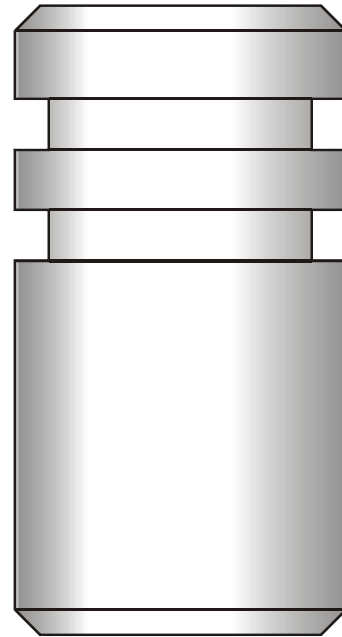


## Percussion Detonator

### Description

The percussion detonator is designed to detonate detonating cord and charges in TCP. As a standard component, it can be used for all the firing heads, including mechanical drop-bar, pressure actuator and differential firing heads.



### Specifications

<b>Part No</b>	HQBQ1-1	HQBQ1-3
<b>Base Load</b>	HMX	HNS
<b>No-fire</b>	8.1 lb·ft	
<b>All-fire</b>	20lb·ft	
<b>Temperature Rating</b>	160°C/48h	200°C/48h
<b>Pressure Rating</b>	14500psi	
<b>Dimension (mm×mm)</b>	φ20×37 (φ0.81in×1.46in)	
<b>Output Energy</b>	Detonate detonating cord	
<b>Storage life</b>	5 years	

## Electric Detonator

### Description

It is used to initiate detonation of detonating cord.



Product number: ED1-1	
Diameter: $\phi 10\text{mm}$	Length: 88mm
Temperature rating: 160°C/2h	Pressure rating: 120MPa
No fire current: 0.3A/5min	All fire current: 0.8A
Resistance: 2.5 $\Omega$	
Detonate object: 80gr./ft HMX、RDX $\phi 5.3$ detonating cord	



Product number: FDLG4-1	
Diameter: $\phi 8\text{mm}$	Length: 53mm
Temperature rating: 160°C/2h	Pressure rating: ----
No fire current: 0.4A/5min	All fire current: 1.0A
Resistance: 1 $\Omega$	
Detonate object: 80gr./ft HMX、RDX $\phi 5.3$ detonating cord	



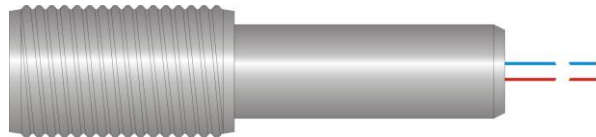
Product number: RD1-2	
Diameter: $\phi 24\text{mm}$ : $\phi 8\text{mm}$	Length: 60mm
Temperature rating: 160°C/2h	Pressure rating: ----
No fire current: 0.2A/5min	All fire current: 0.8A
Resistance: 56 $\Omega$	
Detonate object: 80gr./ft HMX、RDX $\phi 5.3$ detonating cord	

## Electric detonator (2)



Product number: RD3-1	
Diameter: $\phi 10\text{mm}$	Length: 100.5mm
Temperature rating: 160°C/2h	Pressure rating: 70MPa
No fire current: 0.2A/5min	All fire current: 0.8A
Resistance: 56 $\Omega$	
Detonate object: 80gr./ft HMX、RDX $\phi 5.3$ Detonating cord.	

## Electric detonator for tubing cutter



Product number: UQ68/2-0	
Diameter: $\phi 24\text{mm}$	Length: 78mm
Temperature rating: 160°C/2h	Pressure rating: ----
No fire current: 0.4A/5min	All fire current: 1.0A
Resistance: 1 $\Omega$	
Detonate object: Cutter	

### NOTE:

1. Static testing: Under the environmental condition: 21 $\pm$ 3°C and relative humidity below 50%, 25,000 Volts discharged from a 500 $\pm$ 25pF picofarad capacitor through a 5,000 $\pm$ 500 Ohm resistor. The product cannot be detonated by electrical energy released through housing and electrode pins.
2. Storage life is 5 years.

