

Today the cutting with diamond wires offers almost unlimited possibilities to professional users. Thanks to modern wire saw technology it is no problem any longer to cut concrete, reinforced concrete or masonry which before was a task of high complexity. By using swivel rolls and wire guide pulleys cuts in any direction and of any kind become possible. Also in places difficult to access and in extremely narrow areas where a wall saw cannot be used the wire saw technology can be applied without any problems.

CEDIMA disposes of many years of experience in the development and the construction of powerful wire sawing machines that meet all requirements on job sites. From the automatic wire saw CSA-100 for small to medium surfaces to the CSA-1001 with a wire storage capacity of 21 m for large surfaces we offer you the suitable machine for each sawing application.

All the CEDIMA automatic wire saws are equipped with an automatic cutting force control that provides constantly the correct wire tension while cutting. This ensures a permanent maximum output at the lowest possible tool costs. Due to the extensively automated cutting operation the operator's job is effectively eased and possible mistakes due to mishandling are widely avoided. According to your requirements and preferences hydraulic wire drives or drives with modern, powerful high-frequency electric motors are available. The construction of the automatic wire saws allows looping of a maximum wire length around the drive wheel, this involving a high power transmission. The modular design of the machines and the wide range of accessories enable you to compose your wire sawing equipment according to your special requirements. We shall be glad to offer you the appropriate wire for each material.



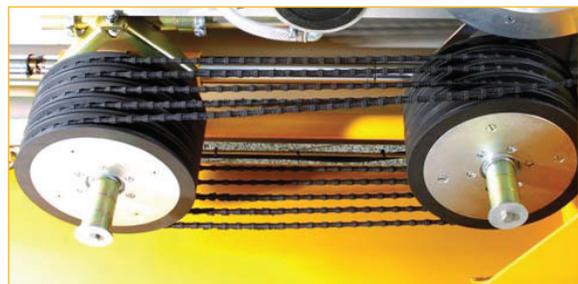
## Operating mode of wire storage

The functionality of the wire storage is similar to a chain-block. In the interior the diamond wire is laid in an endless loop around 2 packages of rolls. The rear package of rolls can be moved hydraulically.

For the starting position the 2 packages of rolls are directly adjoined. The diamond wire has to be mounted on at least 2 rolls of package. While cutting, the rear package of rolls is moved backwards. This way, the wire set free during the sawing process is pulled into the machine.

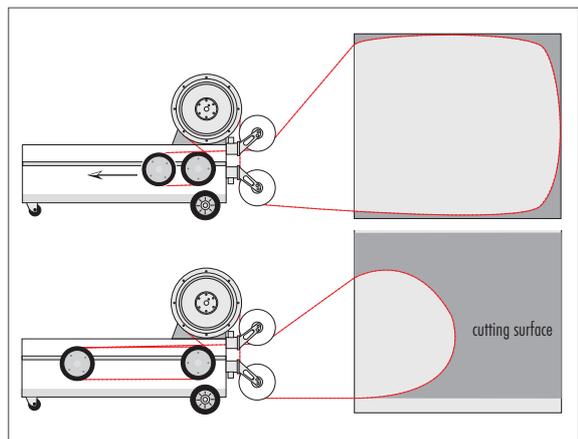
When reaching the final stop, the cutting operation is interrupted by the operator, the rear package of rolls is moved forward again and the wire set free is looped around the remaining storage rolls. This procedure can be repeated until all the storage rolls are lined with wire.

Due to this operating mode large cutting surfaces can be implemented without repositioning the machine or shortening the wire.



principle of a chain block in wire storage compartment

## position of the packages of rolls in the wire storage compartment with different cutting surfaces and identical wire length



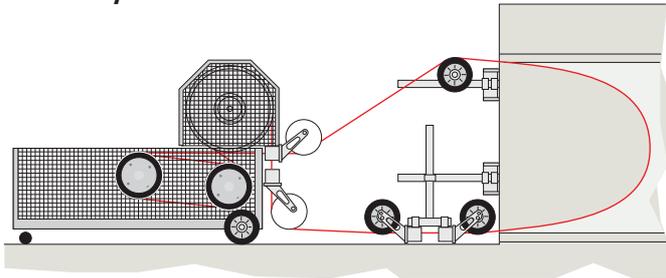
	min. wire length in the machine	max. wire length in the machine	max.available wire storage capacity
CSA-1001 10 storage rolls	6,5 m	20,5 m	14,0 m
CSA-1001 14 storage rolls	6,5 m	27,5 m	21,0 m
CSA-100 8 storage rolls	4,0 m	10,5 m	6,5+1,5* m

\* by displacing the machine on the guiding tube

# WIRE SAW TECHNOLOGY

## Examples for wire sawing operations

### Assembly of a wire saw for vertical cuts

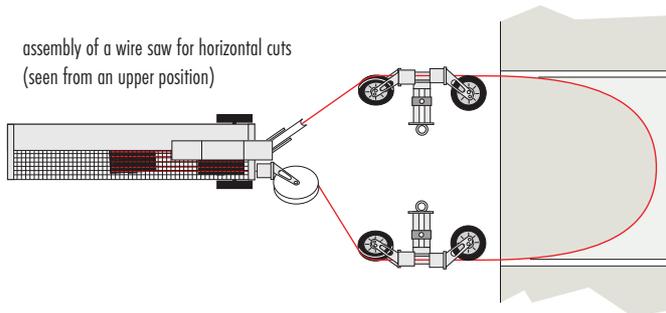


### Cutting a wall opening

For making a rectangular opening four steps are necessary. The wire is led through two prepared core drilling holes at the corners of the area to be cut. Wire guide pulleys and swivel rolls lead the diamond wire from the machine to the cut.

