



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.

## VHP und VHH Directional valves

### Manually operated, 700 bar

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 but can also be connected by using hydraulic piping.

In addition, all valves are equipped with a second pressure oil port P at the back of the valve base.

### Technical data VHP and VHH

Model	Art.-No.	Pressure max. l/min	Size	Oil ports	Hydraulic symbol	Applications
VHP-3/3-1	N14100718	8 - 16	1	3/8 NPT		3/3-way valve with "open centre" in middle position (pressureless circuit) to control single-acting hydraulic cylinders
VHP-3/3-2	N14100720	20 - 40	2	3/8 NPT		
VHP-3/3-1 CC	N14100719	8 - 16	1	3/8 NPT		3/3-way valve with "closed centre" in middle position to control single-acting hydraulic cylinders
VHP-3/3-2 CC	N14100721	20 - 40	2	3/8 NPT		
VHP-4/3-1	N14100227	8 - 16	1	3/8 NPT		4/3-way valve with "open centre" in middle position (pressureless circuit) to control double-acting hydraulic cylinders
VHP-4/3-2	N14100228	20 - 40	2	3/8 NPT		
VHP-4/3-1 CC	N14100322	8 - 16	1	3/8 NPT		4/3-way valve with "closed centre" in middle position to control double-acting hydraulic cylinders
VHP-4/3-2 CC	N14100335	20 - 40	2	3/8 NPT		
VHH-4/3	N14100226	2 - 3	small special design	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 mounted directly to all HPS hand pumps (with connecting set FY-703). Also suitable for small hydraulic power packs.

## VEP

### Directional valves

#### Solenoid incl. pressure set valve, 700 bar

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 – hold – return –

In neutral position (stop) the valves switch to “pressure-less 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 connected by using hydraulic piping.

#### Design

Long-life, direct-control 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.



VEP-3/3-1

VEP-4/3-1

#### Pressure gauge

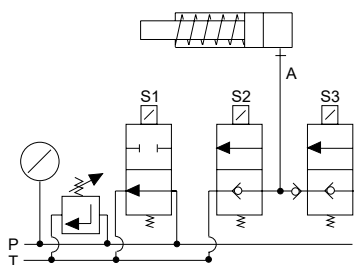
A glycerine-damped pressure gauge GGY-631 is standard with solenoid valves, 0 - 1000 bar, Ø 63 mm.

#### Mounting flange

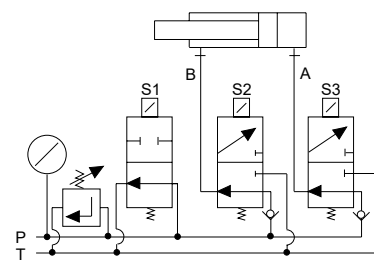
The valve flanges are designed in a way that valves (with pressure connector) can easily be mounted onto power packs.

#### Option

The connector model FY-905 is to be ordered separately.



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

## INFO

If oil ports A and B should have 3/8 NPT the adaptor model FY-30 is to be ordered separately.

#### Technical data VEP

Model	Art.-No.	Control	For cylinders	Operating pressure max. bar	Size	Oil flow max. l/min	Control voltage	Oil ports P T	Pressure relief valve	Weight kg
VEP-3/3-1	N14100404	3/3-way	single-acting	700	1	12	24 V =	3/8 NPT	yes	4.1
VEP-3/3-2	N14100405	3/3-way	single-acting	700	2	25	24 V =	3/8 NPT	yes	7.9
VEP-4/3-1	N14100403	4/3-way	double-acting	700	1	12	24 V =	3/8 NPT	yes	4.1
VEP-4/3-2	N14100406	4/3-way	double-acting	700	2	25	24 V =	3/8 NPT	yes	7.9



### Selection advice

If the valve is to be screwed directly into a hydraulic cylinder, please order model VSM-11.

If the valve is to be combined with the directional valve of a power pack, please order model VSM-21. (see picture on page 380).

## VSM Safety-check valves

### 700 bar

These safety-check valves are used for those applications where pressure drops must be avoided (e.g. holding of a lifted load). Depending on the location in a 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.