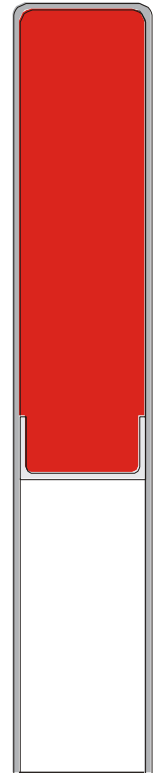
## Booster

### Description

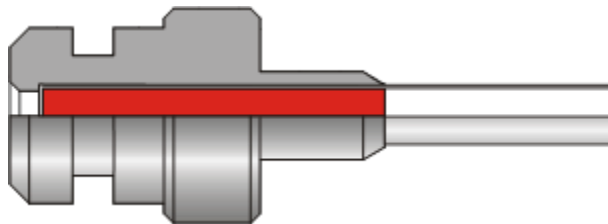
It can receive explosive wave from percussion detonator or other booster, and export explosive wave to detonate other pyrotechnics.

### Specifications

Part Number	Size (mm×mm)	I.D. mm	Base load	Temperature rating (°C/48h)	Storage life (Years)
QBZ2—1/3-10	φ7×41	φ6.5	RD1333+HMX	160	5
QBZ2—1/3-20	φ7×38.5	φ6.5	HMX	160	5
QBZ4—1/3-0	φ6×40	φ5.5	RD1333+HMX	160	5
QBZ4—1/4-0	φ6×36	φ5.5	HMX	160	5
QBZ4—1A	φ6×38.5	φ5.7	HMX	160	5
CB20—5.5 I	φ6×40	φ5.5	HNS	200	5
CB20-5.5 II	φ6×36	φ5.5	HNS	200	5
CB20-6.5 I	φ6×41	φ6.5	HNS	200	5
CB20-6.5 II	φ6×38.5	φ6.5	HNS	200	5



### Detonator of 43 Pressure Activated Vent Firing Head



### Parameters

Part Number	Size (mm×mm)	I.D. mm	Base load	Temperature rating	Storage life (Years)
QT1-1/1-0	φ22×48.5	φ5.5	HMX	160	5

## Bulkhead Boosting Device

### Description

The bulkhead boosting device is composed of special tandem and bulkhead booster. It is designed to reduce pollution and operation risk. It can keep the blank guns from well liquid after perforating. And blank guns can be reused by just cleaning debris.

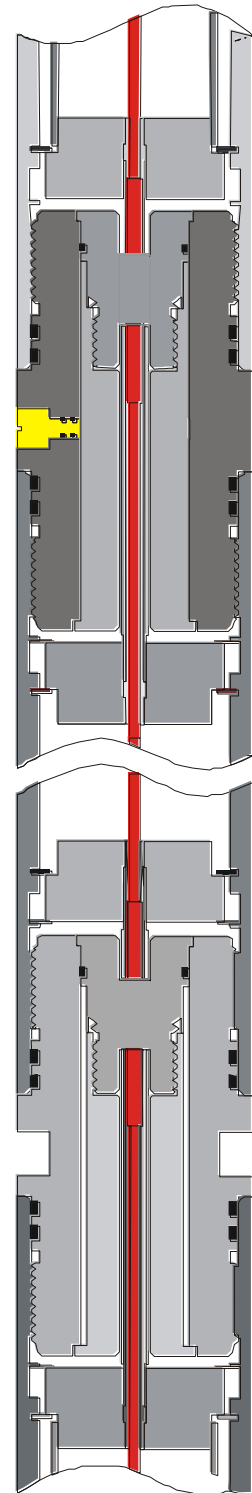
### Benefits/Capabilities

- Can transfer explosive wave reliably.
- Can seal blank guns after perforating.
- No pollution to the platform and ocean water.
- Less labor to clean blank gun.
- The bleed valve can release the explosive gas, disassembly quickly with less labor.
- Can provide two boosting channels, upward and downward.

