INFO

Why hydraulics?

Hydraulics is the kind of power transmission which allows the greatest density of forces. There is no other kind of power transmission that will transmit comparable high forces with the same construction size.

Hydraulic tools

Hydraulic tools are a special type of power tools, which can be used for general assembly and repair jobs with preferably high force in lowest spaces.
Simple applications, clearness of the program in line with robustness, short-term deliveries and universal operation possibilities have made Yale hydraulic components indispensible tools also for elaborate functions.
The unlimited power of hydraulic tools is used in applications like lifting, levelling and positioning of heaviest loads, installations of machines, assembly of complex structures as well as in general repair of maintenance jobs.
The components can also be operated in fixtures for clamping, testing, pressing, extracting, crimping, cutting, riveting and many more.

How to reach high forces in hydraulics?

area	x	pressure	=	force
effective piston area	x	system pressure	=	force
cm^2	x	bar	=	daN

Example: Hydraulic cylinder YS-10/

14.3 cm^2	x	700 bar	=	10010 daN
			=	100 kN
			=	10 t

Linear conversion of pressure force

The above formula shows that pressure forces can be converted linearly.

Example:
A 10 ton cylinder presses at:

700 bar	-	100 kN	=	10 t
350 bar	-	50 kN	=	5 t
100 bar	-	14 kN	=	1.4 t
1 bar	-	0.14 kN	=	0.014 t

INFO

The system pressure determines the force of the hydraulic cylinder. The oil displacement determines the piston travel speed.

Basic terms in hydraulics

Pressure

is the system pressure generated by the pump, which, however, can also be produced by an external power source, which acts on the hydraulic cylinder.

Force

is always the pressure transferred by the hydraulic cylinder (only with counterpressure).

Stroke

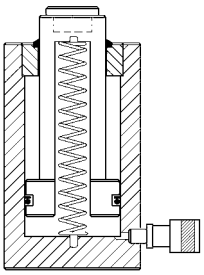
is the travel distance to be achieved by the force (no-load stroke, loaded stroke, return stroke).

Piston travel speed

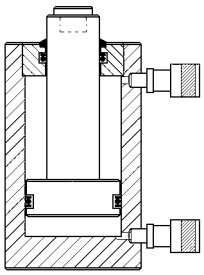
Is the time, in which the piston of the hydraulic cylinder is to pass a certain travel distance (stroke) (no-load stroke + loaded stroke, return stroke).

Hydraulic cylinders

are available in many different designs, however, with only two basic function principles:



single-acting
The piston travel is achieved via hydraulic pressure and returned by spring activation (pressure build-up in one direction only).



double-acting
The piston travel is achieved via hydraulic pressure in both directions.
(Push forces and pulling forces are possible).

Hydraulic hand pumps

The function of a hydraulic hand pump is to convey hydraulic oil (no-load stroke) and to generate pressure, which will be converted by the hydraulic cylinder into force (loaded stroke). Hydraulic hand pumps are independent from energy and can be used in every-day applications. They are easily portable and render an extremely high power generation in connection with a corresponding hydraulic cylinder.
Hand pumps require certain manpower and are often replaced by motor pumps in case of permanent duty and high oil quantities, respectively.

Hand pumps are distinguished by:

1. oil displacement volume (1st stage / 2nd stage).

2. the function of the hydraulic cylinder: single-acting / double-acting.

Motor pumps

transmit an oil flow as soon as the pump unit is driven by the electric motor. Contrary to hand pumps, the oil flow is also available when the hydraulic cylinder is not activated (e.g. during work breaks).

Hydraulic valves

Valves are used in hydraulics to control the oil flow (generated by either hand or motor pump) in terms of direction, pressure and oil volume.

Directional valves

are required to control the direction of the oil flow and thus the work motions of the connected hydraulic cylinder (advance – stop – retract).
Depending on the type of pump and cylinder, 2-, 3- or 4-way valves may be employed.

3/3-way valves for single-acting cylinders

4/3-way valves for double-acting cylinders

Controls are available with either manual or electro-magnetic valves (the latter with remote cable control).

Pressure valves

are employed to limit the system pressure in a hydraulic system or within a part of the oil circuit. Pressure valves or pressure relief valves are also installed as safety devices in order to avoid excessive increase of the system pressure beyond a given value.

Shut-off and throttle valves

are used to easily shut-off hydraulic lines by hand. On account of their sensible control mode, these valves can also be applied to throttle an oil flow and thus to control the piston advance at both lifting or lowering of the load.

Safety check valves

are used for those applications where pressure drops must be avoided.

Pressure switch

can be set to any pressure value in order to switch on/off parts of the hydraulic circuit.

For your safety

Hydraulic units are extremely robust and durable. Nevertheless you should observe the following instructions for your own safety and to increase the life expectancy of the product:

- Never exceed the max. pressure (capacity) of the hydraulic units.
- Avoid eccentric loading of the piston.
- The load must always be positioned centric and parallel on the piston. Avoid point loading!
- Never pass under a raised load, if this is not supported additionally.
- Hydraulic units must be kept clear of heat (e.g. during welding).
- Protect hydraulic hoses against damage and strong kinks. Hydraulic hoses should lie freely in a wide curve. Avoid tensile load.

Eccentric loading

In order to obtain a long life expectancy, hydraulic cylinders series YS, YLS, YFS, YCS, YCH, YH and YPL are manufactured from chromium-molybdenum steel, the cylinder housings and piston rods are hardened and tempered and provided with bronze guides.
Generally, hydraulic cylinders should not be loaded eccentrically, as this can lead to reduced lifetime. In practice, a lateral loading cannot be fully avoided. In this case the maximum system pressure and the stroke of the cylinder should only be used by 50 %. Ensure that the load always rests on the total area of the steel saddle and the piston, respectively. Also ensure that the entire bottom area of the hydraulic cylinder always stands on a level, sustainable ground surface.
This applies especially to flat cylinders!

Repairs

Repair and maintenance should be performed by qualified personnel only. Make sure to use original spare parts only.

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INFO

Hydraulic cylinders with Yale Chro-Mo-Design

Yale hydraulic tools are designed for professional operation. A tool is only as good as its basic material. Therefore, our cylinders are manufactured from high quality chromium-molybdenum steel and are heat-treated.

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.

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. Cylinders carry the full load even under maximum operating pressure.

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 customised combinations which are always supplied fully assembled.

Hardened alloy steel saddle

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

Two bronze bearings minimize friction even in cases of eccentric loading

INFO

Dirt wiper protects against dirt

Stop ring prevents over-stroking of the piston up to full operating pressure

Hard chromium-plated plunger

Piston and ...

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

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

Universal cylinder model YS

Single-acting with spring return, capacity 5 - 100 t

Robust construction with long guides allows 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.

Universal cylinders are designed for all jobs where high forces but compact dimensions are required: e.g. straightening steel constructions, removing 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.