### 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.

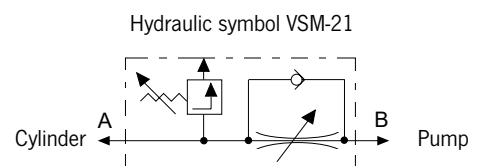
A safety pressure valve protects the cylinder from being overloaded by external loading.

### Technical data VSM

Model	Art.-No.	Operating pressure max. bar	Control	Oil-port cylinder side A	Oil-port pump side B	Width mm	Weight kg
VSM-11	N14100921	700	Check valve	3/8-18 NPT outer	3/8-18 NPT inner	6	0.9
VSM-21	N14100972	700	Check valve	3/8-18 NPT inner	3/8-18 NPT outer	6	1.0

### Dimensions VSM (housing incl. hand wheel)

Model	VSM-11	VSM-21
Length, mm	65	65
Width, mm	60	60
Height, mm	110	110



## VHM 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 to throttle an oil flow especially in connection with lifting applications.



VHM-1-E



VHM-2

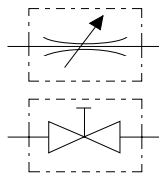
### Technical data VHM

Model	Art.-No.	Operating pressure max. bar	Control	Oil ports both ends	Width mm	Weight kg
VHM-1-E	N14101313	700	Needle	3/8-NPT inner	4	0.7
VHM-2	N14100344	700	Ball	3/8-NPT inner	6	0.9

### Dimensions VHM

Model	VHM-1-E	VHM-2
Length, mm	70	75
Width, mm	30	45
Height, mm	80	75

Hydraulic symbol



## VPS Pressure switch

Adjustable between 100 - 800 bar

As soon as the pressure has reached the set value, a micro-switch (altering 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.



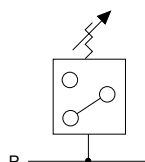
### Technical data VPS

Model	Art.-No.	Control range bar	Electric data	Oil ports	Difference of switch point bar	Repeat accuracy bar	Weight kg
VPS-1	N14100639	100 - 800	5 A/250V	3/8 NPT	25 - 70	10	0.5

### Dimensions VPS

Model	VPS-1
Height x width, mm	130 x 85

Hydraulic symbol



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.



## VPR Pressure relief valves

0 - 700 bar

Pressure relief valves are used if the system pressure (force of the connected hydraulic cylinder) should not exceed a certain value. These precision valves can be easily adjusted and are characterized by precise repetition. The question of a pressure relief valve only depends on the displacement of the high pressure stage of the power pack.

After achieving the set pressure value, the excessive oil is guided back to the reservoir (pressureless).

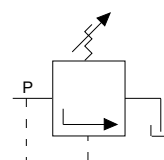
### Technical data VPR

Model	Art.-No.	Control range bar	Oil ports P	Oil ports T	Oil flow max. l/min	Weight kg
VPR-1	N14100722	0-700	G 3/8	G 1/4	10	0.8

### Dimensions VPR

Model	VPR-1
Length, mm	120
Ø, mm	40

### Hydraulic symbol



**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.

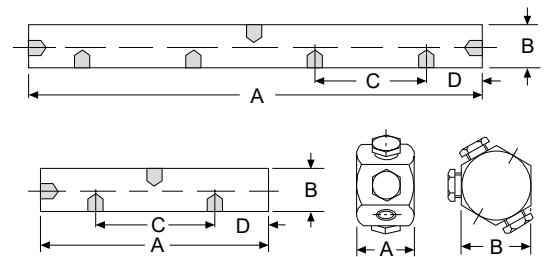
To connect a manifold directly to a hand pump a FY-1 double nipple is recommended.

Each manifold is supplied with three steel blind plugs in case not all the oil ports are required.



**Technical data MY**

Model	Art.-No.	Oil ports	Weight kg
MY-1	N14100164	6 x 3/8-NPT inner	0.5
MY-2	N14100247	4 x 3/8-NPT inner	0.6
MY-4	N14100198	7 x 3/8-NPT inner	1.4



**Dimensions MY**

Model	MY-1	MY-2	MY-4
A, mm	40	150	330
B, mm	50	40	40
C, mm	-	90	90
D, mm	-	30	30



## MY 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 fully 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.

Manifolds 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.

