POWERSHORE

holmatro
mastering power

Complexity

Regularity

4 →

Collapsed structure rescue (USAR)

3 →

Trench rescue

One system for every rescue situation

Holmatro PowerShore is a versatile and easy to assemble emergency shoring system providing quick and reliable stabilization for every rescue situation. No matter what type of operation you are faced with – more regular but less complex or less regular but more complex (see graph) – this system meets any shoring requirement. In all of these situations and environments stabilization with Holmatro PowerShore prevents further injury of those entrapped and creates rapid safe areas for rescuers to work in.

One system for shoring and lifting

Consisting of various lightweight, fully compatible components with snap-lock connection, Holmatro Power-Shore™ can be assembled in a minimum amount of time. With the help of many different extension lengths and accessories virtually any object can be shored at various angles. The load is safely secured by means of a manual or automatic locking system. Holmatro PowerShore is also available with integrated pneumatic or, for even more power, hydraulic lifting cylinders. This allows for a combination of shoring **and** lifting operations in situations where potentially life saving 'working space' needs to be created.

Quick and easy assembly in emergency situations.

The PowerShore system consists of various lightweight components.

Heavy vehicle rescue

Light vehicle rescue

2 ↑

1 ↑

Versatile

- One system for every rescue situation, enabling both shoring and lifting
- Shoring at various angles possible

Shores can be positioned at various angles.

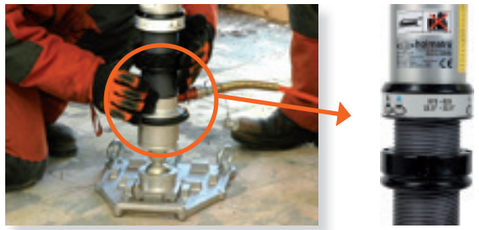
Safe

- Load is secured by manual “Locknut” or automatic locking “Auto-lock” system
- Auto-lock pneumatic or hydraulic systems enable ‘remote shoring’, i.e. when a shore is positioned in an unsafe area and then extended from a remote safe location by either pneumatic or hydraulic pressure

Powerful

- 100 kN / 10.1 t max. load capacity, depending on the shore length
- 100 kN / 10.1 t max. lifting capacity with integrated hydraulic lifting modules

The PowerShore™ system includes hydraulic, pneumatic and manual struts, to deal with every rescue situation.



Load secured by manual Locknut.

The Auto-lock system enables remote shoring.

Heavy goods vehicle shoring and lifting with a hydraulic PowerShore system.

Lightweight

- Easy to carry
- Easy to assemble and position

Lightweight components are easy to carry, assemble and position.

Fast

- Male-female snap-lock (dis)connection system for extremely fast coupling and uncoupling
- Fully compatible components ensure quick assembly
- Reflecting colour codes enable quick length assessment, even in the dark

All fully compatible items can be used together, which ensures quick assembly.

Snap-lock system: all items can be (dis)connected within seconds.

Reflecting colour codes indicate the length and illuminate in the dark.

Smooth edges

- No loose parts sticking out that may catch your clothes.

No protruding parts.

Smooth edges will not catch your clothes.

Shore components

When we look at a single shore, it is usually built of the following components:

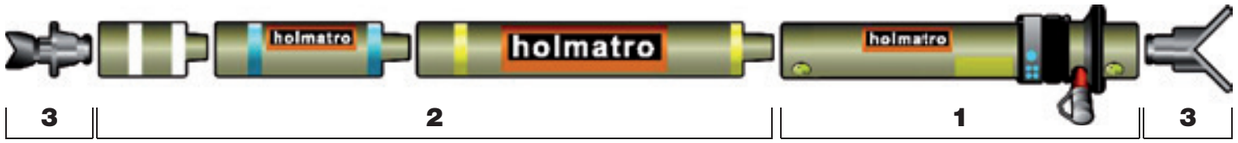
1) a strut
2) one or more extensions
3) heads and accessories

All shores, depending on their length, have a max. load capacity of 100 kN / 10.1 t with a safety factor of 4:1 (see the graph page 20).

Struts (1)

With a stroke of 120 - 252 mm the strut is the extendable part of the shore. There are different types of struts which can be operated manually or by means of pneumatic or hydraulic pressure (see “strut operating systems” page 7).

From top to bottom: hydraulic, manual and pneumatic struts.



Heads & accessories (3)

Holmatro offers a wide variety of heads to complete your shore. Some examples are swivel heads enabling shore positioning at various angles, cross heads that grip well on the underside of vehicles and beam support heads to combine your shoring system with wooden beams (e.g. to shore doorways and windows). Whether dealing with vehicle, trench or collapsed structure rescue you can choose between many different head types to meet specific application and environment requirements. Other accessories to finish your shoring system, such as support plates and tensioning belts, are also available in the PowerShore range.

Beam support head. Cross head. Swivel head.

Extensions (2)

The extensions are used to customize the length of the shore you need to create. Each extension has a reflecting colour code so that it can easily be identified, even in the dark! Commonly used lengths are: 125 mm (white), 250 mm (blue), 500 mm (yellow), 1000 mm (green) and 1500 mm (red, not in picture).

Colour coded extensions.

Colour codes reflect in the dark.

100% compatibility

All Holmatro PowerShore components are universally compatible. In other words: all of the struts can be used with any of the extensions and heads to develop the exact system required for a specific shoring application. The male-female snap-lock connection system enables fast and easy coupling.
For more detailed specifications of all components see pages 19-21.