For horizontal cuts the diamond wire can be guided on its shortest way to a horizontal cutting position by means of parallel positioned swivel rolls.

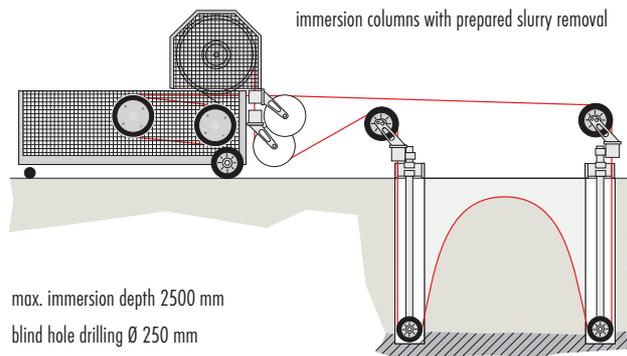
assembly of a wire saw for horizontal cuts (seen from an upper position)



### The wire saw operating as an immersion saw

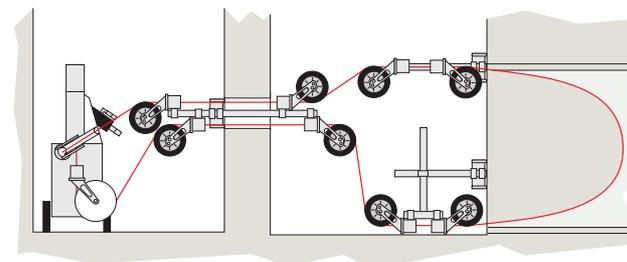
If the diamond wire cannot be led around the material to be cut due to structural reasons the wire saw is operated with the help of immersion columns. Two immersion rolls are placed into corresponding blind hole drillings.

The wire „immerses“ into the material to be cut.



### Wire sawing in narrow areas

By means of swivel rolls the diamond wire can be led to the cut through cramped areas of narrow passages.



Automatic Wire Saw CSA-1001: horizontal cut



Automatic Wire saw CSA-1001: vertical cut



Automatic wire saw CSA-1001 H: vertical cut through a bridge cheek



Automatic wire saw CSA-1001 H: horizontal cut of a bridge pier

## Automatic wire saw CSA-100 E

*high-frequency electric drive, automatic cutting force control*

The mini automatic wire saw CSA-100 has been developed especially for medium and small separation cuts with diamond wires. Despite its considerably compact dimensions the machine provides a wire storage of up to 8 m wire. During development of the CSA-100 the 1-man-principle has consequently been implemented. The machine's single components do not exceed 21 kg.

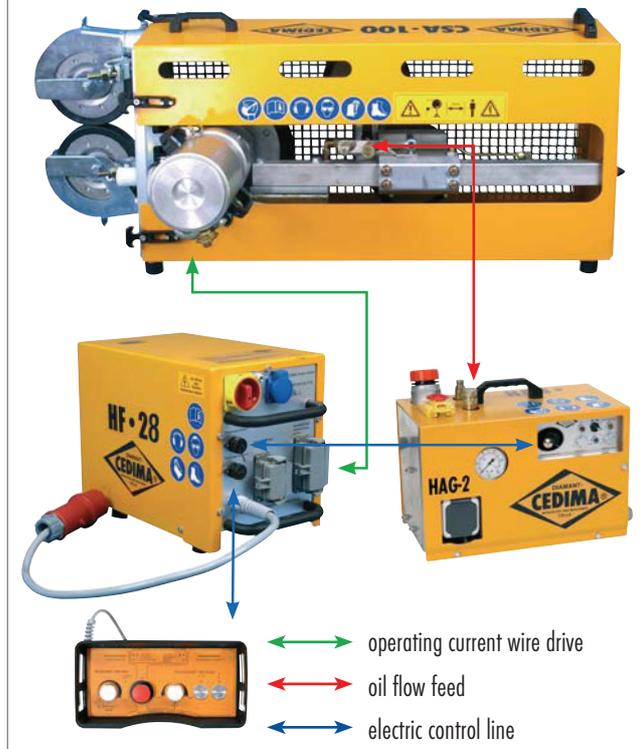
technical data	CSA-100 E
storage rolls	8 pcs.
wire in storage min./max.	4,0/10,5 m
max. wire storage capacity	6,5 + 1,5* m
motor	HFM-18.1 (18 kW)
weight without motor	54 kg
operational weight without wire	75,5 kg
oil flow capacity feed	1 - 15 l/min
max. operating pressure feed	100 bar
dimensions L/W/H	1050/300/460 mm