### Technical data MY

Model	Art.-No.	Version	Weight kg
MY-22	N14100503	2-way manifold with 2 shut-off valves	1.8
MY-44	N14100504	4-way manifold with 4 shut-off valves	3.7
MY-66	N14101056	6-way manifold with 6 shut-off valves	5.5
MY-22-GYA	N14101024	2-way manifold with 2 shut-off valves and 2 pressure gauges	2.8
MY-44-GYA	N14101025	4-way manifold with 4 shut-off valves and 4 pressure gauges	5.7
MY-66-GYA	N14101057	6-way manifold with 6 shut-off valves and 6 pressure gauges	8.5

Assembly examples:



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



Electric hydraulic pump  
PY-07/3/20/3 M with VSM-21 and MY-44

## HPK-10 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.

### HPK-10

Dimensions (L x W x H): 800 x 300 x 170 mm,  
weight: approx. 7.8 kg.



## HFY 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 comes as follows:

### 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.
- No aging problems
- Good compatibility with all sealing materials.
- Fulfills all requirements of DIN 51524 part 2.



### Technical data HFY

Model	Art.-No.	Content l
HFY-1	N14300194	1
HFY-5	N14300195	5
HFY-10	N14301061	10
HFY-20	N14301062	20





## 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 free of charge.

#### Technical data GGY

Model	Art.-No.	Pressure range bar	Scale diameter mm	Glycerine- damped	Oil port DIN 16288	Spanner size	Accuracy class %
GGY-631	N14100168	0 - 1000	63	yes	G 1/4	14	1.6
GGY-632	N14100663	0 - 1000	63	yes	1/4 NPT	14	1.6
GGY-633	N14100877	0 - 160	63	yes	G 1/4	14	1.6
GGY-634	N14100878	0 - 250	63	yes	G 1/4	14	1.6
GGY-635	N14100879	0 - 400	63	yes	G 1/4	14	1.6
GGY-636	N14100880	0 - 600	63	yes	G 1/4	14	1.6
GGY-1001	N14100169	0 - 1000	100	yes	G 1/2	22	1.0
GGY-1001 SZ <sup>1</sup>	N14100698	0 - 1000	100	yes	G 1/2	22	1.0
GGY-1002	N14100664	0 - 250	100	yes	G 1/2	22	1.0
GGY-1003	N14100696	0 - 400	100	yes	G 1/2	22	1.0
GGY-1004	N14100697	0 - 700	100	yes	G 1/2	22	1.0
GGY-1005	N14101023	0 - 160	100	yes	G 1/2	22	1.0
GGY-2500	N14100658	0 - 2500	100	yes	G 1/2	22	1.6

<sup>1</sup>GGY-1001 SZ = with maximum pointer



## GYA-63

### Pressure gauge set

Consisting of pressure gauge GGY-632 (diameter Ø 63 mm, glycerine-damped) and corresponding gauge adaptor. 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.

#### Technical data GYA-63

Model	Art.-No.	Pressure gauge bar	Oil port pump	Oil port hose	Weight kg
GYA-63	N14200497	0 - 1000 bar, Ø 63 mm, glycerine-damped	3/8-NPT outer	3/8-NPT inner	0.5

**GA**  
**Pressure gauge adaptor**

Gauge connection with sleeve nut and 30° inclination for easy reading.

Suitable for all hand pumps series HPS.



**Technical data GA**

Model	Art.-No.	Oil port gauge	Oil port pump	Oil port hose
GA-700	N14200201	G 1/4	3/8-NPT outer	3/8-NPT inner
GA-701	N14200208	G 1/2	3/8-NPT outer	3/8-NPT inner

**GA**  
**Pressure gauge adaptor set**

For double-acting hand pumps model HPH, for mounting between 4/3-directional valve and hand pump.

**Features**

- Advantage: shows both the pushing force and the pulling force of the connected hydraulic cylinder.
- 30° inclination for easy reading.
- Pressureless return line by means of telescopic double nipple.



**Technical data GA**

Model	Art.-No.	Oil port gauge	Oil port	Telescopic nipple
GA-703	N14200202	G 1/2	2 x 3/8-NPT outer	2 x 1/4-NPT outer
GA-704	N14200640	G 1/4	2 x 3/8-NPT outer	2 x 1/4-NPT outer

**GA-2000**  
**Pressure gauge adaptor**

This pressure gauge adaptor is suitable for connection to all TWAZ hand pumps (2000 bar). Suitable for pressure gauge GGY-2500.