Strut operating systems

There are three different types of operating systems for struts. These are manual (also referred to as ‘mechanical’), pneumatic and hydraulic.

Manual (mechanical) operation

Manual struts are extended manually.
Load capacity: 100 kN / 10.1 t

Pneumatic operation

Pneumatic struts are operated by means of an 8 bar pneumatic system, consisting of an air bottle, a pressure reducer, a control unit and air hoses.
Load capacity: 100 kN / 10.1t. Lifting capacity: 4.0 kN / 0.4 t

Hydraulic operation

Hydraulic struts are operated by means of a 720 bar hydraulic hand pump with hose and pressure gauge. The pressure gauge clearly indicates the max. allowed pressure for every shore length. Load **and** lifting capacity: 100 kN / 10.1 t

Strut locking systems

There are also two types of locking systems: Locknut and Auto-lock.

Various combinations of operating and locking systems result in five different types of struts, as shown in the table at the bottom of this page.

Locknut locking system

The Locknut system is secured manually, by means of a Locknut. As the Locknut system does not need to generate any additional forces to lock, it is a good choice for use in e.g. collapsed building shoring, where the forces in place should not be disturbed to prevent a secondary collapse. All struts can be equipped with this type of locking system.

Auto-lock locking system

The Auto-lock system is secured automatically, which allows for remote shoring: the process by which a shore is positioned in an unsafe area and then extended from a remote location by either pneumatic or hydraulic pressure. Therefore only struts with a pneumatic or hydraulic operating system can be equipped with this automatic locking system.

Available combinations

Combining the three operating and two locking systems results in five different strut types:

	Manual (mechanical)	Pneumatic (air)	Hydraulic (oil)
Locknut	Manual Locknut strut	Pneumatic Locknut strut	Hydraulic Locknut strut
Auto-lock		Pneumatic Auto-lock strut	Hydraulic Auto-lock strut

	Manual (mechanical)	Pneumatic (air)	Hydraulic (oil)
Locknut	Manual Locknut strut	Pneumatic Locknut strut	Hydraulic Locknut strut
Auto-lock		Pneumatic Auto-lock strut	Hydraulic Auto-lock strut

On the following pages we will compare applications suiting the five different strut types. It must be said, that the application possibilities are not strictly limited to the examples mentioned for each strut type.

Manual Locknut strut

Manual Locknut type.

Manual threaded type.

The **manual threaded** type, with self-retaining thread acting as a Locknut, has a very small retracted length (250 mm with 120 mm stroke) which makes it ideal for shoring small gaps or any situation where a small insertion space is required.

Together with the manual threaded type, the **manual Locknut** type has the advantage of not requiring additional pneumatic or hydraulic operating equipment to set the system in place. It is therefore very suitable for use in remote areas, confined spaces and simple vehicle stabilization scenarios.

Application examples:

- Narrow trench shoring
- Collapsed structure shoring, especially in confined and remote areas
- Light vehicle stabilization

Vehicle stabilization with manual Locknut struts.

Definition of terms

Remote shoring: The process by which a shore is positioned in an unsafe area and then extended from a remote safe location by either pneumatic or hydraulic pressure.

Manual or automatic follow-up shoring: Shoring used to follow a load that is being lifted by other equipment, such as lifting bags or jacks. The shore is extended automatically (due to compressed air inside the strut) as the load is lifted. It can be secured manually (Locknut system) or automatically (Auto-lock system). Follow-up shoring is intended to hold the load in the event of lifting equipment failure.

Manual threaded type strut used to shore a window. It can be secured with the help of a hook wrench (see image below).

Pneumatic Locknut strut

Pneumatic Locknut strut.

This strut can be used for vehicle, trench or collapsed structure rescue when there is no need for remote shoring (it is locked manually). In situations where compressed air is not available or required it can also be used as a manual strut.

Application examples:

- Manual follow-up shoring in (heavy) vehicle and collapsed structure lifting operations
- Light vehicle stabilization
- Trench shoring (also secondary / replacement shoring)
- Collapsed structure shoring, as a manual strut

Pneumatic Locknut strut used as a manual strut to shore a building.

Pneumatic Auto-lock strut

Thanks to its automatic locking system this strut can be used in situations where remote shoring or automatic follow-up shoring is required.

Application examples:

- Automatic follow-up shoring in (heavy) vehicle lifting operations
- Automatic follow-up shoring in collapsed structure lifting operations
- Remote shoring in trench rescue

Pneumatic Auto-lock strut.

Pneumatic Auto-lock struts are very suitable for remote shoring in trench rescue.

Auto-lock strut used to back up a lifting bag.

Hydraulic Locknut strut

Hydraulic Locknut strut.

Combining a 100 kN / 10.1 t holding capacity with a 100 kN / 10.1 t lifting capacity this powerful strut can be used for lifting and stabilization in one, with a second hydraulic strut acting as a backup. It is a good choice for (heavy) vehicle and collapsed structure shoring and lifting. Although being a little heavier than the pneumatic type it is also suitable for trench shoring.

Application examples:

- (Heavy) vehicle stabilization and lifting, also simultaneously
- Collapsed structure stabilization and lifting, also simultaneously
- Trench shoring

Hydraulic Auto-lock strut

Being a hydraulic powered strut that locks automatically, this type is suitable for remote shoring and lifting operations in (heavy) vehicle and collapsed structure rescue. When used together with a second hydraulic strut the lifting and shoring can be performed simultaneously. Although being a little heavier than the pneumatic type it is also a good strut for remote shoring in trench rescue.

