

# INFO

## Build-up and description of Yale hand pumps

Hand pumps are the most common power source within the area of "High-Pressure Hydraulic Tools". For this reason our hand pumps have been carefully designed and equipped with many details which make the pumps very versatile and handy in every-day applications.

### Relief valve/hand wheel

The fine-adjustment relief valve in connection with the large hand wheel allows millimeter increments when lifting and lowering even highest loads. The fact that sometimes hundreds of tons are controlled by this hand wheel underlines the importance of this feature.

### Sturdy "all-metal-design"

The robust pump head and the absence of any plastic parts result in a long service life and easy maintenance over many years. Plastic reservoirs filled with oil may present a fire risk in connection with welding or similar work!

### Carrying handle

A handy carrying handle on all our hand pumps facilitates transportation enormously.

### Pressure relief valves

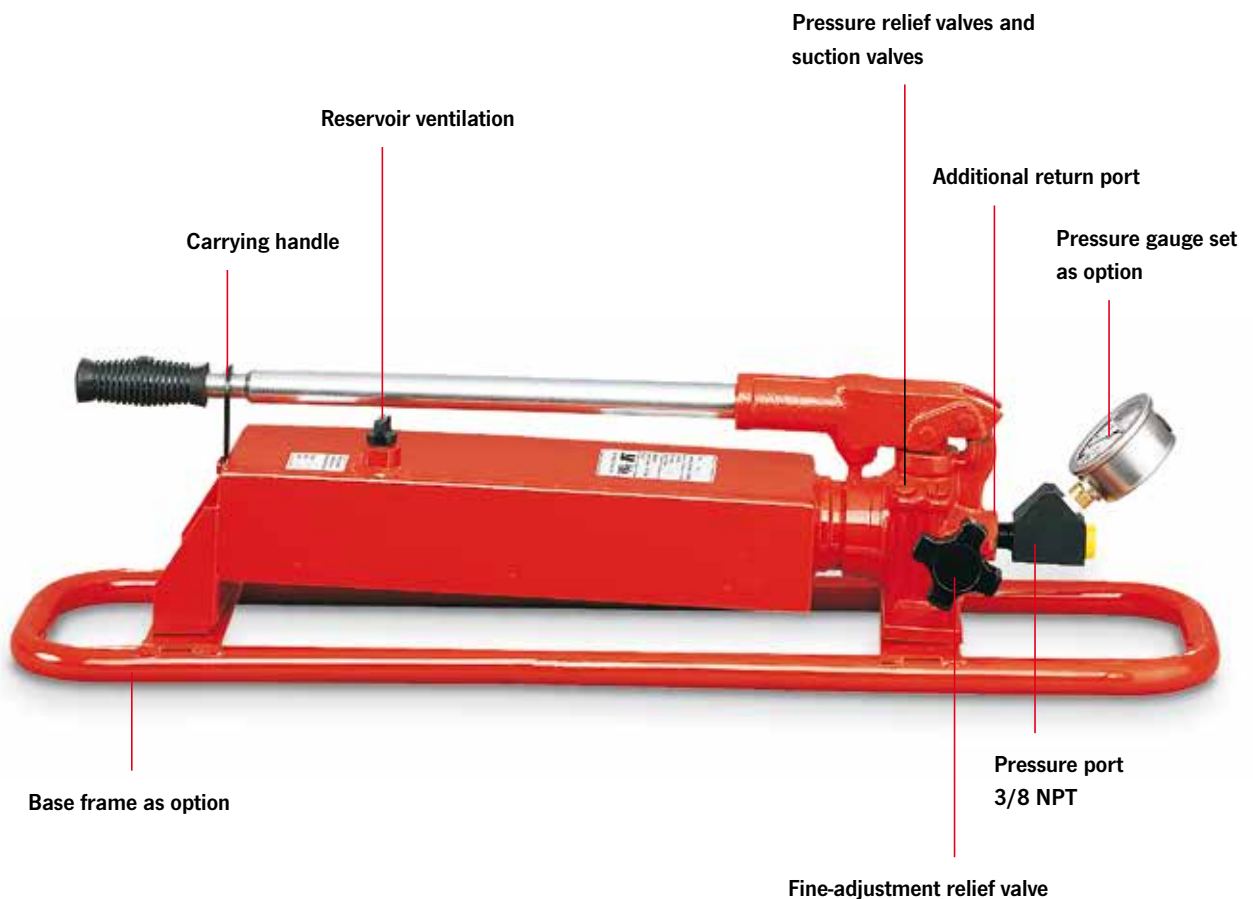
All hand pumps are equipped with two pressure relief valves. They are easily adjustable from outside if pumps must be re-adjusted or a lower operating pressure should not be exceeded.

