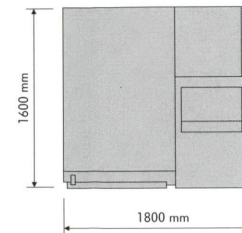
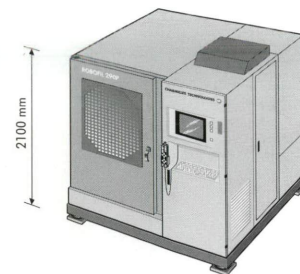


Technical specifications

ROBOFIL 290P



Machine

Type of machining		Wire cutting with coaxial flushing
Dimensions of the complete equipment (L x W x H)	mm	1800 x 1600 x 2100
Total weight of equipment without dielectric	kg	2200
"Machines" Safety and Health Directive		89/392/EEC
"Electromagnetic Compatibility" Directive		89/336/EEC

X, Y, Z and U, V axes

X, Y, Z travel	mm	400 x 250 x 200
U, V travel	mm	400 x 250
Taper angle/height	°/mm	±30/200
Device for measuring movements		Linear glass scales
Measurement resolution XYUVZ	µm	0.5
Collision protection		X, Y, U, V and Z

Work area

Maximum part dimensions (L x W x H)	mm	850 x 500 x 200
Dimension of the front door	mm	900
Maximum part weight	kg	500
Dimensions of table (width x depth)	mm	720 x 500
Floor to table distance	mm	1000

Wire unspooling

Diameter of standard wire guides	mm	0.25
Type of wire guide		Close diamond type. No clearance
Programmable speed of wire unspooling	m/min	0.2 to 15
Programmable traction force of wire	daN	0.3 to 3
Weights and types of permissible reels (according to DIN standards)	kg	1.6 (K100)/ 3.5 (K125)/ 8 (K160)
Weights and types of permissible reels (according to JIS standards)	kg	3 (P3)/ 5 (P5)

Dielectric

Total volume of dielectric	l	300
Total volume of deionization resin	l	20
Programmable Flushing pressure	bars	13

Generator

Maximum machining speed	mm ² /min	280
Minimum surface roughness	µm Ra	0.28

Numerical control

Screen		CRT 14" color
Keyboard		Alphanumeric/102 keys
Remote control		Standard
Control module		IBM®
Processors		INTEL® 486DX4
Disk drive		3.5" DOS
Capacity of diskette A:	MB	1.44
Capacity of hard disk U:	GB	1
Capacity of user memory MEM:	MB	1.5
Communication interface DNC1		RS 232 / RS 422
Position servocontrol		Closed servocontrol loop
Programmable axes		X, Y, U, V, Z
CAM-CT, interactive programming of the geometry		Standard
Pilot-Expert, wire breakage prevention		Standard
Profil-Expert, machining strategy for fine details		Standard
CT-Expert, integrated cutting technology		Standard

Main options

Taper-Expert, for taper accuracy		
Automatic wire threading / Rethreading		
Autorestart		
DNC3, Remote monitoring		
Extended M functions		
Eject 100		
Wire guide	mm	0.10, 0.20, 0.30



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AGIE CHARMILLES Group
GEORG FISCHER +GF+ Manufacturing Technology

ROBOFIL 290P



Designed to do the job for years to come

CHARMILLES TECHNOLOGIES



ROBOFIL 290P

Packed with performance and know-how

- Linear glass scales maintain accuracy over the life of the machine
- Collision protection: prevents downtime lowers maintenance costs boosts operator confidence
- Rugged design with fixed table accommodates heavy workpieces

- Exceptional taper machining (30°/200mm) widens scope of applications

- High cutting speed even under difficult flushing conditions

- Expert Systems boost productivity and maximize profitability: CAM-CT CT-EXPERT PROFIL-EXPERT TAPER-EXPERT PILOT-EXPERT

The ROBOFIL 290P delivers a host of user benefits. The result of proven technology, it derives from world-class expertise and is as reliable as it is user-friendly. Designed and manufactured in Switzerland by Charmilles Technologies this rugged machine is built to last.

