

# Splitters C2 - C12

## Hydraulic Rock and Concrete Splitters



Hydraulic Rock and Concrete Splitters replace blasting and conventional demolition methods. They break down concrete or rock without pressure waves, without vibrations and with very little noise and dust. They have also gained a firm foothold in block extraction in the natural stone industry. For more than 50 years, Darda Rock and Concrete Splitters have been used successfully in over 80 countries around the world. The superior quality, high performance and very long service life of Darda Rock and Concrete Splitters is unsurpassed.

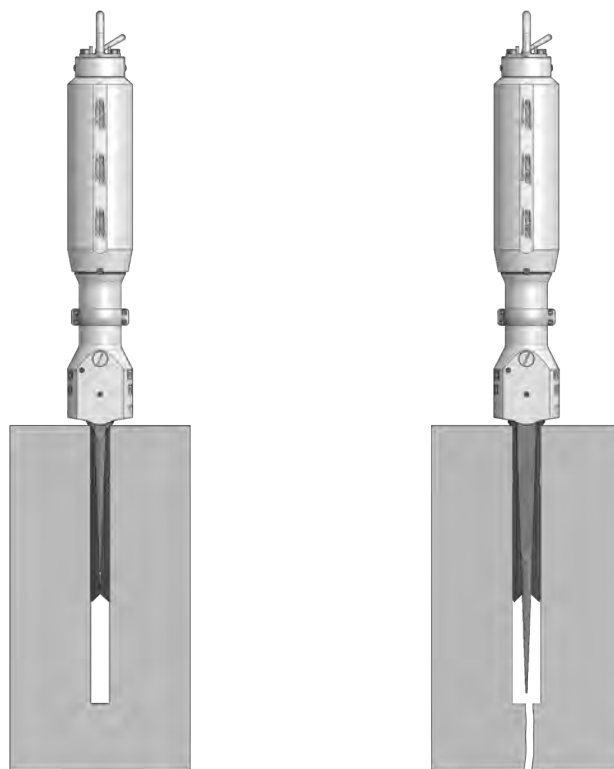
### Functional principle

Conventional mechanical methods destroy the structure of the material by external forces. However, rock and concrete can withstand very high compressive forces from the outside. By comparison, resistance towards forces acting from inside towards outside is relatively small. The development of the Darda Rock and Concrete Splitting Equipment was born from this fact.

### They work according to the safe wedge principle

First, a hole is drilled with the appropriate depth and diameter, into which the wedge set of the splitting cylinder is then inserted and aligned to determine the splitting direction. Hydraulic pressure then pushes the wedge between the two counter wedges and presses them apart. The effective splitting force of up to 413 tons or 4048 kN destroys the structure of concrete and rock from the inside.

A crack is formed in seconds. Smaller types of rebar in reinforced concrete break off.



## Facts

- Enormous splitting force up to 413 t (4048 kN)
- Nearly noise free
- Low dust and low vibration
- Splitting direction can be set
- Ideal for confined spaces
- Easy to use
- Easy to transport
- Can be used anywhere
- Splits in seconds
- Controlled demolition



## Advantages

### Economic efficiency

Blasting usually requires the use of barriers as well as other time-consuming and costly safety procedures. An effort that is no longer necessary with Darda Rock and Concrete Splitters, because they do not cause flyrock or similar dangerous situations. Other work can therefore continue in parallel.

### Safety

Darda Hydraulic Rock and Concrete Splitters are absolutely safe: no uncontrolled release of forces, flyrock, vibrations or even explosion pressure. Costly safety procedures, which are necessary when demolishing with conventional methods, are no longer necessary.

### Environmental friendliness

No vibrations or dust are generated during hydraulic splitting; Darda Rock and Concrete Splitters operate practically without noise. There is no environmental impact. With the Darda Rock and Concrete Splitting Equipment, demolition work can be carried out without disruptions even in densely populated areas or enclosed spaces.

### Rugged design

The extremely sturdy design of the Darda Rock and Concrete Splitters guarantees a very long service life even under the toughest operating conditions. Only minimal maintenance work is required.

### Flexibility

Darda's Hydraulic Splitters are completely independent of carrier equipment such as excavators. The Splitters and Hydraulic Units are easy to transport. Their use is therefore possible even in difficult to access places.

### Easy handling

The equipment is user-friendly and can be operated easily by just one person.

### Exact working

In contrast to most conventional methods, Darda Rock and Concrete Splitters make it possible to work very accurately: the splitting direction and splitting course can be set in advance, making it possible to fix the splitting quantity. Material that is not meant to be split off is spared. This makes the Splitters also ideally suited for block quarrying in quarries.

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## Models and Accessories



### A complete Rock and Concrete Splitter consists of three components:

#### Hydraulic Splitter

The Hydraulic Splitter consists of a control valve, cylinder, front head, and wedge set (one wedge and two counter wedges). The entire Hydraulic Splitter is made of the highest quality aluminum and steel materials to ensure maximum load-bearing capacity and low weight. In a specially developed and complex hardening process, the counter wedges also receive a carbide layer. This makes it possible to transmit the very high forces.

#### Hydraulic Power Unit

An electric, air, diesel or petrol engine powers a high-pressure hydraulic pump. A pressure relief valve limits the system pressure to 50 MPa (500 bar). Both wheeled and portable units are available. Depending on the model, up to five Splitters can be operated in parallel.

