Yale®

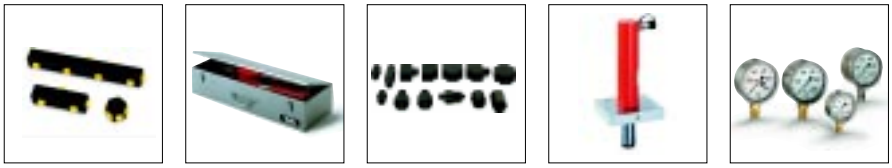
Hydraulic Jacks
Hydraulic Tools

Catalogue 12

Yale Industrial Products

Yale®

At a glance



Content

Dimensions for cylinders and hand pumps:
Please see pages 78 to 82.

Yale®

Technical information

hardened alloy steel saddle

metric mounting threads in cylinder base, plunger and cylinder collar (depending on series)

Hydraulic cylinders with Yale ChroMo-Design

Chromium-molybdenum steel

Yale hydraulic tools are designed for professional operation. A tool is only as good as its basic material. Therefore our cylinders are designed from high quality chromium-molybdenum steel and heat treated. This unique basic material gives Yale hydraulic cylinders a distinctly higher strength in the elastic range, thus providing a considerably longer service life, primarily when hydraulic cylinders are subjected to inevitable eccentric loads.

Double bronze bearings

Practice has shown that hydraulic cylinders used as a tool in workshops or on construction sites are frequently subjected to eccentric loading.
Yale hydraulic cylinders are provided with double bronze bearings on the plunger, which minimizes friction between plunger and body during lateral loading.

two bronze bearings minimize friction even in cases of eccentric loading

Hard-chromium plated piston

Offers excellent protection against mechanical damage and corrosion. Excellent sliding characteristics in conjunction with the upper bronze bearing in the stop ring.

Metric mounting threads and standard parts

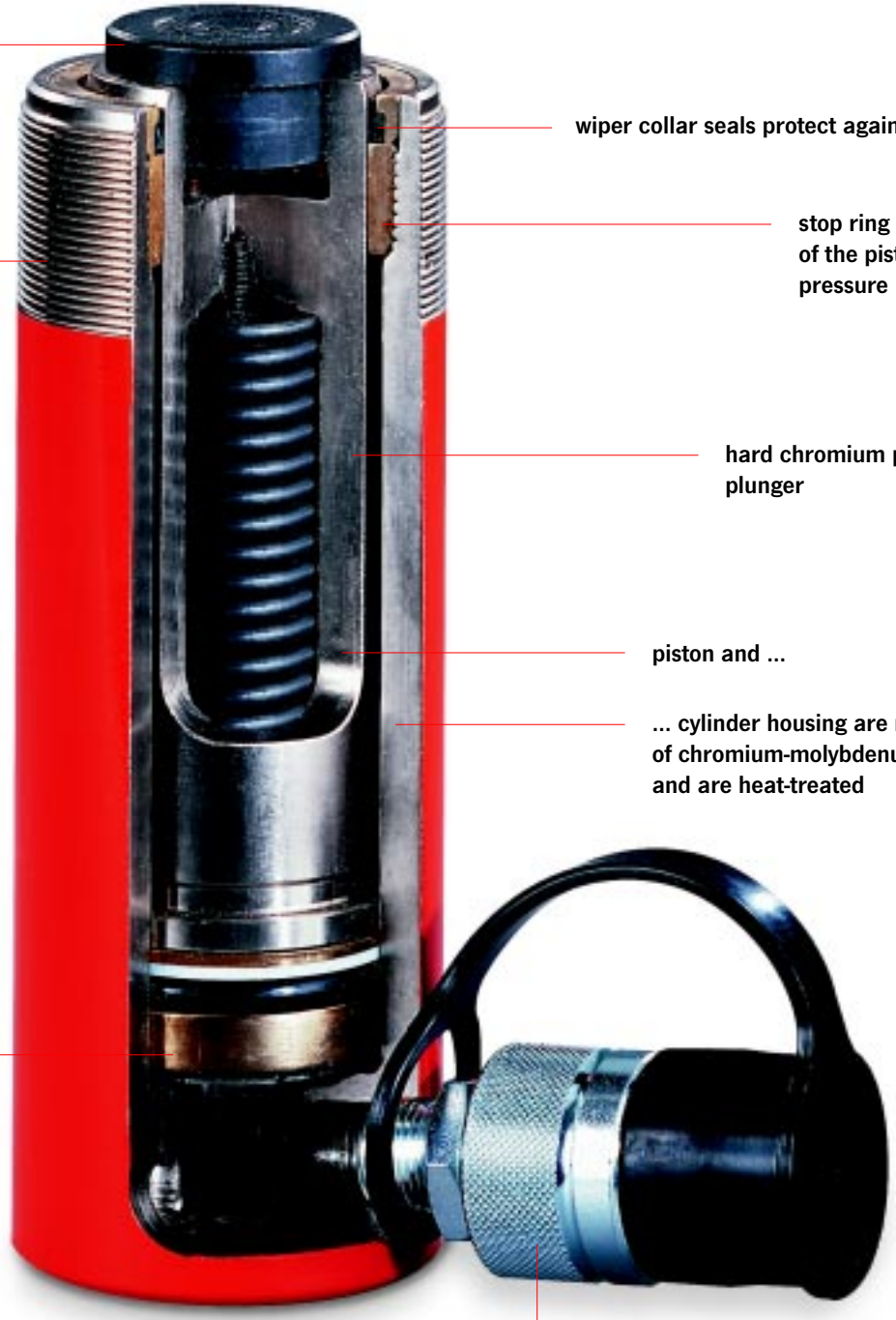
To facilitate the installation of hydraulic cylinders in jigs and fixtures and auxiliary structures.
The metric standard throughout the entire series simplifies service operations and repairs.

Stop ring carries full pressure

As a safety factor the stop ring on all Yale hydraulic cylinders carries the full load even under maximum operating pressure.

Delivered “ready to use“

Yale Hydraulic cylinders are delivered ready to use incl. female coupler half, hardened saddle and mounting threads; larger cylinders come with carrying handle or transportation lugs.
This also applies to customized combinations which are always supplied ready assembled.



wiper collar seals protect against dirt

stop ring prevents overtravel of the piston up to full operating pressure

hard chromium plated plunger

piston and ...

... cylinder housing are made of chromium-molybdenum steel and are heat-treated

female coupler half CFY-1 (incl. dust cap)

Yale®

Universal cylinders YS

Universal cylinders

single acting with spring return
5 to 100 tonnes

Universal cylinders are designed and manufactured to work in the toughest environments to which this type of equipment is normally subjected.
Robust construction with long guides allow the units to withstand abuse and better tolerate eccentric and side loading, yet is convenient to use with only one quick-release coupler hose connection and a spring return.

Features

- Yale ChroMo-Design
- operating pressure max. 700 bar
- single acting with spring return
- robust design with long piston bearings to withstand eccentric loading
- cylinder body and piston are made from massive chromium-molybdenum steel and heat treated
- hard-chromium plated piston with replaceable, heat treated saddle
- metric mounting threads on cylinder collar, in the base and piston rod (5 to 30 tonnes).
- stop ring can bear full capacity (pressure) and is fitted with dirt wiper
- oil port thread: 3/8 NPT
- incl. female coupler half CFY - 1
- YS - 50/100 and YS - 50/160 with carrying handle
- YS - 50/320 to YS - 100/200 with lifting rings

For dimensions see page 78
Selection chart "cylinder/hand pumps" please see page 74.

Applications

Universal cylinders are designed for all jobs where high forces but compact dimensions are required: e.g. straightening of steel constructions, removing of parts like shafts, axles, lifting, positioning, weighing, supporting, testing as well as for all general assembly and repair applications.
Due to the various mounting threads the cylinders can easily be installed in clamping devices, welding fixtures, frame presses etc.

Cylinder size tonnes	Model	Capacity kN	Stroke mm	Effective plunger area cm^2	Oil volume max. cm^3	Closed height mm	Outside ø mm	Weight kg
	YS - 5/15	50	15	7,2	11	45	41	0,9
	YS - 5/25	50	25	7,2	18	97	42	1,0
5	**YS - 5/75**	50	75	7,2	53	157	42	1,5
	YS - 5/127	50	127	7,2	90	214	42	2,0
	YS - 5/180	50	180	7,2	127	267	42	2,4
	YS - 10/25	100	25	14,3	37	90	57	1,6
	YS - 10/50	100	50	14,3	73	125	57	2,1
	YS - 10/100	100	100	14,3	146	178	57	2,8
10	**YS - 10/150**	100	150	14,3	218	250	57	4,1
	YS - 10/200	100	200	14,3	291	300	57	4,7
	YS - 10/250	100	250	14,3	363	352	57	5,5
	YS - 10/300	100	300	14,3	436	407	57	6,3
	YS - 15/25	150	25	21,5	53	110	67	2,7
	YS - 15/50	150	50	21,5	106	140	67	3,3
	YS - 15/100	150	100	21,5	213	190	67	4,3
15	**YS - 15/150**	150	150	21,5	319	260	67	5,8
	YS - 15/200	150	200	21,5	425	310	67	7,0
	YS - 15/250	150	250	21,5	531	365	67	8,0
	YS - 15/300	150	300	21,5	637	420	67	9,0
	YS - 15/350	150	350	21,5	744	472	67	10,0
	YS - 23/25	230	25	32,9	83	116	85	5,0
	YS - 23/50	230	50	32,9	166	150	85	6,0
	YS - 23/100	230	100	32,9	332	202	85	7,5
23	**YS - 23/160**	230	160	32,9	531	277	85	10,0
	YS - 23/210	230	210	32,9	697	330	85	12,0
	YS - 23/250	230	250	32,9	830	376	85	13,5
	YS - 23/300	230	300	32,9	996	428	85	15,0
	YS - 23/345	230	345	32,9	1145	477	85	16,5
30	**YS - 30/125**	300	125	42,9	552	245	102	13,0
	YS - 30/200	300	200	42,9	884	325	102	17,0
	YS - 50/50	500	50	71,5	355	170	125	15,0
50	**YS - 50/100**	500	100	71,5	709	220	125	19,0
	YS - 50/160	500	160	71,5	1135	285	125	24,0
	YS - 50/320	500	320	71,5	2269	460	125	37,0
70	**YS - 70/150**	700	150	100,0	1478	285	146	32,0
	YS - 70/330	700	330	100,0	3252	490	146	52,0
100	**YS - 100/100**	1000	100	143,0	1432	275	180	43,0
	YS - 100/200	1000	200	143,0	2863	375	180	64,0

For accessories for cylinders series YS like lifting claws, piston plates, extension tubes, support plates and threaded flanges please see pages 20 to 22.

Yale®

Low-height cylinders
Flat cylinders

YLS
YFS

YFS

Low-height and flat cylinders

single acting with spring return
10 to 100 tonnes

Features

- Yale ChroMo-Design
- operating pressure max. 700 bar
- single acting with spring return
- low height for tight working areas
- cylinder body and piston made from chromium-molybdenum steel and heat treated
- stop ring can bear full capacity (pressure) and is fitted with dirt wiper
- oil port thread: 3/8 NPT
- incl. female coupler half CFY - 1
- YLS - 100/55 is equipped with 2 lifting rings
  YFS - 100/15 comes with a carrying handle.

Applications

These very compact hydraulic cylinders are designed for lifting and positioning jobs as well as all general maintenance applications, where low height, portability and light weight are needed.
These versatile cylinders are found in all industrial areas like steel mills, civil engineering, heavy construction industry, power plants, off-shore industries etc.
Low height cylinders are recommended for all lifting, pushing, levelling, pressing applications especially in tight working areas. Due to their short strokes flat cylinders should not be subjected to side loading.

YLS

Cylinder size tonnes	**Model**	Capacity kN	Stroke mm	Effective plunger area cm^2	Oil volume cm^3	Closed height mm	Outside ø mm	Weight kg
10	**YLS - 10/35**	100	35	14,3	51	86	70	2,5
20	**YLS - 20/45**	200	45	28,6	128	100	85	4,0
30	**YLS - 30/60**	300	60	42,9	266	120	100	6,5
50	**YLS - 50/60**	500	60	71,5	426	122	125	10,4
100	**YLS - 100/55**	1000	55	143,0	788	141	170	24,0
10	**YFS - 10/11**	100	11	14,3	16	43	56	1,5
20	**YFS - 20/15**	200	15	28,6	31	60	76	3,0
30	**YFS - 30/15**	300	15	44,2	66	60	96	4,2
50	**YFS - 50/15**	500	15	71,5	107	70	145	8,7
100	**YFS - 100/15**	1000	15	143,0	215	91	170	16,0

Yale®

Pull cylinders

YPL
YPP

Pull cylinders

single acting with spring return
10 to 51 tonnes

Yale pull cylinders are able to create extremely high pulling forces and can be controlled precisely by the use of hand pumps or power packs.
In neutral position pull cylinders are fully extended. As soon as the cylinders are pressurized the forged links are drawn together.
A built-in return spring extends the piston again as soon as the pressure is released.
Application areas are ship building, steel construction, bridge building, civil engineering or general repair or assembly applications where high pulling forces are needed.

Features

- Yale ChroMo-Design
- operating pressure max. 700 bar
- single acting with spring return
- can be operated in all positions (except YPP)
- cylinder body and piston are made from massive chromium-molybdenum steel and heat-treated
- double bronze bearings of the hard-chromium plated piston
- stop ring can bear the full capacity
- with dirt wiper
- forged, replaceable links
- with carrying handle and piston protection cover
- oil port thread 3/8 NPT
- incl. female coupler half CFY - 1

For selection chart "cylinder/hand pumps" please see page 74.
Travel-speed chart: Page 77.
Dimensions: Page 79.

Application

Shipbuilding, heavy vessel construction, steel construction, civil engineering as well as general repair and maintenance applications.

Cylinder size tonnes	**Model**	Capacity kN	Stroke mm	Oil volume cm^3	Length between links mm	Weight kg
10	**YPL - 10/150**	100	150	220	750	9
20	**YPL - 20/150**	200	150	440	795	22
30	**YPL - 30/150**	300	150	670	875	29
51	**YPL - 51/150**	510	150	1064	955	59
10	**YPP - 10/150**	100	150	220	750	19

The pull cylinder model YPP - 10/150 is equipped with an integrated hand pump similar to model HPS - 2/0,7.

Yale®

Hollow cylinders

YCS
YCH

Dimensions see page 80.
Selection chart for "cylinder/hand pumps" see page 74.

Hollow cylinders

single-acting with spring return
12 to 93 tonnes

Due to the centre hole design a threaded rod can be placed through the hollow cylinders so that extremely high pulling forces can be achieved.

Features

- Yale ChroMo-Design
- operating pressure 700 bar
- single-acting with spring return
- with large centre hole diameter
- cylinder body and piston are made from chromium-molybdenum steel and heat-treated
- double bronze bearing of the hard chromium-plated piston
- metric mounting threads at cylinder body and inside of piston
- interchangeable hardened saddle
- with inner and outer dirt wipers
- oil port thread 3/8 NPT
- incl. female coupler half CFY - 1
- from YCS - 21/150 with carrying handle
- from YCS - 57/70 with 2 lifting rings

Applications

Hollow cylinders are used as the power component within hydraulic puller sets, for pre-stressing of anker bolts, removing of axles, shafts, bushings, extracting of tubes, as well as for heavy duty pulling applications.

Cylinder size tonnes	**Model**	Capacity kN	Stroke mm	Effective plunger area cm^2	Oil volume cm^3	Closed height mm	Centre hole ø mm	Outside ø mm	Weight kg
12	**YCS - 12/40**	120	40	17,2	71	142	20	70	3,5
	YCS - 12/75	120	75	17,2	132	195	20	70	4,5
21	**YCS - 21/50**	214	50	30,5	153	173	27	100	8,5
	YCS - 21/150	214	150	30,5	458	335	27	100	15,0
33	**YCS - 33/60**	335	60	47,9	287	193	33	114	12,0
	YCS - 33/150	335	150	47,9	716	343	33	114	21,0
57	**YCS - 57/70**	567	70	81,0	562	242	42	150	25,0
62	**YCS - 62/150**	618	150	88,3	1330	335	55	163	38,0
93	**YCS - 93/75**	930	75	133,0	990	280	80	214	55,0

Hollow cylinders

double-acting with hydraulic return
33 to 140 tonnes

Features

- Yale ChroMo-Design
- operating pressure 700 bar
- double acting with hydraulic return
- with large centre hole diameter
- cylinder body and piston are made from chromium-molybdenum steel and heat-treated
- double bronze bearing of the hard chromium plated piston
- metric mounting threads at cylinder body and inside of piston
- interchangeable hardened saddle
- with inner and outer dirt wipers
- oil port thread 3/8 NPT
- incl. 2 female coupler halves CFY - 1
- all cylinders with carrying handle, from YCH - 62/250 with 2 lifting rings

On request we supply special hollow cylinders with pulling capacities up to 600 tonnes.

Applications

Basically the applications are the same as for the single-acting hollow cylinders shown on the opposite page but for this model range the return of the piston is done hydraulically by means of the second oil port.
These double-acting hollow cylinders are used, when the piston needs to be retracted quickly e.g. with high-cycle pulling applications.

Cylinder size tonnes	**Model**	Capacity kN push	pull	Stroke mm	Effective plunger area cm^2	Oil volume cm^3	Closed height mm	Centre hole ø mm	Outside ø mm	Weight kg
33	**YCH - 33/150**	335	180	150	47,9	716	310	33	114	19,0
	YCH - 33/250	335	180	250	47,9	1200	415	33	114	25,0
62	**YCH - 62/250**	618	300	250	88,3	2220	452	55	163	55,0
93	**YCH - 93/250**	930	450	250	133,0	3320	465	55	193	82,0
100	**YCH - 100/40**	1000	500	40	143,0	578	190	55	200	38,0
140	**YCH - 140/200**	1400	700	200	200,2	4080	383	80	253	115,0

For selection chart “cylinder/hand pumps“ and travel speed chart please see page 74 and 77.

Functional principle of hollow cylinders

In connection with threaded rods hollow cylinders can create extremely high forces which are helpful for various repair or assembly applications like removing press-fitted parts, prestressing of anchors etc. In addition, hollow cylinders are used as power source in puller sets and test rigs.

By the use of long threaded rods and by re-adjusting the nut larger distances can be pulled even by use of short cylinder strokes.

Yale®

Universal cylinders YH

Universal cylinders

double-acting with hydraulic return
5 to 200 tonnes

Double-acting cylinder with high retraction speed. The long piston guidings and the outstanding material make the cylinders extremely robust and suitable even for the toughest jobs.

Features

- Yale ChroMo-Design
- operating pressure 700 bar
- double-acting with hydraulic return
- long bronze piston guidings
- piston strokes from 30 up to 500 mm
- cylinder body and piston are made from chromium-molybdenum steel and are heat-treated
- generous double bronze bearing on the hard chromium plated piston
- metric mounting threads on cylinder housing, in the bottom of the cylinder body and in the piston rod
- stop-ring can bear full capacity (pressure)
- interchangeable hardened saddle
- with dirt wiper
- oil port thread 3/8 NPT
- incl. 2 female coupler halves CFY - 1
- from YH - 30/200 with carrying handle
- from YH - 50/350 with 2 lifting rings

Application

These extremely robust double-acting cylinders are specially designed for universal heavy duty lifting and positioning applications as well as for industrial production and assembly jobs.
The cylinders offer high pushing and pulling forces. The double-acting design assures a high piston-retraction speed.
Major areas of application are bridge building and civil engineering, off-shore, ship building, etc.
They can also be used as power souce in frame presses, stamping fixtures and other high-cycle industrial uses where pushing and pulling forces are required.

Accessories for cylinders series YH can be found on page 22-23.
Selection chart “cylinders/hand pumps“ can be found on page 74.

Cylinder size tonnes	**Model**	Capacity kN push	Capacity kN pull	Stroke mm	Effective piston area cm^2 push	Effective piston area cm^2 pull	Oil volume max. cm^3	Closed height mm	Outside ø mm	Weight kg
5	**YH - 5/30**	50	22	30	7,2	3,1	21	160	55	2,5
	YH - 5/80	50	22	80	7,2	3,1	57	210	55	3,3
	YH - 5/150	50	22	150	7,2	3,1	106	280	55	4,4
10	**YH - 10/30**	100	45	30	14,3	6,4	44	175	67	4,0
	YH - 10/80	100	45	80	14,3	6,4	116	225	67	5,0
	YH - 10/150	100	45	150	14,3	6,4	218	295	67	6,7
	YH - 10/250	100	45	250	14,3	6,4	363	395	67	9,0
20	**YH - 20/50**	200	100	50	28,6	14,3	142	195	85	7,0
	YH - 20/150	200	100	150	28,6	14,3	424	310	85	11,0
	YH - 20/250	200	100	250	28,6	14,3	707	410	85	14,0
30	**YH - 30/200**	300	140	200	42,9	20,0	884	355	102	19,0
	YH - 30/350	300	140	350	42,9	20,0	1547	510	102	27,0
50	**YH - 50/150**	500	220	150	71,5	31,5	1064	325	125	27,0
	YH - 50/350	500	220	350	71,5	31,5	2481	525	125	42,0
	YH - 50/500	500	220	500	71,5	31,5	3544	685	125	52,0
70	**YH - 70/150**	700	330	150	100,0	47,2	1478	335	146	37,0
	YH - 70/350	700	330	350	100,0	47,2	3449	540	146	56,0
100	**YH - 100/50**	1000	450	50	143,0	64,4	716	265	180	49,0
	YH - 100/150	1000	450	150	143,0	64,4	2148	365	180	64,0
	YH - 100/350	1000	450	350	143,0	64,4	5010	565	180	94,0
	YH - 100/500	1000	450	500	143,0	64,4	7157	725	180	118,0
200	**YH - 200/150**	2000	900	150	286,0	128,7	4253	410	250	137,0
	YH - 200/350	2000	900	350	286,0	128,7	9924	620	250	198,0
	YH - 200/500	2000	900	500	286,0	128,7	14177	780	250	244,0

For travel-speed chart please see page 77
Dimensions on page 81

Yale®

High tonnage cylinders

YEH

Special cylinders with different capacities or strokes are quoted on request.
Travel-speed chart on page 77.

High tonnage cylinders

double-acting
with hydraulic return
260 to 1100 tonnes

Cylinders of series YEH are normally used for lifting, positioning or handling of heavy loads.

Features

- operating pressure 700 bar
- double-acting with hydraulic return
- generous guiding bands ensure a robust piston guiding
- hard chromium-plated piston
- stop ring as piston end stop
- interchangeable hardened saddle
- with dirt wiper
- oil port thread 3/8 NPT
- incl. 2 female coupler halves CFY - 1
- mounting threads on request
- all cylinders have lifting rings

Applications

Double-acting high tonnage cylinders are used for various lifting, positioning, supporting or levelling jobs in cases where heavy loads have to be handled.
Lifting and moving of large machinery, steel construction, bridges or similar loads, supporting of buildings and foundations.
Further applications are positioning, weighing, through pressing, stress testing or jacking of all kinds of loads.
High tonnage cylinders are found in nearly all areas of industrial activity like steel production, heavy machine manufacturing, civil engineering, ship building, mining, off-shore industry or testing laboratories.

