CONTENTS

Safety Guidelines

PRECAUTIONS

Please read instruction manual carefully prior to operate. Do not operate without fully comprehension.
Pay attention to every warning label and plate on the product.
「Seperate-type hydraulic jack handbook」(No.JOHS-124) from JOHS(Japan Fluid Power Association Standard)is available on request.

- Be sure to follow the 3 kinds of precautions identified below for your safety is highly concerned.

⚠	**Danger**	**This indicates matters that will lead to imminent risk of death or serious injury if incorrectly handled.**
	Warning	**This indicates matters that may lead to imminent risk of death or serious injury if incorrectly handled.**
	Caution	**This indicates matters that may lead to injury or material damage if incorrectly handled.**

※The dangers, warnings and cautions identified herein do not cover every kind of situations. Please be sure to read every instruction manuel carefully and fully comprehend its contents prior to operation. Safety First!
※For safety use, please be sure to comply with the following rules.

- Industrial Safety and Health Act
- Fire Service Act
- JIS B8361 Hydraulic System Common Rules

1.Cautions on choosing equipment

① ⚠ Caution Choose a jack with sufficient lifting capacity (use 70~80% of rated capacity).

② ⚠ Warning When using multiple jacks, uneven load may occur. For the sake of safety, have extra capacity (use 50~70% of rated capacity.)

③ ⚠ Caution Some single-acting jack models may get rusty when used outdoors, which may result in malfunctions. For outdoor applications, inner parts plated is available on request at the time of manufacture.

④ ⚠ Warning If you plan to use an E- or ET-type jack several tens of thousands of times at 70~80% of rated capacity, please discuss your operating conditions with us beforehand. Keep in mind that durability may be subject to operating conditions (spring and sealing packings are considered consumable parts). Also consult with us regarding extreme high-frequency usage cycles.

⑤ ⚠ Warning Scope of jack operating speed should be considered as follows;
For general industrial use, up to 300mm/sec with no load and up to 30mm/sec with load.

⑥ ⚠ Caution Operate jack within the stroke limit to avoid blowout.

⑦ ⚠ Warning Select jack, pump, hose and fittings that can withstabd the system's max. working pressure.

⑧ ⚠ Warning Consider your requirements when choosing a jack, pump, and hose. Make sure the specifications match.

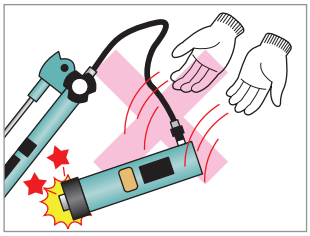
2.Cautions on product handling

① ⚠ Caution To prevent injuries, use appropriate protective equipment for the job.

② ⚠ Caution The equipment is heavy, so be aware of your posture. Take care not to injure your back or pinch your hands when lifting, carrying, or using the equipment.

③ ⚠ Caution Do not stand on, drop, strike, or apply external force to the equipment. By doing so will cause malfunctions, oil leaks, or other damage.

④ ⚠ Caution To prevent accidents, immediately and thoroughly wipe up any leaked oil. Slippery equipment is easy to fall off. Oil on the floor can cause someone to slip and fall.



Do not stand on, drop, strike, or apply external force to the equipment.

3.Cautions when connecting and disconnecting equipment

① Warning Installation, wiring, and removal must be carried out by a qualified specialist, such as a licensed engineer or someone who has received our service training.

② Warning Disconnect power source before beginning of service. Check and make sure all motors are off. Release any residual pressure in the equipment.

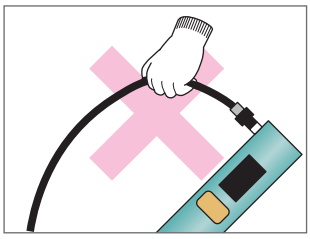
③ Warning Turn off the power from the source before beginning any electrical work.

④ Warning Do not block the hydraulic circuit. When connecting hoses, make sure couplings are tight.

⑤ Warning Do not block the return circuit of a double-acting jack.

⑥ Warning Do not use hoses that are worn out because there is a risk they may burst or leak.

⑦ Caution Do not use hoses to carry or move hydraulic equipment.



Do not use hoses to carry or move hydraulic equipment.

⑧ Danger Do not loosen couplings, plugs, or hoses when the equipment is pressurizing unless a stop valve is installed. Without a stop valve, falling loads, spraying oil, flying parts and other hazards may occur.

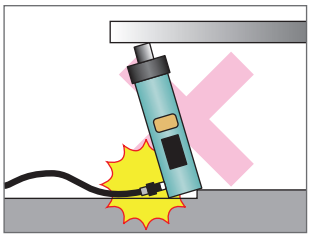
4.Cautions and warnings for installation

① Warning Receive the load vertically on the center of the jack. A load-bearing jack can tip over. Always install it on a solid base and properly face the jack in the direction of gravity. Do not use with extension pipes etc. in unstable conditions.

② Warning Never put yourself under a load until safety is guaranteed. A load-bearing jack can tip over. Use a jack with a safety nut or replace the jack with cribbing or blocking when supporting a load for a long period.

③ Warning Make sure the surfaces above and below the jack will not deform. Remember that a load-bearing jack can tip over. If necessary, use metal plates to widen the pressure-bearing surfaces.

④ Warning Receive load equally and vertically with entire area of the top and bottom of the jack. If necessary, install a tilting saddle.



Receive load equally with entire area of the top and bottom of the jack.

⑤ Warning Install jack on solid base and properly support the jack. As much as possible, ensure that wind, shock, vibration, and other external forces cannot make the jack tip over.

⑥ Warning Do not apply inclined or impact loads to jack. The jack may tip over when lateral forces are applied.
In these cases, always use an anti-tip device.

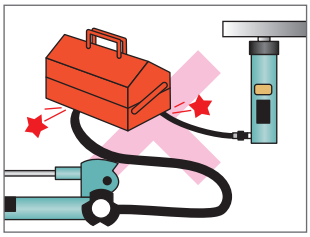
⑦ Warning Install relief valve on hydraulic pump to prevent pump pressure from exceeding the jack's rated pressure.

⑧ Warning Install appropriate safety valves, such as fall-prevention or pilot-check valves, to prevent the load from falling due to damaged hose.

⑨ Warning Take special care not to contaminate hydraulic oil. The load retaining valve and other parts may be damaged if the oil gets contaminated.

⑩ Warning Use stabilizing material under the base and between jack and load to avoid slipping.

⑪ Warning Install jack, hoses, and fittings in a safe position with enough clearance where objects will not fall on hoses.
Do not twist, pull, or bend hoses at extreme angles. Do not weld near hoses. Do not install hoses in areas where they will conduct heat.



Do not not drop anything on the hoses.

⑫ Warning Perform all work in a safe position. Ensure enough space to perform operations, adjustments, or installation. Avoid installing equipment in place where maintenance is difficult.

⑬ Warning Be sure to bleed any air that enters the equipment.

⑭ Warning Pressurized oil is dangerous. If highly pressurized oil sprays from hydraulic equipment, there is a possibility it may penetrate skin, resulting in serious injury. This type of injury requires immediate medical care.

⑮ Warning Keep the work area around jacks clean and orderly.
Keep job site from getting slippery due to oil leaks or spills.
Be careful when connecting or disconnecting hoses and couplings.

⑯ Warning Before operating, confirm chain of operating command for lifting or lowering loads using Jacks.

⑰ Warning Please do not use a damaged, modified or ill-maintained jack.

⑱ Danger If the directional control valve is swtiched to the return circuit when the jack is supporting a load, the load may fall rapidly.
Use a flow-control or similar valve in the circuit to lower the load gradually.

5.Cautions and warnings during operation

① Danger Never use unprotected jacks in areas where explosions or fires may occur.

② Warning To prevent entanglement accidents when using a motorized pump, make sure the rotary shaft has a protective cover.

③ Warning Stop operations immediately if any problem occurs, such as oil leaks, smoke, or unusual noises.
Take corrective action or injury, fire, and other damage may occur.

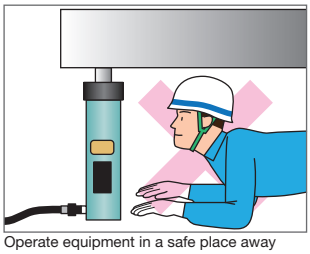
④ Caution Before using the equipment, make sure that all wiring and hoses are in order.
Also check for loose joints or connections.

⑤ Caution Do not operate beyond specification scope that listed in our catalog, drawings, or specification sheets. Otherwise, malfunction or injury may occur.

⑥ Caution Use appropriate hydraulic oil. Monitor the condition of the oil and change it when necessary.

⑦ Caution Loosen air vent plug before operating pump.

⑧ Warning Operate equipment in a safe place away from the load.


Operate equipment in a safe place away from the load.

6.Cautions and warnings on use of multiple jacks

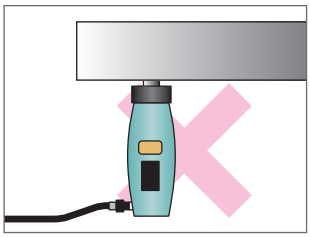
① Warning When using multiple jacks, unbalanced loading may occur.
For the sake of safety, choose jacks with extra capacity (use 50~70% of rated capacity.)

② Warning Receive the load vertically in the center of the jack. A load-bearing jack can tip over. Always install it on a solid base and properly face the jack in the direction of gravity. If necessary, install a tilting saddle.