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 solid 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 t).
- Stop ring can bear full capacity (pressure) and is fitted with dirt wiper.
- Interchangeable hardened saddle.
- Dirt wiper protects against dirt.
- Oil port thread 3/8 NPT.
- Incl. female coupler half model CFY-1.
- Model YS-50/100 and YS-50/160 with carrying handle.
- Models YS-50/320 up to YS-100/200 with lifting rings.

INFO

Selection charts “cylinder/hand pumps“ can be found on pages 405 - 407!

Travel-speed charts are supplied on pages 408 - 409.

Technical data model YS

Cylinder size t	Model	EAN-No. 4025092*	Capacity kN	Stroke mm	Effective plunger area cm^2	Oil volume max. cm^3	Closed height mm	Cylinder outside diameter mm	Weight kg
5	YS-5/15	*150002	50	15	7.2	11	45	41	0.9
5	YS-5/25	*150019	50	25	7.2	18	97	42	1.0
5	YS-5/75	*150026	50	75	7.2	53	157	42	1.5
5	YS-5/127	*150033	50	127	7.2	90	214	42	2.0
5	YS-5/180	*150040	50	180	7.2	127	267	42	2.4
10	YS-10/25	*150057	100	25	14.3	37	90	57	1.6
10	YS-10/50	*150064	100	50	14.3	73	125	57	2.1
10	YS-10/100	*150071	100	100	14.3	146	178	57	2.8
10	YS-10/150	*150088	100	150	14.3	218	250	57	4.1
10	YS-10/200	*150095	100	200	14.3	291	300	57	4.7
10	YS-10/250	*150101	100	250	14.3	363	352	57	5.5
10	YS-10/300	*150118	100	300	14.3	436	407	57	6.3
15	YS-15/25	*150125	150	25	21.5	53	110	67	2.7
15	YS-15/50	*150132	150	50	21.5	106	140	67	3.3
15	YS-15/100	*150149	150	100	21.5	213	190	67	4.3
15	YS-15/150	*150156	150	150	21.5	319	260	67	5.8
15	YS-15/200	*150163	150	200	21.5	425	310	67	7.0
15	YS-15/250	*150170	150	250	21.5	531	365	67	8.0
15	YS-15/300	*150187	150	300	21.5	637	420	67	9.0
15	YS-15/350	*150194	150	350	21.5	744	472	67	10.0
23	YS-23/25	*150200	230	25	32.9	83	116	85	5.0
23	YS-23/50	*150217	230	50	32.9	166	150	85	6.0
23	YS-23/100	*150224	230	100	32.9	332	202	85	7.5
23	YS-23/160	*150231	230	160	32.9	531	277	85	10.0
23	YS-23/210	*150248	230	210	32.9	697	330	85	12.0
23	YS-23/250	*150255	230	250	32.9	830	376	85	13.5
23	YS-23/300	*150262	230	300	32.9	996	428	85	15.0
23	YS-23/345	*150279	230	345	32.9	1145	477	85	16.5
30	YS-30/125	*150286	300	125	42.9	552	245	102	13.0
30	YS-30/200	*150293	300	200	42.9	884	325	102	17.0
50	YS-50/50	*150309	500	50	71.5	355	170	125	15.0
50	YS-50/100	*150316	500	100	71.5	709	220	125	19.0
50	YS-50/160	*150323	500	160	71.5	1135	285	125	24.0
50	YS-50/320	*150330	500	320	71.5	2269	460	125	37.0
70	YS-70/150	*150347	700	150	100.0	1478	285	146	32.0
70	YS-70/330	*150354	700	330	100.0	3252	490	146	52.0
100	YS-100/100	*150378	1000	100	143.0	1432	275	180	43.0
100	YS-100/200	*150361	1000	200	143.0	2863	375	180	64.0

Accessories for cylinders series YS like lifting claws, piston plates, extension tubes, support plates and threaded flanges are also available on request

Support plates are available as accessories

Threaded flanges are available as accessories

INFO

For accessories for cylinders series YS please see pages 350-352!

Dimensions model YS

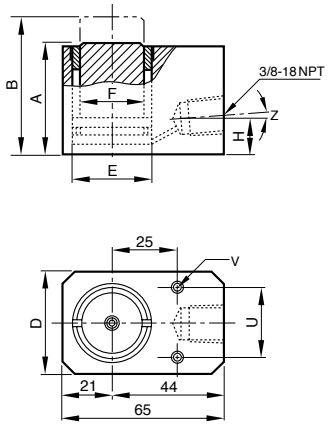
Model	YS-5/15	YS-5/25	YS-5/75	YS-5/127	YS-5/180	YS-10/25	YS-10/50	YS-10/100	YS-10/150	YS-10/200
A, mm	45	97	157	214	267	90	125	178	250	300
B, mm	60	122	232	341	447	115	175	278	400	500
C, mm	45	92	152	209	262	88	119	172	244	294
D, mm	41	42	42	42	42	57	57	57	57	57
E, mm	30	30	30	30	30	43	43	43	43	43
F, mm	25	26	26	26	26	38	38	38	38	38
H, mm	19	19	19	19	19	17	19	19	21	21
J, mm	–	25	25	25	25	–	35	35	35	35
K, mm	–	5	5	5	5	3	6	6	6	6
O, mm	–	M20x2	M20x2	M20x2	M20x2	–	M27x2	M27x2	M27x2	M27x2
P, mm	–	13	13	13	13	–	17	17	22	22
S, mm	–	–	–	–	–	–	–	–	–	–
U, mm	28.5	28	28	28	28	35	35	35	35	35
V, mm	2x5.5 Ø	2xM6	2xM6	2xM6	2xM6	2xM8	2xM8	2xM8	2xM8	2xM8
W, mm	–	23	23	23	23	27	27	27	27	27
X, mm	–	M42x1.5	M42x1.5	M42x1.5	M42x1.5	M57x1.5	M57x1.5	M57x1.5	M57x1.5	M57x1.5
Z, °	5	5	5	5	5	5	5	5	–	–

Model	YS-10/250	YS-10/300	YS-15/25	YS-15/50	YS-15/100	YS-15/150	YS-15/200	YS-15/250	YS-15/300	YS-15/350
A, mm	352	407	110	140	190	260	310	365	420	472
B, mm	602	707	135	190	290	410	510	615	720	822
C, mm	346	401	103	133	183	253	303	358	413	465
D, mm	57	57	67	67	67	67	67	67	67	67
E, mm	43	43	52	52	52	52	52	52	52	52
F, mm	38	38	46	46	46	46	46	46	46	46
H, mm	21	21	19	19	19	22	22	22	22	22
J, mm	35	35	40	40	40	40	40	40	40	40
K, mm	6	6	7	7	7	7	7	7	7	7
O, mm	M27x2	M27x2	M33x2	M33x2	M33x2	M33x2	M33x2	M33x2	M33x2	M33x2
P, mm	22	22	19	19	19	25	25	25	25	25
S, mm	–	–	–	–	–	–	–	–	–	–
U, mm	35	35	42	42	42	42	42	42	42	42
V, mm	2xM8	2xM8	2xM10	2xM10	2xM10	2xM10	2xM10	2xM10	2xM10	2xM10
W, mm	27	27	33	33	33	33	33	33	33	33
X, mm	M57x1.5	M57x1.5	M67x1.5	M67x1.5	M67x1.5	M67x1.5	M67x1.5	M67x1.5	M67x1.5	M67x1.5
Z, °	–	–	5	5	5	–	–	–	–	–