Application examples:

- Remote shoring and lifting of (heavy) vehicles, also simultaneously
- Remote lifting in collapsed structure situations
- Remote shoring of trenches

Hydraulic Auto-lock strut used for heavy vehicle lifting and shoring.

Light vehicle stabilization with hydraulic Locknut struts.

Heavy vehicle stabilization with hydraulic Locknut struts.

Hydraulic Auto-lock strut.

Remote shoring with hydraulic Auto-lock struts.

Vehicle rescue

It is very important to rapidly stabilize a vehicle in the position it is found in, before starting extrication rescue efforts. The reason for this, is that any movement of the vehicle during these efforts may lead to further injury of those trapped inside. In some cases it may also be necessary to carefully lift a (heavy goods) vehicle, e.g. in car under-run situations or to free a trapped limb. The Holmatro PowerShore system can be used for both stabilization and controlled lifting of (heavy) vehicles.

Pneumatic Auto-lock strut used for follow-up shoring in heavy vehicle lifting operations.

Extensions, heads and base plate used for light vehicle stabilization.

Heavy vehicle stabilization with hydraulic Locknut strut.

Heavy vehicle stabilization with hydraulic Locknut strut.

Two hydraulic struts used for light vehicle stabilization and, if required, controlled lifting.

Trench rescue

Trenches are dug for various reasons, such as the laying of pipes and cables. The main cause of trench collapses is inadequate shoring. After a collapse, the trench needs to be shored quickly and properly, in order to prevent further injury of those entrapped, and to create a rapid safe area for rescuers to work in. The Holmatro PowerShore system can be used for all trench rescue operations, including remote shoring.

Remote shoring with Auto-lock struts.

Hydraulic Auto-lock struts used for remote shoring.

Trench shoring with pneumatic Auto-lock struts.

Pneumatic Auto-lock struts positioned in a trench.

Collapsed structure rescue

During collapsed structure rescue operations good emergency shoring is essential. It is used to protect access and exit routes to and from entrapped victims, and to create rapid safe areas for rescuers to work in. The Holmatro PowerShore system is very suitable for emergency shoring and controlled lifting of collapsed structures.

Collapsed structure stabilization and lifting with a hydraulic Locknut system.

Positioning two shores with beam support heads and a beam, to stabilize a building. The hydraulic Locknut struts will be carefully extended by means of a hand pump.

Manual struts with extensions, beam support heads and timber to stabilize a window.

Collapsed building stabilization with a manual Locknut system.

Shores combined with timber to protect the access and exit route of a collapsed building.

The broad range of Holmatro PowerShore components allows you to select a combination that will match your rescue operations in the best possible way. Alternatively, you can choose between a number of advisory sets: logical groupings of components which are suitable for certain applications. These sets and their applications will be described on the next couple of pages.

Mechanical shoring sets

no.	art.no.	description	PSM 1*	PSM 2*
1	150.011.538	MS 2 L 2+ (manual Locknut strut))	1	2
2	150.011.501	SX 1 (extension 125 mm)	1	2
3	150.011.502	SX 2 (extension 250 mm)	1	2
4	150.011.503	SX 5 (extension 500 mm)	1	2
5	150.011.504	SX 10 (extension 1000 mm)	1	2
6	150.011.523	cross head	1	2
7	150.182.038	tilting head	1	2
8	150.011.516	V-block head small	-	2
9	150.011.520	L-support head	1	2
10	390.511.073	tensioning strap	2	4
11	150.581.689	hook wrench	2	2
12	150.011.519	base support plate	1	2
accessories (optional, not included in the sets)				
13	150.011.006	storage bag struts & extensions	1	1
14	150.011.005	storage bag accessories	-	1
15	150.113.057	anti-roll block	7	14

* The numbers listed in these columns represent the number of components as included in the set.

PSM 1
basic mechanical shoring set
set art. no.: 150.062.097
PSM 2
advanced mechanical shoring set
set art. no.: 150.062.098

Application examples

The following examples are some of the applications that can be achieved with these sets. For a more detailed description of all possible applications, please contact your local Holmatro sales representative.

Vehicle extrication rescue

- Stabilization of vehicle on its side (see picture below table)
- Stabilization of vehicle on its roof
- Stabilization in 'light vehicle under heavy vehicle' scenarios

Collapsed structure rescue (USAR)

- Creation of safe areas using single spot shores (see picture below table)
- Creation of door or window shores
- Follow-up shoring of lifted loads

Trench collapse rescue

- Creation of safe working zones in shallow trenches

Stablization of a vehicle on its side.

Spot shore used to protect an exit route.