③ Danger Be careful when lowering a load because it may become unbalanced. This may cause jacks to tip or become overloaded, which can result in damage.

④ Danger Lateral movement of a load supported by multiple jacks is very dangerous. Make sure to follow a pre-determined order and the instructions of an experienced operator.

⑤ Caution For maximum safety when using multiple jacks, have a pre-determined order of operation, a clear communication system, and established commands before beginning operations. Pay attention to each jack's stroke distance and follow the instructions of an experienced operator who is monitoring the load's balance and center of gravity.


Please do not operate beyond capacity of jacks.

7.Cautions and warnings on proper maintenance

① Warning Never modify the equipment yourself. Modified equipment is dangerous.

② Caution Do not disassemble and reassemble equipment unnecessarily. Otherwise, accidents or breakdowns may occur. Necessary maintenance must be carried out by a qualified specialist, such as a licensed engineer or someone tho has received our service training.

③ Caution Pay attention to the surrounding environment when transporting or storing equipment.
Dust, ambient temperature, moisture and other factors can affect the equipment.

④ Caution When storing equipment for a long period, seals may need to be replaced.

⑤ Caution To keep equipment in working order, periodic checks (once per month) are recommended.

◯Cautions and warnings cannot cover every possible circumstance.

Read instructions carefully and always think about safety first.

Choosing the Right Jack and Pump

1.Hydraulic Jack

(1) Capacity

- Please select jack with extra 20～30% capacity than required.
- Moreover, when operating multi-connecting jacks, unbalanced load might occur. Please select jack with extra capacity than required.

(2) Stroke

- Please select jacks with extra stroke than required.

(3) Return Method

Single-acting

Spring return
- Piston rod is returned by an internal spring.
- The piston rod may not return easily when used in an inverted or horizontal position. This can also occur if the piston rod is equipped with attachments or fittings.

Gravity return
- Piston rod is returned by an external force, such as weight or gravity.

Gas return
- Piston rod is returned by sealed, compressed air.

Notices) Regarding above-mentioned 3 types:
- Length of piping can make it difficult for a single-acting jack's piston rod to return.
- Return speed is not constant.
- No pulling force is available.

Double-acting

Hydraulic return
- Piston rod is returned by oil pressure. Useful when a pulling force or a quick return speed are required.
- Appropriate for inverted or horizontal use, or when piston rod is equipped with attachments or fittings.
- Approximate pulling force is 1/2 of pushing force. Refer to individual specs.

(4) Cautions

- Jacks can be used in horizontal, diagonal, vertical, or inverted positions but load movement must be parallel with piston rod movement. Refer to individual specs for allowable lateral load.

(5) Scope of jack operating speed

- For general industrial use, up to 300mm/sec with no load and up to 30mm/sec with load.
- For raising and lowering heavy loads, up to 5mm/sec is suitable.
- Consult with us for applications beyond this range.

(6) Frequency

- For high-frequency usage cycles, use a high-powered Type jack.

(7) Operating Environments

- Use jacks within an ambient temperature range of -5～40℃.
  Seals in standard jacks may withstand a temperature range of -10～80℃.
- Standard jacks are made for indoor use. Consult with us for outdoor applications.

(8) Allowable Lateral Load

- Allowable lateral load is listed in the features section of each jack. Make sure to check it.

2.Hydraulic Pump

(1) Working Pressure

- Select a suitable pump. Make sure the rated pressure of the pump and jack match. Otherwise, the jack may be damaged or its lifting ability may be affected.

(2) Oil Delivery

- Select a pump according to your required lifting speed.

(3) Useable Oil

- Make sure the pump's usable oil matches the jack's required amount.
- Remember to include hosing in your calculations.

＜Calculating necessary oil volume＞

$$Q = \frac{n\ q + \alpha}{1000}$$

Q : Total amount of required oil (ℓ)
n : number of jacks (pcs)
q : oil capacity per jack (mℓ)
α : oil capacity for hosing (mℓ)

※Regarding hand and foot pump, we recommend choosing pump wiht usable oil of Q+extra; Regarding electric pump, considering the raising of oil temperature, we recommend choosing pump with usable oil that is 3 times of Q.

(4) Working Fluid

- Please choose recommending working oil of pump accordingly

Manufacturer	Viscosity Grade	
	ISO– L –HM VG32	ISO– L –HV VG15
Showa Shell Sekiyu K. K.	Tellus Oil G32	Tellus Oil T15
Exxon Mobil Corporation	Mobile DTE32	mobile Oil DTE11M
Idemitsu Kosan Co., Ltd.	Daphne Hydraulic Fluid 32	Super Hydrau 15X
JX Nippon Oil & Energy Corporation	Super Highland 32	Highland 15
Cosmos Oil Co., Ltd.	Cosmo Hydrau AW32	Cosmo Hydrau H V 22

(5) Types and Features

- Hand Pump : By manually leveling handle bar repeatedly to deliver oil.
- Foot Pump : By stepping on foot pedal repeatedly to deliver oil.
- Air Booster : Pump that uses air compressor to create hydraulic force. Approx. 0.7MPa air pressure generates 70MPa hydraulic pressure
- Air Pump : Pump that uses air motor instead of electric motor for hydraulic pump. Best for anti-explosion environments.
- Electric Pump : Standard pump that uses electric motor as driven force. From portable compact type to stationary type. Please select accordingly to speed and application.

3.Hose

- Rubber and nylon hose for your selection. Weight and min. bend radius differ.
- Hose type is determined by a pump's oil delivery. Choosing a hose with the wrong oil flow will affect a jack's speed.

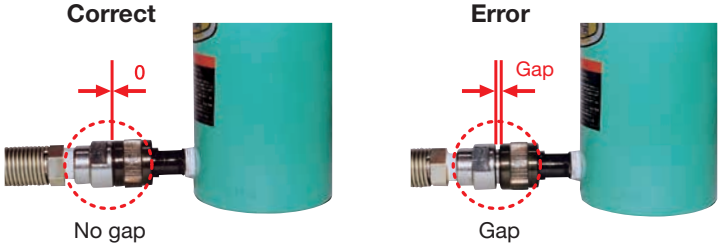
4.Coupler

(1) Attaching

- Make sure the oil delivery rate of pump and couplers match.
- Wrap coupler threads with sealing tape before screwing into the port.
- Clean coupler before connecting.

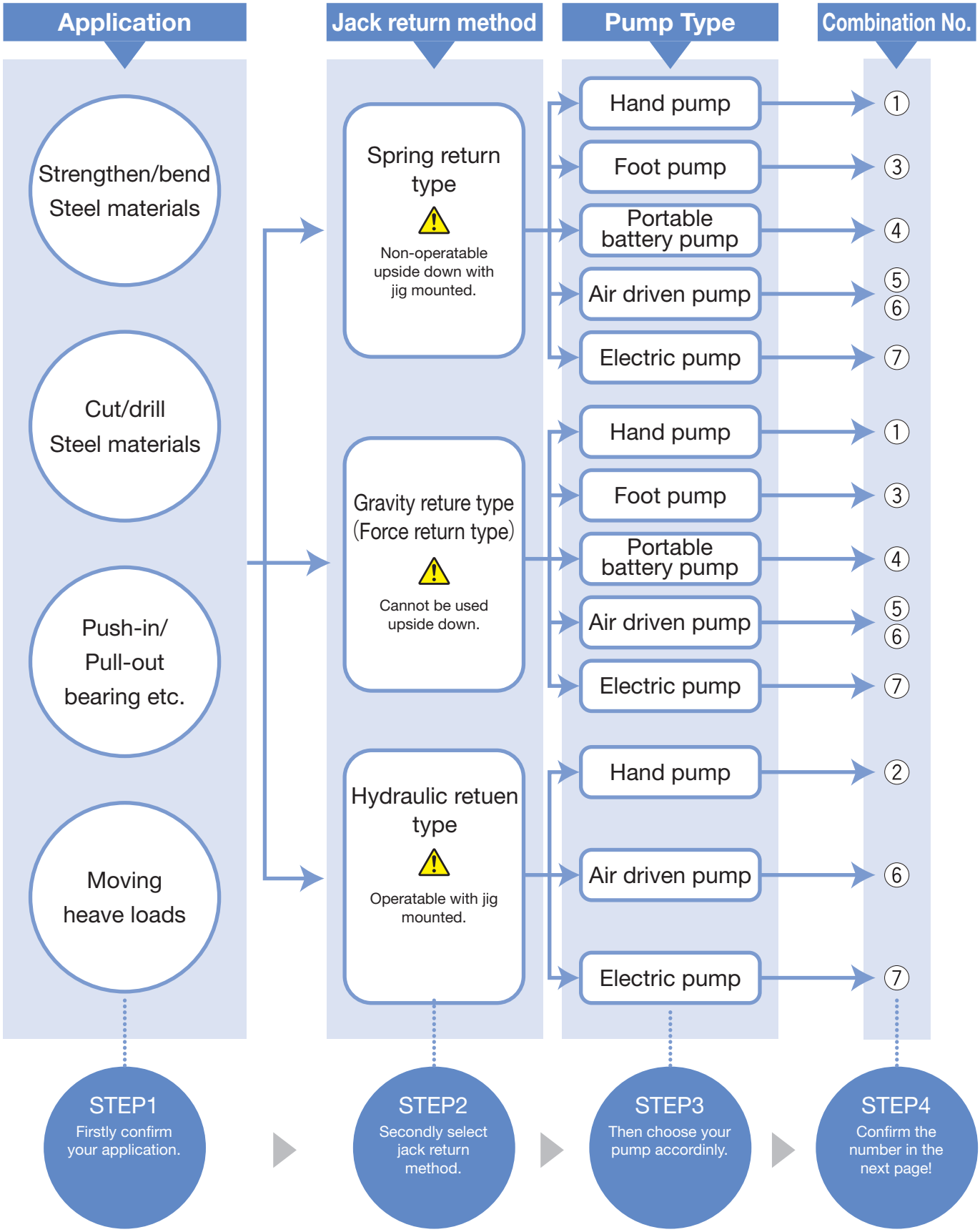
(2) Connecting

- Dirty couplers may contaminate working oil.
- Tighten couplers completely until the male and female ends meet. Poor connections may make it difficult for the piston rod to return.
- De-pressurize the system before connecting or disconnecting couplers.