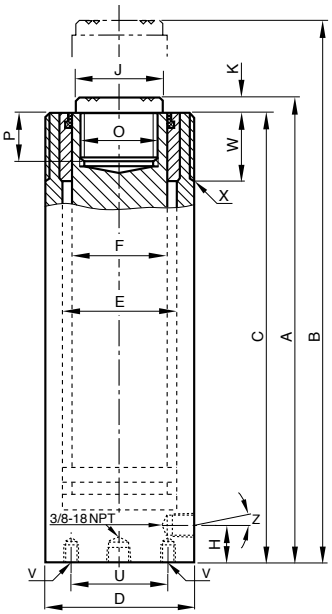
Model	YS-23/25	YS-23/50	YS-23/100	YS-23/160	YS-23/210	YS-23/250	YS-23/300	YS-23/345	YS-30/125	YS-30/200
A, mm	116	150	202	277	330	376	428	477	245	325
B, mm	141	200	302	437	540	626	728	822	370	525
C, mm	113	142	194	269	322	368	420	469	235	315
D, mm	85	85	85	85	85	85	85	85	102	102
E, mm	65	65	65	65	65	65	65	65	75	75
F, mm	56	56	56	56	56	56	56	56	65	65
H, mm	20	22	22	22	22	22	22	22	25	25
J, mm	50	50	50	50	50	50	50	50	50	50
K, mm	3	8	8	8	8	8	8	8	10	10
O, mm	M40x2	M40x2	M40x2	M40x2	M40x2	M40x2	M40x2	M40x2	M36x2	M36x2
P, mm	15	22	22	25	25	25	25	25	25	25
S, mm	–	–	–	–	–	–	–	–	–	–
U, mm	55	55	55	55	55	55	55	55	75	75
V, mm	4xM10	4xM10	4xM10	4xM10	4xM10	4xM10	4xM10	4xM10	4xM10	4xM10
W, mm	40	40	40	40	40	40	40	40	45	45
X, mm	M85x2	M85x2	M85x2	M85x2	M85x2	M85x2	M85x2	M85x2	M102x2	M102x2
Z, °	5	–	–	–	–	–	–	–	–	–

Dimensions model YS

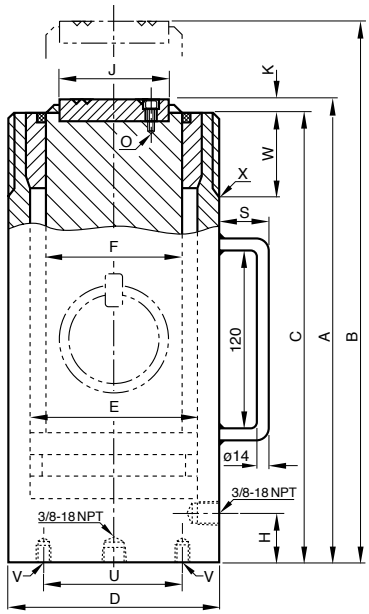
Model	YS-50/50	YS-50/100	YS-50/160	YS-50/320	YS-70/150	YS-70/330	YS-100/100	YS-100/200
A, mm	170	220	285	460	285	490	275	375
B, mm	220	320	445	780	435	820	375	575
C, mm	165	215	280	455	280	485	270	370
D, mm	125	125	125	125	146	146	180	180
E, mm	95	95	95	95	112	112	135	135
F, mm	85	85	85	85	95	95	115	115
H, mm	29	29	29	29	30	30	60	60
J, mm	70	70	70	70	80	80	100	100
K, mm	5	5	5	5	5	5	5	5
O, mm	4xM8	4xM8	4xM8	4xM8	4xM8	4xM8	4xM10	4xM10
P, mm	–	–	–	–	–	–	–	–
S, mm	–	51	51	24	24	24	24	24
U, mm	95	95	95	95	110	110	145	145
V, mm	4xM12	4xM12	4xM12	4xM12	4xM12	4xM12	4xM12	4xM12
W, mm	50	50	50	50	60	60	70	70
X, mm	M125x2	M125x2	M125x2	M125x2	M146x3	M146x3	M180x3	M180x3
Z, °	–	–	–	–	–	–	–	–



Model YS-5/15



Model YS-5/25 up to YS-30/200



Model YS-50/50 up to YS-100/200

INFO

Subject to changes.

YLS

YFS

Low-height and flat cylinders model YLS and model YFS

Single-acting with spring return, capacity max. 10 - 100 t

Low-height cylinders are recommended for all lifting, pushing, levelling, pressing applications especially in tight working areas.

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. Due to their short strokes flat cylinders should not be subjected to side loading.

Features

- Yale ChroMo-Design.
- Operating pressure max. 700 bar.
- Single-acting with spring return.
- Low height for tight working areas.
- Cylinder body and piston are made from solid 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 model CFY-1.
- Model YLS-100/55 is equipped with two lifting rings, model YFS-100/15 comes with a carrying handle.

INFO

Selection charts “cylinder/hand pumps“ can be found on pages 405 - 407!

Travel-speed charts are supplied on pages 408 - 409.

Technical data model YLS

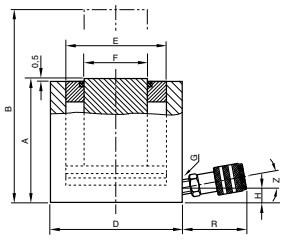
Cylinder size t	Model	EAN-No. 4025092*	Capacity max. kN	Stroke mm	Effective plunger area cm²	Oil volume max. cm³	Closed height mm	Cylinder outside diameter mm	Weight kg
10	YLS-10/35	*150804	100	35	14.3	51	86	70	2.5
20	YLS-20/45	*150811	200	45	28.6	128	100	85	4.0
30	YLS-30/60	*150828	300	60	42.9	266	120	100	6.5
50	YLS-50/60	*150835	500	60	71.5	426	122	125	10.4
100	YLS-100/55	*150842	1000	55	143.0	788	141	170	24.0

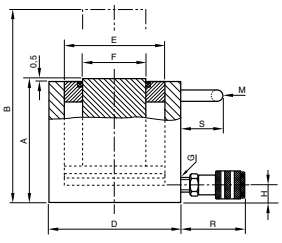
Technical data model YFS

Cylinder size t	Model	EAN-No. 4025092*	Capacity max. kN	Stroke mm	Effective plunger area cm²	Oil volume max. cm³	Closed height mm	Cylinder outside diameter mm	Weight kg
10	YFS-10/11	*150750	100	11	14.3	16	43	56	1.5
20	YFS-20/15	*150767	200	15	28.6	31	60	76	3.0
30	YFS-30/15	*150774	300	15	44.2	66	60	96	4.2
50	YFS-50/15	*150781	500	15	71.5	107	70	145	8.7
100	YFS-100/15	*150798	1000	15	143.0	215	91	170	16.0