**Technical data GA-2000**

Model	Art.-No.	Operating pressure max. bar	Oil port gauge	Oil port pump	Oil port hose
GA-2000	N14200419	2000	G 1/2	M22 x 1.5 outer (with seal cone)	M22 x 1.5 innen (for FY - 201)



## CFY, CMY, CCY Hydraulic couplers

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 uncoupled 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.

### Technical data CFY, CMY and CCY

Model	Art.-No.	Description	Pressure max. bar	Pressure max. bar
CFY-1	N14200166	Coupler half, female (standard)	3/8-NPT, outer	700
CFY-2	N14200482	Coupler half, female	3/8-NPT inner	700
CFY-18	N14200420	Coupler half, female	M18 x 1.5 outer	700
CFY-10-S	N14200814	Coupler half, female	Pipe Ø 10 mm	700
CMY-1	N14200167	Coupler half, male	3/8-NPT, inner	700
CCY-1	N14200165	Coupler halves, female + male	3/8-NPT	700
CDF-9 <sup>1</sup>	N14200396	Dust cap, rubber	-	-

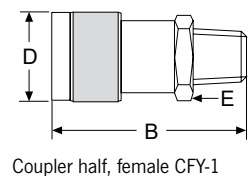
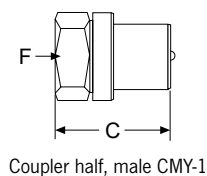
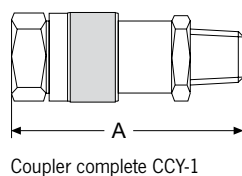
<sup>1</sup>fits to female and male coupler halves (standard with all female coupler halves)

### Dimensions CFY, CMY and CCY

Model	CFY-1	CFY-2	CFY-18	CFY-10-S	CMY-1	CCY-1
A, mm	-	-	-	-	-	87
B, mm	72	78	72	72	-	-
C, mm	-	-	-	-	40	-
D, mm	35	35	35	35	-	-
E, mm	14	27	24	24	-	-
F, mm	-	-	-	-	32	-

## INFO

Hydraulic couplers must always be completely closed, since otherwise the circulation cannot be released.



## HHC 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.



### Technical data HHC

Model	Art.-No.	Length m	Operating pressure bar	Burst pressure bar	Connection 2 male coupler half CMY-1	Connection 1 thread nipple 3/8-NPT, outer	External diameter approx. mm	Bend radius min. mm	Width mm
HHC-5	N14200330	0.5	700	2800			14	100	6.3
HHC-10	N14200300	1	700	2800			14	100	6.3
HHC-20	N14200151	2	700	2800			14	100	6.3
HHC-30	N14200331	3	700	2800			14	100	6.3
HHC-40	N14200152	4	700	2800			14	100	6.3
HHC-60	N14200209	6	700	2800			14	100	6.3
HHC-80	N14200313	8	700	2800			14	100	6.3
HHC-100	N14200332	10	700	2800			14	100	6.3
HHC-120	N14200702	12	700	2800			14	100	6.3
HHC-150	N14200703	15	700	2800			14	100	6.3

### 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 HHC-... (recommended for long hydraulic hoses).

#### 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).




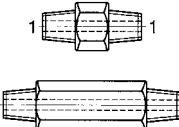

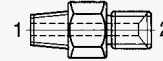

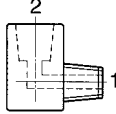

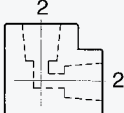

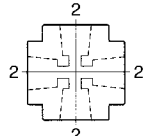

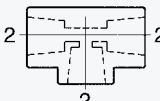
## FY Fittings, reducers, connectors

Fittings are useful for versatile combinations of hydraulic cylinders.