Hydraulic shoring sets

no.	art.no.	description	PSH 1*	PSH 2*	PSH 3*
1	150.011.538	MS 2 L 2+ (manual Locknut strut)	-	2	2
2	150.011.543	HS 1 L 5+ (hydraulic Locknut strut)	2	2	2
3	150.011.547	HS 1 Q 5 FL (hydraulic Auto-lock strut)	-	-	2
4	150.142.066	PA 09 H 2 S 10 (hand pump)	2	2	4
5	150.011.501	SX 1 (extension 125 mm)	2	2	4
6	150.011.502	SX 2 (extension 250 mm)	2	2	4
7	150.011.503	SX 5 (extension 500 mm)	2	2	4
8	150.011.504	SX 10 (extension 1000 mm)	2	2	4
9	150.011.505	FX 1 (double female connector)	-	-	2
10	150.062.074	2-way block	-	1	1
11	150.011.519	base support plate	2	4	4
12	150.062.075	3-way swivel head	-	-	1
13	150.011.523	cross head	2	2	4
14	150.182.046	swivel head	2	2	4
15	150.182.038	tilting head	2	2	4
16	150.011.522	V-block head large	-	-	2
17	150.011.516	V-block head small	2	2	2
18	150.011.524	pointed head	-	-	2
19	150.011.509	flat head	-	2	2
20	390.511.073	tensioning strap	4	6	6
21	150.011.548	rope	-	-	2
22	150.581.689	hook wrench	-	2	2
23	150.011.520	L-support head	2	2	2
24	150.011.514	beam support head 100 mm	-	2	2
25	150.011.513	beam support head 150 mm	-	-	1
accessories (optional, not included in the sets)					
26	150.011.006	storage bag struts & extensions	1	1	2
27	150.011.005	storage bag accessories	1	1	2
28	150.113.057	anti-roll block	14	16	32

* The numbers listed in these columns represent the number of components as included in the set.

PSH 1
basic hydraulic shoring set
set art. no.: 150.062.099
PSH 2
advanced hydraulic shoring set
set art. no.: 150.062.100
PSH 3
heavy duty hydraulic shoring set
set art. no.: 150.062.101

Application examples

The following examples are some of the applications that can be achieved with these sets. For a more detailed description of all possible applications please contact your local Holmatro sales representative.

Vehicle extrication rescue

- Stabilization of vehicle on its side
- Stabilization of vehicle on its roof
- Stabilization in 'light vehicle under heavy vehicle' scenarios
- Controlled lifting of vehicles
- Stabilization of heavy goods vehicles

Collapsed structure rescue (USAR)

- Creation of safe areas using single spot shores (see picture page 14)
- Creation of door or window shores
- Follow-up shoring of lifted loads
- Combined shoring / lifting operations

Trench collapse rescue

- Creation of safe working zones in trenches using remote shoring

Pneumatic shoring sets

no.	art.no.	description	PSP 1*	PSP 2*
1	150.011.538	MS 2 L 2+ (manual Locknut strut)	2	2
2	150.011.546	AS 3 Q 5 FL (pneumatic Auto-lock strut)	2	2
3	150.011.532	AS 3 L 5+ (pneumatic Locknut strut)	-	2
4	150.011.501	SX 1 (extension 125 mm)	2	4
5	150.011.502	SX 2 (extension 250 mm)	2	4
6	150.011.503	SX 5 (extension 500 mm)	2	4
7	150.011.504	SX 10 (extension 1000 mm)	2	4
8	150.011.505	FX 1 (double female connector)	-	2
9	150.062.074	2-way block	1	1
10	150.062.075	3-way swivel head	-	1
11	150.011.519	base support plate	2	4
12	150.011.523	cross head	2	4
13	150.182.046	swivel head	2	2
14	150.182.038	tilting head	2	4
15	150.011.522	V-block head large	-	2
16	150.011.516	V-block head small	2	2
17	150.011.524	pointed head	-	2
18	150.011.509	flat head	-	2
19	390.511.073	tensioning strap	4	6
20	150.581.689	hook wrench	2	2
21	150.011.520	L-support head	2	2
22	150.011.514	beam support head 100 mm	-	2
23	150.011.513	beam support head 150 mm	-	1
24	350.182.002	PRV 823 AU (pressure reducer)	1	2
25	350.182.102	Control Unit HDC 8	1	2
26	350.572.011	AH 10 BU (air hose)	1	1
27	350.572.009	AH 10 YU (air hose)	-	1
28	350.572.007	AH 5 BU (air hose)	-	1
29	350.572.006	AH 5 YU (air hose)	1	1
accessories (optional, not included in the sets)				
30	350.581.096	air bottle	1	2
31	150.113.057	anti-roll block	16	32
32	150.011.006	storage bag struts & extensions	1	2
33	150.011.005	storage bag accessories	1	2

* The numbers listed in these columns represent the number of components as included in the set.

PSP 1
basic pneumatic shoring set
set art. no.: 150.062.102
PSP 2
advanced pneumatic shoring set
set art. no.: 150.062.103

Application examples

The following examples are some of the applications that can be achieved with these sets. For a more detailed description of all possible applications please contact your local Holmatro sales representative.

Vehicle extrication rescue

- Stabilization of vehicle on its side
- Stabilization of vehicle on its roof
- Stabilization in 'light vehicle under heavy vehicle' scenarios
- Stabilization of heavy goods vehicles

Collapsed structure rescue (USAR)

- Creation of safe areas using single spot shores (see picture page 14)
- Creation of door or window shores
- Follow-up shoring of lifted loads