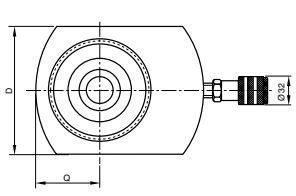
Dimensions model YLS and model YFS

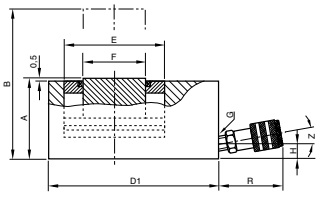
Model	YLS-10/35	YLS-20/45	YLS-30/60	YLS-50/60	YLS-100/55	YFS-10/11	YFS-20/15	YFS-30/15	YFS-50/15	YFS-100/15
A, mm	86	100	120	122	141	43	60	60	70	91
B, mm	121	145	180	182	196	54	75	75	85	106
D, mm	70	85	100	125	170	56	76	96	145	170
D1, mm	–	–	–	–	–	83	95	115	–	–
E, mm	43	60	75	95	135	43	60	75	95	135
F, mm	38	50	57	75	120	38	50	57	75	120
H, mm	16	17	19	19	26	16	19	19	19	22
M, mm	–	–	–	–	148	–	–	–	–	85
Q, mm	–	–	–	–	–	28	38	48	–	–
R, mm	54	54	54	54	54	54	54	54	54	54
S, mm	–	–	–	–	25	–	–	–	–	55
Z, °	10	10	5	5	–	10	5	5	5	5





YLS





YFS

Pull cylinder model YPL

Single-acting with spring return, capacity max. 10 - 51 t

Pull cylinders are able to produce 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.

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

Features

- Yale ChroMo-Design.
- Operating pressure max. 700 bar.
- Single-acting with spring return.
- Can be operated in all positions (except model YPPS).
- Cylinder body and piston are made from solid chromium-molybdenum steel and heat-treated.
- Hard-chromium plated piston with replaceable, heat-treated saddle.
- Stop ring can bear full capacity (pressure) and is fitted with dirt wiper.
- Forged, replaceable links.
- With carrying handle and piston protection cover.
- Oil port thread 3/8 NPT.
- Incl. female coupler half model CFY-1.
- The pull cylinder model YPPS-10/150 is equipped with an integrated hand pump similar to model HPS-2/0,7 A.

INFO

Selection charts “cylinder/hand pumps“ can be found on pages 405 - 407!

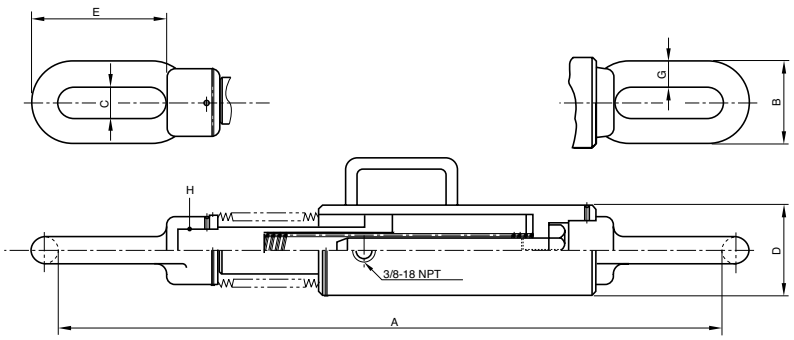
Travel-speed charts are supplied on pages 408 - 409.

Technical data model YPL

Cylinder size t	Model	EAN-No. 4025092*	Capacity max. kN	Stroke mm	Effective plunger area cm²	Oil volume max. cm³	Length between links mm	Weight kg
10	**YPL-10/150**	*152822	100	150	14.2	213	750	9
20	**YPL-20/150**	*152839	200	150	30.6	459	795	22
30	**YPL-30/150**	*152846	300	150	42.6	639	875	29
51	**YPL-51/150**	*157858	510	150	74.6	1120	955	59
10	**YPPS-10/150**	*161909	100	150	14.2	213	750	19

Dimensions model YPL

Model	YPL-10/150	YPL-20/150	YPL-30/150	YPL-51/150	YPPS-10/150
A, mm	749	795	875	955	749
B, mm	78	95	120	150	78
C, mm	32	35	56	70	32
D, mm	68	105	121	156	68
E, mm	120	120	150	150	120
G, mm	23	30	32	40	23
H, mm	M24x1.5	M45x2	M50x2	M60x2	M24x1.5



Hollow cylinders model YCS

Single-acting with spring return, capacity 12 - 93 t

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.

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

Features

- Yale ChroMo-Design.
- Operating pressure max. 700 bar.
- Single-acting with spring return.
- With large centre hole diameter.
- Cylinder body and piston are made from solid chromium-molybdenum steel and heat-treated.
- Hard-chromium plated piston with replaceable, heat-treated saddle.
- Metric mounting threads at cylinder body and inside of piston.
- Stop ring prevents overtravel of the piston up to full operating pressure.
- Interchangeable hardened saddle.
- With inner and outer dirt wipers.
- Oil port thread 3/8 NPT.
- Incl. female coupler half model CFY-1.
- From model YCS-21/150 with carrying handle.
- From model YCS-57/70 with two lifting rings.

INFO

Selection charts “cylinder/hand pumps“ can be found on pages 405 - 407!

Travel-speed charts are supplied on pages 408 - 409.

Function principal of the hollow cylinders

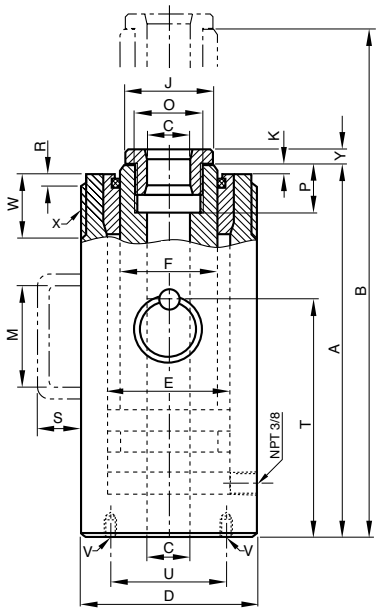
In connection with threaded rods hollow cylinders can produce extremely high forces which are helpful for various repair or assembly applications like removing press-fitted parts, prestressing anchors etc.
In addition, hollow cylinders are used as power source in puller sets and test rigs. By the use of long threaded rods and by readjusting the nut larger distances can be pulled even when using short cylinder strokes.