The Machine

Constant and long-lasting precision

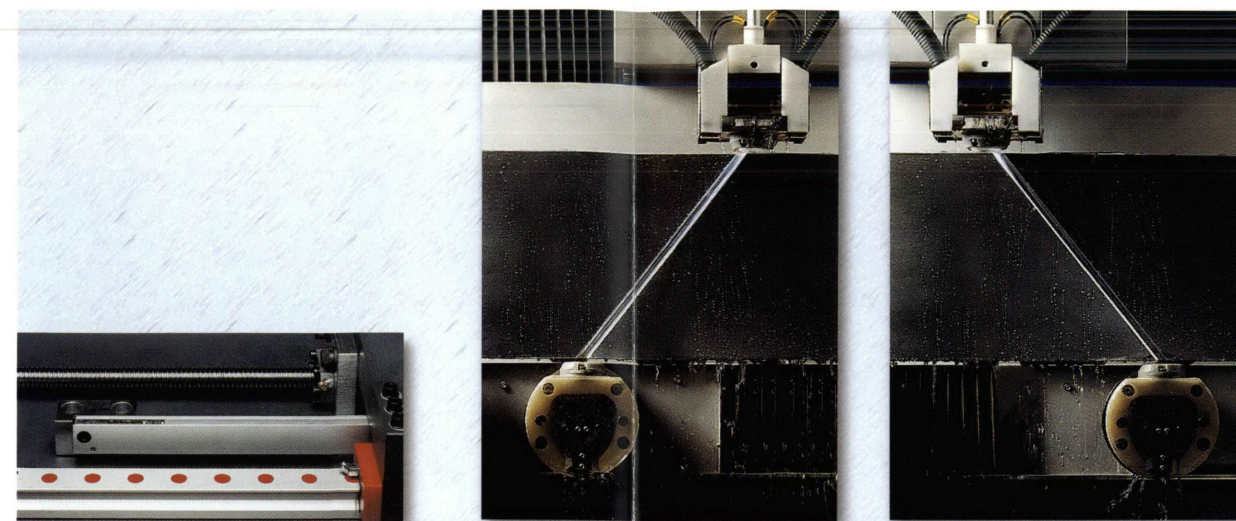
High precision linear glass scales measure the true position of the wire guides and allow direct monitoring of the actual movement of the X, Y, U, V or Z slides. Robofil 290P's design allows the machine to maintain its precision and require no periodic adjustment or calibration. Unaffected by wear, precision of movement remains constant throughout the life of the machine.

Workpieces of 500 kg accepted

Despite its small foot print, the Robofil 290P accepts workpieces up to 500 kg. A fixed table makes this rugged machine able to withstand impact and to maintain cutting performances unaffected by the weight of the workpiece.

Collision protection

An integrated anticollision system on all 5 axes provides for effective protection of all parts during manual or unattended operation. With the machine's accuracy preserved for many years to come, maintenance costs are drastically reduced.



400mm X-U and 250mm Y-V travel allow for exceptional wire angles to be obtained



Easy taper machining

A programmable Z axis and automated measuring system combine to accelerate wire alignment and parameter settings. While experienced operators will appreciate the machine's efficiency and productivity, beginners will feel secure.