### Reservoir ventilation

All hand pumps are equipped with a reservoir ventilation plug. This ensures perfect suction of hydraulic oil and allows you to use the total oil capacity of the reservoir.

### Two-stage output

All hand pumps have two-stage design (except HPS-1/0,7). This allows an increased speed and efficient working during unloaded conditions of the hydraulic cylinder. The switch-over from the low pressure to the high pressure stage is done automatically.



**Delivered ready to use**

All hand pumps are supplied ready to use incl. hydraulic oil.

**Easy-maintenance-design**

There is no need to disassemble the hand pumps in case of service work. All parts like suction and pressure valves, seals, packings etc. are accessible from the outside.

**All hand pumps have the same design**

The same design (build-up) for all hand pumps with the exception of the reservoirs allows the interchangeability of all components. Therefore spare part stocks can be kept to an absolute minimum. Only one spare part kit is necessary to service all hand pumps.

**Excellent suction properties**

Hand pumps suck and displace 100% of their volume per stroke. This results both in a high efficiency as well as a rapid cylinder movement.

**Interchangeability**

All hydraulic cylinders, hand pumps and other components are fully interchangeable and can be combined with all other 700 bar hydraulic lines. All components have the standard oil port and same coupler parts.

**Additional return oil port**

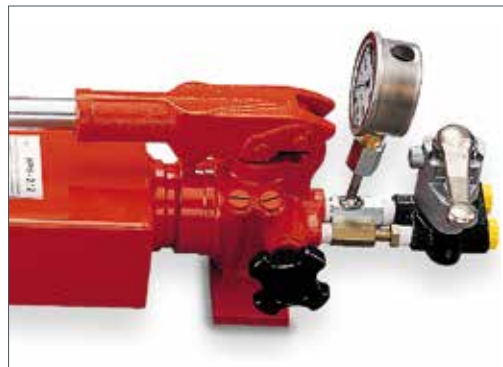
All hand pumps are equipped with a return port to the reservoir. This detail is very advantageous as many hand pumps are integrated in more complex hydraulic circuits.

**Base frame**

On request you can get base frames for the most common hand pumps. These base frames add to the stability and protection of the hand pumps, in particular when used in the field or on a construction site.

**Pressure gauge**

Appropriate pressure gauges with the corresponding adaptors are shown.



Hand pump HPH...

With integrated pressure gauge GGY-631 and gauge adaptor set GA-704.

**Hand pumps for double-acting cylinders with relief valve and 4/2-way directional valve**

Unlike conventional pumps, all hand pumps of the model HPH (with 4/2-way directional valve for double-acting cylinders) include a precision relief valve in addition to the directional control valve. Manual directional control valves switch over abruptly, thus causing undesired pressure surges in the system under load.

The additional relief valve in all HPH-hand pumps allows a precise lowering of the load without any pressure shocks. All components have the standard oil port and same coupler parts.

**Further advantage of this design:**

The pressure gauge shows the pressure as pushing and as pulling force. The combination of a 4-way directional valve with a sensitive relief valve allows a controlled pressure relief without pressure shocks.

OFFLINE

**INFO**

Selection charts "cylinder/hand pumps" can be found on pages 416-417.



## HPS Hand pumps for single-acting cylinders

Hand pumps are easy to use and operate independently of any external energy source. They are designed for a maximum 700 bar system pressure and will allow each hydraulic cylinder to utilize its maximum capacity.

The two-stage system reduces pumping time.

Stage 1 allows rapid piston travel under no load or light load conditions. The pump automatically switches to stage 2 when the piston is loaded and a higher force is required from top. The hand pump is an all-steel construction designed for rough use and has a high-efficiency pumping action. The handle can be locked for easy carrying.

The large and easy-to-control return valve allows the operator to precisely control the return stroke. Other standard features include a large and easy-to-control hand wheel, air bleeding and oil filling plug, large support feet for stability, tilted tank to increase usable oil volume and ergonomic handle grip.

### Features

- Operating pressure max. 700 bar.
- Two-stage operation with automatic switch-over (except HPS-1/0,7 A).
- Large reservoir volumes.
- With pressure relief valves, adjustable from the outside.
- Precision-adjustable relief valve (handwheel).
- Robust all-steel construction.
- HPH-pumps are equipped with a 4-way control valve plus a precision-adjustable relief valve.
- Oil port thread 3/8 NPT.
- Incl. oil filling.

### Option

- Pressure gauges with corresponding adaptors are also available as accessories.

## INFO

Hydraulic hoses are the connection between hand pump and hydraulic cylinders and need to be selected separately. Please see page 391.