Trench collapse rescue

- Creation of safe working zones in trenches using remote shoring

Combined shoring sets

no.	art.no.	description	PSX 1*	PSX 2*	PSX 3*
1	150.011.538	MS 2 L 2+ (manual Locknut strut)	2	4	8
2	150.011.543	HS 1 L 5+ (hydraulic Locknut strut)	2	2	4
3	150.011.547	HS 1 Q 5 FL (hydraulic Auto-lock strut)	-	2	2
4	150.142.066	PA 09 H 2 S 10 (hand pump))	2	4	4
5	150.011.546	AS 3 Q 5 FL (pneumatic Auto-lock strut)	2	2	4
6	150.011.532	AS 3 L 5+ (pneumatic Locknut strut)	-	2	2
7	150.011.501	SX 1 (extension 125 mm)	4	8	16
8	150.011.502	SX 2 (extension 250 mm)	4	8	16
9	150.011.503	SX 5 (extension 500 mm)	4	8	16
10	150.011.504	SX 10 (extension 1000 mm)	4	8	16
11	150.011.505	FX 1 (double female connector)	2	4	4
12	150.062.074	2-way block	1	2	3
13	150.062.075	3-way swivel head	1	2	2
14	150.011.519	base support plate	4	6	8
15	150.011.523	cross head	4	4	6
16	150.011.516	V-block head small	2	2	4
17	150.182.048	tilting head with nailing plate	2	2	4
18	150.182.046	swivel head	4	4	8
19	150.182.038	tilting head	4	8	12
20	150.011.522	V-block head large	2	2	4
21	150.011.524	pointed head	2	2	2
22	150.011.517	cone head	2	2	4
23	150.011.509	flat head	2	2	4
24	150.581.689	hook wrench	2	4	8
25	390.511.073	tensioning strap	6	8	12
26	150.011.548	rope	2	4	8
27	150.011.541	flat head with nailing plate	2	4	6
28	150.011.520	L-support head	2	6	8
29	150.011.514	beam support head 100 mm	2	2	4
30	150.011.513	beam support head 150 mm	2	2	4
31	350.182.002	PRV 823 AU (pressure reducer)	1	2	2
32	350.182.102	Control Unit HDC 8	1	2	2
33	350.572.011	AH 10 BU (air hose)	1	1	1
34	350.572.009	AH 10 YU (air hose)	-	1	1
35	350.572.007	AH 5 BU (air hose)	-	1	1
36	350.572.006	AH 5 YU (air hose)	1	1	1
accessories (optional, not included in the sets)					
37	350.581.096	air bottle	1	2	2
38	150.113.057	anti-roll block	32	64	120
39	150.011.006	storage bag struts & extensions	2	3	6
40	150.011.005	storage bag accessories	2	3	6

* The numbers listed in these columns represent the number of components as included in the set.

PSX 1
basic combined shoring set
set art. no.: 150.062.104
PSX 2
advanced combined shoring set
set art. no.: 150.062.105
PSX 3
heavy duty combined shoring set
set art. no.: 150.062.106

Application examples

The following examples are some of the applications that can be achieved with these sets. For a more detailed description of all possible applications please contact your local Holmatro sales representative.

Vehicle extrication rescue

- Stabilization of vehicle on its side
- Stabilization of vehicle on its roof
- Stabilization in 'light vehicle under heavy vehicle' scenarios
- Controlled lifting of vehicles
- Stabilization of heavy goods vehicles

Collapsed structure rescue (USAR)

- Creation of safe areas using single spot shores (see picture page 14)
- Creation of door or window shores
- Follow-up shoring of lifted loads
- Combined shoring / lifting operations

Trench collapse rescue

- Creation of safe working zones in trenches using remote shoring

Trench shoring sets

no.	art.nr.	description	PST 1*	PST 2*
1	150.011.538	MS 2 L 2+ (manual Locknut strut)	2	4
2	150.011.546	AS 3 Q 5 FL (pneumatic Auto-lock strut)	2	4
3	150.011.501	SX 1 (extension 125 mm)	4	8
4	150.011.502	SX 2 (extension 250 mm)	4	8
5	150.011.503	SX 5 (extension 500 mm)	4	8
6	150.011.504	SX 10 (extension 1000 mm)	2	4
7	150.182.038	tilting head	8	16
8	150.062.074	2-way block	2	4
9	150.581.689	hook wrench	2	4
10	150.011.549	trench support plate	1	2
11	150.011.522	V-block head large	-	2
12	150.011.548	rope	4	8
13	350.572.006	AH 5 YU (air hose)	-	1
14	350.572.007	AH 5 BU (air hose)	-	1
15	350.572.009	AH 10 YU (air hose)	1	1
16	350.572.011	AH 10 BU (air hose)	1	1
17	350.182.002	PRV 823 AU (pressure reducer)	1	2
18	350.182.102	Control Unit HDC 8	1	2
accessories (optional, not included in the sets)				
19	350.581.096	air bottle	1	2
20	150.011.006	storage bag struts & extensions	1	2
21	150.011.005	storage bag accessories	1	2
22	150.113.057	anti-roll block	24	48

* The numbers listed in these columns represent the number of components as included in the set.

PST 1
basic trench shoring set
set art. no.: 150.062.107
PST 2
advanced trench shoring set
set art. no.: 150.062.108

Application examples

The following examples can be achieved with these sets. For a more detailed description of all possible applications please contact your local Holmatro sales representative.

Trench collapse rescue

- Creation of safe working zones in trenches using remote shoring
- Stabilization of unsecured installations (pipes etc.) in collapsed trenches

Remote shoring of a trench.

Trench shoring with pneumatic Auto-lock struts.