\*by displacing the machine on the mounting tube



CSA-100 E with foot MF-6000 for wall or ground mounting

### connecting schema CSA-100 E



### Wire saw CSA-100 E

order-No.	type	description
30000463	CSA-100	automatic wire saw with 2 mini swivel rolls and ground mounting foot, without drive motor
30000467	-	wire guard set with water collecting function
30000270	HFM-18.1	high-frequency electric motor, 18 kW, with 10 m cable
30000345	HF-28	high-frequency universal control
30000430	HAG-2	power pack for hydraulic feed; 230 V/50 Hz; 1,25 l/min; 0 - 95 bar
30000421	-	set of hoses 2-parts, 10 m long, (for feed at wire sawing with HAG-2)
30000314	-	control line HF-28 to HAG-2
30000299	-	universal control box with 10 m cable for HF-28

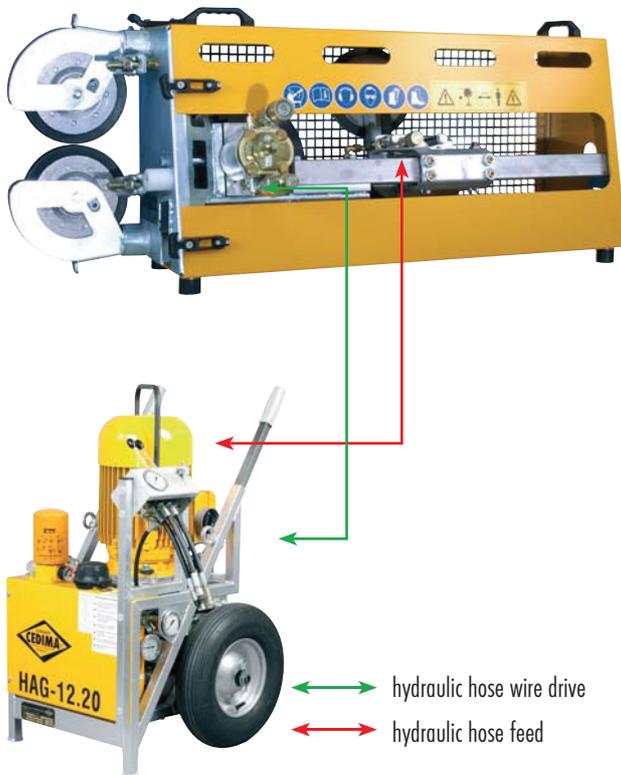
### Accessories automatic wire saw CSA-100 E

order-No.	type	description
30000300	-	universal remote control box for HF-28, alternatively to universal control box with cable
30000464	MF-6000	foot for mounting to wall or ground with mounting tube
30000465	-	precision swivel foot 360° with mounting tube
30000667	-	set of anchoring dowels M12 with impact nut

## Automatic wire saw CSA-100 H

hydraulic drive, automatic cutting force control

### connecting schema CSA-100 H



technical data	CSA-100 H
storage rolls	8 Stk.
wire in storage min./max.	4,0/10,5 m
max. wire storage capacity	6,5 + 1,5* m
weight without motor	54 kg
weight with motor	60,8 kg
oil flow feed	1 - 15 l/min
max. operating pressure feed	100 bar
dimensions L/W/H	1050/300/460 mm

\*by displacing the machine on the mounting tube

technical data hydraulic drives for CSA-100 H	
max. output hydraulic motors	20 kW
oil quantity hydraulic drive	25 - 55 l/min
max. working pressure drive	250 bar