Copper electrode taper-machined on 4 axes

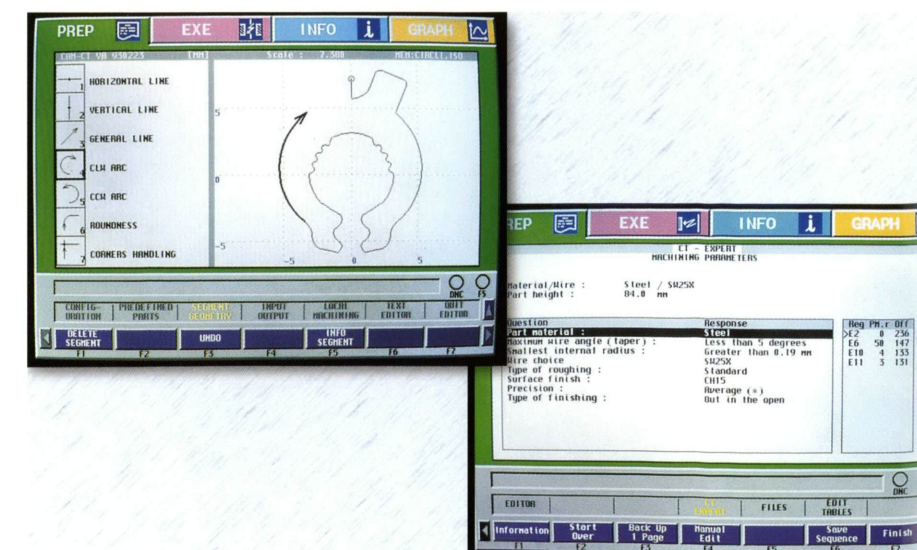
The Numerical Control

CAM-CT Easy programming

Designed to facilitate machine startup, CAM-CT is easy to learn. It enables prompt programming of 2-axis contours and allows integration of the latest EDM technologies from Charmilles Technologies.

CT-EXPERT Expertise at your operator's fingertips

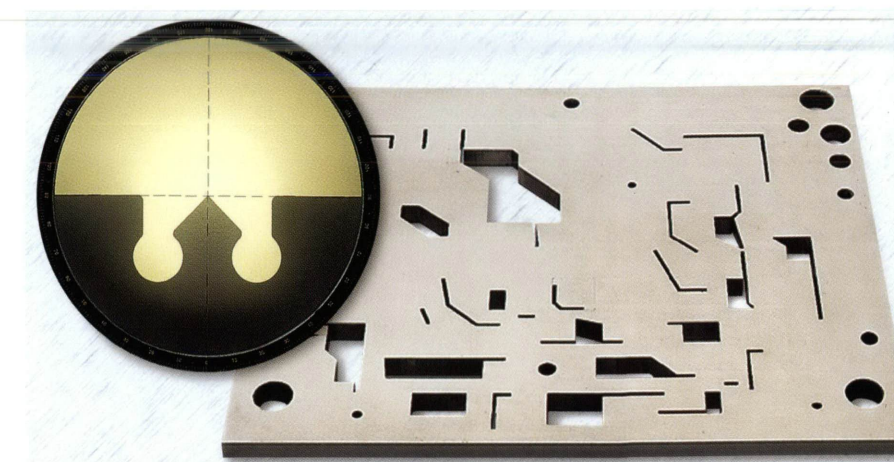
The result of extensive expertise, CT-Expert contains all the technological data for machining a wide variety of parts. With machining settings and offset selected by CT-Expert, even beginners are able to tap the machine's full potential.



The Technology

PROFIL-EXPERT Respectful of fine details

In order to ensure the precision of sharp corners and small radii, Profil-Expert adjusts machining parameters and wire tension before each change in machining direction. Reliable and completely automatic, Profil-Expert is compatible with any material.



Taper-Expert maintains a constant land within 5 µm with a variable taper between 10° and 20°. This is a major factor when it comes to obtaining a perfect extrusion profile.

TAPER-EXPERT Simple and precise

The Taper-Expert software allows to machine angles from 0° to 30° with utmost precision. A series of simple, fast and automatic movements locates precisely the wire's pivoting point in the guide, regardless of inclination angle. In real time and during machining it corrects the wire's position in relation to the angle.

PILOT-EXPERT Protection from wire breakage

The Pilot-Expert software monitors machining automatically and responds instantly by adjusting the spark according to workpiece shape or flushing quality.