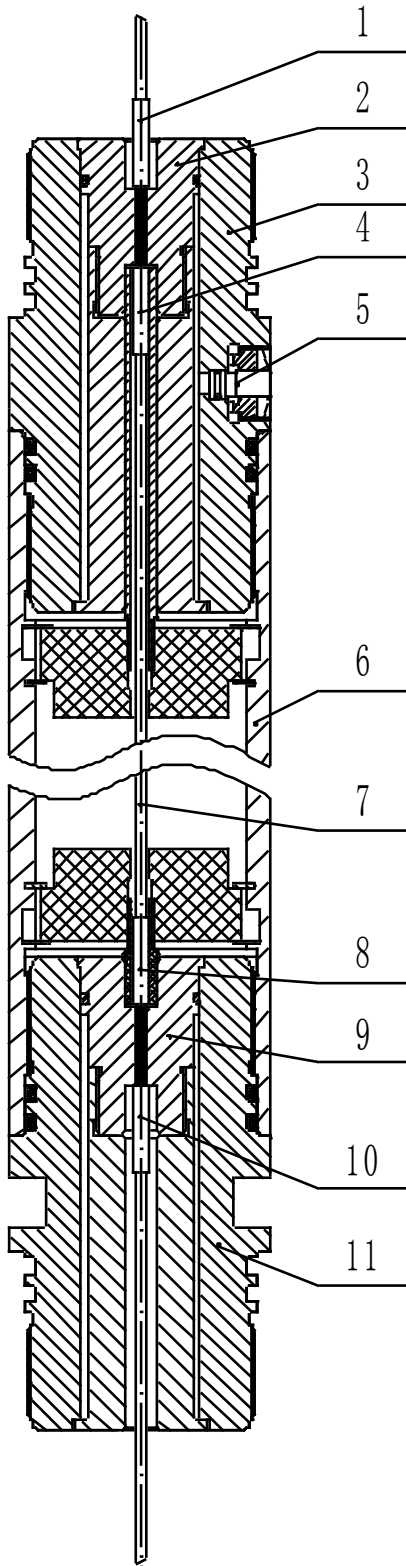
### Specifications

Bulkhead booster specifications		
Code	SQ1-1	
O.D.	φ52mm	2.05"
Make-up Length	78mm	3.07"
Max. Hydrostatic	140Mpa	20,000psi
Thread	M36×2	
Temperature Rating	160°C/48h	
Base load	HMX	
Storage life	5 years	

✧This product is protected by the patent no.: ZL 01 2 67493.1



## Bulkhead booster specifications (2)



Item	Description	Qty
1	Booster	1
2	Bulkhead booster	1
3	Special tandem I	1
4	Booster	1
5	Bleed valve	1
6	Blank gun	1
7	Detonating cord	-
8	Booster	1
9	Bulkhead booster	1
10	booster	1
11	Special tandem II	1

## Detonating cord

### Description

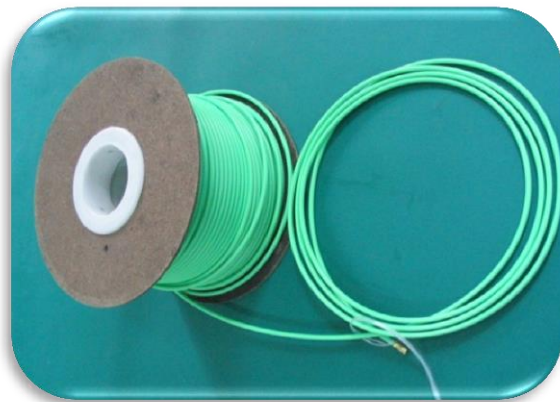
Detonating cord is designed to detonate charges.

### Specifications

<b>Part Number</b>	80HMX XHV	80RDX XHV
<b>O.D.</b>	$\phi 5.1 \pm 0.2$ mm	$\phi 5.1 \pm 0.2$ mm
<b>Explosive</b>	HMX	RDX
<b>Charge load</b>	80 gr./ft.	80 gr./ft.
<b>Jacket material</b>	Nylon	Nylon
<b>Temperature rating</b>	160°C/48h	120°C/48h
<b>V.O.D.</b>	$\geq 7800$ m/s	$\geq 7800$ m/s
<b>Shrinkage rating</b>	$\leq 1\%$	$\leq 1\%$
<b>Length</b>	500ft/roll (Min-length 50ft)	500ft/roll (Min-length 50ft)
<b>Storage life</b>	5 years	5 years



80RDX XHV



80HMX XHV

## Metal Clad Detonating Cord

### Description

Metal clad detonating cord is designed to detonate charges.

### Specifications

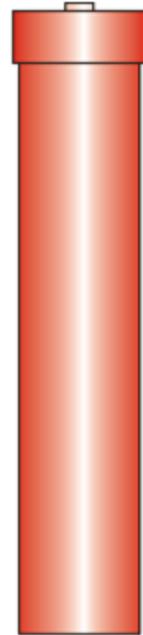
O.D.	φ5.0-φ6.5mm	φ5.0-φ6.5mm	φ5.0-φ6.5mm
Explosive	RDX	HMX	HNS,PYX
Temperature rating	120°C/100h	160°C/100h	230°C/100h
Jacket material	Lead	Lead	Lead
Pressure rating	90MPa	90MPa	90MPa
V.O.D.	≥7000 m/s	≥7000 m/s	≥6700 m/s
Shrinkage rating	≤1%	≤1%	≤1%
Min. Delivery length	3m/one	3m/one	3m/one
Detonation velocity	≥7000m/s	≥7000m/s	≥6700m/s
Bend radius	R30, ≥30°	R30, ≥30°	R30, ≥30°
Storage life	5years	5years	5years



## Time Delay Fuze

### Description

It is used to delay the output of explosive wave which detonates the booster, detonator cord and charges.