Cylinder size tonnes	**Model**	Capacity kN	Stroke mm	Effective piston area cm^2	Oil volume max. cm^3	Closed height mm	Outside ø mm	Weight kg
260	**YEH - 260/50**	2609	50	380,0	1900	271	290	133
	YEH - 260/100	2609	100	380,0	3800	321	290	152
	YEH - 260/150	2609	150	380,0	5700	371	290	170
	YEH - 260/300	2609	300	380,0	11400	521	290	227
340	**YEH - 340/50**	3370	50	490,0	2450	350	330	227
	YEH - 340/100	3370	100	490,0	4907	400	330	254
	YEH - 340/150	3370	150	490,0	7360	450	330	280
	YEH - 340/300	3370	300	490,0	14700	600	330	360
430	**YEH - 430/50**	4226	50	615,0	3078	374	380	321
	YEH - 430/100	4226	100	615,0	6155	424	380	357
	YEH - 430/150	4226	150	615,0	9232	474	380	392
	YEH - 430/300	4226	300	615,0	18464	624	380	497
560	**YEH - 560/50**	5520	50	803,0	4020	425	430	469
	YEH - 560/100	5520	100	803,0	8038	475	430	514
	YEH - 560/150	5520	150	803,0	12058	525	430	558
	YEH - 560/300	5520	300	803,0	24116	675	430	691
670	**YEH - 670/50**	6603	50	961,0	4809	445	470	590
	YEH - 670/100	6603	100	961,0	9617	495	470	645
	YEH - 670/150	6603	150	961,0	14425	545	470	700
	YEH - 670/300	6603	300	961,0	28849	695	470	860
880	**YEH - 880/50**	8625	50	1256,0	6280	495	540	865
	YEH - 880/100	8625	100	1256,0	12560	545	540	938
	YEH - 880/150	8625	150	1256,0	18840	595	540	1010
	YEH - 880/300	8625	300	1256,0	37680	745	540	1225
1100	**YEH - 1100/50**	10916	50	1590,0	7949	535	600	1157
	YEH - 1100/100	10916	100	1590,0	15897	585	600	1245
	YEH - 1100/150	10916	150	1590,0	23845	635	600	1333
	YEH - 1100/300	10916	300	1590,0	47689	785	600	1600

Yale®

Hydraulic cylinders with safety lock nut

YEL

Tilt saddles are recommended if non-parallel surfaces are expected.
See page 18 to 19.

Hydraulic cylinders with safety lock nut

single-acting
30 to 1100 tonnes

Hydraulic cylinders with safety lock nut are recommended when loads have to remain in the lifted position over a period of time. The safety lock nut ensures a positive load hold in any position and work can be carried out beneath the lifted load. Hydraulic pressure can be released so that cylinders work like mechanical supports. Pumps can be separated from cylinders.

Features

- operating pressure 700 bar
- single-acting with gravity return
- special guiding bands for ideal piston guiding
- hard chromium-plated piston with trapezoid thread
- over-flow hole ensures a definite piston end stop
- interchangeable hardened saddle
- tilt saddles as an option
- oil port thread 3/8 NPT
- female coupler half CFY - 1
- spring assisted return of the piston can be quoted on request up to 340 tonnes capacity
- all cylinders with lifting rings

Applications

For all heavy duty jacking applications where a special safety factor is appropriate like lifting and lowering of bridges, supporting of buildings and foundations, jacking up of heavy machines, steel sections, ship modules or similar loads.
Various applications in civil engineering and construction, steel fabrication, power plants, heavy repair and assembly jobs, shipbuilding, off-shore etc.

Cylinder size tonnes	**Model**	Capacity kN	Stroke mm	Effective piston area cm^2	Oil volume max. cm^3	Closed height mm	Cylinder ø mm	Weight kg
30	**YEL - 30/50**	300	50	44,2	221	169	100	10
	YEL - 30/100	300	100	44,2	442	219	100	13
	YEL - 30/150	300	150	44,2	663	265	100	17
50	**YEL - 50/50**	486	50	70,8	355	185	125	19
	YEL - 50/100	486	100	70,8	710	235	125	25
	YEL - 50/150	486	150	70,8	1063	285	125	30
93	**YEL - 93/50**	911	50	133,0	663	200	180	37
	YEL - 93/100	911	100	133,0	1327	250	180	46
	YEL - 93/150	911	150	133,0	1989	300	180	57
140	**YEL - 140/50**	1380	50	201,0	1005	210	215	60
	YEL - 140/100	1380	100	201,0	2010	260	215	74
	YEL - 140/150	1380	150	201,0	3015	310	215	88
220	**YEL - 220/50**	2156	50	314,0	1570	245	265	117
	YEL - 220/100	2156	100	314,0	3140	295	265	165
	YEL - 220/150	2156	150	314,0	4710	345	265	189
340	**YEL - 340/50**	3370	50	491,0	2453	275	330	184
	YEL - 340/100	3370	100	491,0	4906	345	330	229
	YEL - 340/150	3370	150	491,0	7360	395	330	264
430	**YEL - 430/50**	4226	50	615,0	3078	335	380	296
	YEL - 430/100	4226	100	615,0	6157	358	380	340
	YEL - 430/150	4226	150	615,0	9232	435	380	385
560	**YEL - 560/50**	5520	50	804,0	4019	345	430	390
	YEL - 560/100	5520	100	804,0	8038	425	430	481
	YEL - 560/150	5520	150	804,0	12058	475	430	535
670	**YEL - 670/50**	6603	50	961,0	4809	395	470	545
	YEL - 670/100	6603	100	961,0	9621	445	470	614
	YEL - 670/150	6603	150	961,0	14425	495	470	683
880	**YEL - 880/50**	8625	50	1256,0	6280	400	540	714
	YEL - 880/100	8625	100	1256,0	12560	505	540	901
	YEL - 880/150	8625	150	1256,0	18840	555	540	990
1100	**YEL - 1100/50**	10916	50	1590,0	7949	440	600	969
	YEL - 1100/100	10916	100	1590,0	15896	545	600	1201
	YEL - 1100/150	10916	150	1590,0	23845	595	600	1310

Further piston strokes up to 300 mm are quoted on request.

Travel-speed chart on page 77.

Yale®

High tonnage cylinders YEG

High tonnage cylinders

single-acting, gravity return
85 to 1100 tonnes

These inexpensive cylinders of series YEG are used for all general lifting applications in any area of industry where heavy loads need to be lifted, lowered, levelled, positioned or supported.

Features

- operating pressure 700 bar
- single-acting with gravity return
- special guiding bands for ideal piston guiding
- hard chromium-plated piston
- over-flow hole ensures a definite piston end stop
- interchangeable hardened saddle
- tilt saddles as an option
- oil port thread 3/8 NPT
- female coupler half CFY - 1
- all cylinders have lifting rings

Applications

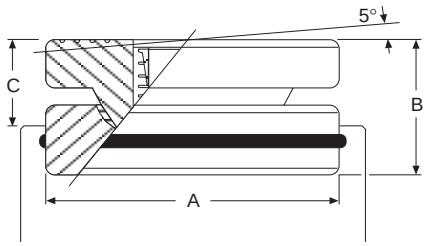
Various applications in civil engineering, heavy machinery, steel construction, ship building, soil testing, bridge building and numerous other jobs where heavy lifting and lowering tasks must be performed and where higher forces must be applied.

Further strokes up to 300 mm are quoted on request.
Travel-speed chart on page 77.

Tilt saddles for cylinders YEL and YEG series

Tilt saddles should be used with YEL and YEG cylinders in cases where cylinders are operated on non-parallel surfaces. The saddles minimize inner friction caused by eccentric loading of the cylinders. The upper part of the saddle can pivot up to 5° in all directions. Tilt saddles are fixed in the piston by means of an o-ring.

Cylinder size tonnes	**Model**	Capacity kN	Stroke mm	Effective piston area cm^2	Oil volume cm^3	Closed height mm	Cylinder ø mm	Weight kg
85	**YEG - 85/50**	911	50	122,6	613	157	170	27
	YEG - 85/100	911	100	122,6	1226	207	170	35
	YEG - 85/150	911	150	122,6	1839	257	170	45
140	**YEG - 140/50**	1380	50	201,0	1005	176	215	49
	YEG - 140/100	1380	100	201,0	2010	226	215	64
	YEG - 140/150	1380	150	201,0	3015	276	215	78
220	**YEG - 220/50**	2156	50	314,0	1570	198	265	86
	YEG - 220/100	2156	100	314,0	3140	248	265	106
	YEG - 220/150	2156	150	314,0	4710	298	265	129
340	**YEG - 340/50**	3370	50	491,0	2453	238	330	159
	YEG - 340/100	3370	100	491,0	4906	288	330	192
	YEG - 340/150	3370	150	491,0	7360	338	330	226
430	**YEG - 430/50**	4226	50	615,0	3078	269	380	237
	YEG - 430/100	4226	100	615,0	6157	319	380	282
	YEG - 430/150	4226	150	615,0	9232	369	380	326
560	**YEG - 560/50**	5520	50	804,0	4019	294	430	332
	YEG - 560/100	5520	100	804,0	8038	344	430	389
	YEG - 560/150	5520	150	804,0	12058	394	430	446
670	**YEG - 670/50**	6603	50	961,0	4809	325	470	449
	YEG - 670/100	6603	100	961,0	9621	375	470	518
	YEG - 670/150	6603	150	961,0	14425	425	470	587
880	**YEG - 880/50**	8625	50	1256,0	6280	354	540	632
	YEG - 880/100	8625	100	1256,0	12560	404	540	721
	YEG - 880/150	8625	150	1256,0	18840	454	540	810
1100	**YEG - 1100/50**	10916	50	1590,0	7949	385	600	848
	YEG - 1100/100	10916	100	1590,0	15896	435	600	958
	YEG - 1100/150	10916	150	1590,0	23845	485	600	1089



Model	suitable for cylinder groups	A mm	B mm	C mm	Weight kg
AYL - 30	YEL - 30...	45	36	28	0,4
AYL - 50	YEL - 50...	61	39	30	0,8
AYL - 100	YEL - 93... and YEG - 85...	88	47	36	2,0
AYL - 150	YEL - 140... and YEG - 140...	111	52	40	3,4
AYL - 200	YEL - 220... and YEG - 220...	131	57	45	5,8
AYL - 400	YEL - 340... and YEG - 340...	178	67	48	13,0

available up to 1100 tons.

Yale®

Accessories for YS - cylinders

AYS

Lifting claws

In connection with the corresponding hydraulic cylinder a lifting claw represents a compact, lightweight and versitile lifting unit.
The lifting claws are screwed onto the collar thread of the cylinder series YS. Claws can be placed under loads with minimum clearance. During the lifting operation the cylinder must be supported against the load in order to eliminate unfavourable forces caused by eccentric loading.

Piston plates

can be screwed into the piston thread of cylinders series YS. They reduce the surface pressure and prevent the pistons from sinking into the ground. Also when using a piston plate in connection with a lifting claw the cylinder must be supported against the load.

Base adaptors and extension tubes

Extension tubes are mounted onto the bottom of cylinders series YS by means of the base adaptor and two hexagon socket srews (screws are included with the base adaptor).
The use of extension tubes adds to the versatility of the standard cylinders.

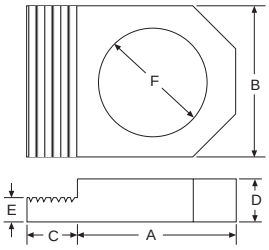
Support plates

These load spreading plates are recommended when slim cylinders are used for lifting applications.
They protect the cylinders from falling over and sinking into the ground.
Robust steel design with carrying handle.

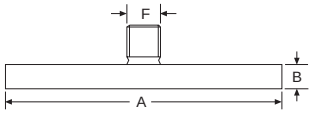
Hydraulic cylinders series YS please find on page 6 to 7.

Model	Description	Suitable for cylinder groups	Dimensions in mm A	B	C	D	E	F	Weight kg
AYS - 10	Lifting claw, max. capacity 5 tonnes	YS - 10/.....	90	90	30	29	22	M57 x 1,5	0,9
AYS - 15	Lifting claw, max. capacity 8 tonnes	YS - 15/.....	110	110	30	34	25	M67 x 1,5	1,3
AYS - 23	Lifting claw, max. capacity 12 tonnes	YS - 23/.....	125	125	30	40	35	M85 x 2	3,8
AYS - 53	Base adaptor, 5 tonnes	YS - 5/.....	53	50	–	–	–	M42 x 1,5	0,5
AYS - 54	Extension tube 125 mm, 5 tonnes	YS - 5/.....	125	–	–	–	–	M42 x 1,5	0,9
AYS - 55	Extension tube 250 mm, 5 tonnes	YS - 5/.....	250	–	–	–	–	M42 x 1,5	1,5
AYS - 56	Extension tube 500 mm, 5 tonnes	YS - 5/.....	500	–	–	–	–	M42 x 1,5	2,8
AYS - 103	Base adaptor, 10 tonnes	YS - 10/.....	58	60	–	–	–	M50 x 2	0,7
AYS - 104	Extension tube 125 mm, 10 tonnes	YS - 10/.....	125	–	–	–	–	M50 x 2	1,2
AYS - 105	Extension tube 250 mm, 10 tonnes	YS - 10/.....	250	–	–	–	–	M50 x 2	2,2
AYS - 106	Extension tube 500 mm, 10 tonnes	YS - 10/.....	500	–	–	–	–	M50 x 2	3,9
AYS - 107	Extension tube 750 mm, 10 tonnes	YS - 10/.....	750	–	–	–	–	M50 x 2	5,9
AYS - 153	Base adaptor, 15 tonnes	YS - 15/.....	70	73	–	–	–	M60 x 2	0,9
AYS - 154	Extension tube 125 mm, 15 tonnes	YS - 15/.....	125	–	–	–	–	M60 x 2	1,6
AYS - 155	Extension tube 250 mm, 15 tonnes	YS - 15/.....	250	–	–	–	–	M60 x 2	2,9
AYS - 156	Extension tube 500 mm, 15 tonnes	YS - 15/.....	500	–	–	–	–	M60 x 2	4,9
AYS - 157	Extension tube 750 mm, 15 tonnes	YS - 15/.....	750	-	-	-	-	M60 x 2	7,9
AYS - 102	Piston plate, round	YS - 10/.....	140	12	–	–	–	M27 x 2	1,5
AYS - 152	Piston plate, round	YS - 15/.....	140	12	–	–	–	M33 x 2	1,8
AYS - 232	Piston plate, round	YS - 23/.....	160	15	–	–	–	M40 x 2	2,2

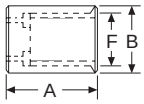
Lifting claws



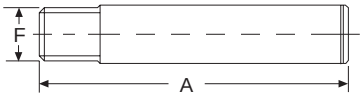
Piston plate



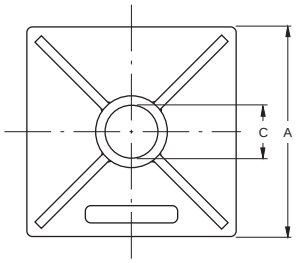
Base adaptors

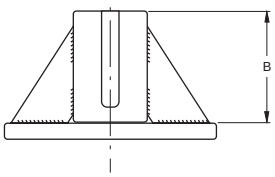


Extension tubes



Model	Suitable for cylinder groups	Dimensions in mm A	B	C	Weight kg
AYS - 101	YS - 10/.....	230	120	58	10,5
AYS - 151	YS - 15/.....	230	120	68	10,5
AYS - 231	YS - 23/.....	230	120	86	10,5





Straightening of a container box by use of a hydraulic cylinder YS - 10/150, extension tube AYS - 106, base adaptor AYS - 103 and electric power pump PY - 04/2/5/2 M.

Lifting of a container by use of an hydraulic cylinder YS - 23/160, lifting claw AYS - 23 and piston plate AYS - 232 powered by a two-stage hand pump HPS - 2/2 with base frame HPB - 2.

Yale®

Accessories

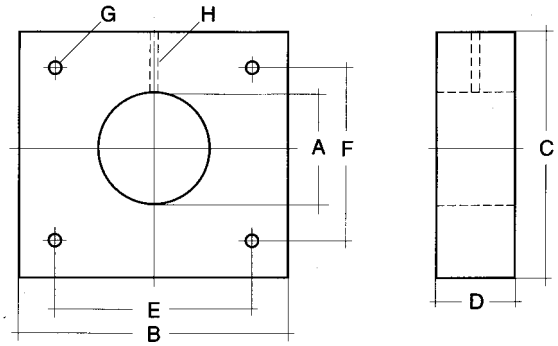
AYP

Threaded flanges

In case hydraulic cylinders have to be inserted into fixtures, press frames or similar devices, these steel flanges can be very handy.
Material: weldable steel.

Model	Suitable for cylinder	Dimensions in mm A	B	C	D	E	F	G	H	Weight kg
AYP - 1010	YS - 10/...	M57 x 1,5	220	200	30	120	150	M12	M8	9,7
AYP - 1510	YS - 15/... YH - 10/...	M67 x 1,5	220	200	40	120	150	M12	M8	12,6
AYP - 2310	YS - 23/... YH - 20/...	M85 x 2	220	200	40	120	150	M12	M8	12,1
AYP - 5010	YS - 50/... YH - 50/...	M125 x 2	250	250	50	225	225	Ø 13,5	M8	19,6
AYP - 10010	YS - 100/... YH - 100/...	M180 x 3	330	330	70	330	330	Ø 17,5	M8	46,0
AYP - 20010	YH - 200/...	M250 x 4	450	450	80	400	400	Ø17,5	M8	97,0

Hydraulic cylinders series YS on page 6 to 7.
Hydraulic cylinders series YH on page 12 to 13.



Yale®

Accessories
AYH

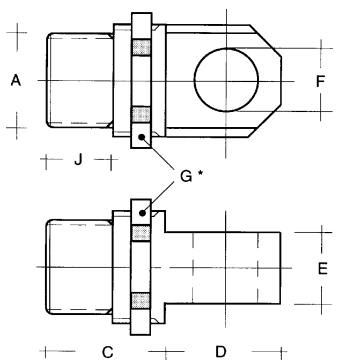
Clevis eye mountings

Clevis eye mountings are screwed onto the piston and bottom of the hydraulic cylinder in those cases where mounting conditions require a pivoting of the cylinder.

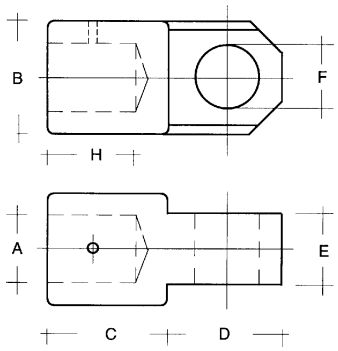
Model	Suitable for cylinder	Suitable for	Dimensions in mm A	B	C	D	E	F	G*	H	J	Weight kg
AYH - 5-1	YH - 5/30	cylinder base	M27 x 2	–	35	35	15	16	M35 x 1,5	–	18	0,3
AYH - 5-2	YH - 5/80 YH - 5/150	piston	M18 x 1,5	35	35	35	15	16	–	19	–	0,3
AYH - 10-1	YH - 10/30 YH - 10/80	cylinder base	M36 x 2	–	38	42	25	20	M40 x 1,5	–	21	0,6
AYH - 10-2	YH - 10/150 YH - 10/250	piston	M27 x 2	40	38	42	25	20	–	21	–	0,6
AYH - 20-1	YH - 20/50	cylinder base	M45 x 2	–	50	65	35	30	M70 x 1,5	–	23	2,1
AYH - 20-2	YH - 20/150 YH - 20/250	piston	M36 x 2	70	50	65	35	30	–	24	–	2,1

* G = retainer nut DIN 981

AYH - ... -1
for cylinder bottom

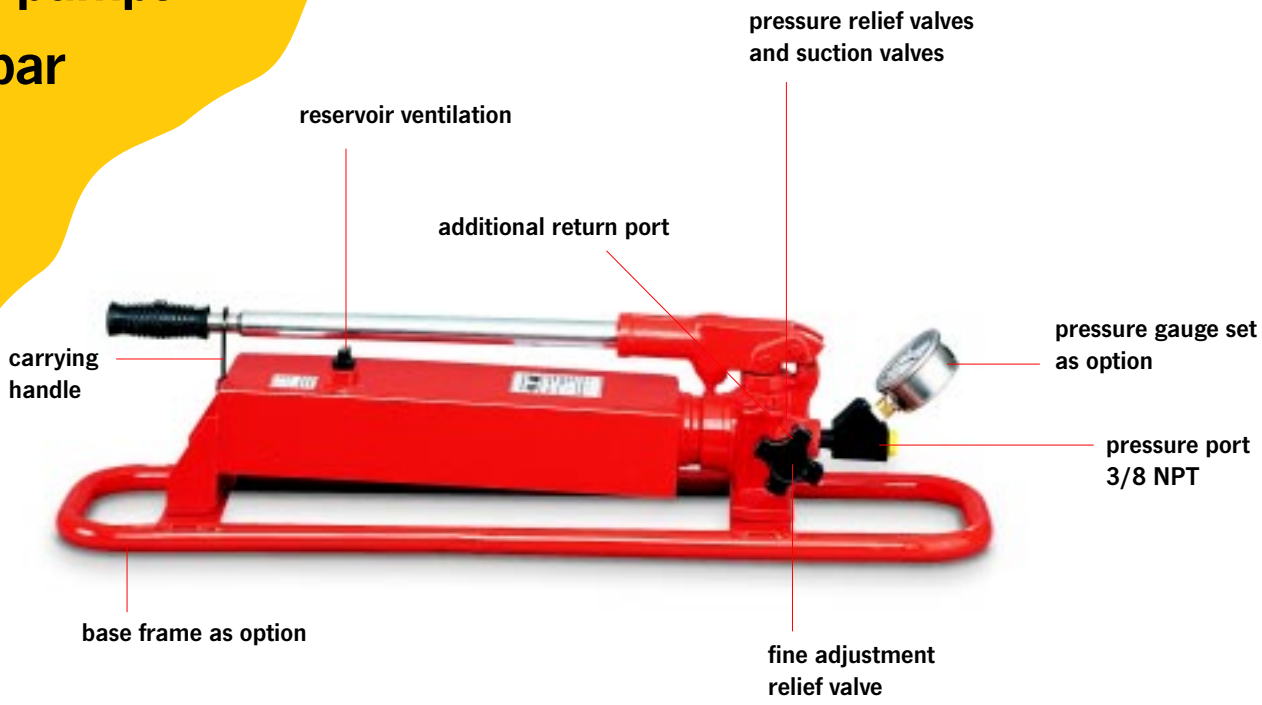


AYH - ... -2
for piston rod



Yale®

Hand pumps 700 bar



Build-up and description of the 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 by millimeter increments lifting and lowering even of the highest loads. The fact that sometimes hundreds of tons are controlled by this hand wheel, underlines the importance of this detail.

Sturdy “all-metal-design“

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

Carrying handle

Hand pumps in general are often carried around. All Yale hand pumps are equipped with a convenient carrying handle.

Pressure relief valves

All Yale hand pumps are equipped with two pressure relief valves. They are easily adjustable from outside in those cases where 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 Yale 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 Yale hand pumps are supplied “ready to use“ incl. hydraulic oil.

“Easy-maintenance-design“

There is no need to disassamble the Yale 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 Yale 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

Yale 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 Yale 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 Yale 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 (see page 27).

Pressure gauges

Appropriate pressure gauges with the corresponding adaptors are shown on page 47.

Hand pump type: 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 (in combination)

Unlike conventional pumps, all Yale hand pumps of the type 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.

Further advantage of this design:

The pressure gauge shows the pressure as pushing and as pulling force.

Selection chart “cylinder/hand pumps“ please find on page 74

Yale®

Hand pumps 700 bar

HPS
HPH

from top:
HPS - 2/4,
HPS - 2/2 with GYA - 63,
HPS - 2/0,7,
HPS - 2/0,3

Hand pumps for single-acting and double-acting hydraulic cylinders

Yale hand pumps are easy to use and operate independently of any external energy source. They are designed for maximum 700 bar system pressure and will allow each Yale 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.
The Yale 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 700 bar
- two stage operation
  with automatic switch-over (except HPS - 1/0,7)
- large reservoir volumes
- with pressure relief valves, adjustable from the outside
- fine 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
- for pressure gauges with corresponding adaptors see page 46 and 47.

