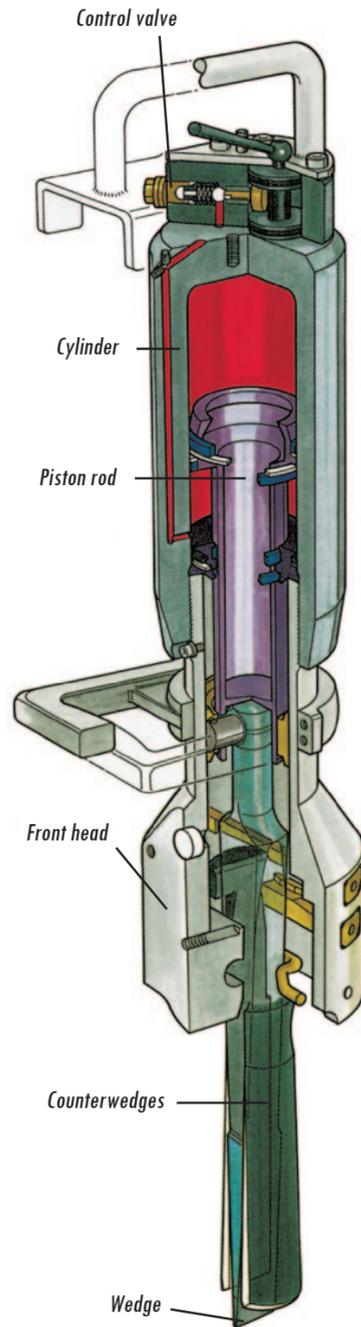


DARDA - splitting cylinder



Darda - general survey

Splitting cylinders

Type	Wedge set	Required drill hole diameter mm	Minimal drill hole depth mm	Splitting distance mm	Splitting force theoretical		Splitting force effective		Weight ² kg	Length splitting cylinder mm	Length wedge set mm	Order-No
					kN	to	kN	to				
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 ¹	2995	305	1962	200	22	1020	230	8381 0409 00
C9	L	48 - 50	580	18 - 53 ¹	2995	305	1962	200	23	1190	400	8381 0409 40
C12	N	45 - 48	610	19 - 60 ¹	6061	618	3507	358	31	1290	380	8381 0412 38
C12	L	45 - 48	680	15 - 44 ¹	8082	824	4048	413	32	1360	450	8381 0412 45
C12	W	45 - 48	550	24 - 80 ¹	4849	494	3150	321	31	1250	320	8381 0412 50

¹ With one enlarging counter wedge and one special enlarging counter wedge ² without hydraulic hoses and SV coupling

Hydraulic pump units (portable)

Type	Type of motor	Weight		Length		Width		Height		Pump capacity low pressure		Pump capacity high pressure		Volume of oil tank		Order-No
		kg	lbs	mm	inch	mm	inch	mm	inch	l/min	gal/min	l/min	gal/min	l	gal (USA)	
AP2	Air motor ¹	40	88	600	23,6	398	15,7	426	16,8	5,0	1,32	1,6	0,42	5,0	1,32	8381 0503 54
BP2	Gasoline motor	40	88	600	23,6	398	15,7	426	16,8	5,0	1,32	1,6	0,42	5,0	1,32	8381 0503 39
EP2	Electric motor 400V	40	88	600	23,6	398	15,7	426	16,8	5,0	1,32	1,6	0,42	5,0	1,32	8381 0503 47
EP2	Electric motor 230V	50	110	600	23,6	398	15,7	426	16,8	5,0	1,32	1,6	0,42	5,0	1,32	8381 0503 51
D4	Diesel motor	137	301	1180	46,4	720	28,4	730	28,8	5,4	1,42	5,4	1,42	10,0	2,64	8381 0502 40

¹ max. 0,7Mpa (7bar), Air consumption: 47-195m³/h

Hydraulic hoses

Type	Length m	Suitable for cylinders	Order-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

¹ Distance between cylinder and pump unit

Enlarging counter wedges

Type	Enlarging counter wedges Order-No	Special enlarging counter wedges Order-No
C4EN	3390 0141 03	—
C9N	3390 0246 11	3390 0246 21
C9L	3390 0246 31	3390 0246 51
C12N	3390 0236 00	3390 0280 00
C12L	3390 0236 21	3390 0280 21
C12W	3390 0236 11	3390 0280 11

Pressure shells

Suitable for	Required drill hole diameter mm	Minimal drill hole depth mm	Order-No
C9N	100	410	3390 0357 00
C12N/W	100	610	3390 0429 00

Special lubricant

Quantity / Tin	Order-No
1,00 kg	3391 0942 10
25,00 kg	3391 0980 10

darda[®]

We've got the power.