Technical data model YCS

Cylinder size t	Model	EAN-No. 4025092*	Capacity kN	Stroke mm	Effective plunger area cm²	Oil volume max. cm³	Closed height mm	Centre hole diameter mm	Cylinder outside diameter mm	Weight kg
12	**YCS-12/40**	*150873	120	40	17.2	71	142	20	70	3.5
12	**YCS-12/75**	*150880	120	75	17.2	132	195	20	70	4.5
21	**YCS-21/50**	*150897	214	50	30.5	153	173	27	100	8.5
21	**YCS-21/150**	*150903	214	150	30.5	458	335	27	100	15.0
33	**YCS-33/60**	*150910	335	60	47.9	287	193	33	114	12.0
33	**YCS-33/150**	*150927	335	150	47.9	716	343	33	114	21.0
57	**YCS-57/70**	*150934	567	70	81.0	562	242	42	150	25.0
62	**YCS-62/150**	*150941	618	150	88.3	1330	335	55	163	38.0
93	**YCS-93/75**	*150958	930	75	133	990	280	80	214	55.0

Dimensions model YCS

Model	YCS-12/40	YCS-12/75	YCS-21/50	YCS-21/150	YCS-33/60	YCS-33/150	YCS-57/70	YCS-62/150	YCS-93/75
A, mm	135	188	163	325	183	333	230	323	265
B, mm	175	263	213	475	243	483	300	473	340
C, mm	20	20	27	27	33	33	42	55	80
D, mm	70	70	100	100	114	114	150	163	214
E, mm	55	55	73	73	90	90	118	130	170
F, mm	40	40	53	53	65	65	90	100	136
J, mm	38	38	50	50	62	62	85	96	132
K, mm	3	3	3	3	3	3	3	3	5
M, mm	–	–	–	120	–	120	–	–	–
O, mm	M30x1.5	M30x1.5	M40x1.5	M40x1.5	M48x1.5	M48x1.5	M65x2	M78x2	M115x2
P, mm	20	20	25	25	30	30	35	40	45
R, mm	4	4	5	5	5	5	5	5	–
S, mm	–	–	–	51	–	51	24	24	24
T, mm	–	–	–	–	–	–	155	200	170
U, mm	58	58	82	82	92	92	120	135	180
V, mm	2xM8	2xM8	2xM10	2xM10	4xM10	4xM10	4xM12	4xM12	4xM16
W, mm	30	30	35	35	40	40	50	60	–
X, mm	M70x2	M70x2	M100x2	M100x2	M110x2	M110x2	M150x3	M160x3	–
Y, mm	7	7	10	10	10	10	12	12	15



Hollow cylinders model YCH

Double-acting with hydraulic return, capacity 33 - 140 t

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.

Features

- Yale ChroMo-Design.
- Operating pressure max. 700 bar.
- Double-acting with hydraulic return.
- With large centre hole diameter.
- Cylinder body and piston are made from solid chromium-molybdenum steel and heat-treated.
- Hard-chromium plated piston with replaceable, heat-treated saddle.
- Metric mounting threads at cylinder body and inside of piston.
- Stop ring prevents overtravel of the piston up to full operating pressure.
- Interchangeable hardened saddle.
- With inner and outer dirt wipers.
- Oil port thread 3/8 NPT.
- Incl. 2 female coupler halves model CFY-1.
- All cylinders with carrying handle, from model YCH-62/250 with 2 lifting rings.

INFO

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

Selection charts “cylinder/hand pumps“ can be found on pages 405 - 407!

Travel-speed charts are supplied on pages 408 - 409.

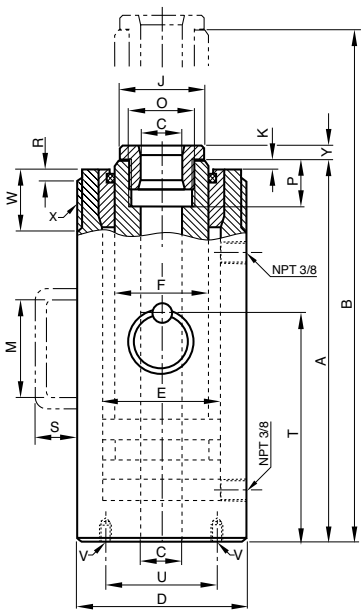
Technical data model YCH

Cylinder size t	Model	EAN-No. 4025092*	Capacity push kN	Capacity pull kN	Stroke mm	Effective plunger area cm²	Oil volume max. cm³	Closed height mm	Centre hole diameter mm	Cylinder outside diameter mm	Weight kg
33	**YCH-33/150**	*150965	335	180	150	47.9	716	310	33	114	19
33	**YCH-33/250**	*150972	335	180	250	47.9	1200	415	33	114	25
62	**YCH-62/250**	*150989	618	300	250	88.3	2220	452	55	163	55
93	**YCH-93/250**	*150996	930	450	250	133.0	3320	465	55	193	82
100	**YCH-100/40**	*151009	1000	500	40	143.0	578	190	55	200	38
140	**YCH-140/200**	*151016	1400	700	200	200.2	4080	383	80	253	115

For double-acting hollow cylinders the “capacity push“ is equivalent to the max. pulling force achieved with tensioning anchor or threaded spindle.

Dimensions model YCH

Model	YCH-33/150	YCH-33/250	YCH-62/250	YCH-93/250	YCH-100/40	YCH-140/200
A, mm	300	405	440	450	175	365
B, mm	450	655	690	700	215	565
C, mm	33	33	55	55	55	80
D, mm	114	114	163	193	200	253
E, mm	90	90	130	150	155	195
F, mm	67	67	105	120	125	160
J, mm	62	62	96	110	110	145
K, mm	3	3	5	5	5	5
M, mm	120	120	–	–	–	–
O, mm	M48x1.5	M48x1.5	M78x2	M85x2	M85x2	M115x2
P, mm	30	30	40	45	45	50
R, mm	5	5	5	5	–	–
S, mm	51	51	24	30	24	30
T, mm	–	–	290	290	115	240
U, mm	92	92	135	160	165	210
V, mm	4xM10	4xM10	4xM12	4xM16	4xM16	4xM16
W, mm	40	40	50	65	–	–
X, mm	M110x2	M110x2	M160x3	M190x3	–	–
Y, mm	10	10	12	15	15	18



Universal cylinders model YH

Double-acting with hydraulic return, capacity 5 - 200 t

These extremely robust double-acting cylinders are especially 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 source in frame presses, stamping fixtures and other industrial uses where high pushing and pulling forces are required.

Features

- Yale ChroMo-Design.
- Operating pressure max. 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 solid chromium-molybdenum steel and heat-treated.
- Double bronze bearing of 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) and is fitted with dirt wiper.
- Interchangeable hardened saddle.
- Dirt wiper protects against dirt.
- Oil port thread 3/8 NPT.
- Incl. 2 female coupler halves model CFY-1.
- From model YH-30/200 with carrying handle.
- From model YH-50/350 with 2 lifting rings.

INFO

For cylinders series YH accessories please see pages 352 - 353.

Selection charts “cylinder/hand pumps“ can be found on pages 405 - 407!

Travel-speed charts are supplied on pages 408 - 409.