Hand pumps for single-acting cylinders

with relief valve (hand wheel)

Model	Reservoir volume cm^3	Displacement 1. stage cm^3	Displacement 2. stage cm^3	Weight kg
HPS - 1/0,7	700	–	2,0	7,0
HPS - 2/0,3	300	5	1,0	3,5
HPS - 2/0,7	700	11	2,0	7,0
HPS - 2/2	2000	11	2,0	10,0
HPS - 2/4	4000	11	2,0	13,0
HPS - 2/6,5	6500	11	2,0	21,0
HPS - 2/10	10000	11	2,0	27,0

**Typical combinations,
speed and selection charts on pages 71 to 77.
Dimensions on page 82.**

Hand pumps
for double-acting cylinders

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

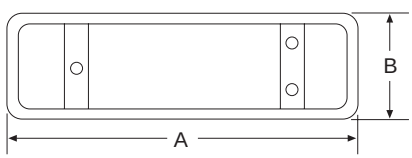
Model	Reservoir volume cm^3	Displacement 1. stage cm^3	Displacement 2. stage cm^3	Weight kg
HPH - 2/0,7	700	11	2,0	8,0
HPH - 2/2	2000	11	2,0	11,0
HPH - 2/4	4000	11	2,0	14,0
HPH - 2/6,5	6500	11	2,0	22,0
HPH - 2/10	10000	11	2,0	28,0

from top:
HPH - 2/4,
HPH - 2/2 with GA - 704 and GGY - 631,
HPH - 2/0,7

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.

Model	suitable for hand pumps	Dimensions/mm A	Dimensions/mm B	Weight kg
HPB - 0,7	HPS - 1/0,7 + HPS - 2/0,7 + HPH - 2/0,7	730	190	1,2
HPB - 2	HPS - 2/2 + HPH - 2/2	765	190	1,3
HPB - 4	HPS - 2/4 + HPH - 2/4	885	190	1,8
HPB - 6	HPS - 2/6,5 + HPH - 2/6,5	910	190	1,9



Yale®

Hand pumps

1500 bar
2000 bar

Mini hand pump 1500 bar

This high pressure pump is particularly designed to pressurize special components like hydraulic nuts, bolt tensioning cylinders, hydraulic safety couplers or similar systems.
The pump is equipped with a pressure limiting valve which discharges to the atmosphere.
The pump can be set to any pressure between zero and 1500 bar.
The pressure gauge is standard and allows permanent pressure control.
Due to a reservoir bellow the pump can be operated in any position (hand held design).

Hand pumps 2000 bar TWZ series

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.

Applications

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 of anchors, for test applications in laboratries and as a power source within test stands and propeller press systems.

Model	Pressure max. bar	Reservoir volume cm^3	Displacement 1. stage cm^3	Displacement 2. stage cm^3	Oil port	Pressure gauge	Pressure gauge Model:	Gauge adaptor Model:	Pressure relief valve	Weight kg
HPS - 1/1500	1500	160	–	0,3	G 1/4	standard	GGY - 639	–	yes	2,6
TWZ - 0,7	2000	700	8	0,6	M22 x 1,5	optional	GGY - 2500	GA - 2000	yes	7,0
TWZ - 1,3	2000	1300	13	1,0	M22 x 1,5	optional	GGY - 2500	GA - 2000	yes	9,0
TWZ - 2,3	2000	2300	31	1,6	M22 x 1,5	optional	GGY - 2500	GA - 2000	yes	16,0

Yale®

Foot pump 700 bar

Foot pump 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
- two-stage displacement
- 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

Model	Pressure max. bar	Displacement 1. stage cm^3	Displacement 2. stage cm^3	Reservoir volume cm^3	Weight kg
FPS - 2/0,5	700	11,0	2,0	500	7,0

Pressure gauges, adaptors and hydraulic hoses on pages 47 to 49.

Accessories for hand pumps series TWZ (2000 bar)

Pressure gauge
Model: GGY - 2500
see page 46

Pressure gauge adaptor
Model: GA - 2000
see page 47

Adaptor
Model: FY - 201
(M 22 x 1,5 to G 1/4)
see page 51

High pressure hose
Model: HH - 2001-20
max. pressure: 2000 bar

Air-driven motor pumps PAY

PAY - 6-5

PAY - 64

PAY - 6

Mini hydraulic pumps

with compressed air driven motor 700 bar

These mini-pumps are driven by an air-powered motor and can be connected to any supply source of compressed air. These compact low-cost pumps can operate all single-acting or double-acting hydraulic cylinders up to a max. operating pressure of 700 bar.
Due to large reservoirs, large cylinders or multiple cylinders can be operated.
The use of an inline air filter-lubricator is recommended.
The hydraulic pressure can be infinitely adjusted on the regulator of the air-lubricator unit. The air-driven motor guarantees 100 % explosion protection.
Pumps for double-acting hydraulic cylinders are equipped with an additional 4-way control valve type VHH - 4/3.
The connected hydraulic cylinder is controlled **- advance - stop - return -** by the universal pedal, which can be either hand or foot-operated.

Model	for cylinder	Reservoir volume l	Max oil pressure bar	Oil displacement l/min	Requested air pressure bar	Air consumption l/min	Oil port	Air port	Weight kg
PAY - 6	single-acting	1,5	700	0,85 to 0,08	7	560	3/8 NPT	1/4 NPT	6,3
PAY - 6-5	double-acting	5,0	700	0,85 to 0,08	7	560	3/8 NPT	1/4 NPT	12,0
PAY - 64	single-acting	1,5	700	0,85 to 0,08	7	560	3/8 NPT	1/4 NPT	7,5
PAY - 64-5	double-acting	5,0	700	0,85 to 0,08	7	560	3/8 NPT	1/4 NPT	13,0

Control of cylinder motion

- pedal in neutral position – motor stands still, cylinder stands, pressure is held
- pedal depressed – motor starts, cylinder advances, pressure is built-up
- pedal pushed forward – motor stands still, pressure is released, cylinder retracts

Yale®

Electric motor pumps PY - 04

Compact electric motor pumps

portable, 700 bar

These light-weight but powerful two-stage pumps are particulary designed for maintenance and repair jobs. Depending on their type, they can either operate single-acting or double-acting hydraulic cylinders.
The ideal combination of manual operated valve and remote pendant control provides the operator with ample freedom of motion and ensures a safe "holding of the load".
The remote pendant control (1,8 m) is used to start the motor even under full load.
The function for both manual valves is as follows:
- advance - stop - return -
With their light weight and convenient carrying handle, these pumps can be easily transported.
Pumps are equipped with thermal overload protection and are supplied with hydraulic oil.

PY - 04/2/5/2M PY - 04/2/5/4M

Operation of the power pump model PY - 04/2/5/2 M

The 2/2-way manual valve operates together with a pilot operated unloading valve, so that the two valve positions result in the following two control possibilities:

1. cylinder holds pressure after motor stop
2. cylinder automatically retracts after motor stop

Model	equipped with control valve:
PY - 04/2/5/2 M	2/2-way valve in connection with a built-in automatic valve to control single-acting cylinders
PY - 04/2/5/4 M	4/3-way valve to control double-acting cylinders

Technical data

pressure, max.	:	700 bar
displacement (two-stage)		
no load	:	4,0 l/min
under load	:	0,23 l/min
reservoir, usable	:	6,5 l
connecting value	:	0,37 kW - 230 V-1Ph
remote pendant control	:	24 V low voltage
rpm	:	2800
protection	:	IP 50
weight, approx.	:	24 kg

Yale®

Mini-hydraulic power packs PY - 03

Mini-electric hydraulic pumps

portable, 700 bar

These two-stage mini pumps are the ideal power packs for small and medium sized hydraulic tools. Examples are: Stamping or punching tools, hydraulic cutters, hydraulic puller sets, crimping tools, nut splitters etc. Furthermore these portable power packs are suitable for all standard maintenance and assembly jobs to pressurize hydraulic cylinders with intermediate operation.
Due to the light weight and the ergonomically designed handle the pumps can be easily carried from job to job. Depending on the individual model these power packs can operate single-acting or double-acting hydraulic cylinders. The ideal combination of solenoid valve with remote pendant control of the electric motor offers practical operation. By using the push-button box (with 2 m cable) the solenoid valve is controlled and the motor is switched on and off, even under full load.

PY - 03/2/4 M 230 PY - 03/2/2 M 230 PY - 03/2/2 E 230

Control functions

Hydraulic cylinder: **- advance - stop - retract -**

Features

- pressure max. 700 bar
- compact design, light-weight,
- sturdy “full-metal“ construction
- for intermittent operation
- two-stage output (oil flow)
- 3 different control valves:
  2/2-way solenoid directional valve, or 2/2-way manual relief valve (hand wheel), or 4/3-way manual directional valve (all in combination with motor start-stop pendant control)
- reservoir: 3,0 liter, usable: 2,0 liter
- incl. hydraulic oil
- electric motor can start under full load
- power supply 230 V-50 Hz, 0,35 kW (available also in 110 V)
- control voltage 24 Volt / protection: IP 50
- oil port 3/8 NPT

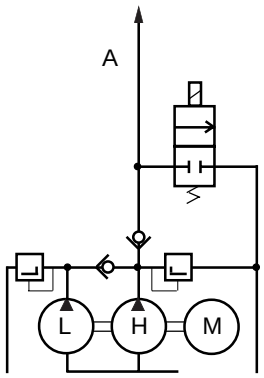
Model	for Cylinder	Pressure max. bar	Displacement 1. stage l/min	Displacement 2. stage l/min	Power supply V	Valve control manual	Valve control solenoid remote	Motor remote control	Reservoir size l	Weight kg
PY - 03/2/2 E 230	single-acting	700	2,0	0,2	230V	–	+++	+++	3,0	12,0
PY - 03/2/2 M 230	single-acting	700	2,0	0,2	230V	+++	–	+++	3,0	12,0
PY - 03/2/4 M 230	double-acting	700	2,0	0,2	230V	+++	–	+++	3,0	12,0
PY - 03/2/2 E 110	single-acting	700	2,0	0,2	110V	–	+++	+++	3,0	12,0
PY - 03/2/2 M 110	single-acting	700	2,0	0,2	110V	+++	–	+++	3,0	12,0
PY - 03/2/4 M 110	double-acting	700	2,0	0,2	110V	+++	–	+++	3,0	12,0

PY - 03/2/2 E 230
PY - 03/2/2 E 110

Operation: for single-acting hydraulic cylinders

push button 1: motor starts, cylinder advances, pressure is built up.
neutral : motor rests, pressure is held.
push button 2: solenoid valve is activated, pressure is built up, cylinder advances.

For applications where a smooth pressure relief is required (e.g. lifting and lowering of loads, straightening etc.) a throttle-check valve (VSM - 21) should be used.



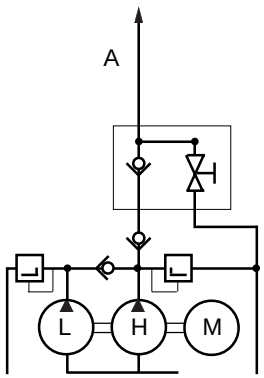
with 2/2-way solenoid directional valve

PY - 03/2/2 M 230
PY - 03/2/2 M 110

Operation : for single-acting hydraulic cylinders

push button : motor starts, cylinder advances, pressure is built up.
neutral : motor rests, pressure is held

By use of the hand wheel the pressure can be released smoothly and the cylinder retracts.



with 2/2-way relief valve (hand wheel)

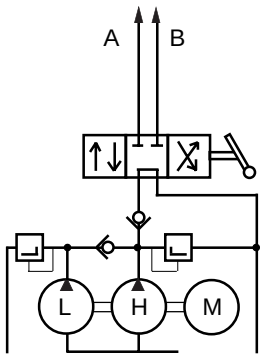
PY - 03/2/4 M 230
PY - 03/2/4 M 110

Operation : for double-acting hydraulic cylinders

push button : motor starts, depending on the position of the lever of the 4/3-way valve the cylinder advances or retracts, pressure is built up.

neutral : motor rests, pressure is held

To retract the cylinder the 4/3-way valve has to be switched and the electric motor must be started.



with 4/3-way manual valve

Yale®

Heavy duty hydraulic power packs

PY - 11/3/30/4 M

PY - 07/3/20/3 E

Electric hydraulic power packs

Series: PY- 07, PY- 11, PY- 22

Yale hydraulic power packs are easy to operate as they are ready assembled and easy to control. The use of power packs is always recommended when:

- jobs have to be done in a time-saving and efficient way,
- repeating jobs have to be finished off,
- quick cylinder cycles have to be achieved,
- large oil volumes in connection with high tonnage cylinders have to be transmitted.

Two-stage oil flows

The standard Yale power packs are equipped with two-stage pumps, which means that a low pressure stage fills the connected hydraulic cylinder quickly up to a pressure of 50 bar.
The high pressure stage is activated automatically from 50 bar up to 700 bar, while the low pressure stage is discharged back to the reservoir.
This economic solution avoids heating-up, saves energy and keeps the power packs compact.

Hydraulic oil

All power packs are designed to be operated with standard hydraulic oil (spefication ISO VG 32).
For certain operating conditions the viscosity class of the hydraulic fluid can be varied.
All power packs are supplied including oil.

Oil cooler

For certain applications, especially when power packs are continuously operated and the oil temperature could exceed 60° C, the use of an oil cooler is recommended.

Do you need to operate a “single-acting“ or “double-acting“ hydraulic cylinder?

The directional control valve has to correspond to the a.m. functional principle of the hydraulic cylinder to be operated. Depending on these principles the power packs are equipped with a:

- 3/3-way valve to operate single-acting hydraulic cylinders (connection with one hydraulic hose) or
- 4/3-way valve to operate double-acting hydraulic cylinders (connection with two hydraulic hoses)

The directional control valves are available either as “manual“ or “solenoid“ operated valves.

Control and operation

The motion control of the connected hydraulic cylinder is done by operating the directional valve.

Operation of the directional valves

Depending on the way of operation, there are "manual" or "solenoid" operated valves.
Manual valves are controlled by shifting the operating lever and represent the economic way of control. These valves have 3 lever positions:
- advance - hold - retract -

Solenoid valves

offer a lot of advantages and are controlled by means of a pendant remote control box. This makes the operator independent from the power pack and makes it easy for him to monitor the job. The solenoid valves are controlled by two push buttons **- advance - hold - retract -** In neutral position **- hold -** the valves rest in pressureless circuit. Pressure and force of the connected cylinder are held without pressure drop.
The complete electrical set-up (with 24 V control) belongs to the scope of delivery.
Solenoid valves allow a very ergonomic operation and offer a quick and precise switching (millimeter-wise) of the connected hydraulic cylinder.

Pressure-less circuit

In neutral position all directional valves rest in "pressureless circuit" which means that the oil flow coming from the rotating pump is guided back to the reservoir without creating any pressure build-up.

Special solenoid valve configurations

Some applications require a special valve configuration, e.g. the independent control of several hydraulic cylinders from a single power pack.
In such cases the complete valve build-up and electrical control is made to the customer's requirements.

"Pressure-Guard" power packs

By using a electro-hydraulic pressure switch and a special electric control, power packs can "self-control" their pre-adjusted pressure.
In applications where the pressure (load) should be applied over a very long period, the connected power pack is switched on and off automatically and replaces the pre-set pressure in case a pressure drop has occured.

Trolleys

For all power packs we offer a cart-frame for flexible movement from job to job.
Cart-frames are equipped with 2 fixed and 2 swivel castors (see page 37).

Features

- long-life power packs, designed for heavy duty applications
- suitable for all jobs in workshops and on construction sites where hydraulic force is required; supplied ready to use
- two-stage displacement, which means quick piston advance under no-load condition and automatic switch-over into high-pressure stage
- available with manual or solenoid operated directional valves
- Solenoid valves with 3 m remote control box (with 2 push-buttons) and pressure set valve as standard. Adjustable from 0 - 700 bar
- 24 V - low voltage control includes a sturdy metal electric control box and "ready to use" set up
- on-off motor switch and 3 m motor connecting cable, oil level gauge,
  and oil filler/reservoir ventilation plug
- all power packs are supplied with a glycerine-damped pressure gauge type GGY - 631
- low noise level due to standard motors with 1450 rpm
- further motor voltages and reservoir sizes on request

Mini-hydraulic power pack
Model PYE - 03/3/10/3 M
single-stage, compact, economic
with manual directional valve

Selection chart see next page.

Two-stage electric hydraulic power packs, 700 bar

Model	Reservoir sizes				Directional control valve				Motor power	Displacement, two-stage	
					manual operated valve		solenoid operated valve			l / min	l / min
	10 l	20 l	30 l	50 l	3/3-way	4/3-way	3/3-way	4/3-way	kW	0 - 50 bar	50 - 700 bar
PY - 07/3/10/3 M	+++	–	–	–	+++	–	–	–			
PY - 07/3/10/4 M	+++	–	–	–	–	+++	–	–			
PY - 07/3/20/3 M	–	+++	–	–	+++	–	–	–	0,75	6,0	0,6
PY - 07/3/20/4 M	–	+++	–	–	+++	–	–	–			
PY - 07/3/20/3 E	–	+++	–	–	–	–	+++	–			
PY - 07/3/20/4 E	–	+++	–	–	–	–	–	+++			
PY - 11/3/20/3 M	–	+++	–	–	+++	–	–	–			
PY - 11/3/20/4 M	–	+++	–	–	–	+++	–	–			
PY - 11/3/30/3 M	–	–	+++	–	+++	–	–	–			
PY - 11/3/30/4 M	–	–	+++	–	–	+++	–	–	1,1	8,5	1,0
PY - 11/3/20/3 E	–	+++	–	–	–	–	+++	–			
PY - 11/3/20/4 E	–	+++	–	–	–	–	–	+++			
PY - 11/3/30/3 E	–	–	+++	–	–	–	+++	–			
PY - 11/3/30/4 E	–	–	+++	–	–	–	–	+++			
PY - 22/3/30/3 M	–	–	+++	–	+++	–	–	–			
PY - 22/3/30/4 M	–	–	+++	–	–	+++	–	–			
PY - 22/3/50/3 M	–	–	–	+++	+++	–	–	–			
PY - 22/3/50/4 M	–	–	–	+++	–	+++	–	–	2,2	18,0	2,1
PY - 22/3/30/3 E	–	–	+++	–	–	–	+++	–			
PY - 22/3/30/4 E	–	–	+++	–	–	–	–	+++			
PY - 22/3/50/3 E	–	–	–	+++	–	–	+++	–			
PY - 22/3/50/4 E	–	–	–	+++	–	–	–	+++			

Code explanation

Directional valve : 3 = for single-acting, 4 = for double-acting cylinder, M = manual valve, E = solenoid valve
Reservoir size : in liters (other reservoir sizes on request)
Motor voltage : 3 = 380-420 V-3 Ph (Euro-voltage), 2 = 230 V-1 Ph, (other voltages on request)
Motor power : 07 = 0,75 kW, 11 = 1,1 kW, 22 = 2,2 kW, 30 = 3 kW, 55 = 5,5 kW, 75 = 7,5 kW, 110 = 11 kW
Type of motor : PY = electric motor, PAY = air motor, PGY = petrol driven motor (4 cycle)

Single-stage electric hydraulic power packs, 700 bar

Model	Reservoir sizes				Directional control valve				Motor power	Displacement
					manual controlled valve		solenoid controlled valve			l / min
	10 l	20 l	30 l	50 l	3/3-way	4/3-way	3/3-way	4/3-way	kw	0 - 700 bar
PYE - 03/3/10/3 M	+++	–	–	–					0,35	0,3
PYE - 03/3/10/4 M	+++	–	–	–					0,35	0,3
PYE - 07/3/10/3 M	+++	+++	+++	+++					0,75	0,6
PYE - 07/3/10/4 M	+++	+++	+++	+++	All valve and reservoir combinations available				0,75	0,6
PYE - 11/3/20/3 M	–	+++	+++	+++					1,1	1,0
PYE - 11/3/20/4 M	–	+++	+++	+++					1,1	1,0
PYE - 22/3/20/3 M	–	–	+++	+++					2,2	2,1
PYE - 22/3/20/4 M	–	–	+++	+++					2,2	2,1

High performance electric hydraulic power pumps, 700 bar, single-stage

Model	Reservoir sizes			Directional control valve				Motor power	Displacement
				manual controlled valve		solenoid controlled valve			l / min
	70 l	100 l	150 l	3/3-way	4/3-way	3/3-way	4/3-way	kw	0 - 700 bar
PYE - 40-1/3/70/4 M	+++	–	–					4,0	2,7
PYE - 55-1/3/70/4 M	+++	–	–					5,5	4,0
PYE - 75-1/3/100/4 M	–	+++	–	All valve and reservoir combinations available				7,5	6,0
PYE - 110-1/3/150/4 M	–	–	+++					11,0	8,0
PYE - 180-1/3/150/4 M	–	–	+++					18,0	12,0

Yale®

Special power pack solutions

Hydraulic power pack with protection cage

This power pack is specially designed for general lifting applications in construction areas. Equipped with an optimized valve configuration, including 4-way manual directional valve VHP - 4/3-1, safety-check valve VSM - 21, pressure relief valve VPR - 3 and 2 pressure gauges for permanent load control.

Hydraulic power pack with 4-way manifold MY - 44-GYA

The most economic way for a “pressure-independent“ and individual control of 4 single-acting hydraulic cylinders. The additionally mounted safety-check valve VSM - 21 avoids uncontrolled pressure drops and the built-in throttle valve allows a precise (millimeterwise) lowering even of the highest loads. Four pressure gauges allow a permanent reading of the individual loads.
On request, the power packs can be equipped with a handy cart-frame to make the operation flexible. This type of power pack can be supplied in all sizes of the PY and PYE series.

Hydraulic power pack with 4-times solenoid valve

The quadruple solenoid valve block ensures a “pressure-independent“ and individual control of 4 double-acting hydraulic cylinders.
Solenoid valves offer several well known advantages such as: ergonomic and safe control by pendant remote control, exact load hold, precise and quick switch characteristics and many more.

Double-hydraulic power pack

In order to realise very high oil flows, two independent pump systems can be combined in one large reservoir. A gear pump ensures an extremely high oil flow up to 250 bar while the high-pressure stage is generated by a high performance radial piston pump. Each pump is equipped with its own solenoid control valve so that the individual oil flows can be generated or discharged on request.

Yale®

Multiple-flow power packs PMF

PMF - 15/3/40/4 x 3 M

All power packs can be supplied with a protection frame suitable for on-site operation. Also cart-frames with 2 fixed and 2 swivel castors are available on request.

Multiple-flow hydraulic power packs

Multiple-flow hydraulic pumps can advance 4 cylinders with the same speed in the same time by injecting equal amounts of hydraulic oil into each individual cylinder. This principle allows a synchronized lifting of machines or similar loads from a central point. Even under different loading conditions the cylinders advance in synchronisation.
A levelling of a lopsided load is easily possible by an individual control of each single cylinder.
The lifting phase is initiated by a push-button remote control box and can be interrupted and continued at any time.
All connected cylinders can be controlled individually or jointly (synchronous).
Lowering of the load is done by operating the directional valve in connection with the throttle valve individually for each circuit.
The multiple-flow pumps can drive all kinds of hydraulic cylinders, machine jacks or stage lifts.

Features

- 4-point synchronized lift due to 4 equal, independent and individual oil flows
- 4 manually operated directional valves, or 4 solenoid directional valves allow an individual or joint control of all 4 connected cylinders (easy levelling of a load possible)
- safe load hold due to check valve in each circuit
- one-man central operation
- motor on-off switch by means of a pendant remote control box in connection with manual valves, or 8-button remote control box to operate the solenoid valves.

Scope of delivery

For each of the four circuits the “ready to use“ supply includes: glycerine-damped pressure gauge, 3-way control valve, safety-check valve, a female coupler-half as connecting port.
Furthermore: hydraulic oil, carrying handles, motor on-off switch, motor connecting cable, pendant remote control, electro-box with transformer and motor relais, oil level gauge and oil-filler/ventilation plug.
All multiple-flow power packs are also available with 4-way directional valves in order to operate double-acting hydraulic cylinders.