Jack & Pump Select Guidelines

• This chart below will help you determine which jack and pump to select.



①Hand pumps

Item / Model	Features of pump	Suitable jack
TWA type	Low/high pressure two stage pump	Single acting jack (Spring/gravity return)
LTWA type	Low/high pressure two stage pump made of aluminum	
TWAX type	100MPa low/high two stage pump	
TWAZ type	200MPa low/high two stage pump	
TWAU type	300MPa low/high two stage pump	———
TWAS type	Low/high pressure two stage pump made of stainless steel	SA type water pressure jack(Spring return)

②Hand pumps

Item / Model	Features of pump	Suitable jack
TWAD type	Low/high pressure two stage pump with control valve	Double acting jack (Hydraulic return)

③Foot pumps

Item / Model	Features of pump	Suitable jack
FPA type	Foot operated pump	Single acting jack (Spring/gravity return)

④Portable battery pumps

Item / Model	Features of pump	Suitable jack
PBP type	Battery driven pump	Single acting jack (Spring/gravity return)

⑤Air booster pumps

Item / Model	Features of pump	Suitable jack
AB type	Air driven pump	Single acting jack (Spring/gravity return)

⑥Air driven pumps

Item / Model	Features of pump	Suitable jack
GHA type	Air driven hydraulic pump	Single acting jack (Spring/gravity return)and double acting jack(hydraulic return)

⑦Electric pumps

Item / Model	Features of pump	Suitable jack
PSP type	220V Power source. Loght wight and compact pump for 72MPa.	Single acting jack (Spring/gravity return)and double acting jack(hydraulic return)
NEXZ type	220V Power source. Loght wight and compact pump for 200MPa.	Single acting jack (Spring/gravity return)
QH type	0.4～3.7kW pump (380V Power source)	Single acting jack (Spring/gravity return)and double acting jack(hydraulic return)
GX type	100MPa type pump	Single acting jack (Spring/gravity return)
AH type	5.5～15kW pump (380V Power source)	Single acting jack (Spring/gravity return)and double acting jack (hydraulic return)
VZ type	200MPa type pump	

E type Power Jacks 50kN

S (Spring return) type

Model number: E 5 S 7.5
- E type
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

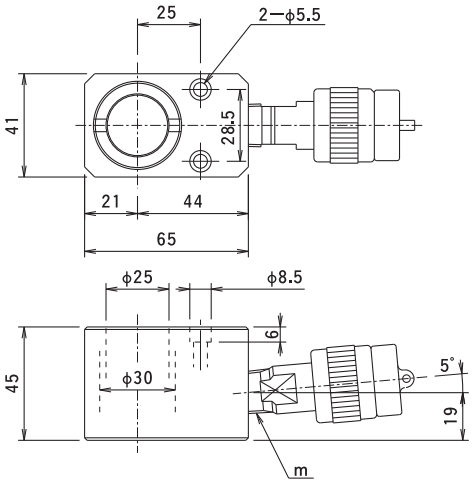
Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt (except E5S1.5).
- Push-in saddle. Contact us for other saddles.
- Inverted applications require a fixed saddle.
- Metric mounting threads in the base.
- Metric mounting threads on cylinder collar.
- Designed to be lightweight and compact.
- Allowable lateral load is 1/20 of lifting capacity.

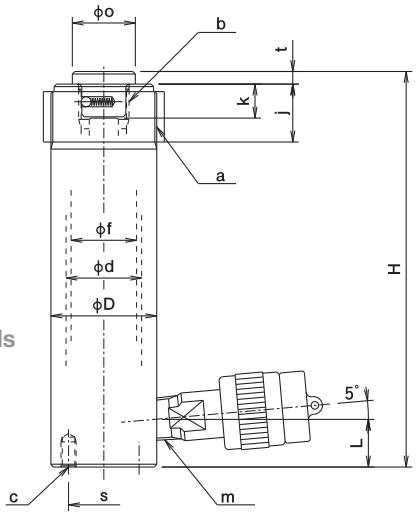
E5S1.5

E5S7.5

Dimensional drawing



Dimensional drawing



Applicable models

E5S2.5
E5S7.5
E5S12.7
E5S18

Specifications

Items	Unit	E5S1.5	E5S2.5	E5S7.5	E5S12.7	E5S18
Capacity	kN(ton)	50(5)				
Stroke	mm	15	25	75	127	180
Closed height (H)	mm	45	97	157	214	267
Cyl. outer dia. (D)	mm	Shown above	42			
Cyl. bore dia. (d)	mm	30				
Cyl. effective area	cm²	7.07				
Oil capacity	mℓ	11	18	53	90	127
Weight approx.	kg	1.4	1.5	2	2.5	2.9
Collar screw dia. (a)	mm	—	M42×1.5			
Collar screw length (j)	mm	—	23			
Rod screw dia. (b)	mm	—	M20×2			
Rod screw length (k)	mm	—	13			
Base screw dia. (c)	mm	Shown above	2—M6×10L			
(s)	mm	Shown above	28			
Rod dia. (f)	mm	25	26			
Saddle dia. (o)	mm	—	25			
(t)	mm	—	5			
Port size (m)	—	NPT3/8				
Height to coupler (L)	mm	19				
Pumps applicable: Hand pump		TWA—0.3 or TWA—0.7				
Pumps applicable: Electric pump		PSP or QH1/2				
Included coupler		B—6JG				

E type Power Jacks 100kN

S (Spring return) type

Model number: E | 10 | S | 2.5
- E type
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

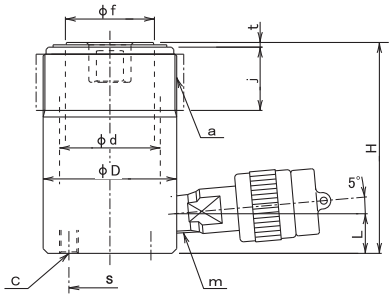
Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Push-in saddle. Contact us for other saddles.
- Inverted applications require a fixed saddle.
- Metric mounting threads in the base.
- Metric mounting threads on cylinder collar.
- Designed to be lightweight and compact.
- Allowable lateral load is 1/20 of lifting capacity.

E10S2.5

E10S10

Dimensional drawing

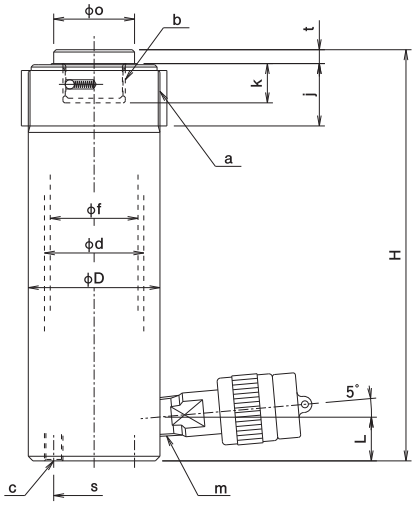


Applicable models

E10S5 E10S10
E10S15 E10S20
E10S25 E10S30

Coupler is parallel to the base.

Dimensional drawing



Specifications

Items	Unit	E10S2.5	E10S5	E10S10	E10S15	E10S20	E10S25	E10S30
Capacity	kN(ton)	100(10)						
Stroke	mm	25	50	100	150	200	250	300
Closed height (H)	mm	90	125	178	250	300	352	407
Cyl. outer dia. (D)	mm	57						
Cyl. bore dia. (d)	mm	43						
Cyl. effective area	cm^2	14.52						
Oil capacity	mℓ	37	73	146	218	291	363	436
Weight approx.	kg	2.1	2.6	3.3	4.6	5.2	6	6.8
Collar screw dia. (a)	mm	M57×1.5						
Collar screw length (j)	mm	27						
Rod screw dia. (b)	mm	–	M27×2					
Rod screw length (k)	mm	–	17		22			
Base screw dia. (c)	mm	2–M8×12L						
(s)	mm	35						
Rod dia. (f)	mm	38						
Saddle dia. (o)	mm	–	35					
(t)	mm	2	6					
Port size (m)	–	NPT3/8						
Height to coupler (L)	mm	17	19		21			
Pumps applicable: Hand pump		TWA–0.3 or TWA–0.7			TWA–0.7			
Pumps applicable: Electric pump		PSP or QH1/2						
Included coupler		B–6JG						

E type Power Jacks 150kN

S (Spring return) type

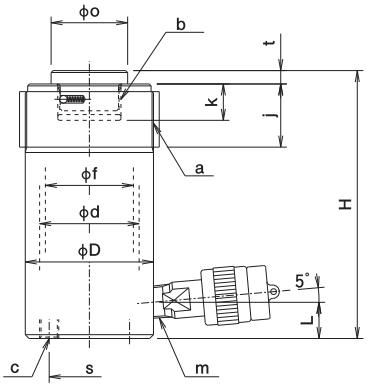
Model number: E | 15 | S | 2.5
- E type
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Push-in saddle. Contact us for other saddles.
- Inverted applications require a fixed saddle.
- Metric mounting threads in the base.
- Metric mounting threads on cylinder collar.
- Designed to be lightweight and compact.
- Allowable lateral load is 1/20 of lifting capacity.