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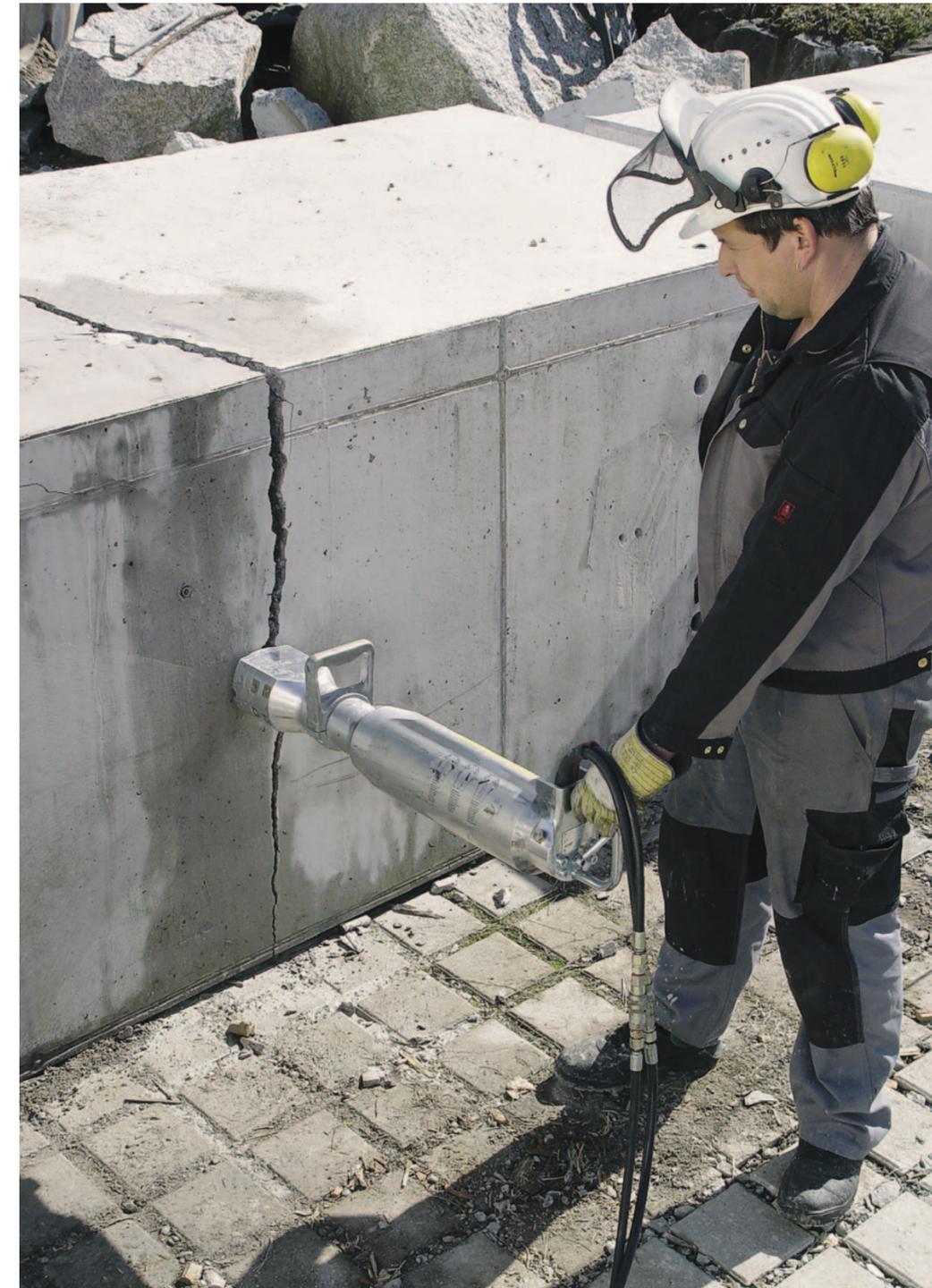
Our distributor:



SPLITTER

C2-C12

Hydraulic rock and concrete splitters



- Splitting force up to 413 tons (4048 kn)
- Dust free
- Quiet performance
- Also applicable at places of difficult access
- Vibration free
- Easy handling
- Easy to transport
- Splits in seconds
- Controlled splitting
- Dimensionally accurate working

The powerful and economic way to split rock and demolish concrete

Hydraulic rock and concrete splitters provide a powerful and extremely cost-effective alternative to other conventional demolition techniques. Hydraulic splitting means controlled splitting, and this method eliminates shock waves, vibrations, dust and noise that large impact tools usually produce. DARDA rock and concrete splitters have been used with a great success in over 80 countries for the past 40 years. The high quality, reliability and durability of the equipment is unsurpassed.

How the splitter works

Conventional demolition techniques destroy rock and concrete by using an external force. However, because of their compressive strength, these materials are highly resistant to impact forces. For optimum results, one should adopt a splitting technique that works from the inside of the material, because rock and concrete have a lower tensile strength. The DARDA hydraulic splitters were developed to do this and work according to a safe and proven wedge principle:



First of all, a hole is drilled to a specified diameter and depth using an ordinary rock drill. Then the wedge set is inserted into the hole with the wedge in a retraced position. The hydraulic pressure then forces the wedge between the two counter wedges, pressing them against the walls of the drilled hole. The effective splitting force of up to **413 tons** or **4048 kN** breaks concrete and rock from the inside, breaking thinner iron rods at the same time.