HAG-12.10 and HSP-12, alternatively to HAG-12.20 with control panel

### Wire saw CSA-100 H

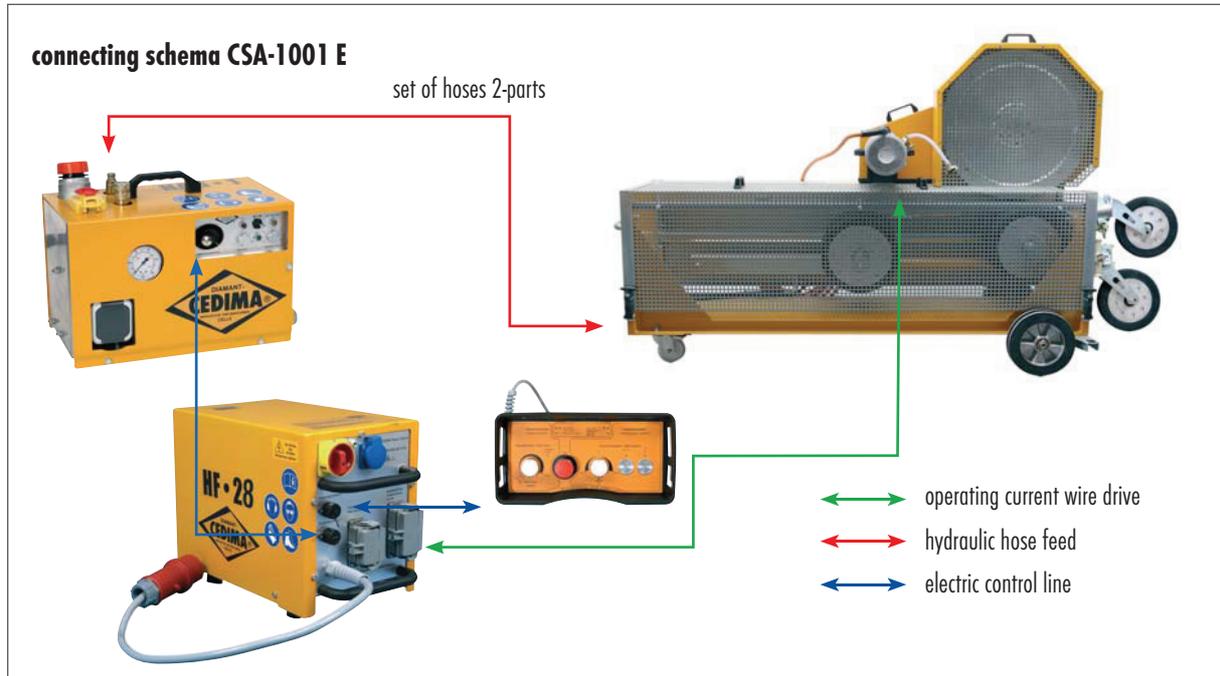
order-No.	type	description
30000463	CSA-100	automatic wire saw with 2 mini swivel rolls and ground mounting foot, without drive motor
30000467	-	wire guard set with water collecting function
30000425	HM-19	hydraulic drive motor 19 cm <sup>3</sup>
30000952	HAG-12.20	hydraulic power pack with hydraulic control panel
30000423	-	set of hoses 3-parts, 10 m long, for drive of drive wheel (wire saw)
30001011	-	set of hoses 2-parts, 10 m long (for feed at wire sawing with HAG-12.20)

### Accessories automatic wire saw CSA-100 H

order-No.	type	description
30000426	HM-23	hydraulic drive motor 23 cm <sup>3</sup> , alternatively to HM-19
30000418	HAG-12.10	hydraulic power pack
30000429	HSP-12	hydraulic control panel
30000421	-	set of hoses 2-parts, 10 m long (for feed at wire sawing with HSP-12)
30000464	MF-6000	foot for mounting to wall or ground with mounting tube
30000614	-	assembly set wire drive wheel
30000465	-	precision swivel foot 360° with mounting tube
30000667	-	set of anchoring dowels M12 with impact nut

## Automatic wire saw CSA-1001 E

high-frequency electric drive, automatic cutting force control



### Wire saw CSA-1001 E

order-No.	type	description
30000454	CSA-1001	automatic wire saw with 2 swivel rolls and 10 storage rolls, without wire drive unit and wire drive wheel
30000475	-	wire guard set
30000505	-	wire drive unit for high-frequency electric motor with drive wheel guard (without motor)
30000457	-	wire drive wheel Ø 600 mm with interchangeable bandage
30000270	HFM-18.1	high-frequency electric motor, 18 kW, mit 10 m cable
30000345	HF-28	high-frequency universal control
30000430	HAG-2	power pack for hydraulic feed; 230 V/ 50 Hz; 1,25 l/min; 0 - 95 bar
30000421	-	set of hoses 2-parts, 10 m long, (for feed at wire sawing with HAG-2)
30000314	-	control line HF-28 to HAG-2
30000299	-	universal control box with 10 m cable for HF-28

technical data	CSA-1001 E
storage rolls	10 pcs.
wire in storage min./max.	6,5/27,5 m
max. wire storage capacity	14/21* m
weight without drive	130 kg
operational weight without wire	180 kg
oil flow feed	1 - 15 l/min
max. operating pressure feed	100 bar
dimensions L/W/H	1950/600/550 mm

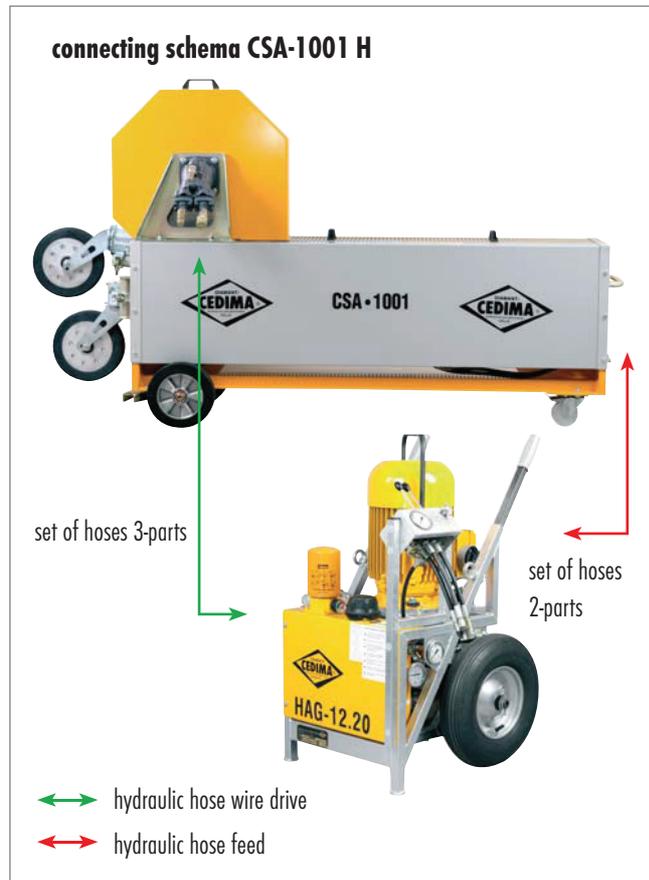
\*4 additional storage rolls required (art.No. 30000490)