4-multiple-flow power pack with solenoid directional valves

To advance 4 hydraulic cylinders independently and in a synchronized way by means of solenoid valves with a pendant remote control box.
This principle provides a high degree of flexibility for the operator who can control the whole process from a central point. The solenoid valves in connection with safety-throttle valves allow a precise control of all connected hydraulic cylinders.
The motion can be interrupted and continued at any time. This configuration can be supplied in all performance stages of the series PMF.

PMF - 15/3/40/4 x 4 E

Multiple flow hydraulic power packs

Model	Pressure	Displacement	Valve control		Motor remote control	Reservoir size litre	Power-supply
	bar	l/min	manual	solenoid			
PMF - 15/3/40/4 x 3 M	4 x 700	4 x 0,3	•	–	•	40	1,5 kW-400V-3Ph
PMF - 15/3/40/4 x 3 E	4 x 700	4 x 0,3	–	•	–	40	1,5 kW-400V-3Ph
PMF - 30/3/40/4 x 3 M	4 x 700	4 x 0,6	•		•	40	3,0 kW-400V-3Ph
PMF - 30/3/40/4 x 3 E	4 x 700	4 x 0,6	–	•	–	40	3,0 kW-400V-3Ph
PMF - 110/3/100/4 x 3 M	4 x 700	4 x 2,1	•		•	100	11,0 kW-400V-3Ph
PMF - 110/3/100/4 x 3 E	4 x 700	4 x 2,1	–	•	–	100	11,0 kW-400V-3Ph

PMF multiple-flow power packs can also be supplied with 4-way valves (to control double-acting cylinders) in all a.m. performance stages.

Yale®

Manual directional valves

VHP
VHH

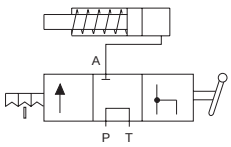
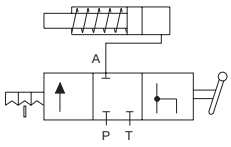
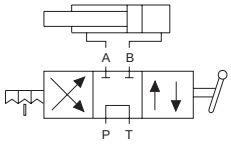
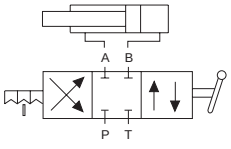
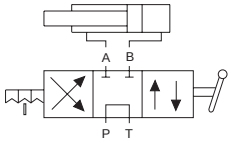
Directional valves

700 bar, manually operated

These directional valves control the oil flow in combination with hydraulic power packs (YHH - 4/3 with hand pumps).
All valves have 3 lever positions to control movement of the connected hydraulic cylinder:

1. left : cylinder advance
2. middle : cylinder neutral (pressureless circuit)
3. right : cylinder retracts

In the middle position (hold) the piston of the cylinder stops and the oil flow is guided in a circuit back to the reservoir ("P" to "T"). The valves can be flanged directly onto power packs or remote connected by using hydraulic piping. "P" and "T" are connected to the bottom of the valve base.
In addition all valves are equipped with a second pressure oil port "P" at the back of the valve base. This port can easily be used to connect a pressure gauge and a pressure relief valve (e.g. VPR - 1).
The oil port "T" shall always be connected to the reservoir without any back pressure.

Model	Pressure max. bar	Oil flow max. l/min	Size	Oil ports	Hydraulic symbol	Applications
VHP - 3/3-1	700	8-16	1	3/8 NPT		3/3-way valve with "open centre" in middle position (pressureless circuit) to control single-acting hydraulic cylinders, standard valve for smaller power packs, size 1
VHP - 3/3-2	700	20-40	2	3/8 NPT		3/3-way valve with "open centre" in middle position (pressureless circuit) to control single-acting hydraulic cylinders, standard valve for larger power packs, size 2
VHP - 3/3-1 CC	700	8-16	1	3/8 NPT		3/3-way valve with "closed centre" in middle position to control single-acting hydraulic cylinders, only for specific multiple valve configuration, size 1
VHP - 3/3-2 CC	700	20-40	2	3/8 NPT		3/3-way valve with "closed centre" in middle position to control single-acting hydraulic cylinders, only for a multitude of valve operations, size 2
VHP - 4/3-1	700	8-16	1	3/8 NPT		4/3-way valve with "open centre" in middle position (pressureless circuit) to control double-acting hydraulic cylinders, standard valve for smaller power packs, size 1
VHP - 4/3-2	700	20-40	2	3/8 NPT		4/3-way valve with "open centre" in middle position (pressureless circuit) to control double-acting hydraulic cylinders, standard valve for larger power packs, size 2
VHP - 4/3-1 CC	700	8-16	1	3/8 NPT		4/3-way valve with "closed centre" in middle position to control double-acting hydraulic cylinders, only for specific multiple valve configuration, size 1
VHP - 4/3-2 CC	700	20-40	2	3/8 NPT		4/3-way valve with "closed centre" in middle position to control double-acting hydraulic cylinders, only for specific multiple valve configuration, size 2
VHH - 4/3	700	2-3	small special design	3/8 NPT 1/4 NPT		4/3-way valve with "open centre" in middle position (pressureless circuit) to control double-acting hydraulic cylinders. Special design to be mounteded directly to all HPS hand pumps (with connecting set FY - 703). Also suitable for small hydraulic power packs.

Yale®

Solenoid directional valves VEP

Solenoid directional valves

700 bar, incl. pressure set valve

Application/Function

Solenoid operated valves are used to control the connected hydraulic cylinder by means of a pendant remote control or further electrical controls like pressure switches or limit switches.

Control principle

All solenoid valves have 3 positions:
- advance - stop - retract -
In neutral position (stop) the valves switch to "pressureless circuit" so that the oil flow is guided back to the reservoir while the connected cylinder is safely held under pressure.
Normally solenoid valves are mounted directly onto power packs but can also be remote mounted by using hydraulic piping.

Design

Long life "direct controlled" ball seal valves with leak-free "load hold function" in neutral position. The solenoids guarantee a very quick reaction of the valves so that cylinders can be controlled millimeterwise. The valves are suitable for continuous operation (100 % on/off duration).

Modular design

The modular principle allows special valve configurations e.g. control of multiple cylinder systems or specific control sequences.

Pressure adjustment

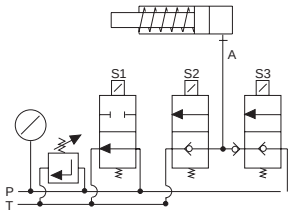
All solenoid valves are equipped with a precision-adjustable pressure set valve which allows the system pressure (force of cylinder) to be limited to any value from 0 to 700 bar.

Pressure gauge

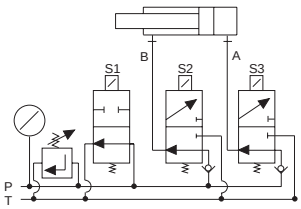
A glycerine damped pressure gauge GGY - 631 is standard with solenoid valves, 0-1000 bar, Ø 63 mm.

Mounting flange

The valve flanges are designed in a way that valves (with pressure connector) can easily be mounted onto Yale power packs.



VEP - 3/3-1 and **VEP - 3/3-2**
for single-acting cylinders



VEP - 4/3-1 and **VEP - 4/3-2**
for double-acting cylinders

Model	Control	for cylinder	Pressure max. bar	Size	permitted max. oil flow l/min.	Control voltage	Oil ports P T A B	Pressure relief valve	Weight kg
VEP - 3/3-1	3/3-way	single-acting	700	1	12	24 V =	3/8 NPT	yes	4,1
VEP - 3/3-2	3/3-way	single-acting	700	2	25	24 V =	3/8 NPT	yes	7,9
VEP - 4/3-1	4/3-way	double-acting	700	1	12	24 V =	3/8 NPT	yes	4,1
VEP - 4/3-2	4/3-way	double-acting	700	2	25	24 V =	3/8 NPT	yes	7,9

Yale®

Valves

VSM
VHM

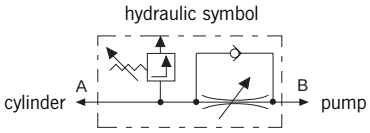
Operation

After closing the relief valve (hand wheel) the cylinder can be advanced via the by-pass.
In direction to the cylinder the valves always have free flow. The built-in check valve ensures that a pressurized cylinder (e.g. a lifted load) is held precisely in stop position. A smooth lowering speed can be adjusted by opening the throttle valve (hand wheel) in order to relieve the pressure.
A safety pressure valve protects the cylinder from being overloaded by external loading.

Safety-check valves

700 bar

These safety-check valves are used for those applications where pressure drops (e.g. holding of a lifted load) must be avoided. Depending on the location in an hydraulic circuit these valves can have different functions. The model VSM - 11 can be directly screwed into the oil port of a hydraulic cylinder and works at this location as a “hose break fuse“. The design of the VSM - 21 is suitable for a combination with VHP directional valves.
At this location the VSM - 21 ensures that the pressure is held precisely and that pressure drops caused by operating the directional valve are avoided.



Selection advice

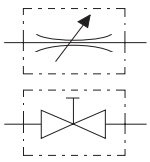
If the valve is to be screwed directly into a hydraulic cylinder, please order VSM - 11.
If the valve is to be combined with the directional valve of a power pack please order VSM - 21 (see photo on page 38).

Model	Pressure max. bar	Design	Oil port cylinder side A	Oil port pump side B	Width mm	Dimensions mm length	width	height	Weight kg
VSM - 11	700	needle	3/8-18 NPT outer	3/8-18 NPT inner	6	75	25	100	0,9
VSM - 21	700	needle	3/8-18 NPT inner	3/8-18 NPT outer	6	75	25	100	1,0

Throttle-/Shut-off valves

700 bar

These valves are used to shut-off hydraulic lines especially in multiple cylinder systems. The needle valve VHM - 1 also allows you to throttle an oil flow especially within lifting applications.

Model	Pressure max. bar	Design	Oil ports both ends	Width mm	Dimensions in mm length	width	height	Weight kg	Hydraulic symbols
VHM - 1	700	needle	3/8-18 NPT inner	6	70	28	88	0,4	
VHM - 2	700	ball	3/8-18 NPT inner	6	83	45	61	0,9	
VHM - 3	700	ball	M18 x 1,5 outer	6	84	45	61	0,9	

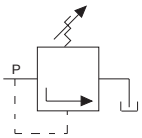
Yale®

Pressure valves
Pressure switch
VPR
VPS

Pressure relief valves

0 - 700 bar

Pressure relief valves are used when the system pressure (force of the connected hydraulic cylinder) should not exceed a certain value.
These precision adjustable valves can be set to any pressure value between 0 and 700 bar by means of a turning knob.
After achieving the set pressure value, the excessive oil is guided back to the reservoir (pressureless).
Pressure relief valves are supplied with the necessary fittings and 0,5 m return hose.

Model	Control range bar	Oil ports P	Oil ports T	Max. oil flow l/min	Dimensions in mm length	Dimensions in mm Ø	Weight kg	Hydraulic symbol
VPR - 1	0-700	G 3/8	G 1/4	10	120	40	0,8	
VPR - 3	0-700	3/8-NPT	1/4-NPT	5	145	40	1,2	
VPR - 6	0-700	3/8-NPT	1/4-NPT	16	185	47	2,2	

Pressure switch

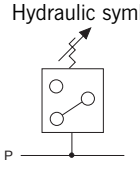
100 - 800 bar

This precision adjustable pressure switch can be set to any pressure value between 100 and 800 bar by means of a turning knob. When the set pressure value is reached, an electrical alternating contact is activated.

This signal can be used:

- for automatic pressure limiting
- to report a certain pressure value
- as an automatic motor on/off switch with “pressure guard“ power packs.

As soon as the pressure has reached the set value, a micro-switch (alternating contact) is activated. Should the pressure drop, the micro-switch starts the pump again in order to rebuild the pressure.

Model	Pressure range bar	Electrical data	Oil port	Difference of switch point bar	Repeat accuracy bar	Dimensions mm	Weight kg	Hydraulic symbol
VPS - 1	100-800	5 A / 250 V	3/8 NPT	25-70	10	130 x 85	0,5	

Yale®

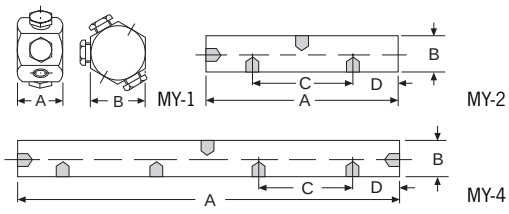
Manifolds

MY

Manifolds, 700 bar

Manifolds are used when several hydraulic cylinders have to be connected to one hydraulic pump.
All manifolds are equipped with 3/8 NPT inner oil ports, so that fittings, hydraulic hoses and couplers can easily be attached.
To connect a manifold directly to a hand pump a FY - 1 double nipple is recommended.
Each manifold is supplied with three steel blind plugs in case not all the oil ports are required.

Model	Oil ports	Dimensions in mm A	B	C	D	Weight kg
MY - 1	6 x 3/8-NPT inner	40	50	–	–	0,5
MY - 2	4 x 3/8-NPT inner	150	40	90	30	0,6
MY - 4	7 x 3/8-NPT inner	330	40	90	30	1,4



above:
MY - 44 - GYA and MY - 22 - GYA
below:
MY - 44 and MY - 22

"Typical combinations" on page 71 to 73.

Manifolds

with shut-off valve, 700 bar

Manifolds with shut-off valves are used when different pressures must be maintained in each hydraulic line and therefore allow the lifting of unequal loads. The manifolds are ready assembled and can be screwed directly to a hand pump or power pack. Depending on the way of assembly a short hose HHC - 10 and a coupler half CFY - 1 can be helpful. Manifold models MY ... GYA are equipped with the corresponding number of shut-off valves plus pressure gauge sets (GYA - 63) which allow a permanent reading of each individual load.

Model	Description	Weight, kg
MY - 22	Manifold with 2 shut-off valves	1,8
MY - 44	Manifold with 4 shut-off valves	3,7
MY - 66	Manifold with 6 shut-off valves	5,5
MY - 22 - GYA	Manifold with 2 shut-off valves and 2 pressure gauges	2,8
MY - 44 - GYA	Manifold with 4 shut-off valves and 4 pressure gauges	5,7
MY - 66 - GYA	Manifold with 6 shut-off valves and 6 pressure gauges	8,5

Hand pump HPS - 2/2
with manifold MY - 44

Electric power pack
PY - 07/3/20/3M with VSM - 21 and MY - 44

Transportation box

for hand pumps, hydraulic cylinders and accessories

For easy transportation and protection of your valuable tools. Large enough to take a hand pump with pressure gauge and hydraulic hose plus several hydraulic cylinders.
The sturdy sheet metal box is equipped with a solid handle and two clasps.

Model: HPK - 10

- Dimensions:
  length 800, width 300, height 170 mm
- Weight, approx.: 7,8 kg

Hydraulic oil

for all hand pumps and power packs

The high quality of the Yale hydraulic oil guarantees a long service life for your equipment.
The high grade HLP oil has the following features:

- class of viscosity: ISO VG 32
- high lubrication index
- high pressure resistance
- favourable temperature/viscosity index
- protection against corrosion and cavitation
- minimizes the formation of foam and sludge
- good derivation of temperature
- good compatibility with all sealing materials

Model	Content/Litre
HFY - 1	1
HFY - 5	5
HFY - 10	10
HFY - 20	20

Pressure gauges
GGY

Pressure gauges

The use of pressure gauges is recommended when the operating pressure (the force of the connected cylinder) should be monitored.
Yale pressure gauges are equipped with a stainless steel housing and an acrylic plastic face cover plate.
To absorb pressure shocks gauges are glycerine-filled, thus contributing to a long service life.
Also, when fitted to a motor pump the pointer will stay jitterfree.
For the calculation of applied cylinder forces corresponding converting charts (pressure vs. force) can be supplied for all Yale hydraulic cylinders.

Model	Pressure range bar	Scale Ø mm	Glycerine damped	Oil port	Spanner size	Accuracy class
GGY - 631	0-1000	63	yes	G 1/4	14	1,6
GGY - 632	0-1000	63	yes	1/4 NPT	14	1,6
GGY - 1001	0-1000	100	yes	G 1/2	22	1,0
GGY - 1004	0-700	100	yes	G 1/2	22	1,0
GGY - 1001 SZ*	0-1000	100	yes	G 1/2	22	1,0
GGY - 2500	0-2500	100	yes	G 1/2	22	1,6

*GGY - 1001 SZ = with maximum pointer

Pressure gauge set and adaptors

GYA GA

Pressure gauge GYA - 63

This pressure gauge set is suitable for connection to all HPS hand pumps. Assembled ready to use, compact design with 45° inclination for easy reading. Consisting of pressure gauge GGY - 632 and corresponding gauge adaptor.

Model GYA - 63

pressure gauge	:	0-1000 bar, Ø 63 mm, glycerine-damped
oil port pump	:	3/8-NPT outer
oil port hose	:	3/8-NPT inner

Pressure gauge adaptor

These pressure gauge adaptors are suitable for connection to all HPS hand pumps.
Gauge connection with sleeve nut and 30° inclination for easy reading.
GA - 700 for small pressure gauges
GA - 701 for large pressure gauges

Model GA - 700

oil port gauge	:	G 1/4
oil port pump	:	3/8-NPT outer
oil port hose	:	3/8-NPT inner

Model GA - 701

oil port gauge	:	G 1/2
oil port pump	:	3/8-NPT outer
oil port hose	:	3/8-NPT inner

Pressure gauge adaptor set

This pressure gauge adaptor set is suitable for connection to all HPH hand pumps (for double acting cylinders). To be connected between 4-way valve and hand pump. Advantage: shows both the pushing force and the pulling force of the connected hydraulic cylinder. With 30° inclination for easy reading. Pressureless return line by means of the telescopic double nipple (see page 25).

Model GA - 703

oil port gauge	:	G 1/2
oil port pump	:	3/8-NPT outer
oil port hose	:	3/8-NPT outer

Model GA - 704

oil port gauge	:	G 1/4
oil port pump	:	3/8-NPT outer
oil port hose	:	3/8-NPT outer

Pressure gauge adaptor

This pressure gauge adaptor is suitable for connection to all TWZ hand pumps (2000 bar). With 30° inclination for easy reading. Suitable for pressure gauge GGY - 2500 (see page 28).

Model GA - 2000

max. pressure	:	2000 bar
oil port gauge	:	G 1/2
oil port pump	:	M22 x 1,5 outer (with seal cone)
oil port hose	:	M22 x 1,5 inner (for FY - 201)

Hydraulic couplers

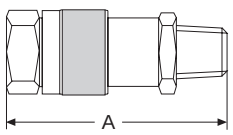
Hydraulic couplers

Hydraulic couplers are necessary for the connecton of various cylinders to one pump but are also important to offer an axial rotating possibility for the connected cylinder. Yale hydraulic couplers are self-sealing which means that the coupler halves only have to be closed hand tight. Both female and male parts have inner balls which seal the coupler halves in un-coupled condition, so that no hydraulic fluid will leak.

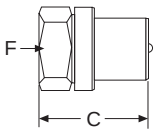
Please note that all Yale hydraulic cylinders are equipped with the standard female coupler half CFY - 1 and dust cap CDF - 9.

Model	Description	Connection thread	pressure bar	Dimensions in mm A	B	C	D	E	F
CFY - 1	Coupler half, female (standard)	3/8-NPT, outer	700	–	72	–	35	24	–
CFY - 2	Coupler half, female	3/8-NPT inner	700	–	78	–	35	27	–
CFY - 18	Coupler half, female	M18 x 1,5 outer	700	–	72	–	35	24	–
CFY - 10-S	Coupler half, female	pipe Ø 10 mm	700	–	72	–	35	24	–
CMY - 1	Coupler half, male	3/8-NPT, inner	700	–	–	38	–	–	32
CCY - 1	Coupler halves, female + male	3/8-NPT	700	85	–	–	–	–	–
CDF - 9	Dust cap, rubber, fits to female and male coupler halves (standard with all female coupler halves)								

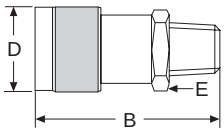
Coupler complete
CCY - 1



Coupler half, male
CMY - 1



Coupler half, female
CFY - 1



Hydraulic hoses

Durable but highly flexible thermoplast hydraulic hoses guarantee a very long life.
The 4-layer build-up includes 2 layers of high tensile steel fabric and robust fitting with 19 mm hexagon.
The volumetric expansion is very low.
Hydraulic hoses model HHC...are equipped with a male coupler half as standard.
Standard length are as per the chart below, further lengths or hoses with larger diameters are quoted on request.

Safety factor : 4:1 (burst pressure 2800 bar)
Outer diameter : approx. 14,0 mm
Bend radius min.: 100 mm
Nominal width : 6,3 mm

Model	Length m	Width mm	Pressure max. bar	Connection 1 thread nipple 3/8-NPT, outer	Connection 2 male coupler half CMY - 1
HHC - 5	0,5	6,3	700		
HHC - 10	1,0	6,3	700		
HHC - 20	2,0	6,3	700		
HHC - 30	3,0	6,3	700		
HHC - 40	4,0	6,3	700		
HHC - 60	6,0	6,3	700		
HHC - 80	8,0	6,3	700	 hose end to be screwed into pumps, valves, manifolds etc. (pump side)	 hose end with male coupler half to be connected to female coupler half of hydraulic cylinder
HHC - 100	10,0	6,3	700		
HHC - 120	12,0	6,3	700		
HHC - 150	15,0	6,3	700		

How to order

Hydraulic hose for all standard combinations (- pump - hose - cylinder -)
Order a standard hose with female coupler half model HHC... (e.g. HHC - 20)

Hydraulic hose for coupling connections on both sides (both ends with CMY - 1)
Order a complete coupler CCY - 1 in addition to a standard hose model HHC... (recommended for long hydraulic hoses).

Hydraulic hose with flexible steel protection
Under model: “HHCC - ... flex“ we offer fully protected hoses with male coupler half CMY - 1 at both ends.
Recommended to protect hydraulic hoses from heat, grinding dust or welding spatter (please advise length of hose).

Hydraulic extension hose (one male coupler half, one female coupler half)
Order a female coupler half CFY - 2 (inner thread) in addition to a standard hose model HHC...

Hydraulic hose without any coupler parts (both ends with threaded nipples)
Order model HH... (both ends 3/8-NPT outer)

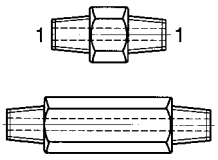
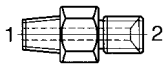
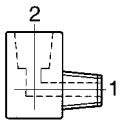
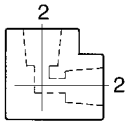
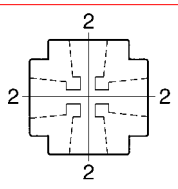
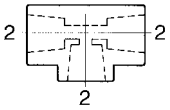
Yale®

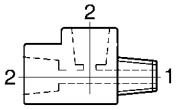
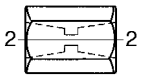
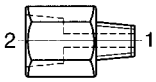
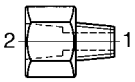
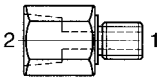
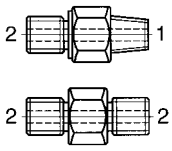
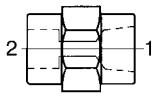
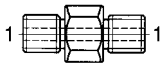
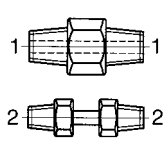
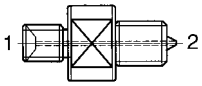
High pressure fittings

FY

Fittings, reducers, connectors

Yale high pressure fittings have been designed to give a variety of connections, extensions and combinations.
The fittings are designed for a max system pressure of 700 bar.
For improved sealing of NPT connections use 2 layers of teflon tape and tighten accordingly.