E15S5

Dimensional drawing

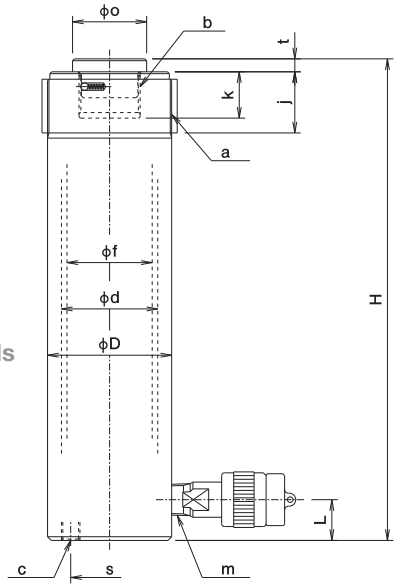


Applicable models

E15S2.5
E15S5
E15S10

E15S15

Dimensional drawing



Applicable models

E15S15
E15S20
E15S25
E15S30
E15S35

Specifications

Items	Unit	E15S2.5	E15S5	E15S10	E15S15	E15S20	E15S25	E15S30	E15S35
Capacity	kN(ton)	150(15)							
Stroke	mm	25	50	100	150	200	250	300	350
Closed height (H)	mm	110	140	190	260	310	365	420	472
Cyl. outer dia. (D)	mm	67							
Cyl. bore dia. (d)	mm	52							
Cyl. effective area	cm^2	21.24							
Oil capacity	mℓ	53	106	213	319	425	531	637	744
Weight approx.	kg	3.2	3.8	4.8	6.3	7.5	8.5	9.5	10.5
Collar screw dia. (a)	mm	M67×1.5							
Collar screw length (j)	mm	33							
Rod screw dia. (b)	mm	M33×2							
Rod screw length (k)	mm	19			25				
Base screw dia. (c)	mm	2–M10×15L							
(s)	mm	42							
Rod dia. (f)	mm	46							
Saddle dia. (o)	mm	40							
(t)	mm	7							
Port size (m)	—	NPT3/8							
Height to coupler (L)	mm	19			22				
Pumps applicable — Hand pump		TWA–0.3 or TWA–0.7		TWA–0.7				TWA–0.9	
Pumps applicable — Electric pump		PSP or QH1/2							
Included coupler		B–6JG							

E type Power Jacks 230kN

S (Spring return) type

Model number: E | 23 | S | 2.5
- E type
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

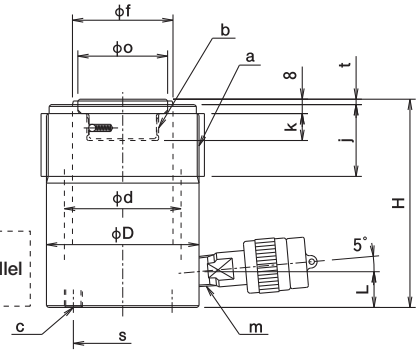
Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Push-in saddle. Contact us for other saddles.
- Inverted applications require a fixed saddle.
- Metric mounting threads in the base.
- Metric mounting threads on cylinder collar.
- Designed to be lightweight and compact.
- Allowable lateral load is 1/20 of lifting capacity.

E23S2.5

E23S16

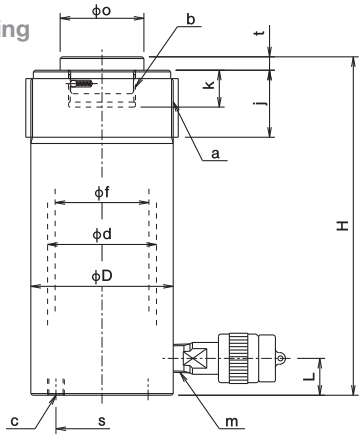
Dimensional drawing



Applicable models

E23S2.5
E23S5
(Coupler is parallel to the base.)

Dimensional drawing



Applicable models

E23S10
E23S16
E23S21
E23S25
E23S30
E23S34.5

Specifications

Items \ Model	Unit	E23S2.5	E23S5	E23S10	E23S16	E23S21	E23S25	E23S30	E23S34.5
Capacity	kN(ton)	230(23)							
Stroke	mm	25	50	100	160	210	250	300	345
Closed height (H)	mm	116	150	202	277	330	376	428	477
Cyl. outer dia. (D)	mm	85							
Cyl. bore dia. (d)	mm	65							
Cyl. effective area	cm²	33.18							
Oil capacity	mℓ	83	166	332	531	697	830	996	1145
Weight approx.	kg	5.5	6.5	8	10	12	14	15	17
Collar screw dia. (a)	mm	M85×2							
Collar screw length (j)	mm	40							
Rod screw dia. (b)	mm	M40×2							
Rod screw length (k)	mm	15	22		25				
Base screw dia. (c)	mm	4–M10×15L							
(s)	mm	55							
Rod dia. (f)	mm	56							
Saddle dia. (o)	mm	50							
(t)	mm	3	8						
Port size (m)	—	NPT3/8							
Height to coupler (L)	mm	20	22						
Pumps applicable: Hand pump		TWA–0.7				TWA–0.9	TWA–1.3		
Pumps applicable: Electric pump		PSP or QH1/2							
Included coupler		B–6JG							

E type Power Jacks 300kN·500kN

S (Spring return) type

Model number: E | 30 | S | 12.5
- E type
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

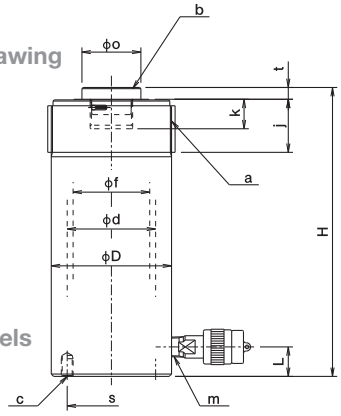
Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Metric mounting threads in the base.
- Metric mounting threads on the cylinder collar.
- Designed to be lightweight and compact.
- E30 models have a push-in saddle; E50 models use a bolt-on type.
- Inverted applications require a fixed saddle.
- Allowable lateral load is 1/20 of lifting capacity.

E30S12.5

E50S16

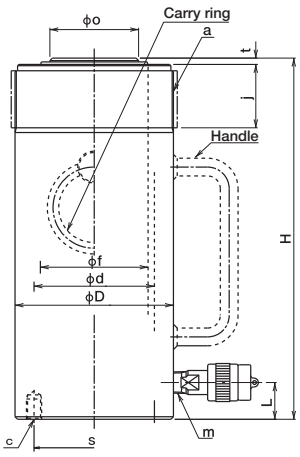
Dimensional drawing



Applicable models

E30S12.5
E30S20

Dimensional drawing



Applicable models

E50S5
E50S10 (With handle)
E50S16 (With handle)
E50S32 (With carry ring)

Specifications

Items	Unit	Model E30S12.5	E30S20	E50S5	E50S10	E50S16	E50S32
Capacity	kN(ton)	300 (30)		500 (50)			
Stroke	mm	125	200	50	100	160	320
Closed height (H)	mm	245	325	170	220	285	460
Cyl. outer dia. (D)	mm	102		125			
Cyl. bore dia. (d)	mm	75		95			
Cyl. effective area	cm²	44.18		70.88			
Oil capacity	mℓ	552	884	355	709	1135	2270
Weight approx.	kg	13	17	15	19	24	37
Collar screw dia. (a)	mm	M102×2		M125×2			
Collar screw length (j)	mm	45		50			
Rod screw dia. (b)	mm	M36×2		–	–	–	–
Rod screw length (k)	mm	25		–	–	–	–
Base screw dia. (c)	mm	4–M10×15L		4–M12×16L			
(s)	mm	75		95			
Rod dia. (f)	mm	65		85			
Saddle dia. (o)	mm	50		70			
(t)	mm	10		3			
Port size (m)	–	NPT3/8					
Height to coupler (L)	mm	25		29			
Pumps applicable: Hand pump		TWA–0.7	TWA–1.3	TWA–0.7	TWA–0.9	TWA–1.3	TWA–4
Pumps applicable: Electric pump		PSP or QH1/2		QH1			
Included coupler		B–6JG					

E type Power Jacks 700kN·1000kN

S (Spring return) type

Model number: E | 70 | S | 15
- E type
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

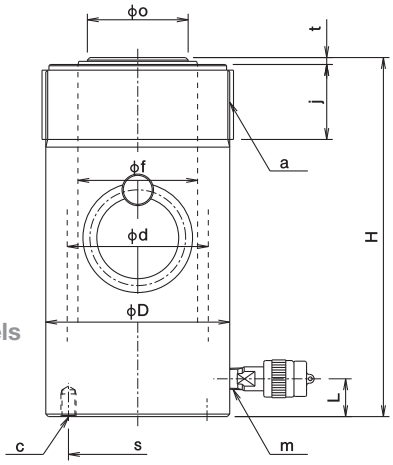
Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Bolt-on saddle.
- Metric mounting threads in the base.
- Metric mounting threads on cylinder collar.
- Designed to be lightweight and compact.
- Allowable lateral load is 1/20 of lifting capacity.