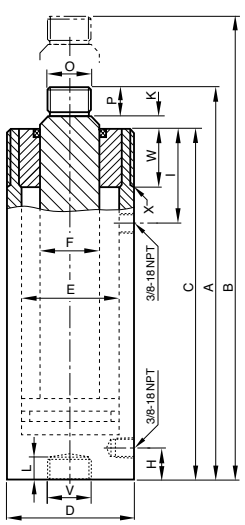
Technical data model YH

Cylinder size t	Model	EAN-No. 4025092*	Capacity push kN	Capacity pull kN	Stroke mm	Effective plunger area push cm^2	Effective plunger area pull cm^2	Oil volume max. cm^3	Closed height mm	Cylinder outside diameter mm	Weight kg
5	**YH-5/30**	*150408	50	22	30	7.2	3.1	21	160	55	2.5
5	**YH-5/80**	*150415	50	22	80	7.2	3.1	57	210	55	3.3
5	**YH-5/150**	*150422	50	22	150	7.2	3.1	106	280	55	4.4
10	**YH-10/30**	*150439	100	45	30	14.3	6.4	44	175	67	4.0
10	**YH-10/80**	*150446	100	45	80	14.3	6.4	116	225	67	5.0
10	**YH-10/150**	*150453	100	45	150	14.3	6.4	218	295	67	6.7
10	**YH-10/250**	*150460	100	45	250	14.3	6.4	363	395	67	9.0
20	**YH-20/50**	*150477	200	100	50	28.6	14.3	142	195	85	7.0
20	**YH-20/150**	*150484	200	100	150	28.6	14.3	424	310	85	11.0
20	**YH-20/250**	*150491	200	100	250	28.6	14.3	707	410	85	14.0
30	**YH-30/200**	*150507	300	140	200	42.9	20.0	884	355	102	19.0
30	**YH-30/350**	*150514	300	140	350	42.9	20.0	1547	510	102	27.0
50	**YH-50/150**	*150521	500	220	150	71.5	31.5	1064	325	125	27.0
50	**YH-50/350**	*150538	500	220	350	71.5	31.5	2481	525	125	42.0
50	**YH-50/500**	*150545	500	220	500	71.5	31.5	3544	685	125	52.0
70	**YH-70/150**	*150552	700	330	150	100.0	47.2	1478	335	146	37.0
70	**YH-70/350**	*150569	700	330	350	100.0	47.2	3449	540	146	56.0
100	**YH-100/50**	*150576	1000	450	50	143.0	64.4	716	265	180	49.0
100	**YH-100/150**	*150583	1000	450	150	143.0	64.4	2148	365	180	64.0
100	**YH-100/350**	*150590	1000	450	350	143.0	64.4	5010	565	180	94.0
100	**YH-100/500**	*150606	1000	450	500	143.0	64.4	7157	725	180	118.0
200	**YH-200/150**	*150613	2000	900	150	286.0	128.7	4253	410	250	137.0
200	**YH-200/350**	*150620	2000	900	350	286.0	128.7	9924	620	250	198.0
200	**YH-200/500**	*150637	2000	900	500	286.0	128.7	14177	780	250	244.0

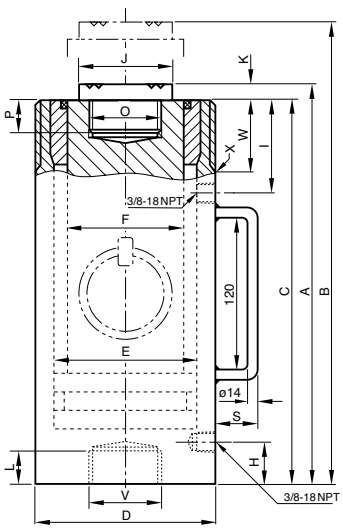
Dimensions model YH

Model	YH-5/30	YH-5/80	YH-5/150	YH-10/30	YH-10/80	YH-10/150	YH-10/250	YH-20/50	YH-20/150	YH-20/250	YH-30/200	YH-30/350
A, mm	160	210	280	175	225	295	395	195	310	410	355	510
B, mm	190	290	430	205	305	445	645	245	460	660	555	860
C, mm	138	188	258	150	200	270	370	167	282	382	345	500
D, mm	55	55	55	67	67	67	67	85	85	85	102	102
E, mm	30	30	30	43	43	43	43	60	60	60	75	75
F, mm	22.4	22.4	22.4	32	32	32	32	42	42	42	55	55
H, mm	31	31	31	35	35	35	35	22	37	37	46	46
I, mm	44	44	44	50	50	50	50	59	59	59	64	64
J, mm	–	–	–	–	–	–	–	–	–	–	50	50
K, mm	4	4	4	5	5	5	5	5	5	5	10	10
L, mm	17	17	17	20	20	20	20	–	22	22	28	28
O, mm	M18x1.5	M18x1.5	M18x1.5	M27x2	M27x2	M27x2	M27x2	M36x2	M36x2	M36x2	M36x2	M36x2
P, mm	18	18	18	20	20	20	20	23	23	23	28	28
S, mm	–	–	–	–	–	–	–	–	–	–	51	51
U, mm	–	–	–	–	–	–	–	–	–	–	–	–
V, mm	M27x2	M27x2	M27x2	M36x2	M36x2	M36x2	M36x2	–	M45x2	M45x2	M36x2	M36x2
W, mm	27	27	27	33	33	33	33	40	40	40	45	45
X, mm	M55x1.5	M55x1.5	M55x1.5	M67x1.5	M67x1.5	M67x1.5	M67x1.5	M85x2	M85x2	M85x2	M102x2	M102x2

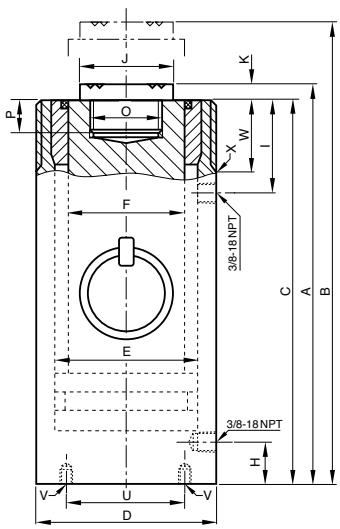
Model	YH-50/150	YH-50/350	YH-50/500	YH-70/150	YH-70/350	YH-100/50	YH-100/150	YH-100/350	YH-100/500	YH-200/150	YH-200/350	YH-200/500
A, mm	325	525	685	335	540	265	365	565	725	410	620	780
B, mm	475	875	1.185	485	890	315	515	915	1.225	560	970	1.280
C, mm	313	513	673	321	526	250	350	550	710	391	601	761
D, mm	125	125	125	146	146	180	180	180	180	250	250	250
E, mm	95	95	95	112	112	135	135	135	135	190	190	190
F, mm	70	70	70	80	80	100	100	100	100	140	140	140
H, mm	55	55	55	58	58	66	66	66	66	80	80	80
I, mm	70	70	70	79	79	90	90	90	95	105	105	105
J, mm	65	65	65	75	75	90	90	90	90	127	127	127
K, mm	12	12	12	14	14	15	15	15	15	19	19	19
L, mm	31	31	31	35	35	–	–	–	–	–	–	–
O, mm	M45x2	M45x2	M45x2	M50x3	M50x3	M65x3	M65x3	M65x3	M65x3	M90x3	M90x3	M90x3
P, mm	31	31	31	35	35	40	40	40	40	55	55	55
S, mm	51	24	24	24	24	24	24	30	30	30	30	30
U, mm	–	–	–	–	–	110	110	110	110	160	160	160
V, mm	M45x2	M45x2	M45x2	M50x3	M50x3	4xM12	4xM12	4xM12	4xM12	4xM16	4xM16	4xM16
W, mm	50	50	50	60	60	70	70	70	70	80	80	80
X, mm	M125x2	M125x2	M125x2	M146x3	M146x3	M180x3	M180x3	M180x3	M180x3	M250x4	M250x4	M250x4