Model		Description		Connection 1		Connection 2	
FY - 1 **FY - 1L**		Double nipple Double nipple, long		3/8 NPT	outer	–	
FY - 13 **FY - 17** **FY - 18**		Double nipple Double nipple Double nipple		1/4 NPT 3/8 NPT 3/8 NPT	outer outer outer	R 1/4 M14 x 1,5 R 1/4	outer (for sleeve nut) outer
FY - 2		Elbow		3/8 NPT	outer	3/8 NPT	inner
FY - 3		Elbow		–		3/8 NPT	inner
FY - 6		Cross		–		3/8 NPT	inner
FY - 4		Tee		–		3/8 NPT	inner

Model		Description		Connection 1		Connection 2	
FY - 5		Tee		3/8 NPT	outer	3/8 NPT	inner
FY - 7 **FY - 11**		Connection Connection		– –		3/8 NPT 1/4 NPT	inner inner
FY - 8 **FY - 9**		Adaptor Adaptor		3/8 NPT 1/4 NPT	outer outer	R 1/2 3/8 NPT	inner inner
FY - 10 **FY - 12**		Adaptor Adaptor		3/8 NPT 1/2 NPT	outer outer	1/4 NPT 3/8 NPT	inner inner
FY - 16 **FY - 19** **FY - 20** **FY - 30** **FY - 33**		Adaptor Adaptor Adaptor Adaptor Adaptor		3/8 NPT M18 x 1,5 M14 G 3/8 3/8 NPT	outer outer outer outer outer	M18 x 1,5 3/8 NPT 3/8 NPT 3/8 NPT M14 x 1,5	inner inner inner inner inner
FY - 26 **FY - 27**		Double nipple Double nipple		3/8 NPT G 3/8	outer outer	G 3/8 G 3/8	outer outer
FY - 31 **FY - 32**		Connection Connection		3/8 NPT 3/8 NPT	inner inner	M18 x 1,5 M20 x 1,5	inner inner
FY - 35		Double nipple		M 14	outer	–	–
FY - 703		Connecting set for 4/3 way valve to HPS hand pumps (telescopic nipple)		3/8 NPT	outer	1/4 NPT	outer
FY - 201		Hose connector for TWZ hand pumps 2000 bar		R 1/4	outer	M22 x 1,5 (with seal cone)	outer

Hydraulic pullers BMZ

Hydraulic pullers BMZ

Hydraulic pullers are an invaluable tool for the maintenance engineer. The pullers allow time and cost savings as they offer high working safety and can be operated in all positions.
Hydraulic pullers are used in all kinds of industries, workshops and in many repair and assembly jobs to remove or install interference fit parts, such as: gears, couplings, bearings, wheels, pulleys, axles, shafts, break drums and many other press fit components. Damage to parts is minimized through the use of controlled hydraulic power, whilst machine down-time can be reduced drastically.

Features

- drop-forged alloy steel jaws
- hard chromium plated piston, spring return
- no radial moment of torsion
- no spindle wear

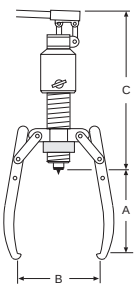
Hydraulic puller

with integrated hydraulics

6, 8 and 11 tonnes

Features

- integrated hydraulic cylinder and pump
- quick adjustment with trapezoid speed nut
- 3 and 2-jaw design
- pump lever can rotate through 360°
- piston with durable, spring loaded centering tip
- supplied in a sturdy plastic box



Model	Capacity tonnes	Piston stroke mm	Reach max. A in mm	Diameter Ø B in mm	Length C in mm	Weight kg
BMZ - 6	6	82	160	200	320	4,9
BMZ - 8	8	82	200	250	320	6,6
BMZ - 11	11	82	230	280	345	8,0

Puller sets

with separate hydraulics

10, 15 and 23 tonnes

Features

- high quality components from our standard hydraulic program
- modular system, hydraulic parts can also be used for many other applications
- long-life hydraulic cylinders manufactured from chromium-molybdenum steel
- two-stage quick-action hand pumps
- incl. high pressure hydraulic hose with quick coupler, L = 2 m
- all complete sets are supplied in metal box (10 and 15 tonnes) or wooden case (23 tonnes)
- all sets are supplied ready to use
- pressure gauge is available on request (GYA - 63)

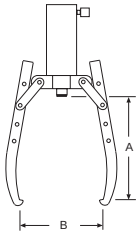
BMZ - 1000 and 1510

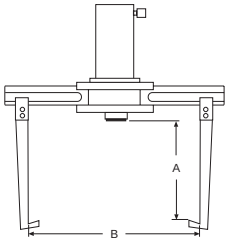
The harder the pulling force, the tighter the grip of the jaws. Longer jaws up to 1000 mm are available on request.

BMZ - 2311

The radially adjustable pulling arms can be locked at any position.

Model	Capacity tonnes	Hydraulic cylinder Model	Hand pump Model	Hydraulic hose Model	Stroke of cylinder mm	Reach max. A in mm	Diameter Ø B in mm	Weight kg
BMZ - 1000	10	none	none	none	-	300	350	9,5
BMZ - 1010	10	YS - 10/150	HPS - 2/0,7	HHC - 20	150	300	350	21,5
BMZ - 1500	15	none	none	none	-	300	350	9,5
BMZ - 1510	15	YS - 15/150	HPS - 2/0,7	HHC - 20	150	300	350	23,5
BMZ - 2300	23	none	none	none	-	190	700	28,0
BMZ - 2311	23	YS - 23/160	HPS - 2/0,7	HHC - 20	160	190	700	45,0





Accessories for BMZ - 2311:

BMZ - 2308 extensions of pulling arms increase the reach (A) up to 400 mm, BMZ - 2309 up to 500 mm

Yale®

Hydraulic puller sets YHP

Hydraulic puller set YHP

These professional puller sets are designed for removing and installing press fitted or heat fitted parts. Hydraulic puller sets eliminate time-consuming and costly repairs as they avoid the damage of parts and reduce machine down times.
All parts are manufactured from high quality drop-forged steel.
The complete sets are supplied “ready to use“ and include all necessary components such as hollow cylinder, hydraulic hand pump, pressure gauge (to control the pulling force) and 2 meter hydraulic hose with quick connect coupler.

3-Grip puller sets

For all pulling jobs where “solid“ parts have to be removed, e.g. gears, belt pulleys, sprockets, flywheels, couplers, shafts, axles etc.
The sets can be used as both 3-jaw and 2-jaw puller.

Model	Capacity max.
YHP - 251 G	20 tonnes
YHP - 351 G	30 tonnes
YHP - 551 G	50 tonnes

Crosshead puller sets

For all pulling jobs where “multi-segmented“ parts have to be removed like: Ball bearings, roller bearings and similar parts. Puller sets are supplied complete with bearing puller attachment and bearing cup puller.

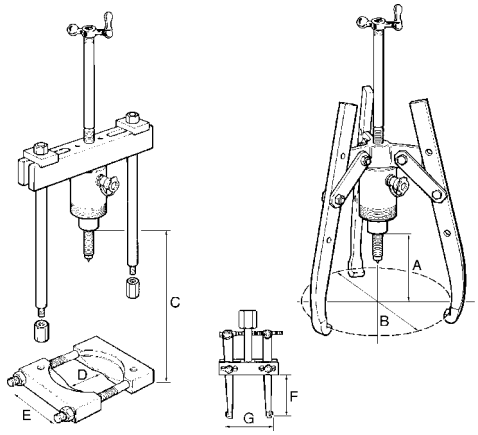
Model	Capacity max.
YHP - 261 G	20 tonnes
YHP - 361 G	30 tonnes
YHP - 561 G	50 tonnes

Multi-purpose puller sets

These multi-purpose puller sets are universal combinations from both a.m. sets and include all necassary parts from 3-grip puller set and cross-head puller set.

Model	Capacity max.
YHP - 2751 G	20 tonnes
YHP - 3751 G	30 tonnes
YHP - 5751 G	50 tonnes

Type of puller set	3-grip puller set			Crosshead puller set			Multi purpose puller set		
Model	**YHP - 251 G**	**YHP - 351 G**	**YHP - 551 G**	**YHP - 261 G**	**YHP - 361 G**	**YHP - 561 G**	**YHP - 2751 G**	**YHP - 3751 G**	**YHP - 5751 G**
Capacity in tonnes:	20	30	50	20	30	50	20	30	50
Hand pump, model: HPS - 1/07	•	•	–	•	•	–	•	•	–
Hand pump, model: HPS - 2/2	–	–	•	–	–	•	–	–	•
Pressure gauge set, model: GYA - 63	•	•	•	•	•	•	•	•	•
Hydraulic hose, model: HHC - 20	•	•	•	•	•	•	•	•	•
Hollow cylinder, model:	YCS - 21/50	YCS - 33/60	YCS - 57/70	YCS - 21/50	YCS - 33/60	YCS - 57/70	YCS - 21/50	YCS - 33/60	YCS - 57/70
Crosshead, 3-grip	•	•	•	–	–	–	•	•	•
Crosshead, 2-grip	•	•	•	–	–	–	•	•	•
Crank	•	•	•	•	•	•	•	•	•
Grip arm, 3 pcs.	•	•	•	–	–	–	•	•	•
Spindle	•	•	•	•	•	•	•	•	•
Strap, 6 pcs.	•	•	•	–	–	–	•	•	•
Strap screw, 6 pcs.	•	•	•	–	–	–	•	•	•
Strap nut, 6 pcs.	•	•	•	–	–	–	•	•	•
Mounting screw, 2 pcs.	•	•	•	•	•	•	•	•	•
Saddle with internal thread	•	•	•	•	•	•	•	•	•
Smooth saddle	•	•	•	•	•	•	•	•	•
Crosshead	–	–	–	•	•	•	•	•	•
Slide plate, 2 pcs.	–	–	–	•	•	•	•	•	•
Nut, 2 pcs.	–	–	–	•	•	•	•	•	•
Washer, 2 pcs.	–	–	–	•	•	•	•	•	•
Pulling leg, 2 pcs.	–	–	–	–	•	–	–	•	–
length in mm	–	–	–	115	205	610	115	205	610
Pulling leg, 2 pcs.	–	–	–	•	–	•	•	–	•
length in mm	–	–	–	240	460	865	240	460	865
Pulling leg, 2 pcs.	–	–	–	–	•	–	–	•	–
length in mm	–	–	–	420	710	–	420	710	–
Pulling leg, 2 pcs.	–	–	–	•	–	–	•	–	–
length in mm	–	–	–	570	–	–	570	–	–
Leg end, 2 pcs.	–	–	–	•	•	•	•	•	•
Leg connector, 2 pcs.	–	–	–	•	•	•	•	•	•
Bearing puller attachment	–	–	–	•	•	•	•	•	•
Bearing cup pulling attachment	–	–	–	•	•	•	•	•	•
Speed nut	–	–	–	•	•	•	•	•	•
Storage case	•	•	•	•	•	•	•	•	•
Weight in kg:	40	65	120	46	86	156	91	172	295



Capacity tonnes	3-grip A	3-grip B	2-grip A	2-grip B	C	D	E	F	G
20 t	300	500	300	420	0-817	25-155	152	140	30-180
30 t	520	900	520	700	0-977	30-250	250	150	75-230
50 t	700	1200	700	1000	0-1233	75-330	330	150	75-230

Dimensions in mm

Aluminium jacks

AJS
AJH

Yale Aluminium hydraulic jacks

Capacities from 6,5 to 100 tonnes

Aluminium jacks combine light weight with high lifting capacity. The use of high tensile aluminium alloy allows lifting capacities of up to 100 tonnes resulting in a very favourable 1,8 tonnes lifting capacity per 1 kg weight ratio.
Operation of Yale hydraulic jacks is very simple. Jacks are supplied ready for use, i.e. including hydraulic oil, operating lever and, where applicable, carrying handle and lifting claw.

Features

- strokes from 75 to 305 mm
- extremely low weight
- the 6,5 and 10 tonnes jacks can be operated in any position (also upside down) and are equipped with spring return piston and stop ring
- the 20 to 100 tonnes jacks can be operated vertically or front face horizontally
- all jacks are provided with an overload protection valve
- from 20 tonnes capacity with additional mechanical stroke limiter
- all jacks with hardened alloy steel saddle and sensitive lowering valve which is activated by the operating lever
- all jacks from 20 tonnes provided with connection port for pressure gauge or motor pump

Application

Yale hydraulic jacks are universally popular tools for use in workshops or on site for all kinds of lifting and assembly applications, for construction, ship building, power plants, general engineering, metal fabrication and many more.
Applications are limitless.
Standard jacks with plain piston and jacks with safety lock nuts cannot be used with a lifting claw.
To increase stability, all jacks with long stroke (305 mm) are equipped with an elongated base plate.

Back view of
AJH - 620 SR

Jacks with lifting claw

Jacks from 20 tonnes are available with a lifting claw. In this case the jacks are provided with an elongated base plate. The max. permissible working load of the lifting claws is 40 % of the jack capacity.

Jacks with safety lock nut

Jacks from 20 tonnes can be supplied with a safety lock nut. This device allows absolute safe jacking over a long period. In this case the hydraulic jack can operate like a mechanical support and the hydraulic system can be totally released.

Jacks with plain piston (standard type)

Model	Capacity tonnes	Max. capacity of lifting claw tonnes	Stroke mm	Closed height mm	Base plate dimensions mm	Min. height of lifting claw mm	Weight kg
AJS - 65	6,5	–	75	131	159 x 76	–	3,6
AJS - 104	10,0	–	115	182	171 x 76	–	6,3
AJH - 620	20,0	–	152	265	180 x 120	–	10,9
AJH - 1220	20,0	–	305	440	250 x 120	–	16,7
AJH - 630	30,0	–	152	265	200 x 140	–	15,4
AJH - 1230	30,0	–	305	452	275 x 140	–	23,4
AJH - 660	60,0	–	152	293	250 x 190	–	27,4
AJH - 1260	60,0	–	305	500	340 x 190	–	43,7
AJH - 6100	100,0	–	152	315	305 x 250	–	49,0

Jacks with lifting claw

Model	Capacity tonnes	Max. capacity of lifting claw tonnes	Stroke mm	Closed height mm	Base plate dimensions mm	Min. height of lifting claw mm	Weight kg
AJH - 620 C	20,0	8	152	280	250 x 120	67	14,5
AJH - 1220 C	20,0	8	305	452	250 x 120	67	22,2
AJH - 630 C	30,0	12	152	284	275 x 140	72	20,3
AJH - 1230 C	30,0	12	305	472	275 x 140	72	31,0
AJH - 660 C	60,0	24	152	327	340 x 190	72	43,1
AJH - 1260 C	60,0	24	305	533	340 x 190	72	64,9

Jacks with safety lock nut

Model	Capacity tonnes	Max. capacity of lifting claw tonnes	Stroke mm	Closed height mm	Base plate dimensions mm	Min. height of lifting claw mm	Weight kg
AJH - 620 SR	20,0	–	152	291	180 x 120	–	10,9
AJH - 1220 SR	20,0	–	305	464	250 x 120	–	16,7
AJH - 630 SR	30,0	–	152	294	200 x 140	–	15,4
AJH - 1230 SR	30,0	–	305	480	275 x 140	–	23,4
AJH - 660 SR	60,0	–	152	330	250 x 190	–	27,4
AJH - 1260 SR	60,0	–	305	536	340 x 190	–	43,7
AJH - 6100 SR	100,0	–	152	366	305 x 250	–	53,0

Yale®

Universal jacks JH

Universal jacks JH

Capacities from 2 to 50 tonnes

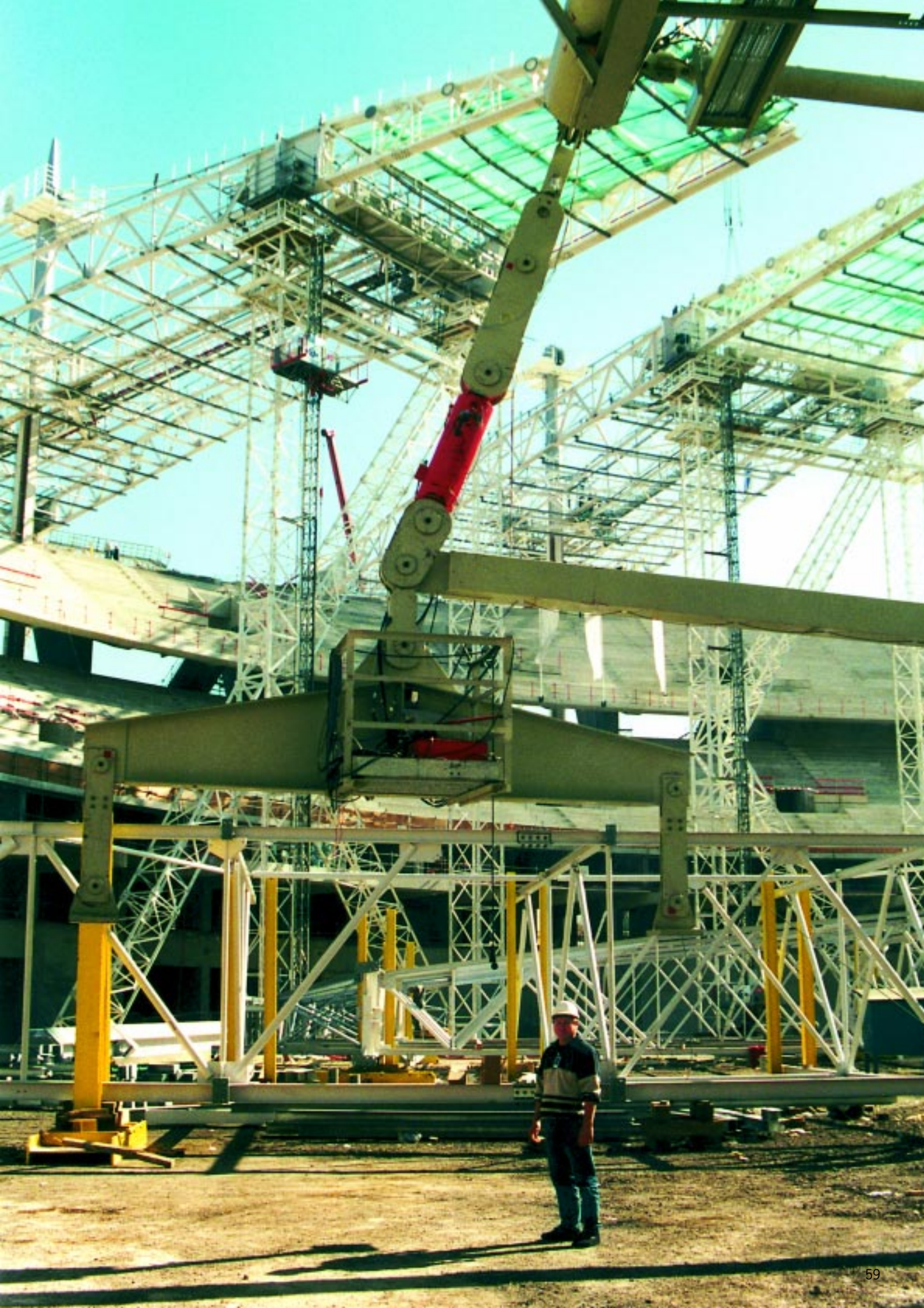
Yale universal jacks supply high forces for general operations like lifting, pushing, moving, supporting of all kind of loads.

Features

- robust, long life design
- pressure relief valve
- precise controlled lowering
- additional screw extension of the piston (from 2 to 20 tonnes)
- grooved saddle
- large base plates for increased stability
- JH - 50-2 with two-stage pump
- incl. operating lever

JH - 50-2

Model	Capacity tonnes	Stroke mm	Additional screw extension mm	Closed height mm	Base plate dimensions mm	Pump	Weight kg
JH - 2	2	115	50	181	90 x 95	1-stage	2,7
JH - 4	4	126	60	205	115 x 110	1-stage	3,7
JH - 6	6	130	75	219	115 x 110	1-stage	4,7
JH - 8	8	152	70	225	120 x 120	1-stage	5,7
JH - 12	12	153	80	240	140 x 130	1-stage	8,0
JH - 20	20	153	80	240	160 x 155	1-stage	11,0
JH - 30	30	180	-	280	210 x 180	1-stage	22,0
JH - 50-2	50	178	-	305	255 x 190	2-stage	53,0



Machine jacks
YAM

Machine jacks with lifting claw
from 2 to 15 tonnes

Machine jacks with lifting claw are used in applications where space below the load is restricted, thus preventing the use of traditional lifting equipment.

Features

- offers safe lifting of machines with an extremely low clearance
- incl. safety pressure valve to prevent overload
- large base offers increased stability under load
- pump lever can rotate through 270° (excluding YAM - 2)
- same load can be lifted on either the head or the claw of jack
- spring return of the lifting claw (only YAM - 5 and YAM - 10)
- precision adjustable lowering valve
- jacks are supplied “ready to use“ incl. pump lever and are filled with oil

YAM - 5

YAM - 10

Applications

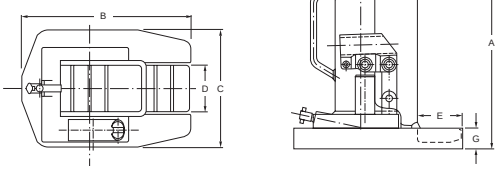
Typical applications for machine jacks are lifting, positioning and transportation of machines, heavy steel constructions or similar loads, as well as general repair and assembly applica-tions, like leveling of high-rise warehouses, heavy duty scaffolds, large frameworks etc.

YAM - 2

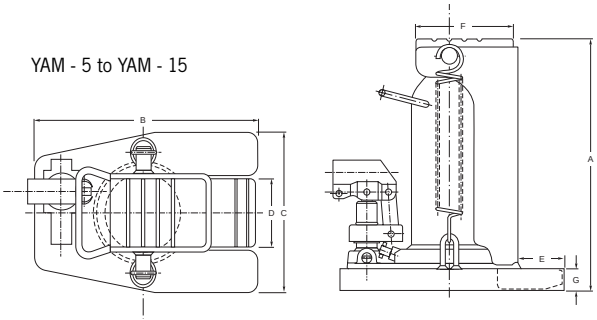
YAM - 15

Model	Capacity on claw and head tonnes	Stroke mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	Weight kg
YAM - 2	2,0	113	235	180	125	50	50	85	16	8,0
YAM - 5	5,0	120	290	257	182	75	57	117	22	19,0
YAM - 10	10,0	145	325	280	240	100	60	150	28	38,0
YAM - 15	15,0	140	336	292	240	85	60	110	28	41,0

YAM - 2



YAM - 5 to YAM - 15



Yale®

Hydraulic machine lifters YAK

Hydraulic machine lifters

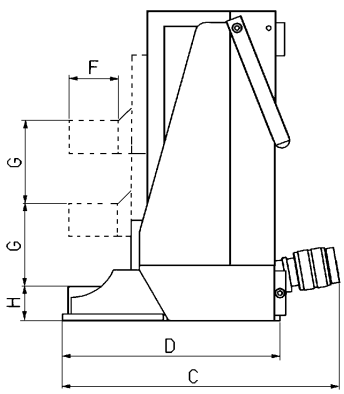
for external pump connection

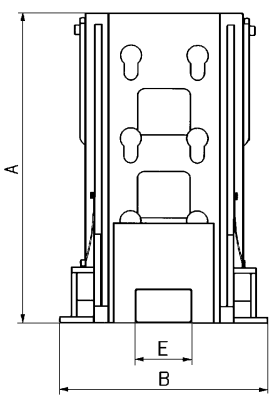
These lifting units can be used for lifting and positioning of machines, steel constructions, heavy modules or segments and similar large loads.

