	1600	0
3.3536 AlMg3	12	160	HiFocus F	1650	0
3.3536 AlMg3	12	130	HiFocus F	1400	0
3.3536 AlMg3	12	160	HiFocus F	1650	0
3.3536 AlMg3	16	130	HiFocus F	1000	0
3.3536 AlMg3	20	160	HiFocus F	1000	0
3.3536 AlMg3	30	280	HiFocus F	1800	0
3.3536 AlMg3	40	280	HiFocus F	1200	1
3.3536 AlMg3	60	280	HiFocus F	550	0

INPUT MASK

Nur einmal die "1" vergeben

Investment costs
Writing off time
Interest rate
Number of shifts
Level of utilization
Maintenance charges
Number of working days per year
Working hours per year for daily x hours per shift
Personnel costs incl. extras
Costs for electric energy

for example, 11 034 402 S85B
(List price of standard equipment)

Plasma source:

Torch:
Plasma gas:
Swirl gas:

HiFocus 360i
with automatic
Gas console
PerCut 370-2
Ar/H₂
N₂

54 078,40 [EUR]	5,00 [years]	8,00 [%]	1,00 [piece]	60,00 [%]	3,00 [% of investment costs]	210,00 [piece]	1 596,00 [h]	25,00 [EUR/h]	0,13 [EUR/kWh]	30,00 [EUR]	30,00 [EUR]	22,00 [EUR]	20,00 [EUR]	20,00 [EUR]	23,54 [l/min]	23,45 [l/min]	7,36 [l/min]	22,43 [l/min]	13,91 [l/min]
										Price gas 50 l cylinder (200 bar)									
										argon (PG1):									
										argon (PG2):									
										hydrogen (PG3):									
										nitrogen (WG1):									
										nitrogen (WG2):									
										Consumption plasma gases (PG)									
										argon (PG1):									
										argon (PG2):									
										hydrogen (PG3):									
										nitrogen (WG1):									
										nitrogen (WG2):									
										Consumption swirl gases (WG)									

Costs consumables (list prices)	Total length of outer contour:	800,00 [mm]			
	Total length of inner contour:	100,00 [mm]			
	Number of inner contours (piercings):	2 [piece]			
	Cathode:	19,90 [EUR]	1,0000	Factor per hour [piece]	Costs per hour [€]
	Nozzle:	13,40 [EUR]	2,0000		
	Swirl-gas cap:	16,50 [EUR]	0,1500		
Gas guiding cap:	Gas guiding cap:	44,25 [EUR]	0,0150		
	Nozzle cap:	48,10 [EUR]	0,0150		
RESULT					
Costs plasma gas (PG)	Total cutting length:	900,00 [mm]			
	Standing expenses per year:	12 876,00 [EUR]			
	Cutting time per year:	958,00 [h]			
	Standing expenses per cutting hour:	13,44 [EUR/h]			
	Personnel costs per cutting hour:	25,00 [EUR/h]			
	Total cutting time:	45,00 [sec]			
	Cutting time incl. machine-handling time:	54,00 [sec]			
	(Theoretic) plasma ignitions per hour:	120 [ignitions/h]			
	Need consumable sets per hour:	0,096 [set]			
	Electric energy costs per hour:	6,31 [EUR/h]			
Costs swirl gas (WG)	argon (PG1):	4,24 [EUR/h]			
	argon (PG2):	4,22 [EUR/h]			
	hydrogen (PG3):	0,97 [EUR/h]			
	nitrogen (WG1):	2,69 [EUR/h]			
	nitrogen (WG2):	1,67 [EUR/h]			
Summary gas costs:	Summary gas costs:	13,79 [EUR/h]			
	Costs consumables:	4,87 [EUR/h]			
	Maintenance charges:	1,02 [EUR/h]			
	Costs machine per hour:	64,63 [EUR/h]			
Costs per cutting meter:	Costs per cutting meter:	0,90 [EUR/m]			
	Number of parts per hour:	40 [piece/h]			
	Costs per part:	1,62 [EUR/piece]			

	= input arrays
	= output arrays