PowerShore struts with hydraulic cylinder

model	art.no.	locking system	retracted length mm	stroke mm	weight kg	working pressure bar / Mpa	force at working pressure kN / t	oil content at max. stroke cc
HS 1 Q 5 FL	150.011.547	Auto-lock	632	252	10.3	720 / 72	100 / 10.1	400
HS 1 Q 10 FL	150.011.536	Auto-lock	1092	252	13.0	720 / 72	100 / 10.1	400
HS 1 L 5+	150.011.543	Locknut	575	252	9.2	720 / 72	100 / 10.1	400
HS 1 L 10+	150.011.537	Locknut	1035	252	11.9	720 / 72	100 / 10.1	400

PowerShore struts with pneumatic cylinder

model	art.no.	locking system	retracted length mm	stroke mm	weight kg	working pressure bar / Mpa	force at working pressure kN / t	max. air / water content in litres
AS 3 Q 5 FL	150.011.546	Auto-lock	632	252	8.4	8	4.0 / 0.4	20.4 / 2.3
AS 3 Q 10 FL	150.011.545	Auto-lock	1092	252	11.2	8	4.0 / 0.4	20.4 / 2.3
AS 3 L 5+	150.011.532	Locknut	575	252	7.3	8	4.0 / 0.4	20.4 / 2.3
AS 3 L 10+	150.011.531	Locknut	1035	252	10.1	8	4.0 / 0.4	20.4 / 2.3

Auto-lock with integrated spacer: plunger with automatic locking mechanism that locks in steps of 9 mm. Retracting the plunger is only possible after releasing the locking mechanism. The integrated spacer, a spring operated flex mechanism with 13 mm stroke, is used to overcome one 9 mm step of the Auto-lock system and creates a max. pretension in the strut of 4.0 kN.

Locknut: plunger with thread and Locknut. When the plunger is extended the Locknut can be secured. The pressure can then be released. Axial displacement per rotation is 16.5 mm.

All struts are equipped on both sides with a female snap-lock system. Cylinders are single acting with spring return. All struts can be used with all extensions and heads.

AS 3 Q 5 FL

AS 3 L 5+

HS 1 L 5+

HS 1 Q 5 FL

PowerShore™ manual (mechanical) struts

model	art.no.	locking system	retracted length mm	stroke mm	weight kg
MS 2 L 2 +	150.011.538	Thread	250	127	2.7
MS 2 L 5 +	150.011.533	Locknut	575	250	6.7

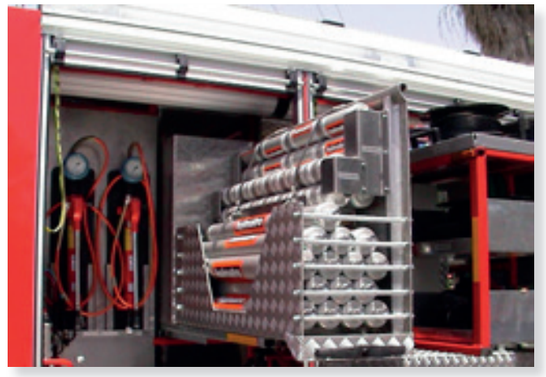
Thread: plunger with thread. When the plunger is extended the thread is self-retaining. Axial displacement per rotation is 16.5 mm.
Locknut: plunger with thread and a Locknut. When the plunger is extended the Locknut can be secured. Axial displacement per rotation is 16.5 mm

These struts are also equipped with a female snap-lock system on both sides, and can be used with all extensions and heads.

MS 2 L 5+

MS 2 L 2+

Holmatro PowerShore™ stored in a container.



Holmatro PowerShore™ stored in a rescue truck.

Accessories hydraulic operation

to be used in combination with struts with hydraulic cylinder

item	description	model	art.no.
1	hand pump, oil content 1000 cc, weight ready for use 8.9 kg, pressure gauge 0-720 bar, rubber protection cover for pressure gauge, hose 3 metres with quick-coupler.	PA 09 H 2 S 10	150.142.066

Accessories pneumatic operation

to be used in combination with struts with pneumatic cylinder

item	description	model	art.no.
1	control unit	HDC 8	350.182.102
2	pressure reducer with hose of 2 metres, suitable for both 200 and 300 bar	PRV 823 AU	350.182.002
3	air bottle 6 litres, 300 bar	-	350.581.096
4	air hose 5 metres, colour yellow	AH 5 YU	350.572.006
4	air hose 5 metres, colour blue	AH 5 BU	350.572.007
4	air hose 10 metres, colour yellow	AH 10 YU	350.572.009
4	air hose 10 metres, colour blue	AH 10 BU	350.572.011

Extensions / Connector

model	art.no.	extension mm	colour code	weight kg	outside Ø mm	working load kN / t*
SX 1	150.011.501	125	white	1.5	90	100 / 10.1
SX 2	150.011.502	250	blue	1.9	90	100 / 10.1
SX 5	150.011.503	500	yellow	2.8	90	100 / 10.1
SX 10	150.011.504	1000	green	4.9	90	100 / 10.1
SX 15	150.011.506	1500	red	6.4	90	100 / 10.1
FX 1	150.011.505	-		1.4	89	100 / 10.1

* depending on total length - see graph below and user manual
Extensions: with male snap-lock system on one side and female snap-lock system on the other side.
Connector FX1: with female snap-lock system on both sides. To connect the male end of an extension with one of the heads. In this way it is possible to make a fixed shore without the use of a strut.