### Specifications

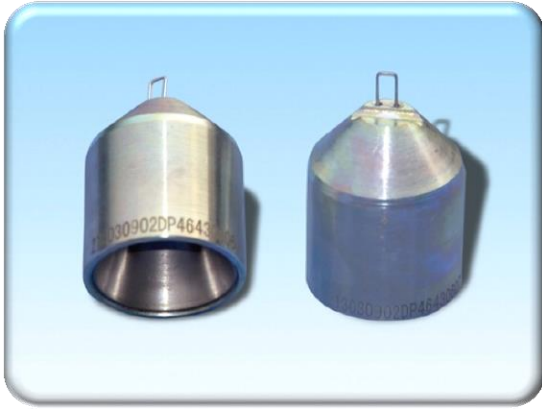
<b>O.D</b>	$\phi$ 48mm	$\phi$ 48mm	
<b>Temperature rating</b>	160°C/ 48h	180°C/ 48h	
<b>Delay time</b>	3 min	6 min	10 min
<b>Output energy</b>	Can detonate explosive serial consist of booster and detonating cord		
<b>Storage life</b>	5 years		

Note: Delay time can be adjusted under customer's specific condition.

## Perforating Charge / Shaped Charge

### Description

It includes a full range of perforating charges in different diameter and penetration depth. We offer tailor-made perforating charge service based on customer requirement.



Explosive	Explosive (Weight) (g)	O.D. of the matched perforation gun (mm)	Holy Density (hole/m)	Entry Hole (inches)	Penetration (inches)	Temperature Resistance
HMX / RDX	16 – 50	73 – 178	16 – 40	0.22 – 0.89	7.18 – 60.6	120°C - 160°C / 48h

## Bangalore For Tail Audio-tracing Device

### Description

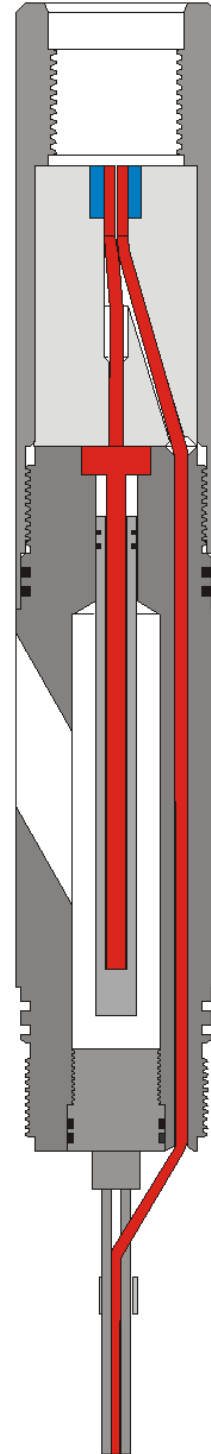
Bangalore for tail audio-tracing device is mainly used to check if guns are fired completely.

### Benefits /Capabilities

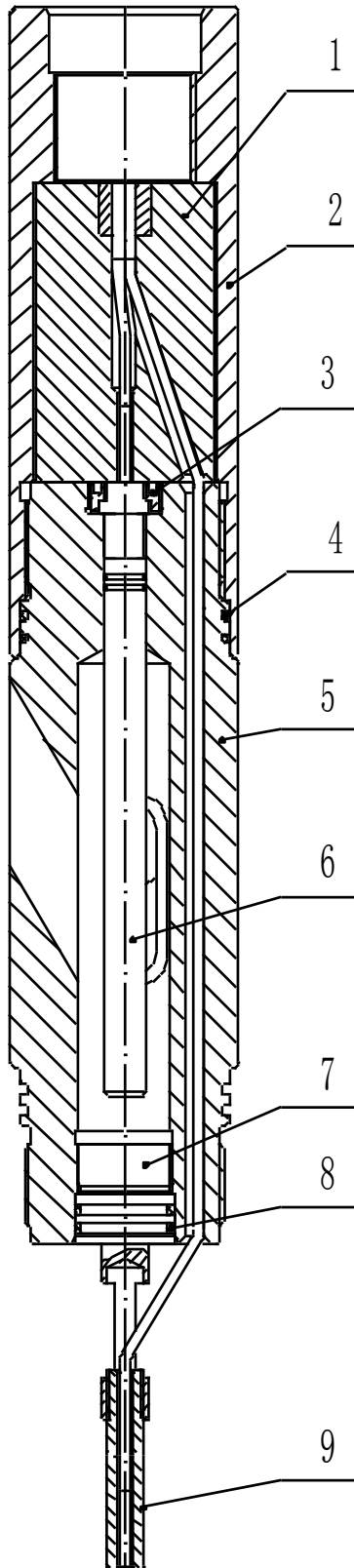
- Delay time 10~20 seconds after gun fired.
- Strong signals.