E70S15

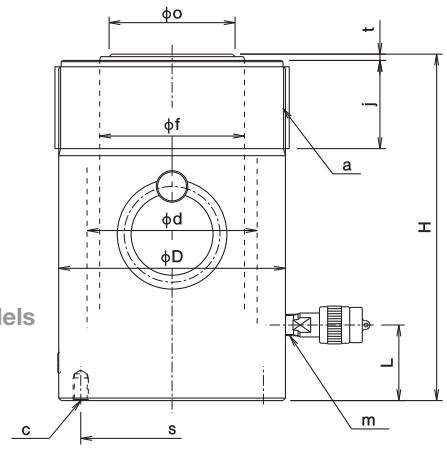
E100S10

Dimensional drawing



Applicable models
E70S15
E70S33

Dimensional drawing



Applicable models
E100S10
E100S20

Specifications

Items	Unit	E70S15	E70S33	E100S10	E100S20
Capacity	kN(ton)	700(70)		1000(100)	
Stroke	mm	150	330	100	200
Closed height (H)	mm	285	490	275	375
Cyl. outer dia. (D)	mm	146		180	
Cyl. bore dia. (d)	mm	112		135	
Cyl. effective area	cm²	98.52		143.14	
Oil capacity	mℓ	1480	3250	1430	2860
Weight approx.	kg	32	52	50	64
Collar screw dia. (a)	mm	M146×3		M180×3	
Collar screw length (j)	mm	60		70	
Rod screw dia. (b)	mm	–	–	–	–
Rod screw length (k)	mm	–	–	–	–
Base screw dia. (c)	mm	4–M12×18L			
(s)	mm	110		145	
Rod dia. (f)	mm	95		115	
Saddle dia. (o)	mm	80		100	
(t)	mm	5			
Port size (m)	–	NPT3/8			
Height to coupler (L)	mm	30		60	
Pumps applicable: Hand pump		TWA–2	TWA–4	TWA–2	TWA–4
Pumps applicable: Electric pump		QH1			
Included coupler		B–6JG			

E type Power Jacks 50kN·100kN

H (Hydraulic return) type

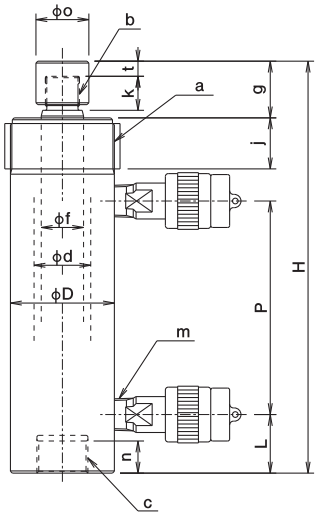
Model number: E 5 H 3
- E type
- Capacity (ton)
- Hydraulic return (H)
- Stroke (cm)

Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Cap included.
- Double-acting push & return jack.
- Pulling force is approx. 1/2 of pushing force.
- Metric mounting threads in the base.
- Metric mounting threads on cylinder collar.
- Allowable lateral load is 1/20 of lifting capacity.

E5H8

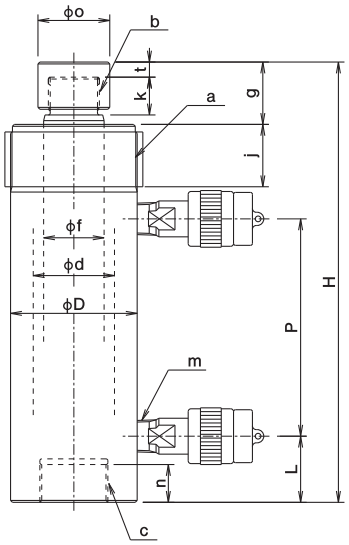
Dimensional drawing



Applicable models
E5H3
E5H8
E5H15

E10H15

Dimensional drawing



Applicable models
E10H3
E10H8
E10H15
E10H25

Specifications

Items \ Model	Unit	E5H3	E5H8	E5H15	E10H3	E10H8	E10H15	E10H25
Capacity	kN(ton)	50(5)			100(10)			
Pulling force	kN(ton)	22(2.2)			45(4.5)			
Stroke	mm	30	80	150	30	80	150	250
Closed height (H)	mm	168	218	288	183	233	303	403
Cyl. outer dia. (D)	mm	55			67			
Cyl. bore dia. (d)	mm	30			43			
Cyl. effective area	cm^2	7.07			14.52			
Oil capacity	mℓ	21	57	106	44	116	218	363
Weight approx.	kg	3	3.8	4.9	4.5	5.5	7	9.5
Collar screw dia. (a)	mm	M55×1.5			M67×1.5			
Collar screw length (j)	mm	27			33			
Rod screw dia. (b)	mm	M18×1.5			M27×2			
Rod screw length (k)	mm	18			20			
Base screw dia. (c)	mm	M27×2			M36×2			
Length of base thread (n)	mm	17			20			
Rod dia. (f)	mm	22.4			32			
Cap dia. (o)	mm	28			38			
(t)	mm	8						
(g)	mm	30			33			
Port size (m)	—	NPT3/8						
Height to coupler (L)	mm	31			35			
Distance between ports (P)	mm	63	113	183	65	115	185	285
Pumps applicable: Hand pump		TWAD−0.7						
Pumps applicable: Electric pump		PSP or QH1/2						
Included coupler		B−6JG						

E type Power Jacks 200kN·300kN

H (Hydraulic return) type

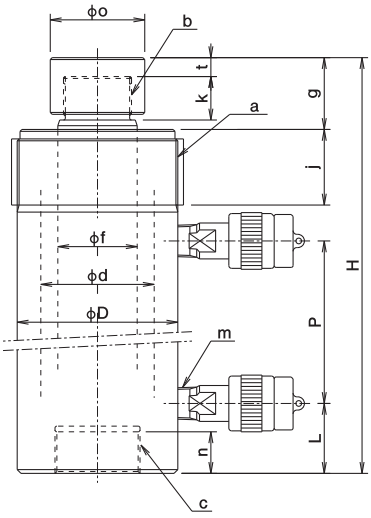
Model number: E | 20 | H | 15
- E type
- Capacity (ton)
- Hydraulic return (H)
- Stroke (cm)

Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Cap included for E20; E30 uses push-in saddle.
- Inverted applications require a fixed saddle.
- Contact us if a screw-on saddle is required.
- Double-acting push & return jack.
- Pulling force is approx. 1/2 of pushing force.
- Metric mounting threads in the base.
- Metric mounting threads on cylinder collar.
- Allowable lateral load is 1/20 of lifting capacity.

E20H15

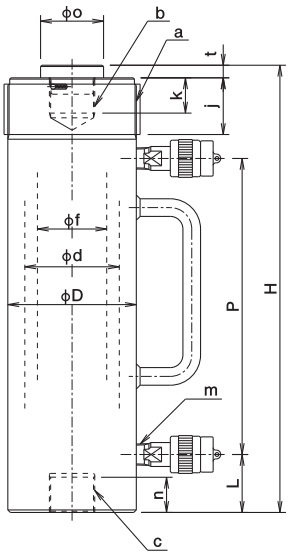
Dimensional drawing



Applicable models
E20H5
E20H15
E20H25
E20H50

E30H20

Dimensional drawing



Applicable models
E30H20 (With handle)
E30H35 (With handle)

Specifications

Items	Unit	E20H5	E20H15	E20H25	E20H50※	E30H20	E30H35
Capacity	kN(ton)	200(20)				300(30)	
Pulling force	kN(ton)	100(10)				140(14)	
Stroke	mm	50	150	250	500	200	350
Closed height (H)	mm	205	320	420	785	355	510
Cyl. outer dia. (D)	mm	85			88	102	
Cyl. bore dia. (d)	mm	60			65	75	
Cyl. effective area	cm^2	28.27			33.18	44.18	
Oil capacity	mℓ	142	424	707	1660	884	1550
Weight approx.	kg	7.5	11	14	30	19	27
Collar screw dia. (a)	mm	M85×2				M102×2	
Collar screw length (j)	mm	40				45	
Rod screw dia. (b)	mm	M36×2				M36×2	
Rod screw length (k)	mm	23				28	
Base screw dia. (c)	mm	—	M45×2			M36×2	
Length of base thread (n)	mm	—	22			28	
Rod dia. (f)	mm	42			48	55	
Cap dia. (o)	mm	50					
(t)	mm	10					
(g)	mm	38				—	—
Port size (m)	—	NPT3/8					
Height to coupler (L)	mm	22	37		37	46	
Distance between ports (P)	mm	86	186	286	625	235	390
Pumps applicable: Hand pump		TWAD−0.7	TWAD−0.9		TWAD−2	TWAD−1.3	TWAD−2
Pumps applicable: Electric pump		PSP or QH1/2					
Included coupler		B−6JG					

Note) Allowable lateral load of model number marked ※ is 1/40 of lifting capacity.