#### Hydraulic hoses

Rugged multi-layer hoses connect the Splitters to the Hydraulic Power Unit.

### Accessories

#### Enlarging counter wedges

In order to enlarge the resulting crack, the standard counter wedges can be quickly and easily replaced with enlarging counter wedges. After expansion, particularly strong reinforcement can be broken off easily.



#### Pressure shells

In a drill hole with narrow diameter, the high splitting force acts on a very small surface area. This results in extremely high surface pressure. In case of heavily reinforced concrete, the concrete may sometimes compact during splitting and only an oval drill hole is created. Only short cracks form around the hole. The rebars do not tear off. Two thick, large pressure shells provide the solution. They are inserted into a core bore of  $\text{Ø } 100 \text{ mm} \mid 4 \text{ inch}$  and enclose a wedge set of the splitter. They are also often used in poor quality concrete.



#### Special Lubricant

During the splitting process, very high forces act on the wedge set. In order to reduce wear, the pressure surfaces of the wedge and the counter wedges must be lubricated regularly. In a long development and test phase, Darda Special Lubricant was proven to significantly reduce the high friction forces and guarantees maximum utilization of the splitting force.



## Specifications | Splitters

Type	Wedge set	Required drill hole diameter mm	Minimum drill depth mm	Splitting distance mm	Splitting force, theoretical kN / t	Splitting force, effective kN / t	Weight <sup>2</sup> kg	Length Splitting Cylinder mm	Length wedge set mm	Article no.
C2S	N	31 - 32	270	9	3490 / 355	1913 / 195	17	745	150	8381 0402 10
C4E	N	35 - 36	430	10	4524 / 461	2256 / 230	21	995	250	8381 0406 25
C4E	WL	35 - 38	540	14	3267 / 333	1864 / 190	22	1145	400	8381 0406 40
C9	N	45 - 48	410	18 - 53 <sup>1</sup>	2995 / 305	1962 / 200	22	1020	230	8381 0409 00
C9	L	48 - 50	580	18 - 53 <sup>1</sup>	2995 / 305	1962 / 200	23	1190	400	8381 0409 40
C12	N	45 - 48	610	19 - 60 <sup>1</sup>	6061 / 618	3507 / 358	31	1290	380	8381 0412 38
C12	L	45 - 48	680	15 - 44 <sup>1</sup>	8082 / 824	4048 / 413	32	1360	450	8381 0412 45
C12	W	45 - 48	550	24 - 80 <sup>1</sup>	4849 / 494	3150 / 321	31	1250	320	8381 0412 50

<sup>1</sup> With one enlarging counter wedge and one special enlarging counter wedge<sup>2</sup> Without hydraulic hoses

C2S



C4E



C9



C12

## Specifications – Enlarging counter wedges

Type	Enlarging counter wedges Article no.	Special enlarging counter wedges Article no.
C4E N	3390 0141 03	–
C9 N	3390 0246 11	3390 0246 21
C9 L	3390 0246 31	3390 0246 51
C12 N	3390 0236 00	3390 0280 00
C12 L	3390 0236 21	3390 0280 21
C12 W	3390 0236 11	3390 0280 11

## Specifications | Special Lubricant

Quantity/container	Article no.	
1 kg	3391 0942 00	Hazardous material
1 kg	3391 0942 10	Non-hazardous material
18 kg	3391 0980 50	Hazardous material
18 kg	3391 0980 20	Non-hazardous material

## Specifications | Hydraulic hoses

Type	Length <sup>1</sup> mm	Number of Splitters	Article no.
S1	10	1	8381 0504 02
S1	20	1	8381 0504 03
S2	10	2	8381 0504 10
S2	20	2	8381 0504 11
S3	20	3	8381 0504 29

<sup>1</sup> Distance between Power Unit and Splitter

## Specifications – Pressure shells

Suitable for	Required drill hole diameter mm	Minimum drill depth mm	Article no.
C9 N	100	410	3390 0357 00
C12 N/W	100	610	3390 0429 00

# Splitters C2 - C12

## Typical applications and possibilities of use

Different splitter models are available for a wide range of applications:

Splitter models	C2S	C4E	C9	C12
<b>Demolition of concrete and reinforced concrete</b>				
Splitting unreinforced and lightly reinforced concrete			●	●
Splitting reinforced concrete			○	●
Splitting in closed rooms and poorly accessible places			●	○
Splitting in confined spaces			●	○
Splitting walls and masonry			●	●
Splitting piles heads			○	●
Chimney demolition			●	○
Secondary splitting of large concrete pieces (pre-splitting for recycling plants)			●	○
Underwater demolition			●	○
<b>Demolition of rock and natural stone</b>				
Rock splitting (e.g. in trench work)			○	●
Secondary splitting of boulders	○	●	●	●
Tunnel-driving work		●	●	●
Expansion work in underground mining	○	●	●	●
Secondary splitting	○	●	○	○
Press pipe jacking	●	●	●	
<b>Block quarrying in the natural stone industry</b>				
Marble		●		
Granite	○	●		●
Sandstone			●	

● Highly suitable

○ Suitable

## Application fields



Demolition of concrete and reinforced concrete



Demolition of rock and natural stone



Block quarrying in the natural stone industry