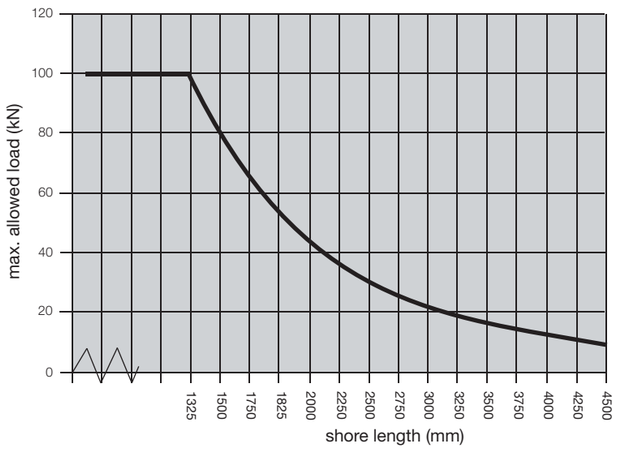

1


1 3


2 4

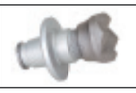
Maximum load vs. shore length

The overall strength of the system depends on its length once it is in place. Each strut has a yellow sticker indicating the load-to-length ratio. If it is a hydraulic strut, the sticker also shows the corresponding max. pressure. The max. holding capacity of 100 kN / 10.1 t applies to shore lengths up to 1.325 m, as shown in the graph below.




Yellow sticker on a strut indicating the load-to-length ratio.

Heads & other accessories

description	art.no.		description	art.no	
Flat head - aluminium. For support against a flat surface; 0.3 kg; Ø 89 mm.	150.011.509		Pointed head. For use in e.g. narrow gaps; 1.2 kg; Ø 89 mm.	150.011.524	
Flat head with nailing plate - aluminium. For support against a flat surface; with nailing holes; 0.8 kg. 150 x 150 mm.	150.011.541		Base support plate. Can support 3 swivel heads and is suitable for the use of up to 3 tensioning belts to create a stable triangle; 4.0 kg.	150.011.519	
Tilting head - aluminium. For support on uneven or tilting surfaces. Max. angle 45° in all directions; 1.7 kg, 95 x 95 mm.	150.182.038		Trench support plate - zinc plated steel. Can be nailed to wooden plates to support 2 swivel heads in e.g. a trench; 0.9 kg; 280 x 110 x 75 mm.	150.011.549	
Tilting head with nailing plate - aluminium. For support on uneven or tilting surfaces; with nailing holes. Max. angle 45° in all directions; 2.5 kg, 150 x 150 mm.	150.182.048		Tensioning belt. Length 4.0 m, width 35 mm, weight 1.4 kg, load 10 kN.	390.511.073	
Beam support head. For use with beams up to 150 mm; with nailing holes; 1.7 kg.	150.011.513		Adjustable hook wrench. To create a preload with the MS 2 L 2+. Two pieces are advised.	150.581.689	
Beam support head. For use with beams up to 100 mm; with nailing holes; 1.2 kg.	150.011.514		Rope with carbine hook. To lower struts, e.g. into a trench.	150.011.548	
L-support head. For use with wide beams; with nailing holes; 1.0 kg.	150.011.520		Rubber anti-roll block. Prevents struts and extensions from rolling on uneven surfaces and protects against dirt and damage.	150.113.057	
Swivel head - aluminium. Can be placed in almost any position and against each other for mutual support; 2.0 kg.	150.182.046		Storage / carrying bag for accessories.	150.011.005	
V-block head small - aluminium. For support of pipes; 0.7 kg; Ø 89 mm.	150.011.516		Storage / carrying bag for struts and extensions.	150.011.006	
V-block head large - aluminium. For support of pipes; 1.7 kg. Opening x width 141 x 100 mm.	150.011.522		2-way block. To support 2 tilting heads.	150.062.074	
Cone head. For support on concrete or steel surfaces; 0.5 kg; Ø 89 mm.	150.011.517		3-way swivel head. Contains 3 integrated swivel heads for use with up to 3 shoring lines in various directions.	150.062.075	
Cross head. For use on many kinds of surfaces; 1.1 kg.	150.011.523				

All accessories to be used on struts and extensions are equipped with a male snap-lock system.


Swivel heads with interlocking mechanism to support two shores placed in opposite direction at various angles. They are used together with a base support plate.


Swivel head combined with a trench support plate. The trench support plate can be nailed to a wooden shoring board inside a trench.

Anti-roll blocks prevent struts and extensions from rolling away on uneven surfaces.

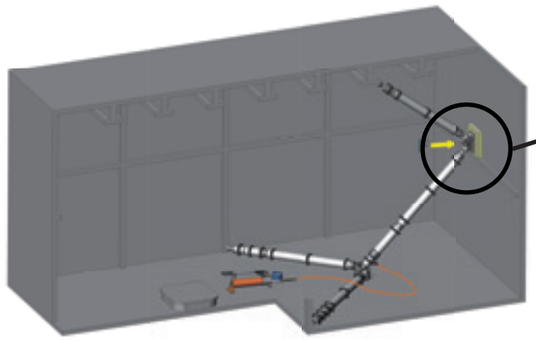
Use of a tilting head with a nailing plate in trench shoring.


Beam support heads are used together with timber in collapsed structure shoring.