### Specifications

Code	WSD5-1	
O.D	φ114mm	4.49"
Make-up length	815mm	32"
Pressure rating	70MPa	10,150psi
Temperature rating	160°C/48h	
Storage life	5years	



## Bangalore for tail audio-tracing device (2)



Item	Description	Qty
1	Boosting module	1
2	Upper sub	1
3	Connection sub	1
4	O-ring	4
5	Case body	1
6	Explosive core module	1
7	Seal plug	1
8	O-ring	2
9	Fix tube	1

Series of Bangalore for tail audio-tracing device

Code	Dimension	Thread
WSD3-1	φ89×450	2 3/8 TBG(P)
WSD3-1H	φ89×450	Tr65×4(P)
WSD3-2	φ89×450	3 1/16-6Acme(P)
WSD3-3	φ89×450	2 7/8-6Acme(P)

Note: Can be connected different firing head by different cross-over sub.

## Tubing Cutter

### Description

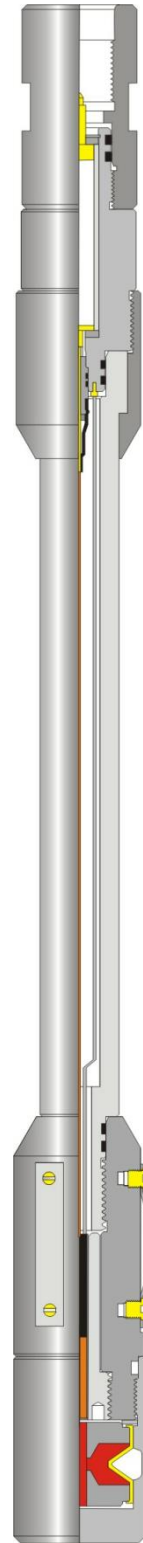
It is designed to cut tubing for pipe recovery operations.

### Benefits /Capabilities

- Suited for API RP67.
- Have centralizer.

### Specifications

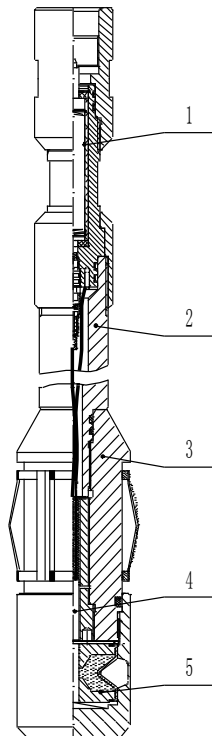
<b>Part number</b>	UQ44	UQ60	UQ55
<b>O.D. of cutter</b>	φ45mm	φ60mm	φ55mm
<b>Pressure rating</b>	70MPa	70MPa	70MPa
<b>Temperature rating</b>	160°C/48h	160°C/48h	160°C/48h
<b>Explosive type</b>	HMX	HMX	HMX
<b>Charge load</b>	13g	31.5g	22.7g
<b>Connection thread</b>	1 1/8-12UN	1 1/8-12UN	1 1/8-12UNF
<b>Recommend application Tubing</b>	2 3/8" 4.00lb/ft~ 5.3lb/ft	2 7/8" 6.40lb/ft~ 7.9lb/ft	3 1/2" 7.70lb/ft~ 10.3lb/ft



## Tubing Cutter (2)

### Specifications (2)

<b>Part number</b>	UQ64	UQ68	UQ86
<b>O.D. of cutter</b>	φ64mm	φ68mm	φ86
<b>Pressure rating</b>	70MPa	70MPa	70MPa
<b>Temperature rating</b>	160°C/48h	160°C/48h	160°C/48h
<b>Explosive type</b>	HMX	HMX	HMX
<b>Charge load</b>	34g	34g	71g
<b>Connection thread</b>	1 1/8-12UN	1 1/8-12UNF	1 1/8-12UNF
<b>Recommend application Tubing</b>	3 1/2" 7.70lb/ft~ 12.95lb/ft	3 1/2" 7.70lb/ft~ 10.30lb/ft	4 1/2" 10.5lb/ft~ 19.2lb/ft