### Accessories automatic wire saw CSA-1001 E

order-No.	description
30000300	universal remote control box for HF-28, alternatively to universal control box with cable

## Automatic wire saw CSA-1001 H

hydraulic drive, automatic cutting force control



technical data	CSA-1001 H
storage rolls	10 pcs.
wire in storage min./max.	6,5/27,5 m
max. wire storage capacity	14/21* m
motor	hydraulic motor max. 30 kW
weight without drive	130 kg
weight with drive	180 kg
oil flow feed	1 - 15 l/min
max. operating pressure feed max.	100 bar
dimensions L/W/H	1950/600/550 mm

\*4 additional storage rolls required (order-No. 30000490)

technical data hydraulic drives for CSA-1001 H	
max. output hydraulic motors	24 kW
oil quantity hydraulic drive	30 - 54 l/min
max. working pressure drive	250 bar



HAG-12.10 and HSP-12, alternatively to HAG-12.20 with control panel

### Wire saw CSA-1001 H

order-No.	type	description
30000454	CSA-1001	automatic wire saw with 2 swivel rolls and 10 storage rolls, without wire drive unit and wire drive wheel
30000475	-	wire guard set
30000474	-	wire drive unit with hydraulic motor 45 cm <sup>3</sup> and drive wheel guard
30000457	-	wire drive wheel Ø 600 mm with interchangeable bandage
30000952	HAG-12.20	hydraulic power pack with hydraulic control panel
30000423	-	set of hoses 3-parts, 10 m long, for drive of drive wheel (wire saw)
30001011	-	set of hoses 2-parts, 10 m long, for feed at wire sawing with HAG 12.20

### Accessories automatic wire saw CSA-1001 H

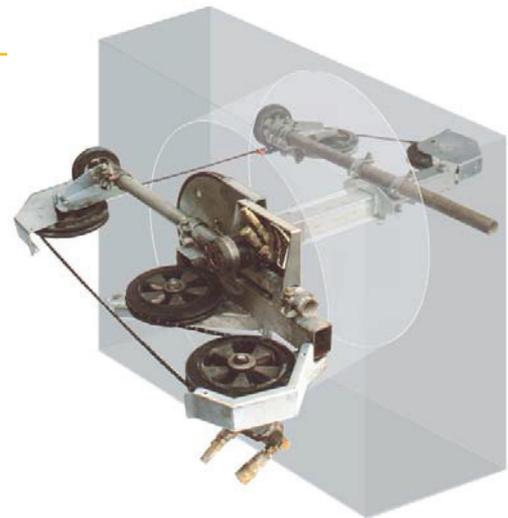
order-No.	description
30000473	wire drive unit with hydraulic motor 60 cm <sup>3</sup> and drive wheel guard
30000956	hydraulic power pack HAG-330 without control panel
30000984	hydraulic control panel HSP-33 for HAG-330 (only plant assembly when placing an order)

### Circular saw CAZ-3200

#### Circular wire saw CAZ-3200 for cutting openings in walls or ceilings.

- for cutting large-sized, circular openings in concrete or masonry of diametres between 0,52 and 3,2\* m at a maximum wall thickness of 1,1\* m
- flush cutting possible at a diameter of at least Ø 1,3 m
- short set-up times and easy handling
- automatic cutting force control
- wire tensioning roll to compensate varying wire loads
- drive by hydraulic power packs of 10 - 30 kW output, e.g. HAG-12.10

\*enlargement possible by extension of guiding tubes



#### Operational method of the circular saw CAZ-3200

A core drilling of 120 mm diameter is created in the centre of the circle to be cut. This hole serves to mount the circular saw and to guide the diamond wire on the opposite side. Wire guide pulleys lead the wire to the cut.

A hydraulic motor drives the endlessly looped diamond wire. Driven hydraulically, the circular saw revolves the central point and a circular opening is being cut.



Zirkelsäge CAZ-3200



technical data of circular saw CAZ-3200	
circle-Ø min./max.	0,52 / 3,2* m
max. wall thickness	1,1* m
centre bore hole for mounting the saw	120 mm
weight drive unit	42 kg
total weight	108 kg

\*enlargement possible by extension of guiding rods

#### Required hydraulic connecting values

required oil quantity for hydraulic drive	30 l/min
max. operating pressure of hydraulic drive	250 bar
required oil quantity for feed	1 - 15 l/min
operating pressure of feed	100 bar

### Circular saw CAZ-3200

order-No.	type	description
30000476	CAZ-3200	special wire saw for creating large-sized, circular openings in concrete, reinforced concrete or masonry
30000952	HAG-12.20	hydraulic power pack with hydraulic control panel
30000423	-	set of hoses 3-parts, 10 m long, for drive of drive wheel (wire saw)
30001011	-	set of hoses 2-parts, 10 m long, (for feed at wire sawing with HAG-12.20)