E type Power Jacks 500kN·700kN

H (Hydraulic return) type

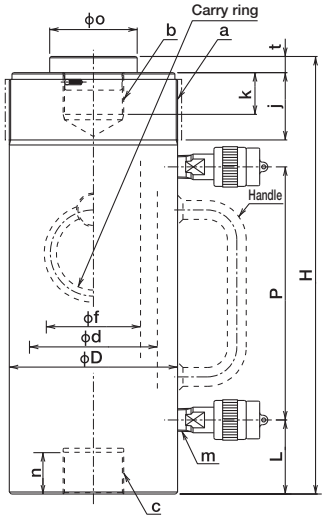
Model number: E | 50 | H | 15
- E type
- Capacity (ton)
- Hydraulic return (H)
- Stroke (cm)

Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Push-in saddle. Contact us for other saddles.
- Inverted applications require a fixed saddle.
- Double-acting push & return jack.
- Pulling force is approx. 1/2 of pushing force.
- Metric mounting threads in the base.
- Metric mounting threads on cylinder collar.
- Allowable lateral load is 1/20 of lifting capacity.

E50H15

Dimensional drawing

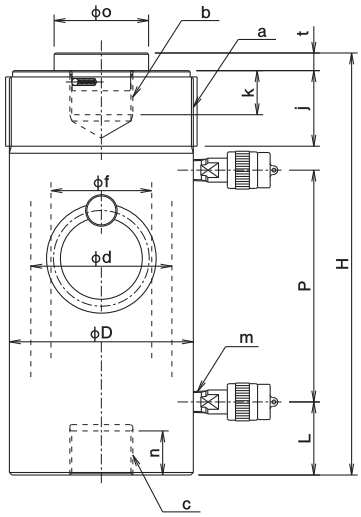


Applicable models

E50H15 (With handle)
E50H35 (With carry ring)
E50H50 (With carry ring)

E70H15

Dimensional drawing



Applicable models

E70H15
E70H35
E100H35 (Bushing + B-9J)
E200H35 (Bushing + B-9J)

Specifications

Items	Unit	E50H15	E50H35	E50H50※	E70H15	E70H35	E100H35	E200H35
Capacity	kN(ton)	500 (50)			700 (70)		1000 (100)	2000 (200)
Pulling force	kN(ton)	220 (22)			330 (33)		450 (45)	900 (90)
Stroke	mm	150	350	500	150	350		
Closed height (H)	mm	325	525	685	335	540	565	620
Cyl. outer dia. (D)	mm	125			146		180	250
Cyl. bore dia. (d)	mm	95			112		135	190
Cyl. effective area	cm²	70.88			98.52		143.14	283.53
Oil capacity	mℓ	1065	2480	3550	1480	3450	5010	9924
Weight approx.	kg	27	42	52	37	56	94	198
Collar screw dia. (a)	mm	M125×2			M146×3		M180×3	M250×4
Collar screw length (j)	mm	50			60		70	80
Rod screw dia. (b)	mm	M45×2			M50×3		M65×3	M90×3
Rod screw length (k)	mm	31			35		40	55
Base screw dia. (c)	mm	M45×2			M50×3		4—M12×18L	4—M16×25L
Length of base thread (n)	mm	31			35		110	160
Rod dia. (f)	mm	70			80		100	140
Saddle dia. (o)	mm	65			75		90	127
(t)	mm	12			14		15	19
Port size (m)	—	NPT3/8						
Height to coupler (L)	mm	55			58		66	80
Distance between ports (P)	mm	188	388	548	184	389	394	416
Pumps applicable: Hand pump		TWAD—2	TWAD—4	TWAD—6.5			TWAD—8	—
Pumps applicable: Electric pump		QH1 or QH2					QH2	QH3
Included coupler		B—6JG					Bushing+B—9J	

Note) Allowable lateral load of model number marked ※ is 1/40 of lifting capacity.

ET type Power Jacks 500kN·1000kN·2000kN

H (Hydraulic return) type

Model number: ET | 100 | H | 5
- ET type
- Capacity (ton)
- Hydraulic return (H)
- Stroke (cm)

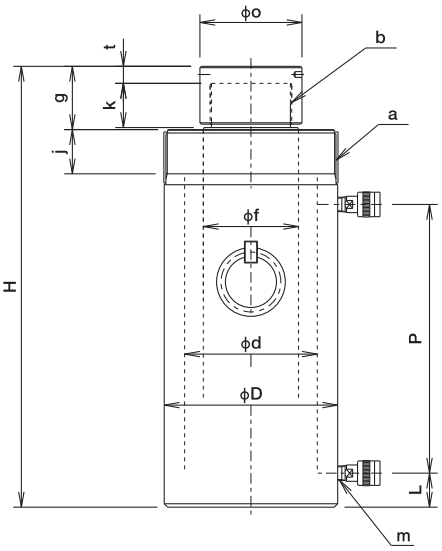
Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Cap included.
- Double-acting push & return jack.
- Pulling force is approx. 1/2 of pushing force.
- Metric mounting threads on cylinder collar.
- Allowable lateral load is 1/20 of lifting capacity (except 500 · 1000 stroke).

ET100H15

ET200H15

Dimensional drawing



Applicable models

ET50H5～
ET200H100
※No carry rings on ET100H5

Specifications

Items \ Model	Unit	ET50H5	ET50H10	ET100H5	ET100H15	ET100H30	ET100H50※1	ET200H15	ET200H30	ET200H50※1	ET200H100※2
Capacity	kN(ton)	500		1000(100)				2000(200)			
Pulling force	kN(ton)	220		500(50)				1000(100)			
Stroke	mm	50	100	50	150	300	500	150	300	500	1000
Closed height (H)	mm	246	296	328	462	613	867	498	648	926	1466
Cyl. outer dia. (D)	mm	125		180				255			
Cyl. bore dia. (d)	mm	95		135				195			
Cyl. effective area	cm²	70.88		143.14				298.65			
Oil capacity	mℓ	355	709	716	2147	4294	7157	4480	8959	14932	29865
Weight approx.	kg	19	23	55	78	98	138	163	208	293	450
Collar screw dia. (a)	mm	M125×2		M180×3				M250×4			
Collar screw length (j)	mm	50		70				65			
Rod screw dia. (b)	mm	M65×3		M90×3				M120×4			
Rod screw length (k)	mm	35		50				65			
Rod dia. (f)	mm	70		95				140			
Head dia. (o)	mm	85		110				150			
(t)	mm	13		15				25			
(g)	mm	48		68				93			
Port size (m)	—	Rc3/8		Rc1/2				Rc1/2			
Height to coupler (L)	mm	35		50			100	50		105	
Distance between ports (P)	mm	88	138	105	215	370	584	245	395	618	1128
Pumps applicable: Hand pump		TWAD-0.9		TWAD-1.3	TWAD-4	TWAD-6	TWAD-10	TWAD-6	—	—	—
Pumps applicable: Electric pump		QH1 or QH2		QH2				QH3			
Included coupler		B-6J		B-9J				B-9J			

Note) Allowable lateral load of model number marked ※1 is 1/30 of lifting capacity and ※2 is 1/40 of lifting capacity.

ET type Power Jacks 3000kN·500kN·10000kN

H (Hydraulic return) type

Model number: ET 300 H 30
- ET type
- Capacity (ton)
- Hydraulic return (H)
- Stroke (cm)

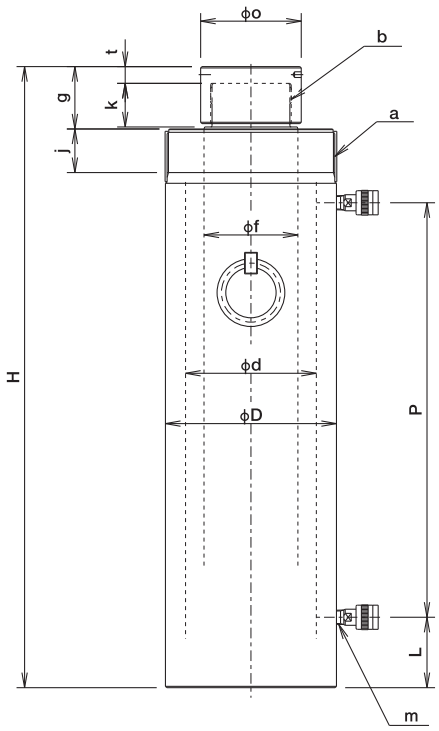
Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Cap included.
- Double-acting push & return jack.
- Pulling force is approx. 1/2 of pushing force.
- Metric mounting threads on cylinder collar.
- Allowable lateral load is 1/20 of lifting capacity (except 500 · 1000 stroke).

ET300H30

ET500H50

Dimensional drawing



Specifications

Items \ Model	Unit	ET300H30	ET300H50※1	ET300H100※2	ET500H30	ET500H50※1	ET500H100※2	ET1000H100※2
Capacity	kN(ton)	3000(300)			5000(500)			10000(1000)
Pulling force	kN(ton)	1400(140)			2300(230)			5000(500)
Stroke	mm	300	500	1000	300	500	1000	1000
Closed height (H)	mm	710	1020	1520	775	1120	1620	2020
Cyl. outer dia. (D)	mm	315			405			590
Cyl. bore dia. (d)	mm	235			300			425
Cyl. effective area	cm^2	433.74			706.86			1418.62
Oil capacity	mℓ	13012	21687	43374	21206	35343	70686	141862
Weight approx.	kg	383	500	720	610	930	1300	3400
Collar screw dia. (a)	mm	M310×4			M400×6			M585×6
Collar screw length (j)	mm	105			100			185
Rod screw dia. (b)	mm	M150×4			M180×4			M250×4
Rod screw length (k)	mm	80			75			150
Rod dia. (f)	mm	170			230			300
Head dia. (o)	mm	185			230			330
(t)	mm	30			35			50
(g)	mm	115			115			240
Port size (m)	—	Rc1/2			Rc3/4			Rc1
Height to coupler (L)	mm	60	115		77	155		260
Distance between ports (P)	mm	390	630	1130	411	660	1160	1270
Pumps applicable: Hand pump		—	—	—	—	—	—	—
Pumps applicable: Electric pump		QH5 or AH7.5		AH7.5	AH20		AH20 or AH40	
Included coupler		B−12J			B−16J			

Note) Allowable lateral load of model number marked ※1 is 1/30 of lifting capacity and ※2 is 1/40 of lifting capacity.