Features

- “toe lift design“ for very low clearance
- lifting claw adjustable to 3 heights
- safe stability due to extendable support feet
- built-in hydraulic cylinder with spring return
- incl. quick connect coupler half CFY - 1 and carrying handle
- can be operated with all high pressure hand pumps or power packs
- or with 4-split flow power packs for „synchronized lifting operations“
- allows safe remote lifting operation
- recommended hand pump HPS - 2/0,7 with hydraulic hose HHC - 20

Model	Capacity tonnes	Stroke	Dimensions in mm								Pressure max. in bar	Weight kg
			A	B	C	D	E	F	G	H		
YAK - 10150	10	150	285	185	255	190	45	40	75	20	700	26,0
YAK - 23160	23	160	320	260	290	250	70	55	80	30	700	45,0





Yale®

Hydraulic stage lifts

Hydraulic stage lifts

capacities up to 200 tonnes

Stage lifts are compact “low head room“ lifting devices, for universal lifting applications.
They are designed to lift and lower loads over high distances.
Stage lifts overcome the usual limitations of their lifting height imposed by stroke length.
Stage lifts operate with “ double-acting“ hydraulic cylinders (return stroke by hydraulic pressure) and are equipped with a load spreading plate and a piston support plate.

Features

- Yale ChroMo-Design
- high quality materials ensure long service life
- stage lift body made from high grade aluminum
- low cost lifting systems possible, (3-point resp. 4-point)
- low weight (e.g. 60 kg for a 50 ton unit)
- large diameter tilt saddle
- incl. coupler halves and carrying handles

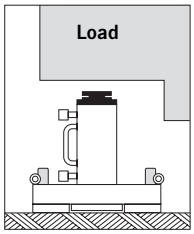
Function

A stage lift operates inverted and lifts the load via the bottom of the cylinder whilst it climbs on a pile of support bars (wood or aluminium).
In principle the load can be lifted to any height although stage lifts are still compact and versatile for “low head room“ lifting applications.
A further big advantage is that the load can be supported safely on the pile of support blocks at any stage.
The simple “3-step operation“ eliminates the need for additional holding arrangements and the repositioning or replacing of cylinders which are normally required for a higher lifting distance.
A stage lift climbs up and down on its own.

Control

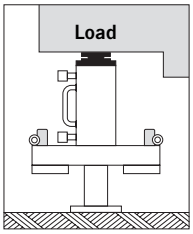
Depending on the power pack, selected stage lifts can be controlled individually (by hand or motor pump) or together in a synchronized arrangement with multi-flow pumps.

Function of stage lifts



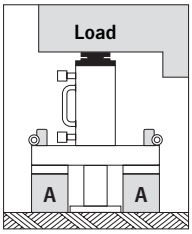
1. Stage

Initial position,
stage lift rests on the ground under the load.



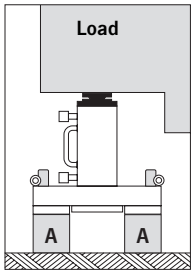
2. Stage

step 1,
load is raised



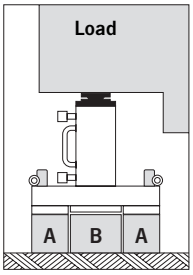
3. Stage

two support bars type “A“ are positioned in place



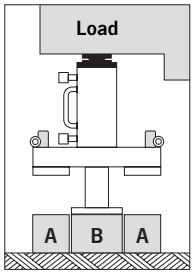
4. Stage

piston is retracted and load rests on support bars type “A“



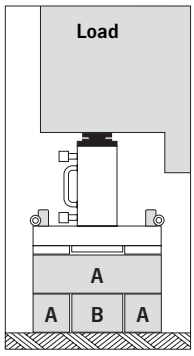
5. Stage

broader middle bar type “B“ is inserted



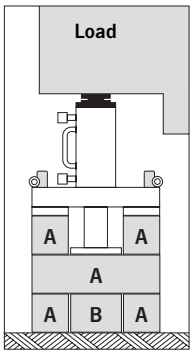
6. Stage

step 2,
load raised on broader middle bar “B“



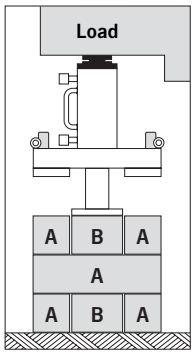
7. Stage

Two bars “A“ are inseted and rotated at 90°,
piston is retracted and middle bar is inserted



8. Stage

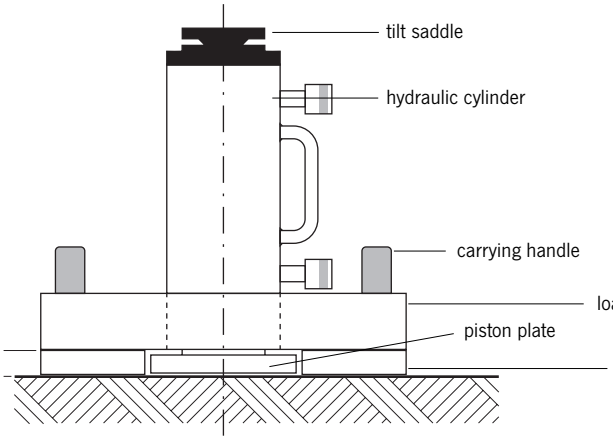
Load is lifted on middle bar (3rd step),
two support bars type “A“ are positioned at 90°
and load rests on support bars “A“.



9. Stage

Piston is retracted,
middle bar type “B“ is inserted and lifts the 4th step on middle bar “B“

and so on...



Model	Capacity max. tonnes	Stroke mm	Closed height mm	Load spreading plate mm	Piston plate Ø mm	Weight approx. kg
ST - 5015	50	150	396	425 x 425	160	60
ST - 10015	100	150	455	525 x 525	180	115
ST - 20015	200	150	510	600 x 600	210	196

Yale®

Hydraulic tools

Hydraulic spreader YHS

single acting, with spring return
0,5 to 1,5 tonnes

These universal power tools can be used for all repair, maintenance and assembly work requiring precisely controlled power, e.g. aligning of containers and shells, lifting, positioning or aligning of machinery and structural components, forcing-off of shutterings and moulds. Applications are unlimited ...
The spreaders can be operated with all hand pumps (e.g. HPS - 1/0,7 or HPS - 2/0,7 and hydraulic hose HHC - 20)

Model	Capacity max. kN	Capacity max. tonnes	Pressure max. bar	Oil volume cm^3	Spread width min. mm	Spread width max. mm	Weight kg
YHS - 05	5	0,5	700	10	16	100	1,9
YHS - 11	10	1,0	700	10	14	100	2,1
YHS - 15	15	1,5	700	70	35	220	6,9

Features

- operating pressure max: 700 bar
- single-acting with spring return
- works in all positions
- spreader arms from high tensile steel
- incl. female coupler half CFY - 1 with dust cap

Hydraulic chain cutter YCC - 1

This hydraulic chain cutter has been designed for cutting high tensile, grade 80 chains up to a material diameter of 18 mm. The open design allows easy positioning of the chain.
The unit can be operated using the range of Yale high pressure pumps.

Recommended pumps:

- air powered pump: PAY - 6
- electric power pack: PY - 04/2/5/2 M
- hand pump: HPS - 2/0,7

Features

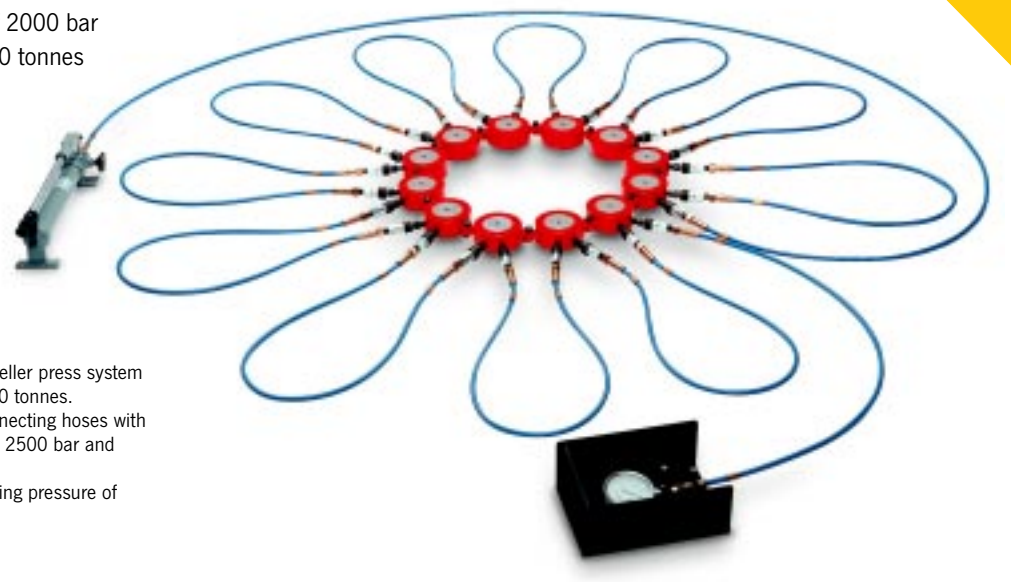
- operating pressure, max.: 700 bar
- max. cutting force: 23 tonnes
- cutting performance: 18 Ø (chain grade 80)
- max. opening of blades: 30 mm
- weight: 17 kg
- built-in standard hydraulic cylinder
- single-acting with spring return

- durable, heat treated cutting blades
  easy replacement, blades can be re-sharpened
- incl. protection guard
  and female coupler half CFY - 1 with dust cap

Hydraulic propeller press system

2000 bar

The Yale hydraulic propeller press system is used to press-fit large propellers onto the drive shaft of ships. To this end the special flat cylinders can be linked together to build a chain of any length and press force. The cylinders are provided with appropriate link eyes at both sides.
The maximum operating pressure of 2000 bar ensures high press forces up to 2200 tonnes or more, according to the relevant shaft diameter.



Hydraulic propeller press system

The picture shows a complete hydraulic propeller press system with 12 cylinders with a total capacity of 1200 tonnes.
The system is complete with appropriate connecting hoses with quick release couplers, pressure gauge up to 2500 bar and hand pump model TWZ - 2,3
All parts are designed for a maximum operating pressure of 2000 bar.

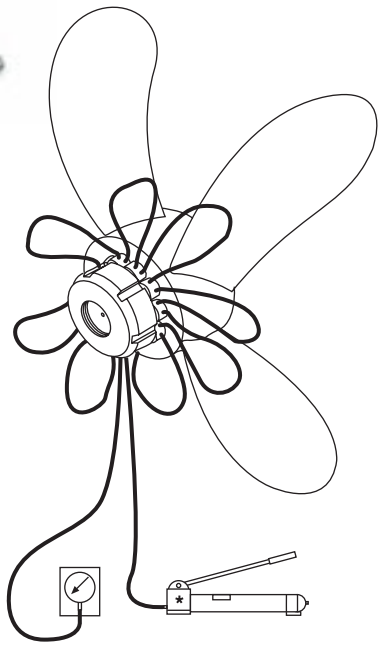
Special flat hydraulic cylinder

with link connections at both sides and 2 male quick connect coupler halves.

Capacity, max: 100 tonnes
Stroke: 10 mm
Pressure, max.: 2000 bar
Diameter Ø: 127 mm
Closed height: 50 mm

Link plates and lifting hooks

are used to connect the cylinders and to handle the complete chain with a crane.
2 pieces of link plates and lifting hooks as well as the corresponding number of high pressure hoses (with female quick connect couplers at both ends) belong to a complete set.



Yale®

Test rig for hoisting equipment RPYS

Hydraulic test rig for hoisting equipment RPYS - 1215

For testing pul-lifts, lever hoists, chain blocks, wire rope pullers as well as other lifting equipment after repair or inspection.

Features

- fully welded, low-strain press-frame
- upper and lower hook suspension by means of shackles, incl. two 5 tonnes pull-rings for smaller test units
- lateral pump table
- infinite adjustment of the pulling force
- chart for easy determination of test force
- removable lower suspension e.g. for testing of plate clamps
- base pre-drilled for mounting

Quality hydraulic components

- Hollow cylinder made from chromium-molybdenum steel, heat-treated, inside and outside with dirt wipers
- long cylinder stroke of 150 mm, piston hard-chromium-plated with bronze bearings
- high-strength threaded bar (M27)
- two-stage quick action hand pump
- fine-adjustment pressure valve
- large pressure gauge, glycerine-filled, Ø 100 mm, class 1,0 %

Frequent use

For frequent testing, the hand pump may be replaced by a low-cost air hydraulic (PAY - 6) or electric pump (PY - 04/2/5/2 M).

Testing of hoisting equipment

The lifting unit is placed between upper and lower shackle, the chain is tensioned against the oil cushion of the partly advanced piston of the hydraulic cylinder. The applied force can be read on the pressure gauge.

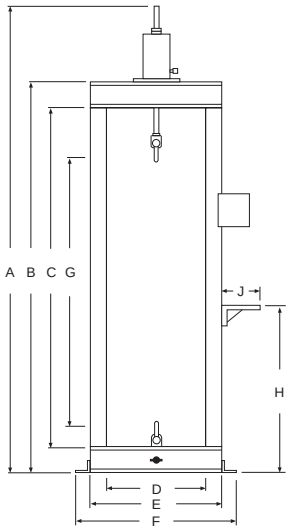
Testing of the hoist brake

For a functional test of the hoist brake the hand pump may be used to apply a counter pressure and thus increase the pulling force after a general test.

Hollow cylinder
YCS - 21/150

single-acting, with spring return

- max. capacity: 12 tonnes
- chromium-molybdenum steel, heat treated with bronze bearings
- operating pressure: 0-400 bar
- piston stroke: 150 mm
- center hole Ø: 27 mm



A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	Weight kg
2580 to 2730	2160	1840	500	630	760	1030 to 1425	750	150*	225 kg

* 700 mm with 5 tonnes pull-rings

Hydraulic hand pump
HPS - 2/0,7

two-stage, with quick action

- operating pressure: 0-400 bar
- reservoir: 0,7 l
- fine-adjustment pressure relief valve
- pressure gauge: glycerine-damped, 0-400 bar, Ø 100 mm, class 1,0 %

Hydraulic test rig for steel winches
RPYS - 1535

Capacity 15 tonnes

For the testing of steel winches or similar lifting devices we offer a specific test rig.
This test rig can be operated with the already existing pump from other test rigs.

- max. capacity : 15 tonnes
- stroke : 350 mm
- cylinder YS - 15/350 made from chromium-molybdenum steel, heat treated with bronze bearings and spring return

Yale®

Hydraulic workshop presses RPY

Universal workshop presses

from 10 to 200 tonnes

For all repair and assembly jobs such as:

- pressing and removing of bolts, shafts, bearings
- straightening of beams, profiles, axles, shafts
- forming, bending, crimping
- general load tests and tests of weld specimens
- stamping, cutting, punching
- pre-adjustment of tools

According to european standards, all Yale workshop presses can be used without any additional protection devices as the piston speed is below 10 mm/sec. For special applications additional safety equipment (e.g. protection grid or two-hand-safety-control) can be offered on request.

Features

- heavy duty H-frame design with open sides
- quality welded construction for maximum strength and stability (presses can be operated in vertical or horizontal position)
- 4-column design allows side loading of long work pieces
- 4 locking bolts ensure a precisely aligned press head and press table
- modular build-up offers a wide range of combinations covering cylinder, pump and valve control (other combinations than those shown in the selection chart are available)
- 50 and 100 tonnes workshop presses with adjustable press table and press head
  200 tonnes press with adjustable table and fix welded press head
- optional with manually operated pumps or power packs (electrically or air pressure driven)
- all presses are equipped “ready to use“, incl. all necessary parts like:
  hydraulic oil, oil level gauge, oil filler plug, motor switch, connecting cable, high-pressure hydraulic hoses, glycerine-damped pressure gauges, fixing holes in base profiles, adjusting device for press table and head, swivelling pump console, conversion chart: pressure/force etc.

Accessories for 50, 100 and 200 tonnes presses like flat table plates, press awls and V-blocks can be supplied on request.

Hydraulic cylinders

- cylinders made from chromium-molybdenum steel, heat treated
- piston hard chromium-plated with two bronze bearings and metric mounting thread
- hydraulic return (50-200 tonnes) or spring return (10 and 20 tonnes)
- available piston strokes from 150 to 500 mm

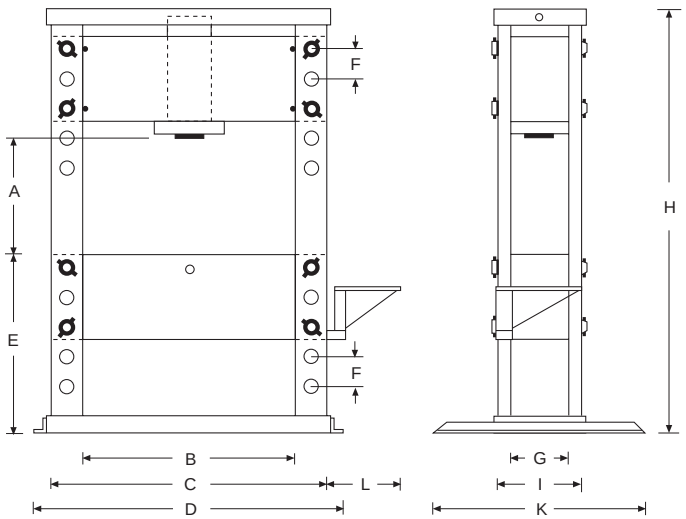
Hydraulic hand pumps

- all pumps have two stage displacement with finely adjustable load release valve
- glycerine damped pressure gauge, ø 63 mm, class. 1,6 %
- hydraulic hose, L = 2,0 m with male coupler half

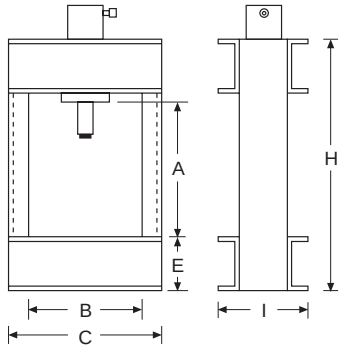
Hydraulic power packs

- all pumps with two-stage displacement
- pressure pre-set valve on request, (comes standard with solenoid valve control)
- glycerine damped pressure gauge, ø 100 mm, class. 1,0 %
- control by manual directional valve (with motor start-stop remote control) or solenoid valve with pendant remote control box

Frame size	$A_{min.}$ mm	$A_{max.}$ mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	K mm	L mm	Weight approx. kg
10 t	-	440	380	510	-	180	-	-	840	300	-	-	86
23 t	-	440	380	510	-	180	-	-	840	300	-	-	86
50 t	350	900	800	1000	1230	810	140	265	2000	305	1000	350	880
100 t	245	805	1000	1300	1430	860	140	335	2000	395	1000	350	1290
200 t	320	1000	1000	1400	1580	1040	170	450	2430	550	1000	400	2800



Workshop presses 50, 100 and 200 tonnes



Bench presses 10 and 23 tonnes

Selection chart for work shop presses (further combinations pump/cylinder are possible)

Model	Capacity tonnes	Cylinder model	Cylinder stroke mm	Piston return	Pump	Valve control	Pump model
RPY - 1015 M	10	YS - 10/150	150	spring	hand pump	manual valve	HPS - 2/0,7
RPY - 1015 A	10	YS - 10/150	150	spring	air pump	manual valve	PAY - 6
RPY - 1025 EM	10	YS - 10/250	250	spring	electric pump	manual valve	PY - 04/2/5/2 M
RPY - 2316 M	23	YS - 23/160	160	spring	hand pump	manual valve	HPS - 2/2
RPY - 2316 A	23	YS - 23/160	160	spring	air pump	manual valve	PAY - 6
RPY - 2325 M	23	YS - 23/250	250	spring	hand pump	manual valve	HPS - 2/2
RPY - 2325 EM	23	YS - 23/250	250	spring	electric pump	manual valve	PY - 04/2/5/2 M
RPY - 5015 M	50	YH - 50/150	150	hydraulic	hand pump	manual valve	HPH - 2/2
RPY - 5015 EM	50	YH - 50/150	150	hydraulic	electric pump	manual valve	PY - 04/2/5/4 M
RPY - 5035 EM	50	YH - 50/350	350	hydraulic	electric pump	manual valve	PY - 04/2/5/4 M
RPY - 5035 EE	50	YH - 50/350	350	hydraulic	electric pump	solenoid valve	PY - 07/3/20/4 E
RPY - 5050 EE	50	YH - 50/500	500	hydraulic	electric pump	solenoid valve	PY - 07/3/20/4 E
RPY - 10035 EM	100	YH - 100/350	350	hydraulic	electric pump	manual valve	PY - 07/3/20/4 M
RPY - 10035 EE	100	YH - 100/350	350	hydraulic	electric pump	solenoid valve	PY - 07/3/20/4 E
RPY - 10050 EM	100	YH - 100/500	500	hydraulic	electric pump	manual valve	PY - 07/3/20/4 M
RPY - 10050 EE	100	YH - 100/500	500	hydraulic	electric pump	solenoid valve	PY - 07/3/20/4 E
RPY - 20035 EM	200	YH - 200/350	350	hydraulic	electric pump	manual valve	PY - 11/3/20/4 M
RPY - 20035 EE	200	YH - 200/350	350	hydraulic	electric pump	solenoid valve	PY - 11/3/20/4 E
RPY - 20050 EM	200	YH - 200/500	500	hydraulic	electric pump	manual valve	PY - 11/3/20/4 M
RPY - 20050 EE	200	YH - 200/500	500	hydraulic	electric pump	solenoid valve	PY - 11/3/20/4 E

Code explanation

Valve control : M = manual pump E = solenoid valve with pendant remote control
Pump : M = manual pump E = electric pump A = air pressure pump
Piston stroke : 15 = 150 mm, 16 = 160 mm, 25 = 250 mm, 35 = 350 mm, 50 = 500 mm
Capacity, max. : 10 = 10 tonnes, 23 = 23 tonnes, 50 = 50 tonnes, 100 = 100 tonnes, 200 = 200 tonnes
Model

Further combinations cylinder/pump can be quoted.

100 tonnes workshop press
with protection grid and two-hand safety-control.

Typical combinations for hydraulic systems

To assist you in selecting the necessary components for simple hydraulic systems, you will find hereafter examples of the most common combinations. Each combination comprises the complete system with all required parts. No additional components are needed.

Single-acting systems

Hydraulic cylinders of series: YS, YCS, YFS, YLS, YEL, YEG

1. Simple system (most common combination)

consisting of hydraulic cylinder, hand pump and hydraulic hose. For all operations where a reading of the force is not required.

Hydraulic equipment:

1 Hydraulic cylinder of a.m. series
1 Hand pump of series HPS...
1 Hydraulic hose HHC...
(incl. coupler halves, length: optional)

All parts ready assembled.

2. Simple system (as 1) additionally with pressure gauge

for reading the operating pressure and thus the acting force of the connected hydraulic cylinder.

Hydraulic equipment:

1 Hydraulic cylinder of a.m. series
1 Hand pump of series HPS...
1 Hydraulic hose HHC...
(incl. coupler halves, length: optional)
1 Pressure gauge set GYA - 63

All parts ready assembled.

3. Simple system (as 1) but with two hydraulic cylinders at one hand pump

Due to the inter-connection of the two hydraulic cylinders they are subjected to the same operating pressure; that means they develop the same force. This type of combination is used for those applications, where equal forces have to be handled; otherwise see combination 4.

Hydraulic equipment:

2 Hydraulic cylinders of a.m. series
1 Hand pump of series HPS...
2 Hydraulic hoses HHC...
(incl. coupler halves, length: optional)
1 Manifold MY - 2
1 Double nipple FY - 1

All parts ready assembled.

Single-acting systems

Hydraulic cylinders of series:
YS, YCS, YFS, YLS, YEL, YEG

4. Combination for independent control of two single-acting hydraulic cylinders

The additional manifold with shut-off valves allows different operating pressures and consequently different acting forces of the two cylinders so that uneven loads may be lifted with just one hand pump.

Hydraulic equipment:

2 Hydraulic cylinders of a.m. series
1 Hand pump of series HPS...
2 Hydraulic hoses HHC...
(incl. coupler halves, length: optional)
1 Manifold MY - 22
(with 2 shut-off valves)

All parts ready assembled.