Model YH-5/30 up to YH 20/250



Model YH-30/200 up to YH 70/350



Model YH-100/50 up to YH 200/500

High-tonnage cylinders model YEHA

Double-acting with hydraulic return, capacity max. 140 - 1100 t

Cylinders of series YEHA are normally used for lifting, positioning or handling heavy loads. The double-acting function allows a faster piston return, even with longer hydraulic hoses.

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.

Features

- Operating pressure max. 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.
- Dirt wiper protects against dirt.
- Oil port thread 3/8 NPT.
- Incl. 2 female coupler halves model CFY-1.
- Mounting threads on request.
- All cylinders have lifting rings.

INFO

Selection charts “cylinder/hand pumps“ can be found on pages 405 - 407!

Travel-speed charts are supplied on pages 408 - 409.

Technical data model YEHA

Cylinder size t	Model	EAN-No. 4025092*	Capacity max. kN	Stroke mm	Effective plunger area cm^2	Oil volume max. cm^3	Closed height mm	Cylinder outside diameter mm	Weight kg
140	YEHA-140/50	*162937	1400	50	201	1005	201	200	44
140	YEHA-140/100	*162920	1400	100	201	2010	251	200	51
140	YEHA-140/150	*162944	1400	150	201	3015	306	200	59
140	YEHA-140/200	*162951	1400	200	201	4020	356	200	66
140	YEHA-140/300	*162975	1400	300	201	6030	461	200	81
220	YEHA-220/50	*162982	2200	50	314	1570	216	250	75
220	YEHA-220/100	*162999	2200	100	314	3140	266	250	86
220	YEHA-220/150	*163002	2200	150	314	4710	326	250	101
220	YEHA-220/300	*163033	2200	300	314	9425	486	250	139
340	YEHA-340/50	*163125	3430	50	491	2453	231	310	127
340	YEHA-340/100	*163132	3430	100	491	4906	281	310	148
340	YEHA-340/150	*163149	3430	150	491	7360	341	310	175
340	YEHA-340/300	*163170	3430	300	491	14700	501	310	243
430	YEHA-430/50	–	4226	50	616	3079	248	340	164
430	YEHA-430/100	–	4226	100	616	6158	294	340	188
430	YEHA-430/150	*118347	4226	150	616	9236	353	340	215
430	YEHA-430/250	–	4226	300	616	18474	508	340	293
560	YEHA-560/50	–	5620	50	804	4019	268	390	234
560	YEHA-560/100	*163446	5620	100	804	8038	318	390	286
560	YEHA-560/150	*163439	5620	150	804	12058	373	390	301
560	YEHA-560/300	–	5620	300	804	24130	538	390	406
670	YEHA-670/50	–	6603	50	962	4811	283	430	304
670	YEHA-670/100	*188791	6603	100	962	9621	333	430	343
670	YEHA-670/150	*474771	6603	150	962	14432	398	430	400
670	YEHA-670/300	–	6603	300	962	28866	558	430	529
880	YEHA-880/50	–	8790	50	1257	6280	310	490	434
880	YEHA-880/100	–	8790	100	1257	12560	360	490	485
880	YEHA-880/150	–	8790	150	1257	18840	420	490	551
880	YEHA-880/300	–	8790	300	1257	37700	580	490	719
1100	YEHA-1100/50	–	11000	50	1590	7949	330	550	584
1100	YEHA-1100/100	–	11000	100	1590	15896	380	550	648
1100	YEHA-1100/150	*570893	11000	150	1590	23845	440	550	731
1100	YEHA-1100/300	*918442	11000	300	1590	47700	600	550	943

INFO

For tilt saddles for cylinders please see pages 348 - 349.

Hydraulic cylinders with safety lock nut model YELA

Single-acting, gravity return
capacity max. 30 - 1100 t

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.

Lifting and moving of large machinery, steel construction, bridges or similar loads, supporting of buildings and foundations.

For all heavy-duty jacking applications where a special safety factor is appropriate like lifting and lowering bridges, supporting buildings and foundations, jacking up heavy machines, steel sections, ship modules or similar loads.

Features

- Operating pressure max. 700 bar.
- Single-acting, gravity return.
- Generous guiding bands ensure a robust piston guiding.
- Hard chromium-plated piston with trapezoidal thread.
- Overflow hole ensures a definite piston end stop.
- Interchangeable hardened saddle.
- Oil port thread 3/8 NPT.
- Incl. female coupler half model CFY-1.
- All cylinders have lifting rings.

INFO

Further piston strokes are quoted on request.

For tilt saddles for cylinders please see pages 348-349.