Item	Description	Qty
1	crossover coupling	1
2	Connection rod	1
3	Centralizer	1
4	Electric detonator	1
5	Cutter	1

## Safety Protection Device

### Description

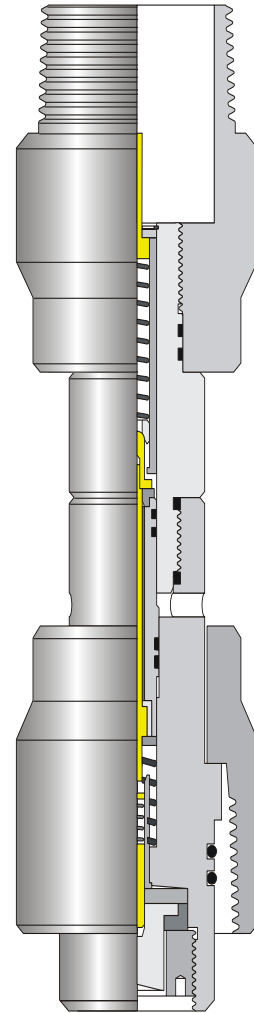
This safety adapter is used to disconnect the power source from electrical detonator at surface or well head and switched on under over 3MPa hydrostatic pressure.

### Benefits / Capabilities

- The detonator' circuit is switched off at surface.
- The closing and opening pressure of device can be adjusted.

### Specifications

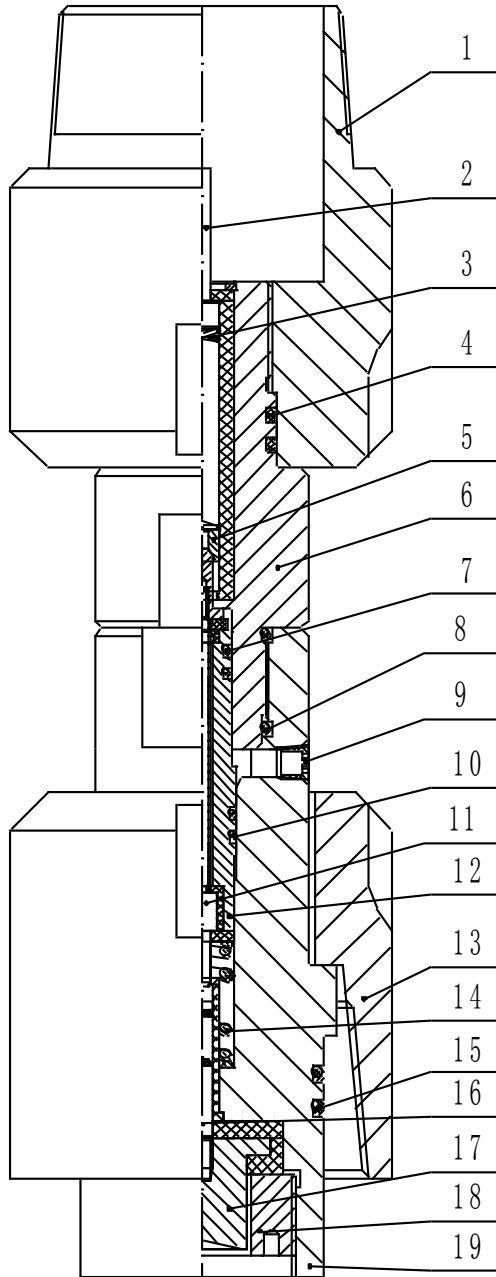
<b>Code</b>	DAQ1-2	
<b>O.D.</b>	φ102mm	4.00"
<b>Make-up length</b>	338mm	13.31"
<b>Pressure rating</b>	70MPa	10,150psi
<b>Min circle close pressure</b>	3MPa	435psi
<b>Circle open pressure</b>	≤2MPa	≤290psi



✧ This product is protected by the patent no. : ZL 2003 2 0103408.9

## Safety Protection Device (2)

### Specifications (2)



Item	Description	Qty
1	Upper contactor	1
2	Upper connector	1
3	Spring	1
4	O-ring	2
5	Closing head	1
6	Top Sub	1
7	O-ring	2
8	O-ring	2
9	Filter screw	4
10	O-ring	2
11	Copper Bar	1
12	Piston	1
13	Tighten ring	1
14	Retracting spring	1
15	O-ring	2
16	Lower connector	1
17	Lower Contactor	1
18	Lower Sub	1
19	Plug screw	1



## Safety Protection Device

### Description

Safety adapter is a safety device connected between cable head and gun. It can disconnect the power source from electrical detonator at surface or well head, and switched on under over 3MPa hydrostatic pressure.