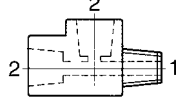

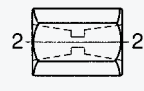

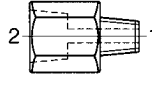

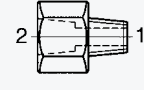

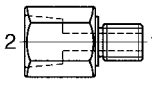

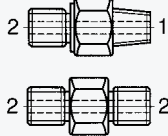

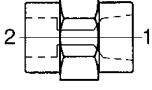

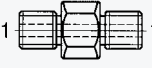

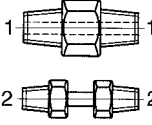

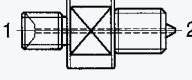
Yale high pressure fittings have been designed to give a variety of connections, extensions and combinations. The fittings are designed for a max. system pressure of 700 bar.

For improved sealing of 3/8 NPT connections use two layers of teflon tape and tighten accordingly.

### Technical data FY

Model	Art.-No.		Description	Figures	Connection 1	Connection 2
FY-1 FY-1L	N14200153 N14200659		Double nipple Double nipple, long		3/8 NPT outer 3/8 NPT outer	- -
FY-13 FY-17 FY-18	N14200244 N14200342 N14200343		Double nipple		1/4 NPT outer 3/8 NPT outer 3/8 NPT outer	R 1/4 outer M14 x 1.5 (for sleeve nut) R 1/4 outer
FY-2	N14200154		Elbow		3/8 NPT outer	3/8 NPT inner
FY-3	N14200155		Elbow		-	3/8 NPT inner
FY-6	N14200158		Cross		-	3/8 NPT inner
FY-4	N14200156		Tee		-	3/8 NPT inner

Technical data FY

Model	Art.-No.		Description	Figures	Connection 1	Connection 2
FY-5	N14200157		Tee		3/8 NPT outer	3/8 NPT inner
FY-7 FY-11	N14200159 N14200243		Connection		-	3/8 NPT inner 1/4 NPT inner
FY-8 FY-9	N14200199 N14200224		Adaptor		3/8 NPT outer 1/4 NPT outer	R 1/2 inner 3/8 NPT inner
FY-10 FY-12	N14200245 N14200246		Adaptor		3/8 NPT outer 1/2 NPT outer	1/4 NPT inner 3/8 NPT inner
FY-16 FY-19 FY-20 FY-30 FY-33	N14200323 N14200353 N14200354 N14200693 N14200889		Adaptor		3/8 NPT outer M18 x 1,5 outer M14 outer G 3/8 outer 3/8 NPT outer	M18 x 1,5 inner 3/8 NPT inner 3/8 NPT inner 3/8 NPT inner M14 x 1.5 inner
FY-26 FY-27	N14200654 N14200655		Double nipple		3/8 NPT outer G 3/8 outer	G 3/8 outer G 3/8 outer
FY-31 FY-32	N14200694 N14200695		Connection		3/8 NPT inner 3/8 NPT inner	M18 x 1.5 inner M20 x 1.5 inner
FY-35	N14200890		Double nipple		M 14 outer	-
FY-703	N14200203		Connecting set for 4/3-way valve to HPS hand pumps (telescopic nipple)		3/8 NPT outer	1/4 NPT outer
FY-201	N14200487		Adaptor for TWAZ hand pumps 2000 bar		R1/4 outer	M22 x 1.5 outer (with seal cone)



## BMZ Hydraulic puller with integrated hydraulics

Pulling force max. 6, 8 and 11 t

Hydraulic pullers are a valuable 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

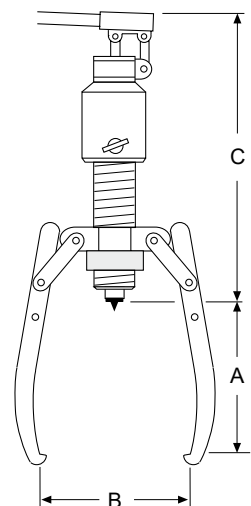
- Drop-forged alloy steel jaws.
- Hard chromium plated piston, spring return.
- No radial moment of torsion.
- No spindle wear.
- Integrated hydraulic cylinder and pump.
- Quick adjustment with trapezoid speed nut.
- 3 and 2-jaw design.
- Pump lever can rotate through 360°.
- Piston with durable, spring loaded centering tip.
- Supplied in a sturdy plastic box.