Technical data model YELA

Cylinder size t	Model	EAN-No. 4025092* 4053981**	Capacity max. kN	Stroke mm	Effective plunger area cm²	Oil volume max. cm³	Closed height mm	Cylinder outside diameter mm	Weight kg
30	YELA-30/50	*151894	300	50	44	221	169	100	10.5
30	YELA-30/100	*151900	300	100	44	442	219	100	13.5
30	YELA-30/150	*151917	300	150	44	663	269	100	17.5
30	YELA-30/200	*284677	300	200	44	885	319	100	19.5
30	YELA-30/300	**592817	300	300	44	1325	419	100	26.0
50	YELA-50/50	**817118	497	50	71	355	155	125	15
50	YELA-50/100	**950266	497	100	71	710	205	125	20
50	YELA-50/150	**817088	497	150	71	1063	260	125	25
50	YELA-50/200	**742991	497	200	71	1420	310	125	30
50	YELA-50/300	**590233	497	300	71	2130	415	125	40
100	YELA-93/50	**817125	931	50	133	663	180	170	31
100	YELA-93/100	**817095	931	100	133	1327	230	170	40
100	YELA-93/150	**589220	931	150	133	1989	285	170	50
100	YELA-93/200	**749075	931	200	133	2654	335	170	59
100	YELA-93/300	–	931	300	133	3980	440	170	78
140	YELA-140/50	**945026	1400	50	201	1005	201	200	49
140	YELA-140/100	–	1400	100	201	2010	251	200	61
140	YELA-140/150	**589022	1400	150	201	3015	311	200	76
140	YELA-140/200	–	1400	200	201	4020	361	200	88
140	YELA-140/300	–	1400	300	201	6030	471	200	115
220	YELA-220/50	–	2200	50	314	1570	208	250	79
220	YELA-220/100	–	2200	100	314	3140	258	250	98
220	YELA-220/150	**817101	2200	150	314	4710	318	250	121
220	YELA-220/250	–	2200	250	314	7850	433	250	165
340	YELA-340/50	–	3370	50	491	2453	238	310	139
340	YELA-340/100	–	3370	100	491	4906	288	310	169
340	YELA-340/150	**820521	3370	150	491	7360	348	310	204
340	YELA-340/250	–	3370	250	491	12300	458	310	269
430	YELA-430/50	–	4226	50	615	3078	250	340	175
430	YELA-430/100	–	4226	100	615	6157	300	340	210
430	YELA-430/150	–	4226	150	615	9232	365	340	258
430	YELA-430/250	–	4226	250	615	15400	480	340	338
560	YELA-560/50	–	5520	50	804	4019	280	390	263
560	YELA-560/100	–	5520	100	804	8038	330	390	310
560	YELA-560/150	**767710	5520	150	804	12058	395	390	370
560	YELA-560/250	–	5520	250	804	20100	510	390	478
670	YELA-670/50	–	6603	50	961	4809	305	430	343
670	YELA-670/100	–	6603	100	961	9621	355	430	400
670	YELA-670/150	–	6603	150	961	14425	420	430	473
670	YELA-670/250	–	6603	250	961	24100	535	430	604
880	YELA-880/50	–	8625	50	1256	6280	325	490	474
880	YELA-880/100	–	8625	100	1256	12560	375	490	548
880	YELA-880/150	–	8625	150	1256	18840	440	490	643
880	YELA-880/250	–	8625	250	1256	31400	555	490	813
1100	YELA-1100/50	–	10916	50	1590	7949	340	550	681
1100	YELA-1100/100	–	10916	100	1590	15896	420	550	773
1100	YELA-1100/150	–	10916	150	1590	23845	485	550	894
1100	YELA-1100/250	–	10916	250	1590	39741	600	550	1107

INFO

Selection charts “cylinder/hand pumps“ can be found on pages 405-407!

Travel-speed charts are supplied on pages 408-409.

High-tonnage cylinders model YEGA

Single-acting, gravity return
capacity max. 140 - 1100 t

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

Lifting and moving large machinery, steel construction, bridges or similar loads, supporting buildings and foundations.

For all heavy-duty jacking applications where a special safety factor is appropriate like lifting and lowering bridges, supporting buildings and foundations, jacking up heavy machines, steel sections, ship modules or similar loads.

Features

- Operating pressure max. 700 bar.
- Plunger in special piston guiding bands.
- Hard chromium-plated piston.
- Overflow hole ensures a definite piston end stop.
- Interchangeable hardened saddle.
- Oil port thread 3/8 NPT.
- Incl. female coupler half model CFY-1.
- All cylinders have lifting rings.

INFO

Further piston strokes are quoted on request.

The use of tilt saddles is recommended.

For tilt saddles for cylinders please see pages 348-349.

Selection charts “cylinder/hand pumps“ can be found on pages 405-407!

Travel-speed charts are supplied on pages 408-409.

Tilt saddles for cylinders model AYL

Tilt saddles should be used with YELA and YEGA 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.

INFO

Available for all cylinder series YELA, YEGA and YEHA up to 1100 t.

Also available for cylinder series YS from 10 - 50 t.

Technical data model YEGA

Cylinder size t	Model	EAN-No. 4025092*	Capacity max. kN	Stroke mm	Effective plunger area cm³	Oil volume max. cm³	Closed height mm	Cylinder outside diameter mm	Weight kg
140	YEGA-140/50	*163385	1380	50	201	1005	155	200	38
140	YEGA-140/100	*163194	1380	100	201	2010	205	200	51
140	YEGA-140/150	*163200	1380	150	201	3015	255	200	63
140	YEGA-140/200	*163217	1380	200	201	4020	305	200	75
140	YEGA-140/300	*163231	1380	300	201	6030	405	200	100
220	YEGA-220/50	*163248	2200	50	314	1570	170	250	64
220	YEGA-220/100	*163255	2200	100	314	3140	220	250	85
220	YEGA-220/150	*163262	2200	150	314	4710	270	250	104
220	YEGA-220/250	*163286	2200	250	314	7850	370	250	143
340	YEGA-340/50	*163309	3370	50	491	2453	210	310	123
340	YEGA-340/100	*163319	3370	100	491	4906	260	310	154
340	YEGA-340/150	*163323	3370	150	491	7360	310	310	184
340	YEGA-340/250	*163347	3370	250	491	12300	410	310	243
430	YEGA-430/50	*163484	4226	50	616	3079	215	340	125
430	YEGA-430/100	*163491	4226	100	616	6158	265	340	157
430	YEGA-430/150	*163507	4226	150	616	9236	315	340	190
430	YEGA-430/250	–	4226	250	616	15394	415	340	255
560	YEGA-560/50	*163927	5520	50	804	4019	240	390	223
560	YEGA-560/100	*366823	5520	100	804	8038	290	390	272
560	YEGA-560/150	*535281	5520	150	804	12058	340	390	319
560	YEGA-560/250	–	5520	250	804	20100	440	390	413
670	YEGA-670/50	–	6603	50	962	4811	265	430	298
670	YEGA-670/100	–	6603	100	962	9621	315	430	355
670	YEGA-670/150	–	6603	150	962	14432	365	430	412
670	YEGA-670/250	–	6603	250	962	24053	465	430	525
880	YEGA-880/50	–	8625	50	1257	6280	290	490	423
880	YEGA-880/100	–	8625	100	1257	12560	340	490	503
880	YEGA-880/150	–	8625	150	1257	18840	390	490	577
880	YEGA-880/250	–	8625	250	1257	31400	490	490	725
1100	YEGA-1100/50	*163569	10916	50	1590	7949	415	550	766
1100	YEGA-1100/100	*163576	10916	100	1590	15896	465	550	867
1100	YEGA-1100/150	–	10916	150	1590	23845	515	550	960
1100	YEGA-1100/250	*163743	10916	250	1590	39741	615	550	1147

Technical data model AYL

Model	EAN-No. 4025092*	Suitable for cylinder groups	Weight kg
AYL-30	*156837	YELA-30...	0.4
AYL-50	*156844	YELA-50...	0.8
AYL-100	*156851	YELA-93...	2.0
AYL-150	*156868	YELA-140... and YEGA-140...	3.4
AYL-200	*156875	YELA-220... and YEGA-220...	5.8
AYL-340	–	YELA-340... and YEGA-340...	13.0
AYL-430	–	YELA-340... and YEGA-340...	19.5

Other sizes on request

Dimensions model AYL

Model	AYL-30	AYL-50	AYL-100	AYL-150	AYL-200	AYL-340	AYL-430
A, mm	45	61	88	111	131	178	200
B, mm	36	39	47	52	57	67	79
C, mm	28	30	36	40	45	47	57