5. Combination for independent control of two single-acting hydraulic cylinders (as 4.) but with two additional pressure gauges

This allows a permanent reading of the different operating pressures and thus of the different acting forces in the two hydraulic cylinders.

Hydraulic equipment:

2 Hydraulic cylinders of a.m. series
1 Hand pump of series HPS...
2 Hydraulic hoses HHC...
(incl. coupler halves, length: optional)
1 Manifold MY - 22 - GYA
(with 2 shut-off valves
and 2 pressure gauges)

All parts ready assembled.

6. System to lift uneven loads by means of just one hand pump or motor pump

With the 4 way manifold and 4 shut-off valves all cylinders maybe subjected to different operating pressures.
For increased distances between the individual lifting points, the use of two hand pumps may be more appropriate.

Hydraulic equipment:

4 Hydraulic cylinders of a.m. series
1 Hand pump of series HPS...
4 Hydraulic hoses HHC...
(incl. coupler halfs, length: optional)
1 Manifold MY - 44
(with 4 shut-off valves)

All parts ready assambled.

7. System to lift uneven loads (as 6.) but with four additional pressure gauges

This allows a permanent reading of the different operating pressures and thus of the different acting forces in the 4 hydraulic cylinders.
The system may thus also be used for weighing and for defining the centre of gravity of the load.

Hydraulic equipment:

4 Hydraulic cylinders of a.m. series
1 Hand pump of series HPS...
4 Hydraulic hoses HHC...
(incl. coupler halves, length: optional)
1 Manifold MY - 44 - GYA
(with 4 shut-off valves and
4 pressure gauges)

All parts ready assembled.

Double-acting systems

Hydraulic cylinders of series:
YH, YCH, und YEH

8. Double-acting hydraulic system

Most common double-acting combination, consisting of hydraulic cylinder, hand pump and 2 hydraulic hoses.
Hydraulic cylinder pushes and retracts by means of hydraulic pressure.

Hydraulic equipment:

1 Hydraulic cylinder of a.m. series
1 Hand pump of series HPH...
2 Hydraulic hoses HHC...
(incl. coupler halves, length: optional)

All parts ready assambled.

9. Double-acting hydraulic system (as 8.) but with pressure gauge

This solution allows the reading of the pushing and pulling force of the connected cylinder.

Hydraulic equipment:

1 Hydraulic cylinder of a.m. series
1 Hand pump of series HPH...
2 Hydraulic hoses HHC...
(incl. coupler halves, length: optional)
1 Pressure gauge Ø 63 mm, GGY - 631
1 Adaptor set GA - 704 **or**
1 Pressure gauge Ø 100 mm, GGY - 1001
1 Adaptor set GA - 703

All parts ready assembled.

Many other different combinations for multiple cylinder operations can be quoted on request.

Yale®

Selection chart for hand pumps and hydraulic cylinders

Please contact us for any questions regarding the configuration of complex systems acc. to your specific requirement.

Selection chart for hand pumps and hydraulic cylinders

Which hand pump fits to which hydraulic cylinder?

The appropriate hand pump model basically depends on the oil volume of the selected hydraulic cylinders. To assist you in your choice please find proposals for the most common cylinders in our range.

How to find the right hand pump in the charts?

Find the chosen hydraulic cylinder in the left column. The chart recommends one or more hand pumps, depending on the reservoir size and working speed (two-stage hand pumps).

Several hydraulic cylinders connected to one hand pump:

In those cases where several hydraulic cylinders are connected to one hand pump, the oil volume must be multiplied by the number of connected cylinders. The reservoir of the hand pump must be at least equal to the required total oil volume (plus reserve). If the reserve is very small it may be necessary to top up the reservoir after the air bleeding procedure, depending on the length of the hydraulic hose. New standard hydraulic hoses need approx. 30 cm^3 of hydraulic oil per meter length. During further operation there is no need to consider the volume of the connected hydraulic hose (regardless of the length) because hoses always remain filled.

Double-acting systems

Please note that while advancing a double-acting cylinder about 1/3 of the cylinder‘s oil volume flows back to the reservoir (coming from piston chamber). After the air-bleeding procedure both oil chambers will remain filled.

+++	recommended hand pump
++	these combinations can also be used, but the oil volume of the hand pump is quite small.
–	these combinations should not be chosen, because the oil volumes of the hand pumps are too small to fill the selected cylinder (resp. too large and bulky).

Selection chart for single-acting systems

Cylinder	Oil volume	Hand pump single-stage	Hand pumps two-stage				
Model	cm^3	**HPS - 1/0,7** 700 cm^3	**HPS - 2/0,3** 300 cm^3	**HPS - 2/0,7** 700 cm^3	**HPS - 2/2** 2000 cm^3	**HPS - 2/4** 4000 cm^3	**HPS - 2/6,5** 6500 cm^3
YS - 5/15	11	++	+++	–	–	–	–
YS - 5/25	18	+++	+++	++	–	–	–
YS - 5/75	53	+++	+++	++	–	–	–
YS - 5/127	90	+++	+++	++	–	–	–
YS - 5/180	127	+++	+++	++	–	–	–
YS - 10/25	37	+++	++	+++	–	–	–
YS - 10/50	73	+++	++	+++	–	–	–
YS - 10/100	146	+++	–	+++	–	–	–
YS - 10/150	218	+++	–	+++	–	–	–
YS - 10/200	291	+++	–	+++	–	–	–
YS - 10/250	363	+++	–	+++	++	–	–
YS - 10/300	463	++	–	+++	+++	–	–
YS - 15/25	53	+++	++	+++	–	–	–
YS - 15/50	106	+++	++	+++	–	–	–
YS - 15/100	213	+++	–	+++	++	–	–
YS - 15/150	319	+++	–	+++	+++	–	–
YS - 15/200	425	++	–	+++	+++	–	–
YS - 15/250	531	++	–	+++	+++	–	–
YS - 15/300	637	–	–	–	+++	–	–
YS - 15/350	744	–	–	–	+++	–	–
YS - 23/25	83	+++	–	+++	++	–	–
YS - 23/50	166	+++	–	+++	++	–	–
YS - 23/100	332	+++	–	+++	++	–	–
YS - 23/160	531	++	–	+++	+++	–	–
YS - 23/210	697	–	–	–	+++	–	–
YS - 23/250	830	–	–	–	+++	–	–
YS - 23/300	996	–	–	–	+++	–	–
YS - 23/345	1145	–	–	–	+++	–	–
YS - 30/125	552	++	–	+++	+++	–	–
YS - 30/200	884	–	–	–	+++	–	–
YS - 50/50	355	++	–	+++	+++	–	–
YS - 50/100	709	–	–	–	+++	–	–
YS - 50/160	1135	–	–	–	+++	–	–
YS - 50/320	2269	–	–	–	–	+++	++
YS - 70/150	1478	–	–	–	+++	+++	++
YS - 70/320	3252	–	–	–	–	++	+++
YS - 100/100	1432	–	–	–	+++	++	+
YS - 100/200	2863	–	–	–	–	+++	++

Selection chart for single-acting systems

Cylinder	Oil volume	Hand pump single-stage	Hand pumps two-stage				
Model	cm³	**HPS - 1/0,7** 700 cm³	**HPS - 2/0,3** 300 cm³	**HPS - 2/0,7** 700 cm³	**HPS - 2/2** 2000 cm³	**HPS - 2/4** 4000 cm³	**HPS - 2/6,5** 6500 cm³
YLS - 10/35	51	+++	+++	+++	–	–	–
YLS - 20/45	128	+++	++	+++	–	–	–
YLS - 30/60	266	++	–	+++	–	–	–
YLS - 50/60	426	++	–	+++	+++	–	–
YLS - 100/55	788	–	–	–	+++	–	–
YFS - 10/11	16	+++	+++	+++	–	–	–
YFS - 20/15	31	+++	+++	+++	–	–	–
YFS - 50/15	107	+++	++	+++	–	–	–
YFS - 100/15	215	+++	++	+++	–	–	–
YCS - 12/40	71	+++	+++	+++	–	–	–
YCS - 12/75	132	+++	+++	+++	–	–	–
YCS - 21/50	153	+++	++	+++	++	–	–
YCS - 21/150	458	+++	–	+++	+++	–	–
YCS - 33/60	287	+++	–	+++	–	–	–
YCS - 33/150	716	–	–	–	+++	–	–
YCS - 57/70	562	++	–	+++	+++	–	–
YCS - 62/150	1330	–	–	–	+++	–	–
YCS - 93/75	990	–	–	–	+++	–	–

Selection chart for double-acting systems

Cylinder	Oil volume	Hand pumps, two-stage				
Model	cm³	**HPH - 2/0,7** 700 cm³	**HPH - 2/2** 2000 cm³	**HPH - 2/4** 4000 cm³	**HPH - 2/6,5** 6500 cm³	**HPH - 2/10** 10000 cm³
YCH - 33/150	716	++	+++	-	-	-
YCH - 33/250	1200	-	+++	++	-	-
YCH - 62/250	2220	-	++	+++	-	-
YCH - 93/250	3320	-	-	+++	++	-
YCH - 100/40	578	++	+++	-	-	-
YCH - 140/200	4080	-	-	+++	++	-
YH - 5/30	21	+++	-	-	-	-
YH - 5/80	57	+++	-	-	-	-
YH - 5/150	106	+++	-	-	-	-
YH - 10/30	44	+++	-	-	-	-
YH - 10/80	116	+++	-	-	-	-
YH - 10/150	218	+++	-	-	-	-
YH - 10/250	363	+++	++	-	-	-
YH - 20/50	142	+++	++	-	-	-
YH - 20/150	424	+++	+++	-	-	-
YH - 20/250	707	++	+++	-	-	-
YH - 30/200	884	-	+++	-	-	-
YH - 30/350	1547	-	+++	-	-	-
YH - 50/150	1064	-	+++	-	-	-
YH - 50/350	2481	-	++	+++	-	-
YH - 50/500	3544	-	-	+++	++	-
YH - 70/150	1478	-	+++	-	-	-
YH - 70/350	3449	-	-	+++	++	-
YH - 100/50	716	++	+++	-	-	-
YH - 100/150	2148	-	++	+++	-	-
YH - 100/350	5010	-	-	++	+++	-
YH - 100/500	7157	-	-	-	++	+++
YH - 200/150	4253	-	-	++	+++	-
YH - 200/350	9924	-	-	-	++	+++
YH - 200/500	14177	-	-	-	-	+++

Yale®

Pump and cylinder speed chart

Hand pumps

For hand pumps the figures given correspond to the number of pump strokes to achieve a piston travel of 10 mm.

Power pumps

For power pumps the piston travel speed is indicated in mm/sec.

Double-acting hydraulic cylinders

Please note that double-acting cylinders (YCH, YH und YEH) always retract faster than they advance, due to the different oil chamber volumes.

ND = Low pressure stage (unloaded stroke)
HD = High pressure stage (loaded stroke)
– = combination not recommended resp. not possible

Reservoir volumes

The reservoir volumes of hand pumps shall at least correspond to the oil volume which is necessary to advance all connected hydraulic cylinders (plus reserve). Motor pump reservoirs should have at least twice the total required oil quantity (better 3 or 4 times) depending on the operation conditions. For continious operation choose extra large reservoirs to avoid excessive heating-up of the hydraulic oil.

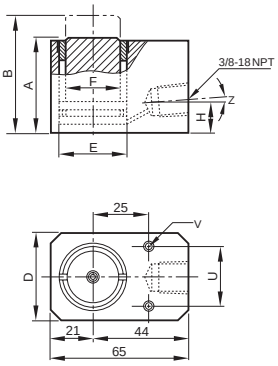
	Hand pumps		Power pumps												
	number of pump strokes for 10 mm stroke		piston travel speed in mm/sec.												
Cylinder-class tonnes	**HPS - 2/0,7 to HPS - 2/10**	**HPS - 1/0,7 to HPS - 2/10**	**PY - 04**		**PY - 07**		**PY - 11**		**PY - 22**		**PYE - 40**	**PYE - 55**	**PYE - 75**	**PYE - 110**	**PYE - 180**
	ND	HD	ND	HD	ND	HD	ND	HD	ND	HD	HD	HD	HD	HD	HD
5	1	4	99,9	5,4	155,9	14,2	–	–	–	–	63,8	–	–	–	–
10	1	7	48,7	2,6	75,9	6,9	103,5	11,5	–	–	31,1	46,0	69,0	–	–
15	2	11	33,3	1,8	51,9	4,7	70,8	7,9	–	–	21,2	31,5	47,2	62,9	–
20	2	14	25,0	1,4	39,0	3,5	53,2	5,9	106,9	12,4	15,9	23,6	35,4	47,3	75,0
21	2	15	23,2	1,3	36,1	3,3	49,3	5,5	99,1	11,5	14,8	21,9	32,8	43,8	69,5
23	3	17	21,3	1,2	33,2	3,0	45,3	5,0	91,1	10,6	13,6	20,1	30,2	40,3	63,9
30	3	22	16,0	0,9	24,9	2,3	34,0	3,8	68,4	7,9	10,2	15,1	22,7	30,2	48,0
33	4	24	14,8	0,8	23,1	2,1	31,5	3,5	63,4	7,4	9,5	14,0	21,0	28,0	44,5
50	5	35	10,0	0,5	15,6	1,4	21,2	2,4	42,6	4,9	6,4	9,4	14,1	18,8	29,9
57	6	40	8,8	0,5	13,7	1,2	18,7	2,1	37,7	4,4	5,6	8,3	12,5	16,7	26,4
62	7	44	8,0	0,4	12,4	1,1	17,0	1,9	34,1	4,0	5,1	7,5	11,3	15,1	24,0
70	8	49	7,2	0,4	11,2	1,0	15,3	1,7	30,7	3,6	4,6	6,8	10,2	13,6	21,5
85	9	61	5,8	0,3	9,0	0,8	12,3	1,4	24,7	2,9	3,7	5,4	8,2	10,9	17,3
93	10	66	5,4	0,3	8,4	0,8	11,4	1,3	22,9	2,7	3,4	5,1	7,6	10,1	16,1
100	11	72	4,9	0,3	7,7	0,7	10,5	1,2	21,1	2,5	3,2	4,7	7,0	9,3	14,8
140	15	100	3,5	0,2	5,5	0,5	7,5	0,8	15,0	1,7	2,2	3,3	5,0	6,7	10,6
200	22	142	2,5	0,1	3,9	0,4	5,3	0,6	10,7	1,2	1,6	2,4	3,5	4,7	7,5
220	24	157	2,2	0,1	3,5	0,3	4,8	0,5	9,6	1,1	1,4	2,1	3,2	4,3	6,8
340	32	205	–	–	2,7	0,2	3,7	0,4	7,4	0,9	1,1	1,6	2,4	3,3	5,2
430	47	308	–	–	1,8	0,2	2,4	0,3	4,9	0,6	0,7	1,1	1,6	2,2	3,4
560	62	402	–	–	1,4	0,1	1,9	0,2	3,8	0,4	0,6	0,8	1,2	1,7	2,6
670	74	481	–	–	1,1	0,1	1,6	0,2	3,1	0,4	0,5	0,7	1,0	1,4	2,2
880	97	628	–	–	0,9	0,1	1,2	0,1	2,4	0,3	0,4	0,5	0,8	1,1	1,7
1100	122	795	–	–	0,7	0,1	0,9	0,1	1,9	0,2	0,3	0,4	0,6	0,8	1,3

This travel-speed chart indicates theoretical values, which may vary in actual applications.

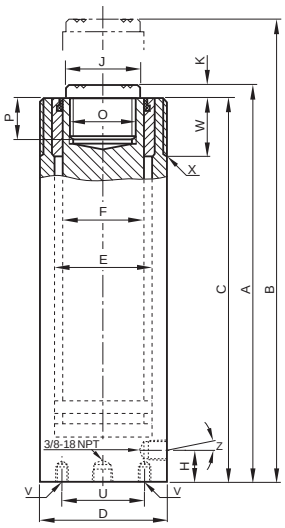
Universal cylinders model YS

single-acting with spring return 5 to 100 tonnes

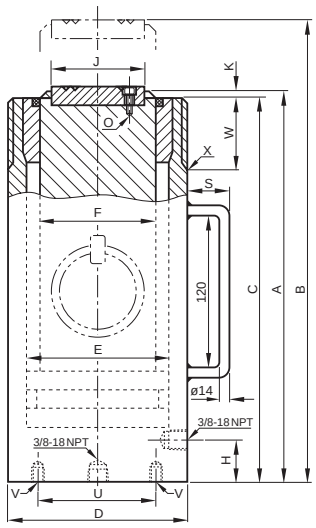
Model	A mm	B mm	C mm	D mm	E mm	F mm	H mm	J mm	K mm	O	P mm	S mm	U mm	V	W mm	X	Z
YS - 5/15	45	60	45	41	30	25	19	–	–	–	–	–	28,5	2 x 5,5ø	–	–	5°
YS - 5/25	97	122	92	42	30	26	19	25	5	M20 x 2	13	–	28	2 x M6	23	M42 x 1,5	5°
YS - 5/75	157	232	152	42	30	26	19	25	5	M20 x 2	13	–	28	2 x M6	23	M42 x 1,5	5°
YS - 5/127	214	341	209	42	30	26	19	25	5	M20 x 2	13	–	28	2 x M6	23	M42 x 1,5	5°
YS - 5/180	267	447	262	42	30	26	19	25	5	M20 x 2	13	–	28	2 x M6	23	M42 x 1,5	5°
YS - 10/25	90	115	88	57	43	38	17	–	3	–	–	–	35	2 x M8	27	M57 x 1,5	5°
YS - 10/50	125	175	119	57	43	38	19	35	6	M27 x 2	17	–	35	2 x M8	27	M57 x 1,5	5°
YS - 10/100	178	278	172	57	43	38	19	35	6	M27 x 2	17	–	35	2 x M8	27	M57 x 1,5	5°
YS - 10/150	250	400	244	57	43	38	21	35	6	M27 x 2	22	–	35	2 x M8	27	M57 x 1,5	–
YS - 10/200	300	500	294	57	43	38	21	35	6	M27 x 2	22	–	35	2 x M8	27	M57 x 1,5	–
YS - 10/250	352	602	346	57	43	38	21	35	6	M27 x 2	22	–	35	2 x M8	27	M57 x 1,5	–
YS - 10/300	407	707	401	57	43	38	21	35	6	M27 x 2	22	–	35	2 x M8	27	M57 x 1,5	–
YS - 15/25	110	135	103	67	52	46	19	40	7	M33 x 2	19	–	42	2 x M10	33	M67 x 1,5	5°
YS - 15/50	140	190	133	67	52	46	19	40	7	M33 x 2	19	–	42	2 x M10	33	M67 x 1,5	5°
YS - 15/100	190	290	183	67	52	46	19	40	7	M33 x 2	19	–	42	2 x M10	33	M67 x 1,5	5°
YS - 15/150	260	410	253	67	52	46	22	40	7	M33 x 2	25	–	42	2 x M10	33	M67 x 1,5	–
YS - 15/200	310	510	303	67	52	46	22	40	7	M33 x 2	25	–	42	2 x M10	33	M67 x 1,5	–
YS - 15/250	365	615	358	67	52	46	22	40	7	M33 x 2	25	–	42	2 x M10	33	M67 x 1,5	–
YS - 15/300	420	720	413	67	52	46	22	40	7	M33 x 2	25	–	42	2 x M10	33	M67 x 1,5	–
YS - 15/350	472	822	465	67	52	46	22	40	7	M33 x 2	25	–	42	2 x M10	33	M67 x 1,5	–
YS - 23/25	116	141	113	85	65	56	20	50	3	M40 x 2	15	–	55	4 x M10	40	M85 x 2	5°
YS - 23/50	150	200	142	85	65	56	22	50	8	M40 x 2	22	–	55	4 x M10	40	M85 x 2	–
YS - 23/100	202	302	194	85	65	56	22	50	8	M40 x 2	22	–	55	4 x M10	40	M85 x 2	–
YS - 23/160	277	437	269	85	65	56	22	50	8	M40 x 2	25	–	55	4 x M10	40	M85 x 2	–
YS - 23/210	330	540	322	85	65	56	22	50	8	M40 x 2	25	–	55	4 x M10	40	M85 x 2	–
YS - 23/250	376	626	368	85	65	56	22	50	8	M40 x 2	25	–	55	4 x M10	40	M85 x 2	–
YS - 23/300	428	728	420	85	65	56	22	50	8	M40 x 2	25	–	55	4 x M10	40	M85 x 2	–
YS - 23/345	477	822	469	85	65	56	22	50	8	M40 x 2	25	–	55	4 x M10	40	M85 x 2	–
YS - 30/125	245	370	235	102	75	65	25	50	10	M36 x 2	25	–	75	4 x M10	45	M102 x 2	–
YS - 30/200	325	525	315	102	75	65	25	50	10	M36 x 2	25	–	75	4 x M10	45	M102 x 2	–
YS - 50/50	170	220	165	125	95	85	29	70	5	4 x M8	–	–	95	4 x M12	50	M125 x 2	–
YS - 50/100	220	320	215	125	95	85	29	70	5	4 x M8	–	51	95	4 x M12	50	M125 x 2	–
YS - 50/160	285	445	280	125	95	85	29	70	5	4 x M8	–	51	95	4 x M12	50	M125 x 2	–
YS - 50/320	460	780	455	125	95	85	29	70	5	4 x M8	–	24	95	4 x M12	50	M125 x 2	–
YS - 70/150	285	435	280	146	112	95	30	80	5	4 x M8	–	24	110	4 x M12	60	M146 x 3	–
YS - 70/330	490	820	485	146	112	95	30	80	5	4 x M8	–	24	110	4 x M12	60	M146 x 3	–
YS - 100/100	275	375	270	180	135	115	60	100	5	4 x M10	–	24	145	4 x M12	70	M180 x 3	–
YS - 100/200	375	575	370	180	135	115	60	100	5	4 x M10	–	24	145	4 x M12	70	M180 x 3	–



YS - 5/15



YS - 5/25 to YS - 30/200



YS - 50/50 to YS - 100/200

Low-profile cylinders model YLS

single-acting with spring return, 10 to 100 tonnes

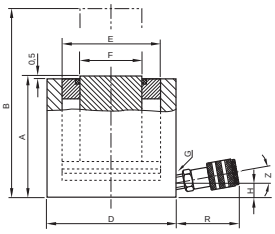
Model	A mm	B mm	D mm	D_1 mm	E mm	F mm	H mm	M mm	Q mm	R mm	S mm	Z mm
YLS - 10/35	86	121	70	–	43	38	16	–	–	54	–	10°
YLS - 20/45	100	145	85	–	60	50	17	–	–	54	–	10°
YLS - 30/60	120	180	100	–	75	57	19	–	–	54	–	5°
YLS - 50/60	122	182	125	–	95	75	19	–	–	54	–	5°
YLS - 100/55	141	196	170	–	135	120	26	148	–	54	25	–

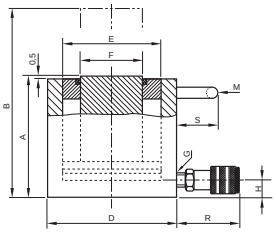
Flat cylinders model YFS

single-acting with spring return, 10 to 100 tonnes

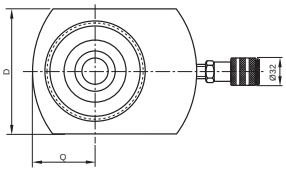
Model	A mm	B mm	D mm	D_1 mm	E mm	F mm	H mm	M mm	Q mm	R mm	S mm	Z mm
YFS - 10/11	43	54	56	83	43	38	16	–	28	54	–	10°
YFS - 20/15	60	75	76	95	60	50	19	–	38	54	–	5°
YFS - 30/15	60	75	96	115	75	57	19	–	48	54	–	5°
YFS - 50/15	70	85	145	–	95	75	19	–	–	54	–	5°
YFS - 100/15	91	106	170	–	135	120	22	85	–	54	55	–