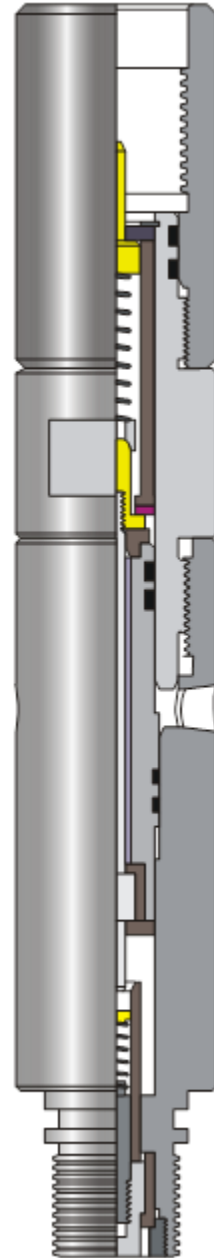
### Benefits / Capabilities

- The detonator' circuit is switched off at surface.
- The closing and opening pressure of device can be adjusted.

### Specifications

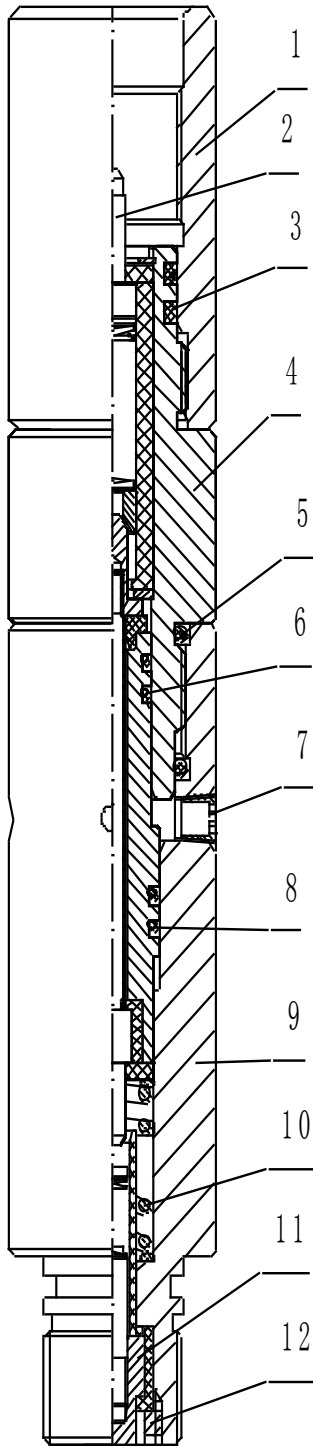
<b>Code</b>	DAQ1-4	
<b>O.D.</b>	φ43mm	1.69"
<b>Make-up length</b>	267mm	10.5"
<b>Pressure rating</b>	70MPa	10,150psi
<b>Min. circle close pressure</b>	3.5MPa	500psi
<b>Circle open pressure</b>	≤2.5MPa	≤350psi

✧This product is protected by the patent no.: ZL 2003 2 0103408.9



## Safety Protection Device (2)

### Specifications (2)



Item	Description	Qty
1	Transform joint	1
2	Upper contactor	1
3	O-ring	2
4	Upper contactor module	1
5	O-ring	2
6	O-ring	2
7	Filter plug	4
8	O-ring	2
9	Bottom contactor module	1
10	Extension spring	1
11	Copper bar	1
12	Plug screw	1

## Safety Protection Device

### Description

Safety adapter is a safety device connected between cable head and gun. It can disconnect the power source from electrical detonator at surface or well head, and switched on under over 3MPa hydrostatic pressure.