# WIRE SAW TECHNOLOGY

## Diamond wires



Syncro - diamond wire with set diamonds

order-No.	type	description	application material	wet cutting	dry cutting	beads per meter
10004003	orange 10,5 mm	sintered	concrete with up to 3 % shares of reinforcement, soft to hard aggregates	x		40
10004002	blue 11,0 mm	sintered	concrete with up to 3 % shares of reinforcement, soft to hard aggregates	x		40
10003651	black 10,5 mm	galvanical, diamonds applied in surface, conical beads	concrete stainless steel, premium steel, fiber plastic, hard natural stone, etc.	x	x	40
10003652	black syncro 10,5 mm	sintered set diamonds	concrete with 3-8 % shares of reinforcement, to extremely hard aggregates	x		40
10003661	black 11,0 mm	actively soldered, diamonds applied in surface	concrete & reinforced concrete up to 8 % shares of reinforcement stainless steel, cast iron and other metals	x	x	48
10003653	black 12,0 mm	sintered	masonry and concrete for draining	x		40

### Handling of diamond wires

To guarantee the undisturbed function and the longest possible life of your CEDIMA diamond wire you are kindly requested to observe the following recommendations:



fig. 1



fig. 2



fig. 3



fig. 4

#### Turning in the diamond wire before closing

In order to prevent a one-sided wear of the wire it has to be turned in around its longitudinal axis before being closed. This produces a tension that makes the wire turning while cutting, thus an even wear of the diamond wire is obtained. After having laid on the diamond wire in the storage compartment and around the workpiece to be cut, take the end of the wire coming out of the machine and form a loop (fig. 1). Now continue to turn the wire in its twisting direction (fig. 2). As guiding value we recommend 1 to 1,5 complete turns per metre diamond wire, i.e. 20 to 30 turns for 20 m wire length.

