

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 hoses 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 halves, length: optional)
- 1 Manifold MY - 44
(with 4 shut-off valves)

All parts ready assembled.



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 assembled.



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.

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 cm³ 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 Model	Oil volume cm ³	Hand pump single-stage	Hand pumps two-stage				
		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 Model	Oil volume cm ³	Hand pump single-stage	Hand pumps two-stage				
		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
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 Model	Oil volume cm ³	Hand pumps, two-stage				
		HPH - 2/0,7 700 cm ³	HPH - 2/2 2000 cm ³	HPH - 2/4 4000 cm ³	HPH - 2/6,5 6500 cm ³	HPH - 2/10 10000 cm ³
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	-	-	-	-	+++

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.

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 continuous operation choose extra large reservoirs to avoid excessive heating-up of the hydraulic oil.

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

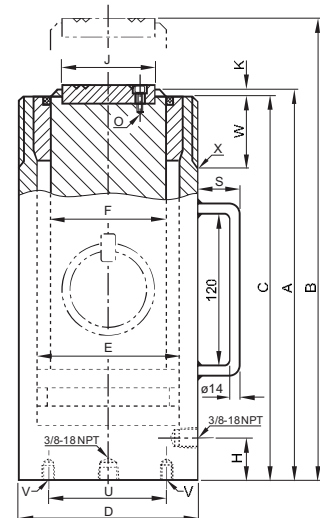
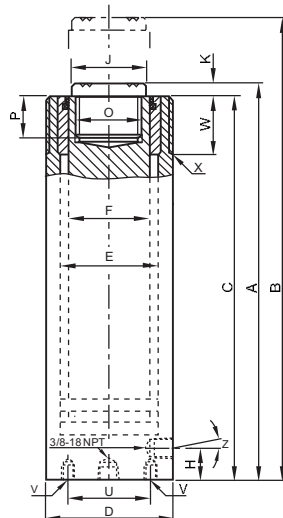
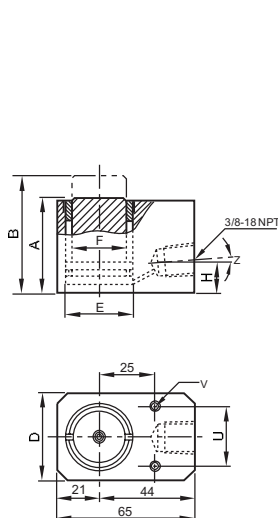
Cylinder-class tonnes	Hand pumps		Power pumps												
	number of pump strokes for 10 mm stroke		piston travel speed in mm/sec.												
	HPS - 2/0,7 to HPS - 2/10	HPS - 1/0,7 to HPS - 2/10	PY - 04		PY - 07		PY - 11		PY - 22		PYE - 40	PYE - 55	PYE - 75	PYE - 110	PYE - 180
	ND	HD	ND	HD	ND	HD	ND	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	-



Low-profile cylinders model YLS

single-acting with spring return, 10 to 100 tonnes

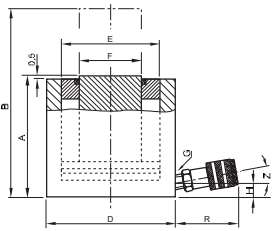
Model	A mm	B mm	D mm	D ₁ mm	E mm	F mm	H mm	M mm	Q mm	R mm	S mm	Z mm
YLS - 10/35	86	121	70	-	43	38	16	-	-	54	-	10°
YLS - 20/45	100	145	85	-	60	50	17	-	-	54	-	10°
YLS - 30/60	120	180	100	-	75	57	19	-	-	54	-	5°
YLS - 50/60	122	182	125	-	95	75	19	-	-	54	-	5°
YLS - 100/55	141	196	170	-	135	120	26	148	-	54	25	-

Flat cylinders model YFS

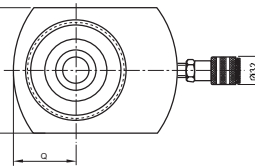
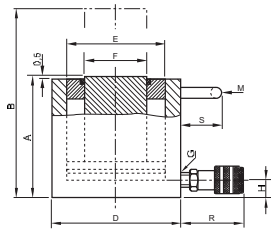
single-acting with spring return, 10 to 100 tonnes

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	-

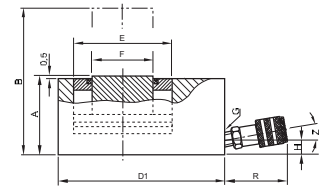
G = oil port thread: 3/8" NPT M = length of carrying handle