### Technical data BMZ

Model	Art.-No.	Pulling force max. t	Stroke mm	Weight kg
BMZ-6	N13500610	6	82	4.9
BMZ-8	N13500611	8	82	6.6
BMZ-11	N13500612	11	82	8.0

### Dimensions BMZ

Model	BMZ-6	BMZ-8	BMZ-11
Reach max. A, mm	160	200	230
Width Ø max. B, mm	200	250	280
Length C, mm	320	320	345











BMZ-1010  
BMZ-1510



BMZ-2311

## BMZ Puller sets with separate hydraulics 10, 15 and 23 t

Pulling force max. 10 - 23 t

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

### Features

- High quality components from our standard hydraulic programme.
- 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 = 2.0 m.
- All complete sets are supplied in metal box model HPK-10 or wooden case.
- All sets are supplied ready to use.

### Scope of delivery

- Pressure gauge set model GYA-63.



Accessories for BMZ-2300 and BMZ-2311: BMZ-2308 extensions of pulling arms increase the reach (A) up to 395 mm. BMZ-2309 up to 495 mm.



Pressure gauge set GYA-63 is part of the scope of delivery.

## BMZ-1010 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

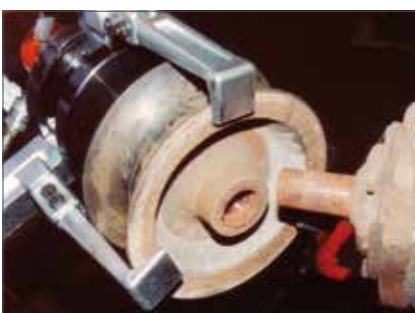
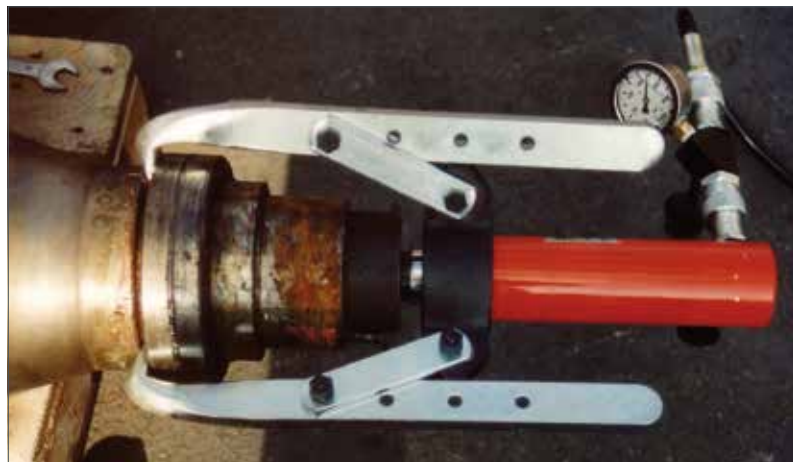
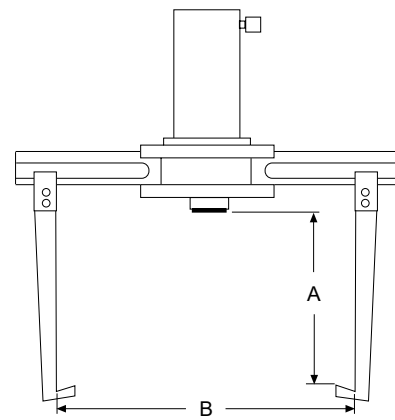
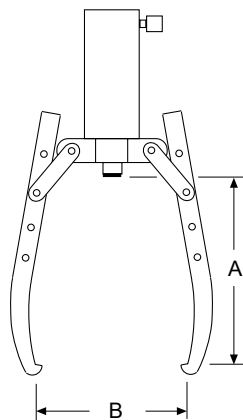
The radially adjustable pulling arms can be locked in any position.