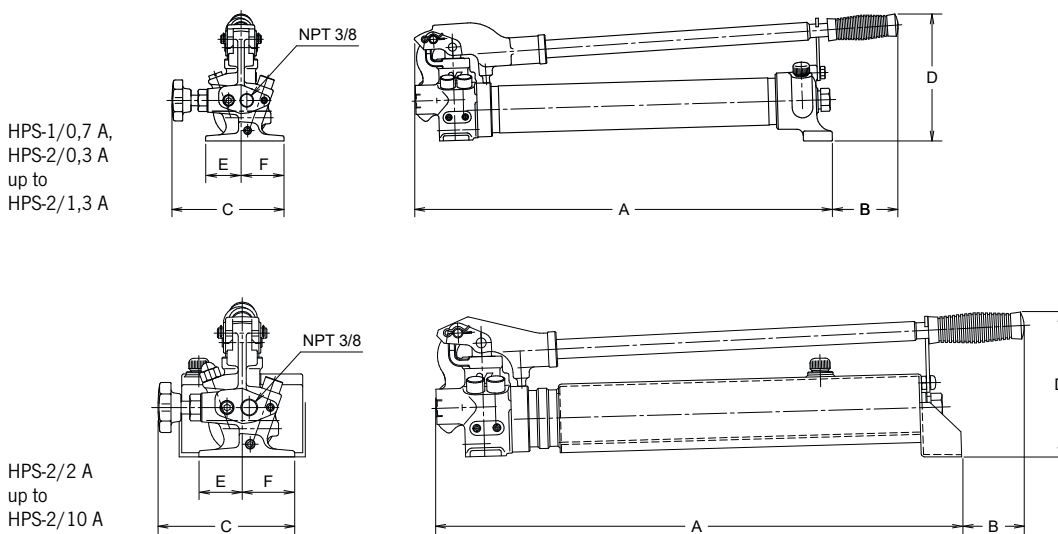
## Technical data HPS

Model	Art.-No.	Displacement	Reservoir volume cm <sup>3</sup>	Displacement 1 <sup>st</sup> stage cm <sup>3</sup>	Displacement 2 <sup>nd</sup> stage cm <sup>3</sup>	Weight kg
HPS-1/0,7 A	N12101011	single-stage	700	–	2	7.0
HPS-2/0,3 A	N12101127	two-stage	300	5	1	3.5
HPS-2/0,7 A	N12101012	two-stage	700	11	2	7.0
HPS-2/1,3 A	192085595	two-stage	1300	11	2	9.0
HPS-2/2 A	N12101013	two-stage	2000	11	2	10.0
HPS-2/4 A	N12101014	two-stage	4000	11	2	13.0
HPS-2/6 A	N12101015	two-stage	6000	11	2	21.0
HPS-2/10 A	N12101016	two-stage	10000	11	2	27.0

## Dimensions HPS

Model	HPS-1/0,7 A	HPS-2/0,3 A	HPS-2/0,7 A	HPS-2/1,3 A	HPS-2/2 A	HPS-2/4 A	HPS-2/6 A	HPS-2/10 A
A, mm	505	410	505	630	520	645	645	800
B, mm	85	100	85	80	70	65	65	65
C, mm	135	105	135	135	145	160	215	250
D, mm	150	125	150	150	150	150	180	190
E, mm	43	35	43	43	43	43	43	43
F, mm	52	35	52	52	52	52	52	52

Dimensions approx.





## HPH Hand pumps for double-acting hydraulic cylinders

With 4-way valve and relief valve (hand wheel)

All hand pumps of type HPH are designed as double-acting cylinders. Basically, they do not differ from series HPS, but are equipped with a 4/3-way directional valve.

The precision-adjustable relief valve remains unaffected and permits a sensitive pressure relief.

### Option

- Pressure gauges with corresponding adaptors are also available as accessories.

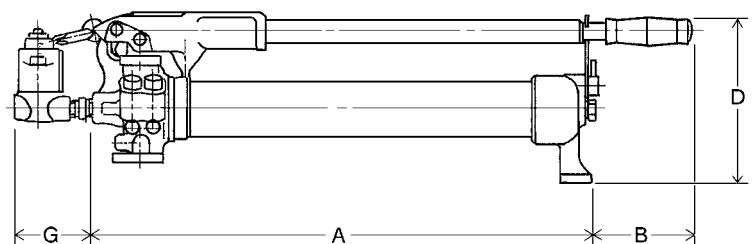
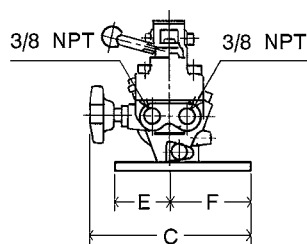
### Technical data HPH