The versatility of Holmatro's PowerShore™ system is not limited to the wide variety of rescue applications described. Marine forces too, value the benefits of this system, as it can also be used for sealing leaks onboard ships. To meet the different conditions of emergency situations at sea Holmatro adapted their standard PowerShore components. This has resulted in a special naval damage control set offering solutions for various scenarios, such as sealing a leak in a dividing wall.

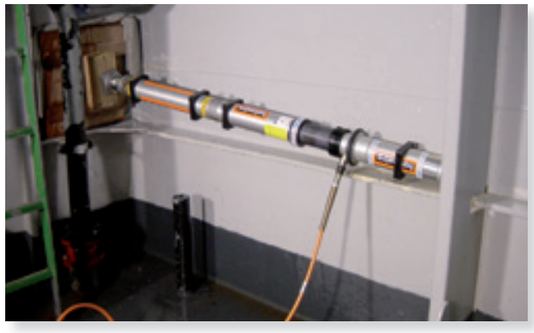
Naval damage control set.

The PowerShore system can also be used to seal leaks onboard marine ships.



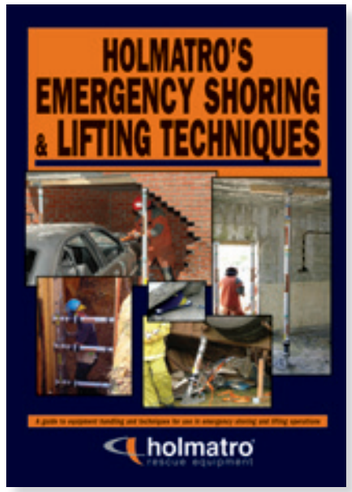
Sealing a leak in a dividing wall with the hydraulic PowerShore naval damage control system.

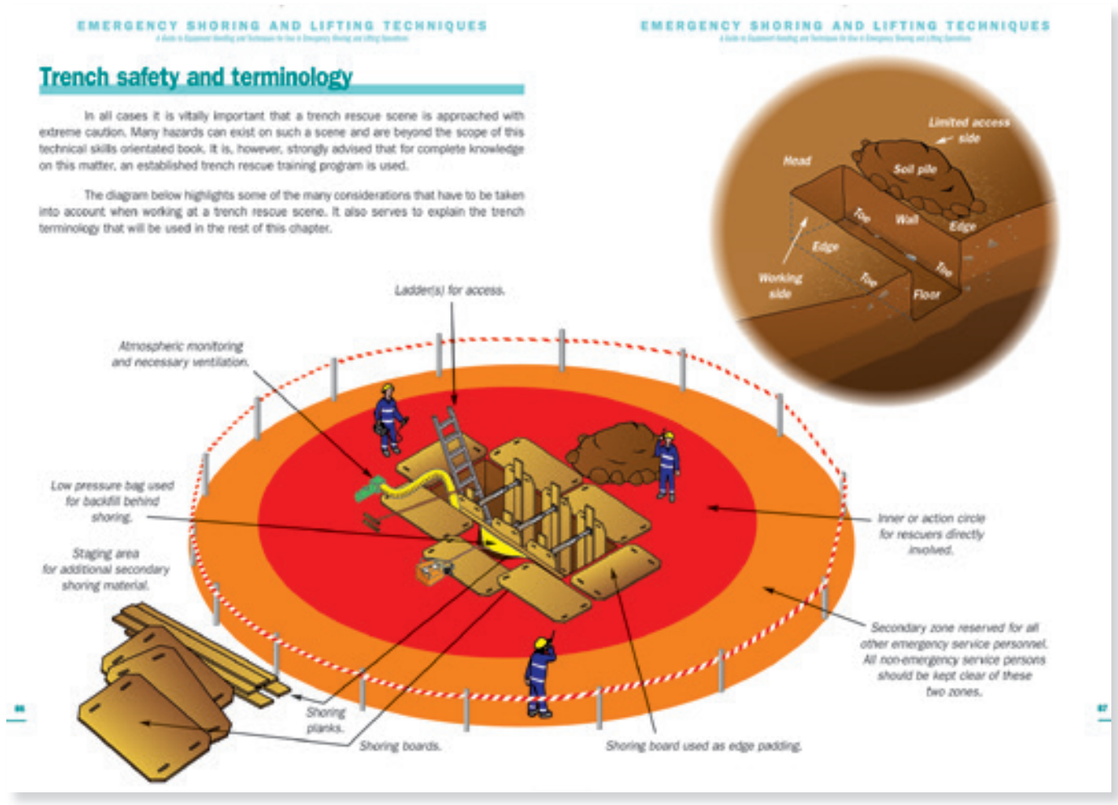
A 3-way swivel head and a 2-way block used for shoring lines in various directions.



Hydraulic-powered struts used together with extensions, heads and timber to seal a leak inside a marine ship.

Also available from Holmatro is a new guide to equipment handling and techniques for use in emergency shoring and lifting operations. This book describes the various rescue operations where systems such as Holmatro PowerShore are commonly used. These include light and heavy vehicle rescue, collapsed structure rescue and trench rescue. Subjects like hazard and load management principles alternate with situational approaches in Holmatro's Emergency Shoring & Lifting Techniques. The guide offers a well-balanced mix of theory and practice, and is therefore a valuable training tool.





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Important safety notice

This brochure contains information on rescue tools and rescue techniques that can be employed in different emergency shoring and lifting situations. The situations shown in this brochure are examples only and merely meant to assist the user of this brochure in understanding certain basic emergency shoring techniques and rescue tools available.

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