## Technical data BMZ

Model	Art.-No.	Pulling force max. t	Hydraulic cylinder model	Hand pump model	Hydraulic hose model	Stroke of the cylinder mm	Weight kg
BMZ-1000	N13500613	10	without	without	without	-	9.5
BMZ-1010	N13500614	10	with YS-10/150	with HPS-2/0,7 A	HHC-20	150	21.5
BMZ-1500	N13500615	15	without	without	without	-	9.5
BMZ-1510	N13500616	15	with YS-15/150	with HPS-2/0,7 A	HHC-20	150	23.5
BMZ-2300	N13500617	23	without	without	without	-	56.8
BMZ-2311	N13500600	23	with YS-23/160	with HPS-2/0,7 A	HHC-20	160	106.0

## Dimensions BMZ

Model	BMZ-1000	BMZ-1500	BMZ-2300
Reach max. A, mm	300	300	190
Width Ø max. B, mm	350	350	700



## INFO

The set "Cross-bearing puller" have reduced max. pulling forces.



### 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	Art.-No.	Pulling force max. t
YHP-252 G	N13500005	20
YHP-352 G	N13500006	30
YHP-552 G	N13500007	50



### Cross-bearing puller sets

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

Model	Art.-No.	Pulling force max. t
YHP-262 G	N13500008	10
YHP-362 G	N13500009	15
YHP-562 G	N13500010	25



### Multi-purpose puller sets

These multi-purpose puller sets are universal combinations of both a.m. sets and include all necessary parts from 3-grip puller set and crosshead puller set.

Model	Art.-No.	Pulling force max. t
YHP-2752 G	N13500011	20/10
YHP-3752 G	N13500012	30/15
YHP-5752 G	N13500013	50/25

## Type of puller set

Model	3-grip puller set			Crosshead puller set			Multi purpose puller set		
	YHP-252 G	YHP-352 G	YHP-552 G	YHP-262 G	YHP-362 G	YHP-562 G	YHP-2752 G	YHP-3752 G	YHP-5752 G
Art.-No.	N13500005	N13500006	N13500007	N13500008	N13500009	N13500010	N13500011	N13500012	N13500013
Nennkraft, t	20	30	50	10	20	25	20/10	30/15	50/25
Hand pump, model HPS-1/07 A (part 1)	•	•	–	•	•	–	•	•	–
Hand pump, model HPS-2/2 A (part 1)	–	–	•	–	–	•	–	–	•
Pressure gauge set, model GYA-63 (part 2)	•	•	•	•	•	•	•	•	•
Hydraulic hose, model HHC-20 (part 3)	•	•	•	•	•	•	•	•	•
Hollow cylinder (part 4), 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
Triple crosshead (part 5)	•	•	•	–	–	–	•	•	•
Double crosshead (part 6)	•	•	•	–	–	–	•	•	•
Grip arm, 3 pcs. (part 8)	•	•	•	–	–	–	•	•	•
Spindle (part 9)	•	•	•	•	•	•	•	•	•
Strap, 6 pcs. (part 10)	•	•	•	–	–	–	•	•	•
Strap screws + strap nuts, 6 pcs. (part 11)	•	•	•	–	–	–	•	•	•
Mounting screws, 2 pcs. (part 13a)	•	•	•	–	–	–	•	•	•
Mounting screws, 2 pcs. (part 13b)	–	–	–	•	•	•	•	•	•
Saddle with internal thread (part 14)	•	•	•	•	•	•	•	•	•
Smooth saddle (part 15)	•	•	•	•	•	•	•	•	•
Slotted crosshead (part 16)	–	–	–	•	•	•	•	•	•
Slide plate, 2 pcs. (part 17)	–	–	–	•	•	•	•	•	•
Nut, 2 pcs. (part 18)	–	–	–	•	•	•	•	•	•
Washer, 2 pcs. (part 19)	–	–	–	•	•	•	•	•	•
Pulling leg, short, 2 pcs. (part 20), mm	–	–	–	280	255	455	280	255	455
Pulling leg, long, 2 pcs. (part 21), mm	–	–	–	460	505	773	460	505	773
Leg end, 2 pcs. (part 24)	–	–	–	•	•	•	•	•	•
Leg connector, 2 pcs. (part 25)	–	–	–	•	•	•	•	•	•
Bearing puller attachment (part 26)	–	–	–	•	•	•	•	•	•
Bearing cup pulling attachment (part 27)	–	–	–	•	•	•	•	•	•
Storage case (part 29)	•	•	•	•	•	•	•	•	•
Weight, kg	40	65	120	46	86	156	91	172	295

The symbols stand for: • including complete set, – not included

## Dimensions hydraulic puller set YHP

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