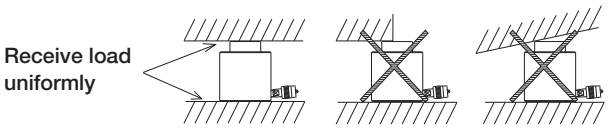
EL type Low Profile Jacks

S (Spring return) type

Model number: EL 10 S 3.5
- EL type
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

Features

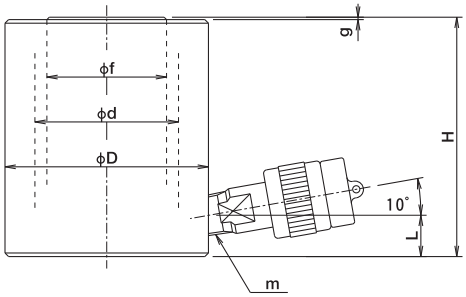
- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Flat, compact design.
- Great for fine adjustments in confined areas or machinery installation in extremely narrow spaces.
- Receive load over the entire area of piston head and base, as shown below. Lateral loads may cause damage to the jack.



EL10S3.5

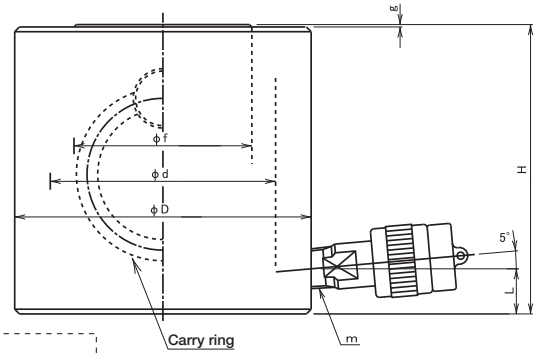
EL50S6

Dimensional drawing



Applicable models
EL10S3.5
EL20S4.5

Dimensional drawing



Applicable models
EL30S6
EL50S6
EL100S5.5
(Coupler is parallel to the base.)

Specifications

Items	Unit	EL10S3.5	EL20S4.5	EL30S6	EL50S6	EL100S5.5
Capacity	kN(ton)	100(10)	200(20)	300(30)	500(50)	1000(100)
Stroke	mm	35	45	60	60	55
Closed height (H)	mm	86	100	120	122	141
Cyl. outer dia. (D)	mm	70	85	100	125	170
Cyl. bore dia. (d)	mm	43	60	75	95	135
Cyl. effective area	cm^2	14.52	28.27	44.18	70.88	143.14
Oil capacity	mℓ	51	127	265	425	787
Weight approx.	kg	2.4	3.8	6	10.5	22
Rod dia. (f)	mm	38	50	57	75	120
(g)	mm	1	1	1	1	1
Port size (m)	—	NPT3/8				
Height to coupler (L)	mm	16	17	19	19	26
Pumps applicable: Hand pump		TWA−0.3 or TWA−0.7		TWA−0.7		TWA−0.9
Pumps applicable: Electric pump		PSP or QH1/2				
Included coupler		B−6JG				

Note) Receive load vertically to avoid lateral load.

EF type Flat Jacks

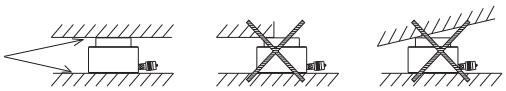
S (Spring return) type

Model number: EF | 10 | S | 1.1
- EF type
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

Features

- Piston rod is plated with hard chrome.
- Flat, compact design.
- Great for fine adjustments in confined areas or machinery installation in extremely narrow spaces.
- Handle included on EF100S1.5 model.
- Flat jacks with a stroke of 15mm or less.
- Receive load over the entire area of piston head and base, as shown below. Lateral loads may cause damage to the jack.

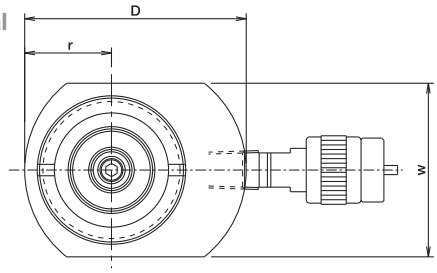
Receive load uniformly

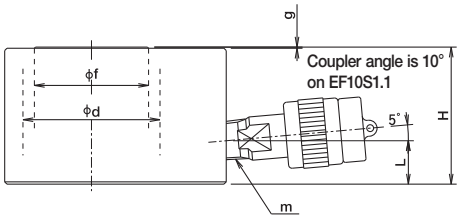


EF30S1.5

EF100S1.5

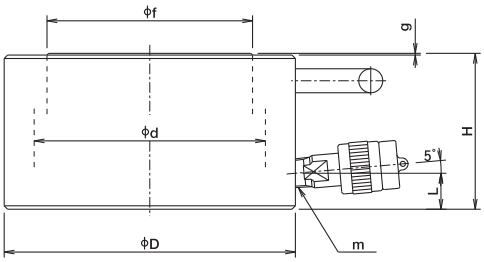
Dimensional drawing





Applicable models
EF10S1.1
EF20S1.5
EF30S1.5

Dimensional drawing



Applicable models
EF50S1.5
EF100S1.5
(With handle)

Specifications

Items	Unit	EF10S1.1	EF20S1.5	EF30S1.5	EF50S1.5	EF100S1.5
Capacity	kN(ton)	100(10)	200(20)	300(30)	500(50)	1000(100)
Stroke	mm	11	15	15	15	15
Closed height (H)	mm	43	60	60	70	91
Cyl. outer dia. (D)	mm	83	97	115	145	170
Cyl. bore dia. (d)	mm	43	60	75	95	135
Cyl. effective area	cm^2	14.52	28.27	44.18	70.88	143.14
Oil capacity	mℓ	16	43	66	107	215
Weight approx.	kg	1.4	3	4.5	8.6	16
Rod dia. (f)	mm	38	50	57	75	120
Wide of cyl. (w)	mm	56	76	96	–	–
(r)	mm	28	38	48	–	–
(g)	mm	0.8	0.5	0.5	1	1
Port size (m)	–	NPT3/8				
Height to coupler (L)	mm	16	19	19	19	21
Pumps applicable: Hand pump		TWA−0.3 or TWA−0.7				
Pumps applicable: Electric pump		–	PSP or QH1/2			
Included coupler		B−6JG				

Note) Receive load vertically to avoid lateral load.

EC type Hollow Jacks

S (Spring return) type

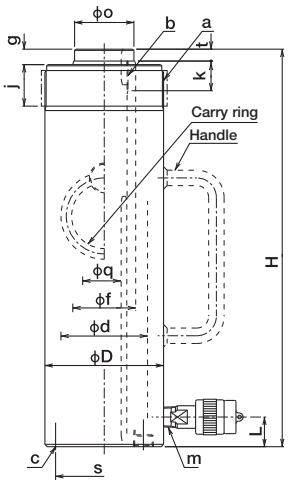
Model number: EC 12 S 4
- EC type
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

Features

- This jack has a hollow in the center of the piston. Useful in pre-stressed concrete construction, such as high-rise buildings, bridges, power plants, tunnels, and other applications.
- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Screw-in saddle.
- Inner surface of piston rod is threaded.
- Allowable lateral load is 1/20 of lifting capacity.

EC20S15

Dimensional drawing

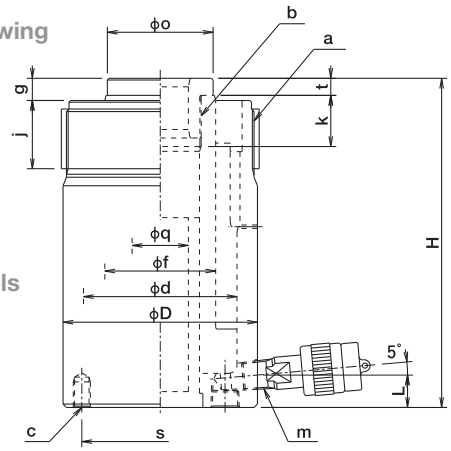


Applicable models

EC20S15 (With handle)
EC30S15 (With handle)
EC50S7 (With carry ring)
EC60S15 (With carry ring)
EC90S7.5 (With carry ring)