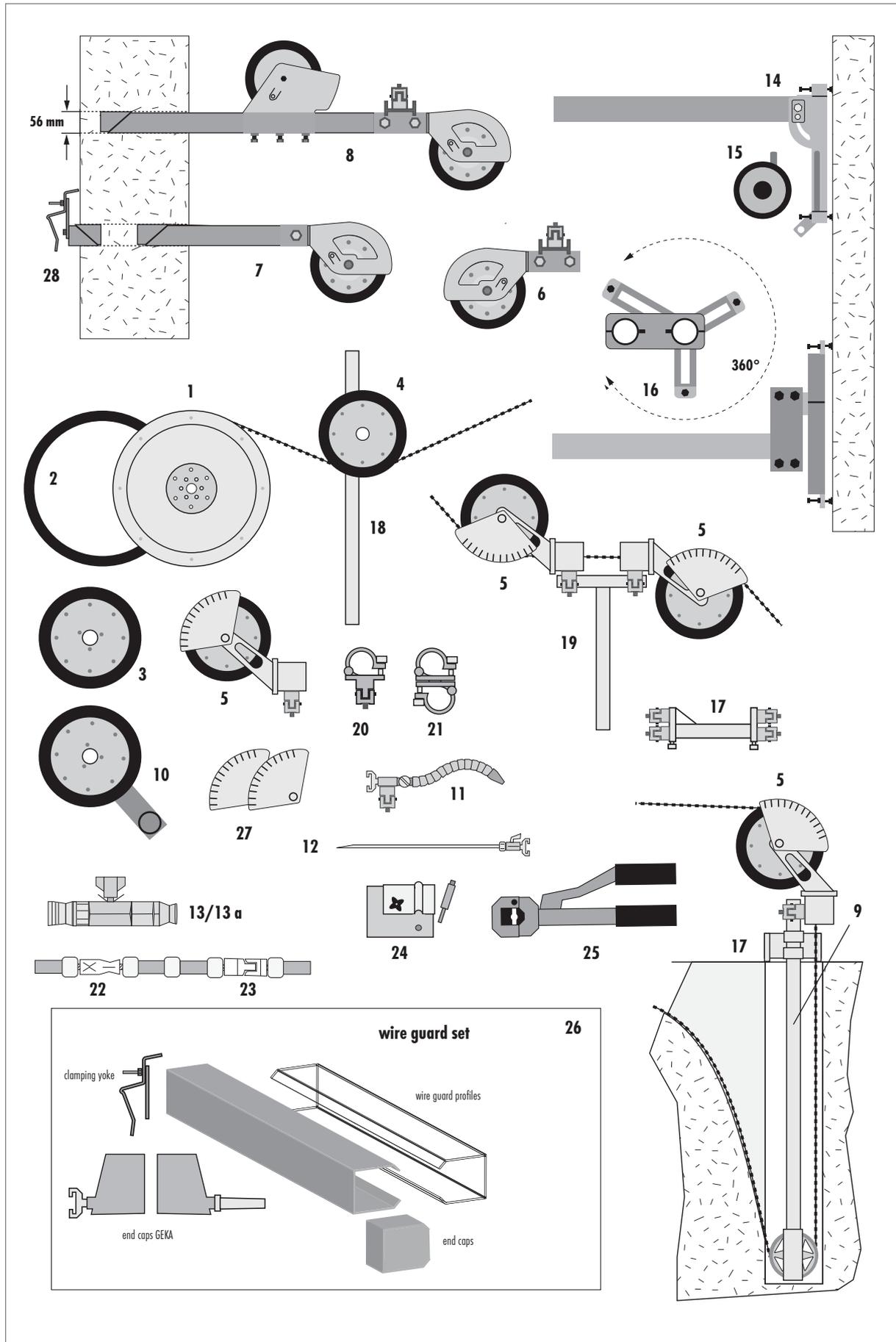
#### Closing the diamond wire

For closing the diamond wire remove the rubber coating at both ends as well as the spring very close to the diamond bead as shown in fig.2. Insert the steel core in both sides of the steel wire clamp. Make sure that the clamp is not positioned too close to the diamond beads as shown in fig. 3 below. To guarantee the best possible flexibility of the wire, 2-3 mm steel core should be left free on both sides (fig. 3 centre). Now press the steel wire clamp with an appropriate hydraulic jointing clamp (pos 25), thus creating a tensile strength connection (fig. 4 above). When using screw-type connectors please act accordingly. Using articulated joints, make sure that the sleeve of the connector is mounted at the towing side of the diamond wire. The running direction of the diamond wire is indicated by arrows on the rubber coating.

#### Opening the diamond wire / repair after a wire

For opening the diamond wire and for the repair after a wire breakage please proceed as described in the „Product recommendations for handling and repair of CEDIMA diamond wires“, attached to each wire delivery. Here you will also find safety recommendations for the use. Please observe the safety recommendations for a safe and effective working with CEDIMA diamond wires.





### Wire drive wheels and storage rolls

Pos.	order-No.	operation with	description
1	30000457	CSA-1001	wire drive wheel Ø 600 mm with interchangeable bandage
2	30000458	CSA-1001	bandage for wire drive wheel Ø 600 mm
3	30000490	CSA-1001	storage rolls Ø 300 mm for capacity increase of wire storage compartment
-	30000493	CSA-100/1001	CSA-1001:bandage for storage rolls Ø 300 mm / CSA-100: bandage for wire drive wheel

### Wire guidance and water supply to the wire

Pos.	order-No.	operation with	description
4	30000484	all CSA	wire guide pulley Ø 270 mm with hard rubber contact surface and assembly tube
5	30000461	CSA-1001	swivel roll Ø 270 mm with interchangeable bandage and mounting device for wire guard set CSA-1001 (ord.-No. 30000475)
-	30000494	CSA-1001	bandage for swivel roll Ø 270 mm
6	30000466	CSA-100	mini swivel roll Ø 200 mm with interchangeable hard rubber bandage and mounting device for wire guard set CSA-100 (order-No. 30000467)
-	30000492	CSA-100	bandage for mini swivel roll Ø 200 mm
7	30000469	all CSA	wire guiding device short with 1 guide pulley
8	30000468	all CSA	wire guiding device long with 1 mini swivel roll and 1 guide roll
9	30000479	all CSA	immersion column with immersion roll Ø 230 mm for cuts in blind hole Ø 250 mm, length 2,5 m, with suction hose, without swivel roll and mounting foot
10	30000489	all CSA	wire guide pulley for flush cutting Ø 300 mm, with holder
11	30000491	all CSA	flexible jet with GEKA-coupling
12	30000482	all CSA	water lance with GEKA-coupling
13	70006302	all CSA	throttle-check-valve - starting aid CSA-1001 and CSA-100 in operation with HSP-12
13a	70011197	all CSA	throttle-check-valve - starting aid CSA-1001 and CSA-100 in operation with HAG-12.20 / HAG-330

### Accessories for mounting

Pos.	order-No.	operation with	description
14	30000464	CSA-100	MF-6000, foot for mounting to wall and ground with mounting tube, 0-45° tiltable
15	30000614	CSA-100 H	assembly set wire drive wheel
16	30000465	CSA-100	precision swivel foot with mounting tube, pivoting by 360°
17	30000460	all CSA	mounting foot for fixing the mounting tubes and the immersion column
18	30000477	all CSA	mounting tube 1 m long
18	30000478	all CSA	mounting tube 2 m long
19	30000481	all CSA	T-mounting tube for fixing of swivel rolls
20	30000480	all CSA	rigid scaff old coupling
21	30000506	all CSA	rotating scaff old coupling