Advantages

Economical
Blasting usually requires work stoppages and the installation of protective walls and other safety equipment. This costs both time and money. With DARDA high-performance rock and concrete splitters, blasting is no longer necessary. Therefore, there is no potential danger to the workforce or passers-by, and other work in the immediate surroundings can continue unaffected.

Safe
Hydraulic splitting means controlled demolition. The entire force developed is always under full control. There is no danger of flying debris, vibrations or even explosions.

Environmental-friendly
When using the DARDA hydraulic splitting technique, there are unpleasant side effects like vibrations and dust. Even noise emission is extremely low, which means that, all in all, this demolition technique is particularly environmental-friendly. That is why the DARDA splitter is indispensable in densely populated areas or inside buildings.

Durable
Thanks to the extremely robust design, the DARDA rock and concrete splitter can withstand even the toughest conditions. Its durability is quite exceptional. Therefore, next to no maintenance is required. Yet another cost-saving factor.

Autonomy
DARDA splitters and pump units are easy to transport. Operators no longer depend on heavy machinery, e.g. excavators, for their transport to the demolition site. Therefore, even the smallest workplace is no longer a problem.

Easy to use
The splitters are extremely easy to operate. The lightweight design enables an operator to work on a splitting job single-handedly. Even unskilled workers can learn to use the DARDA splitter in a very short time.

Controlled demolition
DARDA hydraulic rock and concrete splitters enable you to work with a precision that cannot be achieved when using conventional demolition methods. The desired direction of the split and size of material to be removed can be determined beforehand. The portion of a structure that ought to remain intact is not affected by the splitting process.

Technical Details

A complete DARDA rock and concrete splitter comprises 3 components:
1. one or several splitting cylinders
2. one hydraulic pump unit
3. one set of high- and low-pressure hoses

Hydraulic splitting cylinder
The hydraulic splitting cylinder consists of a control valve, a cylinder, a front head and a wedge set (1 wedge and 2 counter wedges). The entire cylinder is made of highest quality aluminium and steel so that although the equipment is light, it is still extremely durable. The counter wedges are also coated with a hard metal (carbide) layer in a specially developed hardening process. This makes them more resistant to very high pressure and forces.

Multitude of applications
There are different types of splitting cylinders available for a variety of applications.



Hydraulic pump unit
Electric, air, diesel or gasoline motors can be used to drive the high-pressure pump units. The system pressure has been limited to 50 MPa (500 bar) by a pressure limiting valve. Both mobile and portable pump units are available. Depending on the pump model, up to 5 splitting cylinders can be run simultaneously.

Hydraulic hoses
High- and low pressure hoses connect the splitter to the pump unit. If several splitters are to be connected, a distributor part is attached to the end of the 10 m hose.



Main applications	Type of splitting cylinder	C 2 S	C 4 E	C 9	C 12
Demolition of concrete and reinforced concrete					
Demolition of nonreinforced and lightly reinforced concrete				●	●
Demolition of reinforced concrete			○	●	●
Demolition work in closed spaces and places that are of difficult access (e.g. in elevator shafts)			●	●	●
Demolition work in extremely cramped spaces			●	●	○
Cutting concrete piles			●	●	●
Demolition of factory chimneys			●	●	○
Secondary splitting of concrete slabs (e.g. preparing concrete for recycling)			●	●	○
Underwater demolition			●	●	●
Demolition of rock					
Rock demolition (e.g. in trenching or splitting rock for a cellar extension)			○	●	●
Secondary splitting of large boulders		○	●	●	●
Tunnelling			●	●	○
Enlarging work in underground mining		●	●	●	●
Secondary splitting		○	●	●	○
Pipe jacking/microtunnelling		●	●	●	○
Production of blocks in the natural stone industry					
Marble			●		
Granite		○	●		●
Sandstone				●	

● cylinder is most suitable ○ cylinder is suitable



Enlarging counter wedges
If you need to enlarge the crack already made, simply remove the counter wedges initially used and replace with enlarging counter wedges. The crack can now be widened further, allowing heavy duty iron bars and other reinforcements to be cut.



Pressure shells
In a small diameter drill hole, the high splitting force acts on a very small area, exerting extreme surface pressure. In the case of heavily steel-reinforced concrete and under the most unfavorable conditions, attempts at splitting may merely compact the concrete, leaving an oval hole. Only short cracks develop around the hole and the reinforcing rods remain unaffected. In such cases, two large, heavy-gauge pressure shells provide the necessary remedy. These are introduced into a 100 mm diameter core hole and enclose the wedge set of the splitting cylinder. The splitting force is now applied over a large area, resulting in a precise split and forcing the steel rods apart more effectively.



Special lubricant
During the splitting process the wedge set is exposed to extremely high forces. This requires that the inner wedge and counter wedge surfaces be frequently lubricated. Tests carried out over an extended period of time proved beyond doubt that only our special lubricant is capable of significantly reducing the extreme friction. Owing to that, the use of DARDA lubricating paste guarantees the highest splitting performance which is 20 to 50% higher than if conventional lubricants are used.