Model	Art.-No.	Displacement	Reservoir volume cm <sup>3</sup>	Displacement 1 <sup>st</sup> stage cm <sup>3</sup>	Displacement 2 <sup>nd</sup> stage cm <sup>3</sup>	Weight kg
HPH-2/0,7 A	N12101018	two-stage	700	11	2	8
HPH-2/2 A	N12101019	two-stage	2000	11	2	11
HPH-2/4 A	N12101020	two-stage	4000	11	2	14
HPH-2/6 A	N12101021	two-stage	6000	11	2	22
HPH-2/10 A	N12101022	two-stage	10000	11	2	28

### Dimensions HPH

Model	HPH-2/0,7 A	HPH-2/2 A	HPH-2/4 A	HPH-2/6 A	HPH-2/10 A
A, mm	505	520	645	645	800
B, mm	85	70	65	65	65
C, mm	160	160	160	200	160
D, mm	150	150	150	180	190
E, mm	43	43	43	43	43
F, mm	52	25	52	52	52
G, mm	85	85	85	85	85

Dimensions approx.



## HPB

### Base frames for hand pumps

These base frames add to the stability of your hand pump, in particular when used in the field or on a construction site where hand pumps are frequently operated on uneven and soft ground.

At the same time, the hand pumps are protected from sand, humidity and possible damage.

The assembly of the base frames is very easy; just three holes have to be bored to mount the frame to the hand pump.

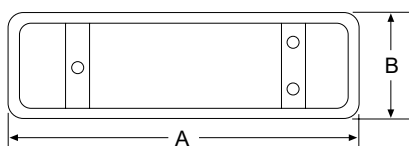


### Technical data HPB

Model	Art.-No.	Suitable for hand pump	Weight kg
HPB-2	N14500205	HPS-1/0,7 A + HPS-2/0,7 A + HPS-2/2 A + HPH-2/0,7 A + HPH-2/2 A	1.3
HPB-4	N14500206	HPS-2/4 A + HPS-2/6 A + HPH-2/4 A + HPH-2/6 A	1.8

### Dimensions HPB

Model	HPB-2	HPB-4
A, mm	765	885
B, mm	190	190





## TWAZ Hand pumps model

Operating pressure max. 2000 bar

These high-performance hand pumps allow a very rapid pressure build-up due to their two-stage design. Both pressure stages are equipped with a limiting valve which can easily be adjusted from outside.

High-pressure hand pumps are used for special applications like pressurizing hydraulic nuts and safety couplings, hydrostatic testing, bolt tensioners, high-pressure oil injection for bushing removal, pretensioning anchors, for test applications in laboratories and as a power source within test stands and propeller press systems.

### Accessories for hand pumps TWAZ



Option:  
pressure gauge,  
GGY-2500.



Option:  
pressure gauge-adaptor,  
GA-2000.



Option:  
adaptor,  
FY-201  
(M22 x 1.5 on G 1/4).



Option:  
hydraulic hoses,  
HH-2001-20,  
max. pressure: 2000 bar.

### Technical data TWAZ

Model	Art.-No.	Pressure max. bar	Reservoir volume cm <sup>3</sup>	Displacement 1 <sup>st</sup> stage cm <sup>3</sup>	Displacement 2 <sup>nd</sup> stage cm <sup>3</sup>	Oil port	Pressure gauge	Pressure gauge model	Gauge adaptor model	Pressure relief valve	Weight kg
TWAZ-0,7	N12201100	2000	700	8	0.6	M22 x 1.5	optional	GGY-2500	GA-2000	yes	7.0
TWAZ-1,3	N12201101	2000	1300	13	1.0	M22 x 1.5	optional	GGY-2500	GA-2000	yes	9.0
TWAZ-2,3	N12201102	2000	2300	31	1.6	M22 x 1.5	optional	GGY-2500	GA-2000	yes	16.0

## FPS Foot pump

### Operating pressure 700 bar

Used to operate single-acting hydraulic cylinders, especially for repeated applications, such as checking of welding samples, pressing of connection components (crimping), actuating of clamping devices, as well as for all applications, where it is necessary to keep hands free.

The pump can be used everywhere, as it is independent of an external energy source and is easily portable. An extremely good stability guarantees a comfortable and safe operation up to the highest pressure. It is a “real” foot operated pump, as the return stroke of the connected hydraulic cylinder is released by foot control.

### Features

- Operating pressure max. 700 bar.
- Absolute stability due to large base plate.
- Minimized labour fatigue.
- Operating pressure adjustable. Valves accessible from the outside.
- Return stroke of cylinder also controlled by foot operation.
- Oil port 3/8 NPT.

### Options

- Pressure gauges and suitable adaptors.
- Hydraulic hoses



### Technical data FPS

Model	Art.-No.	Operating pressure max. bar	Displacement 1 <sup>st</sup> stage cm <sup>3</sup>	Displacement 2 <sup>nd</sup> stage cm <sup>3</sup>	Reservoir volume useable cm <sup>3</sup>	Weight kg
FPS-2/0,5 A	N12501128	700	11	2	500	7