### Accessories for diamond wire

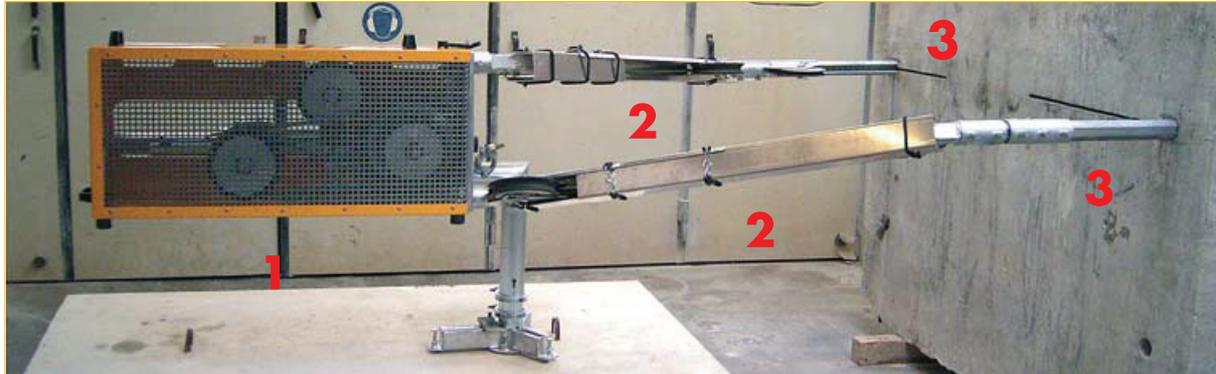
Pos.	order-No.	description
22	70011172	steel wire clamps (25 pcs.) for closing diamond wires of 10,5 and 11 mm
22	10003646	steel wire clamps type (25 pcs.) for closing of heavily used diamond wires 10,5 und 11 mm
23	10003643	articulated joints (5 Stk.) for closing and opening of diamond wires 10,5 and 11 mm
-	10003644	spare pin for articulated joints
24	70002875	device for opening and closing of articulated joints
25	30000509	hydraulic jointing clamp with press chucks for closing diamond wires of 10,5 and 11 mm, press force 8 tonnes

positions 26, 27, 28: wire guard equipment - detailed description on page 86

## WIRE SAW TECHNOLOGY

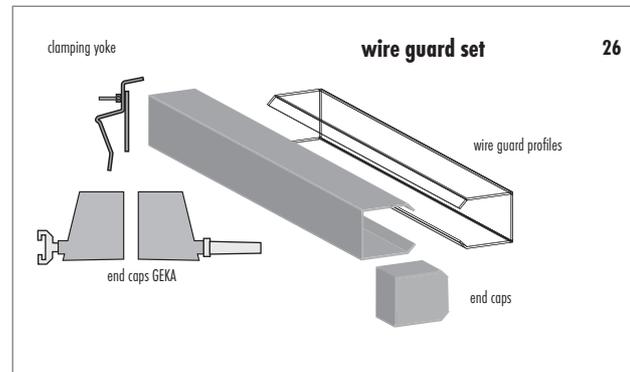
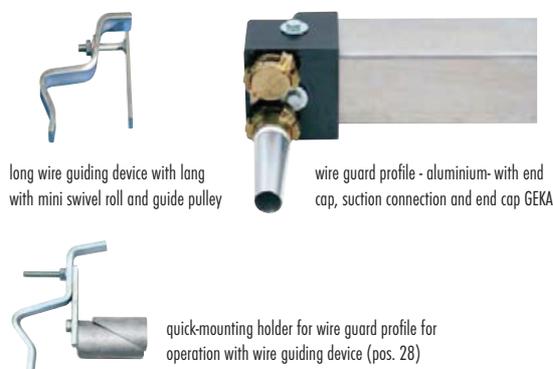
### WIRE GUARD SET WITH WATER COLLECTION FUNCTION

In order to increase the safety for your operating staff CEDIMA has developed highly effective wire guard systems that will reduce considerably the risk of injury following a wire breakage (flying beads and whip-lashing diamond wire) a wire breakage (flying beads and whip-lashing diamond wire).



CSA-100 (1) with mounted wire guard system (2) and wire guiding devices (3)

The CEDIMA wire guard systems is a simple possibility to cover completely the freely running wire parts that represent potential danger. U-profiles made of aluminium are put on the wire and fixed with rubbers. These profiles are available in various lengths. On both ends the wire guard profiles are fitted to the swivel rolls that continue to rotate unimpaird. The closed back side of the profile is mounted in the direction the wire could possibly swing out. The wire guard profiles are available for all CEDIMA automatic wire saws. For the CSA-100 the system is equipped with an additional water collection function. By means of the sealing elements and end caps that belong to the set most of the slurry can be collected and suctioned.



Pos.	order-No.	operation with	description
26	30000475	CSA-1001	wire guard set consisting of: wire guard profile made of aluminium (5 x 2,3 m; 4 x 1,15 m; 3 x 0,76 m), 4 end caps made of aluminium for wire guard profile, 6 clamping yokes for mounting the wire guard profiles directly to the wall, fixing material
26	30000467	CSA-100	wire guard and water collecting set consisting of: wire guard profile made of aluminium (1 x 3 m; 1 x 2,5 m; 1 x 2 m; 1 x 1,5 m; 1 x 1 m; 2 x 0,75 m; 1 x 0,5 m), 2 end caps PUR for wire guard profile, 3 x end caps for GEKA-connection, 1 x suction connection GEKA, 6 clamping yokes for mounting the wire guard profiles directly to the wall, fixing and sealing material
27	70001974	CSA-1001	retrofitting set for mounting the wire guard to swivel rolls Ø 270 mm without holder
28	30000500	all CSA	quick-mounting holder for wire guard profile for the operation with wire guiding devices