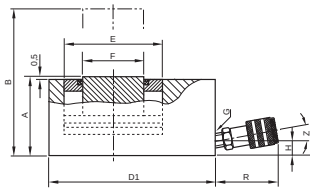
G = oil port thread: 3/8" NPT M = length of carrying handle





YLS



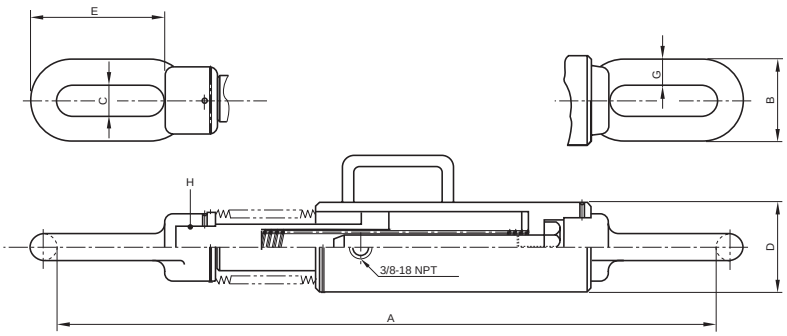


YFS

Pull cylinders model YPL + YPP

single-acting with spring return, 10 to 51 tonnes

Model	A mm	B mm	C mm	D mm	E mm	G mm	H mm
YPL - 10/150	749	78	32	68	120	23	M24 x 1,5
YPL - 20/150	795	95	35	105	120	30	M45 x 2
YPL - 30/150	875	120	56	121	150	32	M50 x 2
YPL - 51/150	955	150	70	156	150	40	M60 x 2
YPP - 10/150	749	78	32	68	120	23	M24 x 1,5



Hollow cylinders model YCS

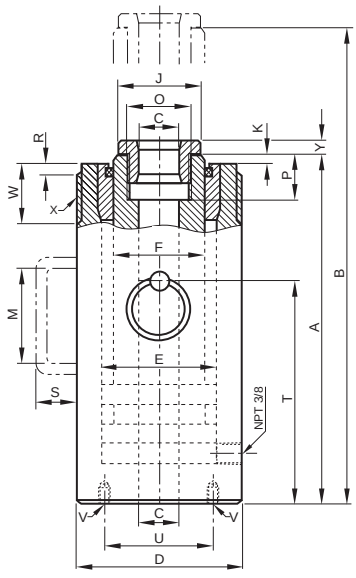
single-acting with spring return 12 to 93 tonnes

Model	A mm	B mm	C mm	D mm	E mm	F mm	J mm	K mm	M mm	O mm	P mm	R mm	S mm	T mm	U mm	V mm	W mm	X mm	Y
YCS - 12/40	135	175	20	70	55	40	38	3	–	M30 x 1,5	20	4	–	–	58	2 x M8	30	M70 x 2	7
YCS - 12/75	188	263	20	70	55	40	38	3	–	M30 x 1,5	20	4	–	–	58	2 x M8	30	M70 x 2	7
YCS - 21/50	163	213	27	100	73	53	50	3	–	M40 x 1,5	25	5	–	–	82	2 x M10	35	M100 x 2	10
YCS - 21/150	325	475	27	100	73	53	50	3	120	M40 x 1,5	25	5	51	–	82	2 x M10	35	M100 x 2	10
YCS - 33/60	183	243	33	114	90	65	62	3	–	M48 x 1,5	30	5	–	–	92	4 x M10	40	M110 x 2	10
YCS - 33/150	333	483	33	114	90	65	62	3	120	M48 x 1,5	30	5	51	–	92	4 x M10	40	M110 x 2	10
YCS - 57/70	230	300	42	150	118	90	85	3	–	M65 x 2	35	5	24	155	120	4 x M12	50	M150 x 3	12
YCS - 62/150	323	473	55	163	130	100	96	3	–	M78 x 2	40	5	24	200	135	4 x M12	60	M160 x 3	12
YCS - 93/75	265	340	80	214	170	136	132	5	–	M115 x 2	45	–	24	170	180	4 x M16	–	–	15

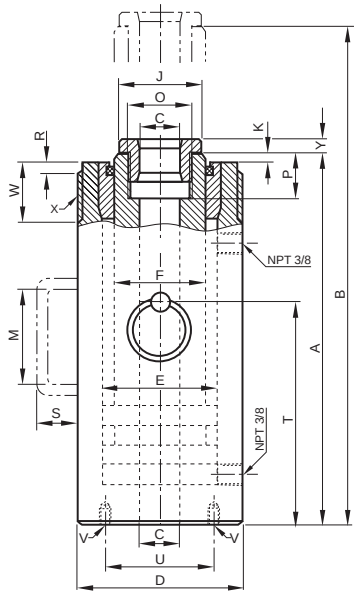
Hollow cylinders model YCH

double-acting with hydraulic return 33 to 140 tonnes

Model	A mm	B mm	C mm	D mm	E mm	F mm	J mm	K mm	M mm	O mm	P mm	R mm	S mm	T mm	U mm	V mm	W mm	X mm	Y
YCH - 33/150	300	450	33	114	90	67	62	3	120	M48 x 1,5	30	5	51	–	92	4 x M10	40	M110 x 2	10
YCH - 33/250	405	655	33	114	90	67	62	3	120	M48 x 1,5	30	5	51	–	92	4 x M10	40	M110 x 2	10
YCH - 62/250	440	690	55	163	130	105	96	5	–	M78 x 2	40	5	24	290	135	4 x M12	50	M160 x 3	12
YCH - 93 /250	450	700	55	193	150	120	110	5	–	M85 x 2	45	5	30	290	160	4 x M16	65	M190 x 3	15
YCH - 100/40	175	215	55	200	155	125	110	5	–	M85 x 2	45	–	24	115	165	4 x M16	–	–	15
YCH - 140/200	365	565	80	253	195	160	145	5	–	M115 x 2	50	–	30	240	210	4 x M16	–	–	18



YCS

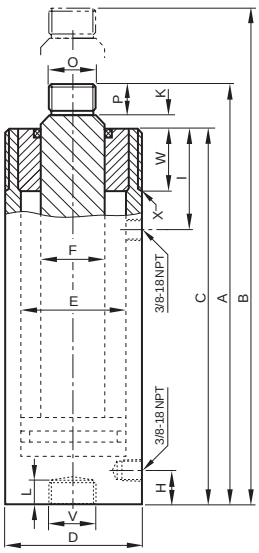


YCH

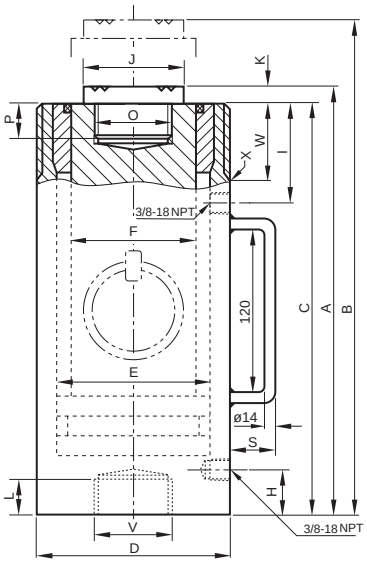
Universal cylinder model YH

double-acting with hydraulic return 5 to 200 tonnes

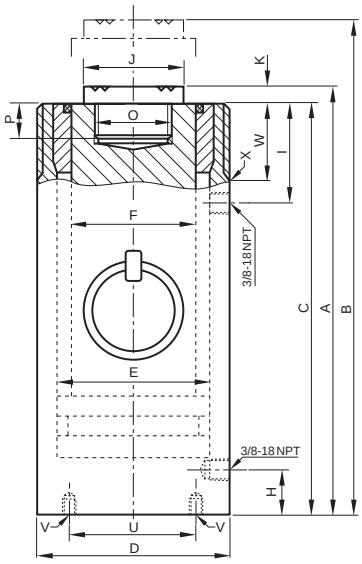
Model	A mm	B mm	C mm	D mm	E mm	F mm	H mm	I mm	J mm	K mm	L mm	O	P mm	S mm	U mm	V	W mm	X
YH - 5/30	160	190	138	55	30	22,4	31	44	–	4	17	M18 x 1,5	18	–	–	M27 x 2	27	M55 x 1,5
YH - 5/80	210	290	188	55	30	22,4	31	44	–	4	17	M18 x 1,5	18	–	–	M27 x 2	27	M55 x 1,5
YH - 5/150	280	430	258	55	30	22,4	31	44	–	4	17	M18 x 1,5	18	–	–	M27 x 2	27	M55 x 1,5
YH - 10/30	175	205	150	67	43	32	35	50	–	5	20	M27 x 2	20	–	–	M36 x 2	33	M67 x 1,5
YH - 10/80	225	305	200	67	43	32	35	50	–	5	20	M27 x 2	20	–	–	M36 x 2	33	M67 x 1,5
YH - 10/150	295	445	270	67	43	32	35	50	–	5	20	M27 x 2	20	–	–	M36 x 2	33	M67 x 1,5
YH - 10/250	395	645	370	67	43	32	35	50	–	5	20	M27 x 2	20	–	–	M36 x 2	33	M67 x 1,5
YH - 20/50	195	245	167	85	60	42	22	59	–	5	–	M36 x 2	23	–	–	–	40	M85 x 2
YH - 20/150	310	460	282	85	60	42	37	59	–	5	22	M36 x 2	23	–	–	M45 x 2	40	M85 x 2
YH - 20/250	410	660	382	85	60	42	37	59	–	5	22	M36 x 2	23	–	–	M45 x 2	40	M85 x 2
YH - 30/200	355	555	345	102	75	55	46	64	50	10	28	M36 x 2	28	51	–	M36 x 2	45	M102 x 2
YH - 30/350	510	860	500	102	75	55	46	64	50	10	28	M36 x 2	28	51	–	M36 x 2	45	M102 x 2
YH - 50/150	325	475	313	125	95	70	55	70	65	12	31	M45 x 2	31	51	–	M45 x 2	50	M125 x 2
YH - 50/350	525	875	513	125	95	70	55	70	65	12	31	M45 x 2	31	24	–	M45 x 2	50	M125 x 2
YH - 50/500	685	1185	673	125	95	70	55	70	65	12	31	M45 x 2	31	24	–	M45 x 2	50	M125 x 2
YH - 70/150	335	485	321	146	112	80	58	79	75	14	35	M50 x 3	35	24	–	M50x3	60	M146 x 3
YH - 70/350	540	890	526	146	112	80	58	79	75	14	35	M50 x 3	35	24	–	M50x3	60	M146 x 3
YH - 100/50	265	315	250	180	135	100	66	90	90	15	–	M65 x 3	40	24	110	4 x M12	70	M180 x 3
YH - 100/150	365	515	350	180	135	100	66	90	90	15	–	M65 x 3	40	24	110	4 x M12	70	M180 x 3
YH - 100/350	565	915	550	180	135	100	66	90	90	15	–	M65 x 3	40	30	110	4 x M12	70	M180 x 3
YH - 100/500	725	1225	710	180	135	100	66	95	90	15	–	M65 x 3	40	30	110	4 x M12	70	M180 x 3
YH - 200/150	410	560	391	250	190	140	80	105	127	19	–	M90 x 3	55	30	160	4 x M16	80	M250 x 4
YH - 200/350	620	970	601	250	190	140	80	105	127	19	–	M90 x 3	55	30	160	4 x M16	80	M250 x 4
YH - 200/500	780	1280	761	250	190	140	80	105	127	19	–	M90 x 3	55	30	160	4 x M16	80	M250 x 4



YH - 5/30 to YH - 20/250



YH - 30/200 to YH - 70/350



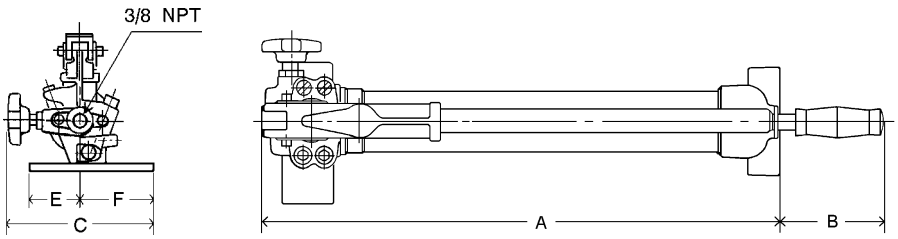
YH - 100/50 to YH - 200/500

Hand pumps model HPS

for single-acting hydraulic cylinders

Model	A	B	C	D	E	F	G
HPS - 2/0,3	500	100	100	110	35	35	–
HPS - 1/0,7	590	95	160	165	55	80	–
HPS - 2/0,7	590	95	160	165	55	80	–
HPS - 2/2	595	65	160	165	55	80	–
HPS - 2/4	715	65	160	180	55	80	–
HPS - 2/6,5	715	65	200	180	55	80	–
HPS - 2/10	880	65	160	190	55	80	–

Dimensions approx. in mm

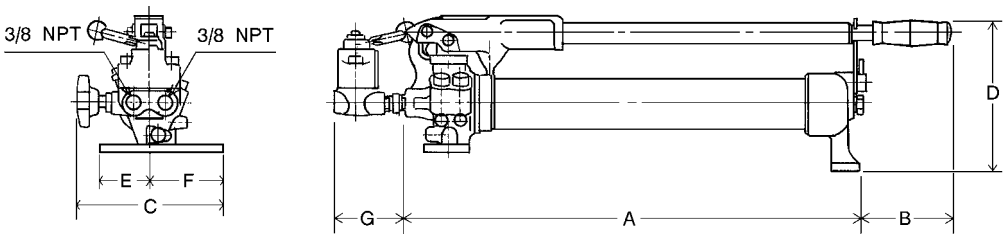


Hand pumps model HPH

for double acting hydraulic cylinders with 4/3-way valve

Model	A	B	C	D	E	F	G
HPH - 2/0,7	590	95	160	165	55	80	85
HPH - 2/2	595	65	160	165	55	80	85
HPH - 2/4	715	65	160	180	55	80	85
HPH - 2/6,5	715	65	200	180	55	80	85
HPH - 2/10	880	65	160	190	55	80	85

Dimensions approx. in mm



Yale®

Hoisting equipment

Yale Hoisting equipment

Yale hoists are world renowned lifting appliances with proven reliability for industry and service. The comprehensive range comprises of the following manual and powered products:

- Ratchet lever hoists
- Hand chain hoists
- Travelling trolleys and clamps
- Manual cable pullers
- Electric and air chain hoists
- Electric and air wire rope winches

Loads of 250 through 20.000 kg are safely lifted and transported.
Yale hoists have been designed for long life endurance and low cost maintenance and repair. They comply with national and international regulations and standards and are in conformity with Machinery Directive 89/392.
Their production is subject to the controlled standards of DIN ISO 9001.
Every unit is delivered with works test certificate, operating instruction with integrated EC declaration of conformity.

Please ask for our catalogue „Yale Hoisting Equipment“


TIGRIP
Mod.
Ser.No.
Trgf./W.L.
kg
Greifb./Jaw.Cap.
mm
Eigengew./Weight
kg
CE

TIGRIP®

Lifting clamps and weighing systems

TIGRIP®
Lifting clamps

TIGRIP® Lifting clamps and attachments have a reputation for reliability, quality and safety going back more than 35 years.
For transport and handling of loads with a hoist the TIGRIP® programme offers the optimum connection between hook and load for almost any application.
Selection of the correct unit is simple,
for additional information please contact our technical sales team.

TIGRIP® grips everything

TIGRIP®
Weighing systems

A well established manufacturer of crane weighers and dynamometer systems with undoubted accuracy.
These extremely robust and reliable units can be used in all industries where weights or tensile forces need to be determined.
Their applications are practically unlimited.

TIGRIP® your first choice




Please ask for our catalogue
„TIGRIP® Lifting Clamps and Weighing Systems“


Yale

Slings and ratchet lashings

Yale
Flat webbing and round slings

Yale flat webbing slings and round slings are made from high tensile polyester (PES) in accordance with DIN 61360 and colour coded as per current CEN standard.
Flat webbing slings are duplex construction from PU-starched, thermally fixed web fabric.
Available with soft sewn eyes or steel links in capacities up to 10 tons. Higher capacities and special lengths on request.
Round slings are double-fabric outer casing PU-finished, thermally fixed. Available in capacities up to 10 tonnes. Higher capacities on request.

Yale
Ratchet lashings

Yale ratchet lashings are made from polyester, heat set, streched, PU impregnated and in compliance with DIN 60060. Available in endless configuration or with various hook or claw attachments. Capacities up to 10 tonnes. Special lashings on request.




Please ask for our catalogue „Flat Webbing & Round Slings Ratchet Lashings“

Introducing Yale . . . .

The trademark Yale dates back to Linus Yale jnr. who invented and developed the revolutionary pin-tumbler cylinder lock, world renowned as the Yale lock.

1868 Together with his partner Henry R. Towne Linus Yale jnr. establishes the first Yale lock factory in Stamford, Connecticut named The Yale and Towne Manufacturing Company.

1875 Acquisition of the patents right to the Weston differential pulley block and the start of Yale hoist production.

1877 Yale designs the first spur geared hand chain hoist with incorporated Weston screw-and-disc type load brake.

1904 Yale sets up first sales operations in Germany, England and France.

1920 By acquisition of C. L. Hunt, a renowned manufacturer of electric platform trucks, Yale enters the materials handling equipment business with electric fork lift trucks and production facilities in Germany and England.

1927 Concentration of production and distribution in Velbert. Acquisition of the lock manufacturing company Boge & Kasten, Solingen and access to the marketing rights under the trademark BKS.

1936 Start of hoist manufacture in Velbert with production of the world renowned Yale Pul-Lift® ratchet lever hoist. This robust and reliable tool was (and still is) the key product establishing Yale's reputation in hoisting technology in Europe and abroad. Until now more than one million Yale Pul-Lift® units have been built at the Velbert plant alone.

1952 Start of fork lift truck production in Velbert.

1963 Merger between Eaton Corporation and Yale & Towne Manufacturing.

1983 In USA Eaton Corporation sells the Yale hoist product line to Yale Industrial Products, Inc.

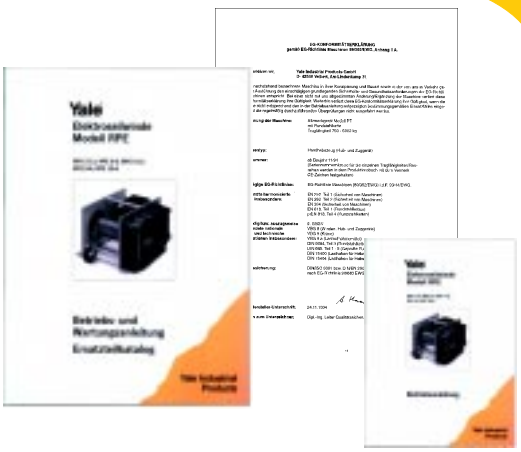
1985 Production and distribution of Yale hoisting equipment in Europe is taken over by Yale Industrial Products GmbH in Velbert, Germany with representations in various countries and subsidiaries in the U.K, France and Austria. During the following years the product offering of Yale Industrial Products GmbH was enlarged by

1988 Hydraulic Jacks and Tools

1994 Flat Webbing & Round Slings, Ratchet Lashings

1999 Tigrip® Lifting Clamps and Weighing Systems

Today Yale Industrial Products GmbH of Velbert is a member of a worldwide operating enterprise in the field of materials handling equipment. The company manufactures and distributes a comprehensive range of hoists and lifting clamps, textile slings and ratchet lashings, dynamometer systems and crane weighers as well as a wide range of hydraulic jacks and tools. Qualified personnel at theYale locations in Germany, the U.K., France, Austria and South Africa as well as representations in Europe, America and Asia provide competent know-how and service. Yale logistics with worldwide distribution allows short lead times and international availability. Yale Industrial Products GmbH is known for a market and product orientated policy, a number of strong product names and a leading European market position in the field of standard manual hoisting equipment.



Product Documentation

Every unit is delivered with operating instruction, CE declaration of conformity resp. manufacture and a works test certificate, which confirms the perfect tested status of the product. Additional documentation, e.g. spare parts manuals or maintenance and repair instructions are available on request.

DIN EN ISO 9001

Yale Industrial Products GmbH manufactures world wide according to uniform, controlled standards of DIN EN ISO 9001. All Yale locations are certified. This is a guarantee for our business partners that given standards in design and development, manufacturing, assembly and service are complied with.

ZERTIFIZIERTES DIN EN ISO 9001 QUALITÄTSSICHERUNGSSYSTEM

Reg. Nr. 151-01

(DIN EN ISO 9001 issue August 1994)
Certified since November 1991

Special Documentation

Additional inspections with test report 2.2 resp. inspection certificate 3.1.B according to DIN EN 10204 or specific pre-shipment inspections e.g. by DNV or GL can be carried out at cost on request.

Yale Industrial Products Operations

Germany and Export territories

-European Headquarter-

Yale Industrial Products GmbH

Am Lindenkamp 31
42549 Velbert
Phone: 00 49 (0) 20 51/600-0
Fax: 00 49 (0) 20 51/600-127
Web Site: www.yale.de
E-mail: central@yale.de

Austria

Yale Industrial Products GmbH

Gewerbepark, Wiener Straße 132a
2511 Pfaffstätten
Phone: 00 43 (0) 22 52/4 60 66-0
Fax: 00 43 (0) 22 52/4 60 66-22
Web Site: www.yale.at
E-mail: zentrale@yale.at

United Kingdom

Yale Industrial Products Ltd

3 D Hortonwood 10
Telford, Shropshire TF 1 4ES
Phone: 00 44 (0) 19 52 67 02 22
Fax: 00 44 (0) 19 52 67 77 93
Web Site: www.yaleproducts.com
E-mail: sales@yaleproducts.com

Yale Industrial Products Ltd

Unit 12, Loughside Industrial Park
Dargan Crescent, Belfast BT3 9JP
Phone: 00 44 (0) 28 90 77 14 67
Fax: 00 44 (0) 28 90 77 14 73
Web Site: www.yaleproducts.com
E-mail: sales@yaleproducts.com

France

Manutention Connection

Zone Industrielle des Forges
18108 Vierzon cedex
Phone: 00 33 (0) 248/71 85 70
Fax: 00 33 (0) 248/75 30 55
Web Site: www.yale-levage.com
E-mail: centrale@yale-levage.com

Netherlands

Yale Industrial Products B.V.

Grotenoord 30
3341 LT Hendrik Ido Ambacht
Phone: 00 31 (0) 78/6 82 59 67
Fax: 00 31 (0) 78/6 82 59 74
Web Site: www.yaletakels.nl
E-mail: information@yaletakels.nl

South Africa

Yale Industrial Products (Pty.) Ltd

P.O. Box 270
Westmead, 3608
Phone: 00 27 (0) 31/7 00 43 88
Fax: 00 27 (0) 31/7 00 45 12
Web Site: www.yale.co.za
E-mail: yaleafr@iafrica.com

Yale Lifting & Mining Products (Pty.) Ltd

P.O. Box 592
Magaliesburg, 1791
Phone: 00 27 (0) 14/5 77 26 07
Fax: 00 27 (0) 14/5 77 35 34
Web Site: www.yale.co.za
E-mail: yalelift@mweb.co.za

Spain and Portugal

Yale Elevación Ibérica S.L.

Av. de la Raza
Almacen 4 Nave 5
41012 Sevilla
Phone: 00 34 954 29 89 40
Fax: 00 34 954 29 89 42
Web Site: www.yaleiberica.com
E-mail: informacion@yaleiberica.com

Yale Elevación Ibérica S.L.

Rua Poseidón, 2 (Polg. Icaria)
15179 Perillo-Oleiros (A Coruña)
Phone: 00 34 981 63 95 91
Fax: 00 34 981 63 98 27
Web Site: www.yaleiberica.com
E-mail: informacion@yaleiberica.com

Yale Distributor:

3.1. E 6 - 7.2000 IDM