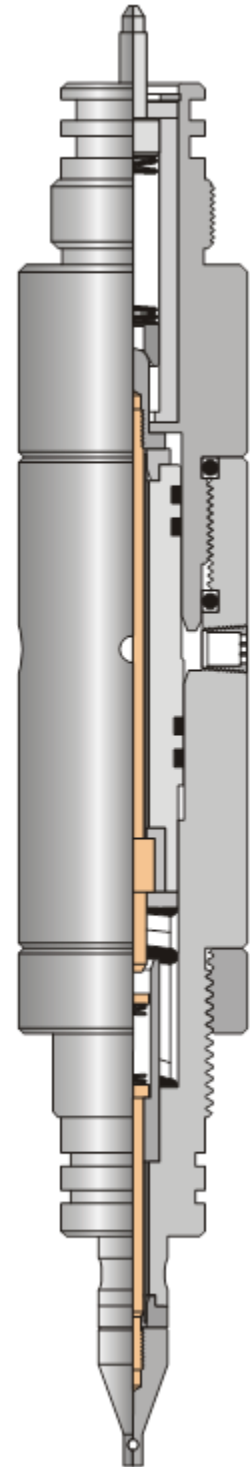
### Benefits / Capabilities

- The detonator' circuit is switched off at surface.
- The closing and opening pressure of device can be adjusted.

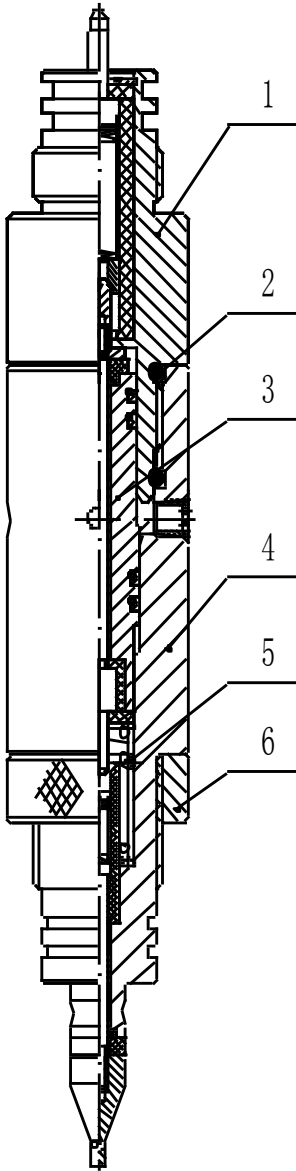
### Specifications

<b>Pressure rating</b>	105MPa	15,225psi
<b>Min. circle close pressure</b>	3MPa	435psi
<b>Circle open pressure</b>	≤2MPa	≤290psi

✧This product is protected by the patent no.: ZL 2003 2 0103408.9



## Safety Protection Device (2)



Item	Description	Qty
1	Upper contactor module	1
2	O-ring	2
3	Piston module	1
4	Lower contactor module	1
5	retracting spring	1
6	tighten ring	1

### Series of safety protection device

Code	Dimension	Thread	Closing pressure (psi)
AQ-3A	φ44×275	1 3/16-12UN(P)—1 3/16-12UN(P)	500, 1000
DAQ1-3A(43)	φ43×275	1 3/16-12UN(P)—1 3/16-12UN(P)	500, 1000
DAQ1-3A(43)1500psi	φ43×275	1 3/16-12UN(P)—1 3/16-12UN(P)	1500
DAQ1-3A(43)2000psi	φ43×275	1 3/16-12UN(P)—1 3/16-12UN(P)	2000
DAQ1-3A(43)3500psi	φ43×275	1 3/16-12UN(P)—1 3/16-12UN(P)	3500
DAQ1-3A(43)5500psi	φ43×275	1 3/16-12UN(P)—1 3/16-12UN(P)	5500
DAQ1-3A(54)1500psi	φ54×275	1 3/16-12UN(P)—1 3/16-12UN(P)	1500
DAQ1-3A(54)2000psi	φ54×275	1 3/16-12UN(P)—1 3/16-12UN(P)	2000
DAQ1-3A(54)3500psi	φ54×275	1 3/16-12UN(P)—1 3/16-12UN(P)	3500
DAQ1-3A(54)5500psi	φ54×275	1 3/16-12UN(P)—1 3/16-12UN(P)	5500
AQ-4A	φ54×275	1 3/16-12UN(P)—1 3/16-12UN(P)	500, 1000
DAQ1-3A(54)	φ54×275	1 3/16-12UN(P)—1 3/16-12UN(P)	500, 1000
DAQ1-3(43)	φ43×334	M30×2(B)—M30×2(P)	500, 1000
DAQ1-3(54)	φ54×334	1 3/16-12UN(B)—1 3/16-12UN(P)	500, 1000