YLS



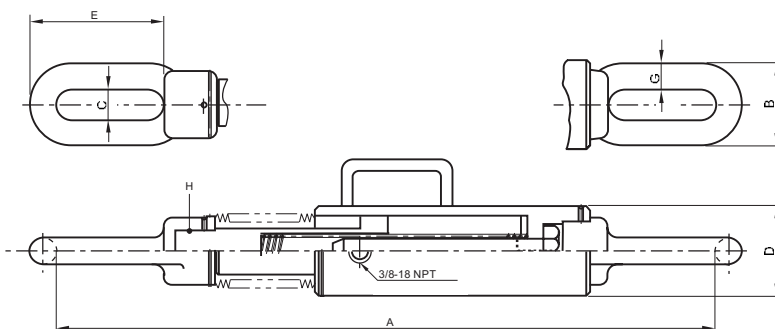
YFS



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

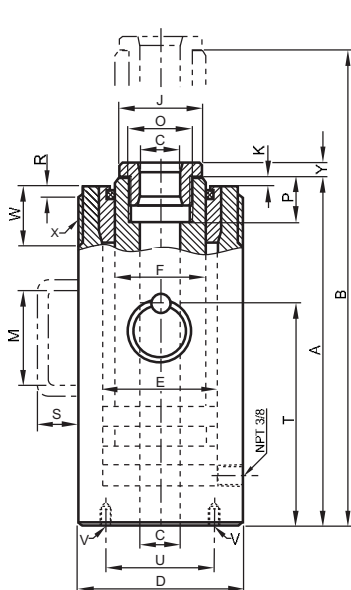
single-acting with spring return 12 to 93 tonnes

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

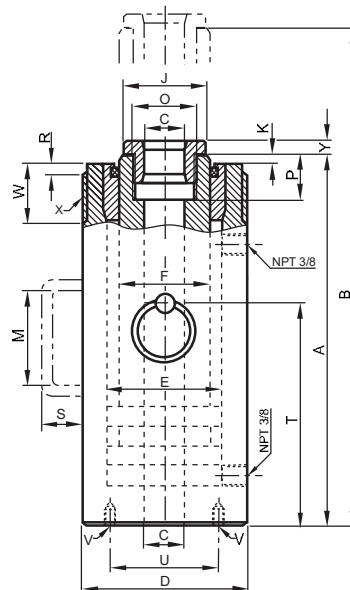
Hollow cylinders model YCH

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

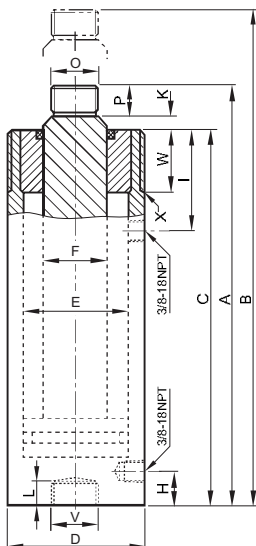


YCH

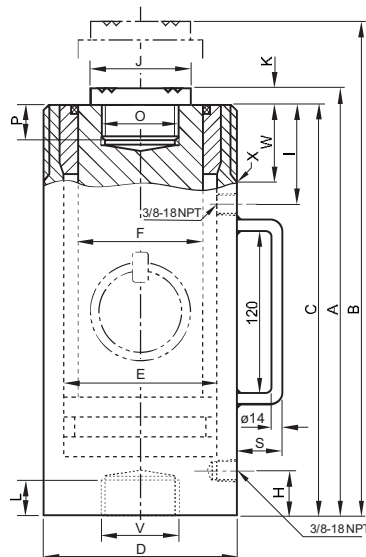
Universal cylinder model YH

double-acting with hydraulic return 5 to 200 tonnes

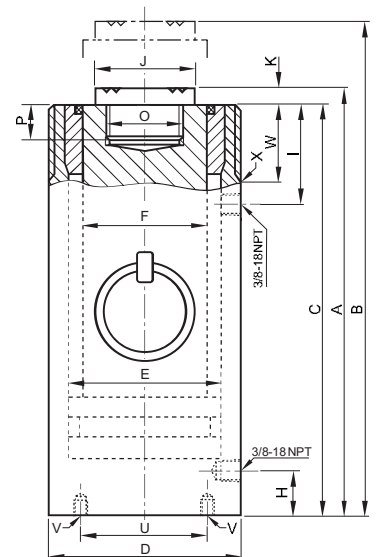
Model	A mm	B mm	C mm	D mm	E mm	F mm	H mm	I mm	J mm	K mm	L mm	O	P mm	S mm	U mm	V	W mm	X
YH - 5/30	160	190	138	55	30	22,4	31	44	-	4	17	M18 x 1,5	18	-	-	M27 x 2	27	M55 x 1,5
YH - 5/80	210	290	188	55	30	22,4	31	44	-	4	17	M18 x 1,5	18	-	-	M27 x 2	27	M55 x 1,5
YH - 5/150	280	430	258	55	30	22,4	31	44	-	4	17	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

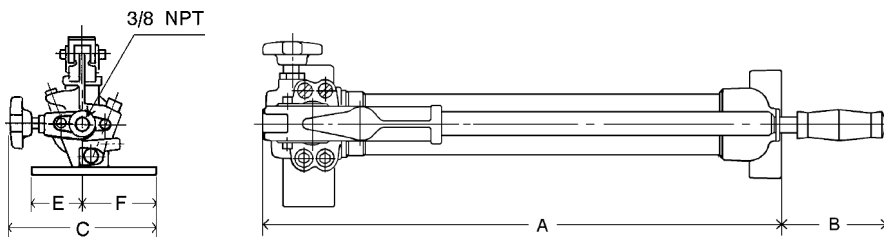


YH - 100/50 to YH - 200/500

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