EC30S6

Dimensional drawing



Applicable models

EC12S4
EC12S7.5
EC20S5
EC30S6

Specifications

Items	Unit	EC12S4	EC12S7.5	EC20S5	EC20S15	EC30S6	EC30S15	EC50S7	EC60S15	EC90S7.5
Capacity	kN(ton)	120 (12)		200 (20)		300 (30)		500 (50)	600 (60)	900 (90)
Stroke	mm	40	75	50	150	60	150	70	150	75
Closed height (H)	mm	142	195	173	335	193	343	242	335	280
Cyl. outer dia. (D)	mm	Max.75 (70)		100		114		150	163	214
Cyl. bore dia. (d)	mm	55		73		90		117.52	130	170
Center hole dia. (q)	mm	20		28.5		33		42	55	80
Cyl. effective area	cm²	17.60		30.51		47.71		80.20	88.55	131.95
Oil capacity	mℓ	71	132	153	458	287	716	562	1330	990
Weight approx.	kg	4	5	9	15	12	21	25	38	55
Collar screw dia. (a)	mm	M70×2		M100×2		M110×2		M150×3	M160×3	—
Collar screw length (j)	mm	30		35		40		50	60	—
Rod screw dia. (b)	mm	M30×1.5		M40×1.5		M48×1.5		M65×2	M78×2	M115×2
Rod screw length (k)	mm	20		25		30		35	40	45
Base screw dia. (c)	mm	2–M8×12ℓ		2–M10×12ℓ		4–M10×15ℓ		4–M12×20ℓ	4–M12×16ℓ	4–M16×20ℓ
(s)	mm	58		82		92		120	135	180
Rod dia. (f)	mm	40		53		65		90	100	136
Saddle dia. (o)	mm	38		50		62		85	96	132
(t)	mm	7		10		10		12	12	15
(g)	mm	10		13		13		15	15	20
Port size (m)	mm	NPT3/8								
Height to coupler (L)	—	19		19	25	19	27	32	22	27
Pumps applicable — Hand pump		TWA–0.3 or TWA–0.7			TWA–0.7		TWA–0.9	TWA–0.7	TWA–2	TWA–1.3
Pumps applicable — Electric pump		PSP or QH1/2						QH1		
Included coupler		B–6JG								

EC type Hollow Jacks

H (Hydraulic return) type

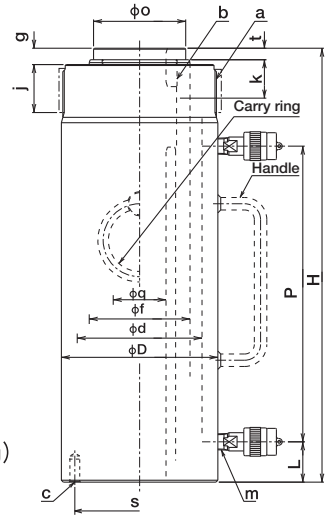
Model number: EC 30 H 15
- EC type
- Capacity (ton)
- Hydraulic return (H)
- Stroke (cm)

Features

- This jack has a hollow in the center of the piston. Useful in pre-stressed concrete construction, such as high-rise buildings, bridges, power plants, tunnels, and other applications.
- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Double-acting push & return jack.
- Screw-in saddle.
- Inner surface of piston rod is threaded.
- Allowable lateral load is 1/20 of lifting capacity.

EC60H25

Dimensional drawing

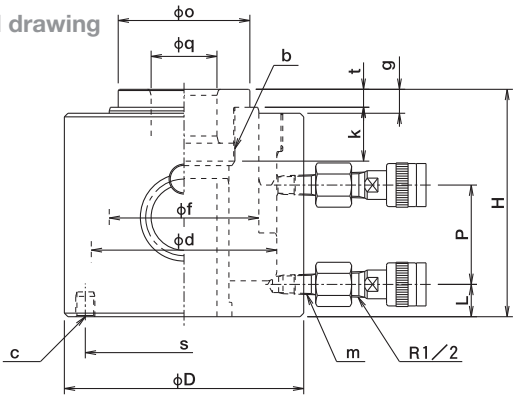


Applicable models

EC30H15 (With handle)
EC30H25 (With handle)
EC60H25 (With carry ring)
EC90H25
(With carry rings, bushing, and B-9J coupler)

EC100H4

Dimensional drawing



Applicable models

EC90H25
EC100H4
EC140H20

Specifications

Items \ Model	Unit	EC30H15	EC30H25	EC60H25	EC90H25	EC100H4	EC140H20
Capacity	kN(ton)	300 (30)		600 (60)	900 (90)	1000 (100)	1400 (140)
Pulling force	kN(ton)	180 (18)		300 (30)	450 (45)	–	–
Stroke	mm	150	250	250	250	40	200
Closed height (H)	mm	310	415	452	465	190	383
Cyl. outer dia. (D)	mm	114		163	193	200	253
Cyl. bore dia. (d)	mm	90		130	150	155	195
Center hole dia. (q)	mm	33		55	55	55	80
Cyl. effective area	cm^2	47.71		88.55	132.54	144.51	203.61
Oil capacity	mℓ	716	1200	2220	3320	578	4080
Weight approx.	kg	19	25	55	82	38	115
Collar screw dia. (a)	mm	M110×2		M160×3	M190×3	–	–
Collar screw length (j)	mm	40		50	65	–	–
Rod screw dia. (b)	mm	M48×1.5		M78×2	M85×2	M85×2	M115×2
Rod screw length (k)	mm	30		40	45	45	50
Base screw dia. (c)	mm	4–M10×15ℓ		4–M12×24ℓ	4–M16×24ℓ	4–M16×17ℓ	4–M16×20ℓ
(s)	mm	92		135	160	165	210
Rod dia. (f)	mm	67		105	120	125	160
Saddle dia. (o)	mm	62		96	110	110	145
(t)	mm	10		12	15	15	18
(g)	mm	13		17	20	20	23
Port size (m)	–	NPT3/8					
Height to coupler (L)	mm	32		42	42	27	32
Distance between ports (P)	mm	200	305	308	313	83	253
Pumps applicable: Hand pump		TWAD–1.3	TWAD–2	TWAD-4		TWAD–0.9	TWAD–6.5
Pumps applicable: Electric pump		PSP or QH1/2		QH1			QH2
Included coupler		B–6JG				Bushing+B–9J	

EC type Hollow Jacks

H (Hydraulic return) type for PC construction

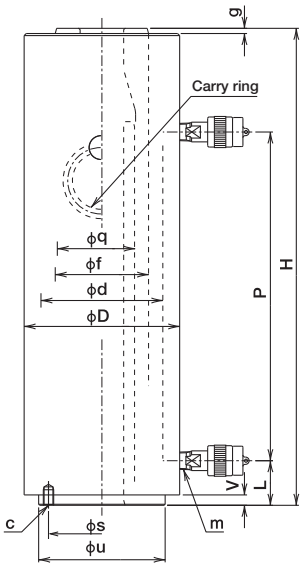
Model number: EC 30 H 20
- EC type
- Capacity (ton)
- Hydraulic return (H)
- Stroke (cm)

Features

- This jack has a hollow in the center of the piston. Useful in pre-stressed concrete (PC) construction, such as high-rise buildings, bridges, power plants, tunnels, and other applications.
- Piston rod is plated with hard chrome.
- Double-acting push & return jack.
- Equipped with a ram chair for hollow-jack attachments (Except EC100H15).
- Allowable lateral load is 1/20 of lifting capacity.

EC50H25

Dimensional drawing

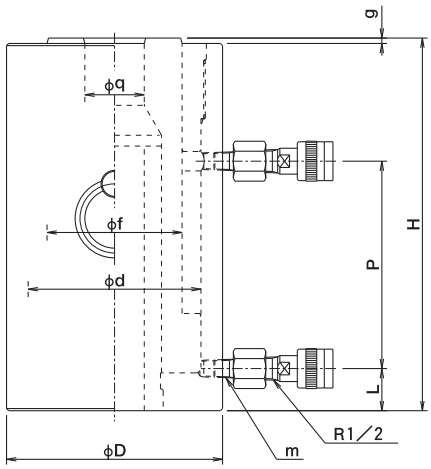


Applicable models

EC30H20 (No carry ring)
EC50H25
EC100H30
EC200H15
EC200H35

EC100H15

Dimensional drawing



Specifications

Items	Unit	EC30H20	EC50H25	EC100H15	EC100H30	EC200H15	EC200H35
Capacity	kN(ton)	300 (30)	500 (50)	1000 (100)		2000 (200)	
Stroke	mm	200	250	150	300	150	350
Closed height (H)	mm	360	460	345	515	390	600
Cyl. outer dia. (D)	mm	115	150	200		270	
Cyl. bore dia. (d)	mm	90	117.52	160		215	
Center hole dia. (q)	mm	33	42	55		75	
Cyl. effective area	cm^2	47.71	77.30	144.32		284.51	
Oil capacity	mℓ	955	1933	2165	4330	4270	9960
Weight approx.	kg	23	50	70	100	145	210
Base screw dia. (c)	mm	2–M10×12 ℓ	2–M10×15 ℓ	–	2–M12×15 ℓ	2–M16×32 ℓ	
$^{-0.2}_{-0.3}$ (u)	mm	93	122	–	160	205	
(v)	mm	10	10	–	10	15	
(s)	mm	74	103	–	130	165	
Rod dia. (f)	mm	71	90	125		165	
(g)	mm	2	5	5		5	
Port size (m)	–	NPT3/8					
Height to coupler (L)	mm	35	43	39	49	68	70
Distance between ports (P)	mm	245	317	192	352	207	415
Pumps applicable — Hand pump		TWAD–2	TWAD–4	TWAD–4	TWAD–6.5		—
Pumps applicable — Electric pump		PSP or QH1/2	QH1	QH2		QH3	
Included coupler		B–6JG		Bushing +B–9J			

O.J. Power® / LC series 30MPa (Made-to-order)

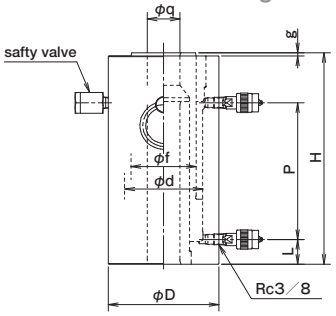
LC type Hollow Aluminum Jacks

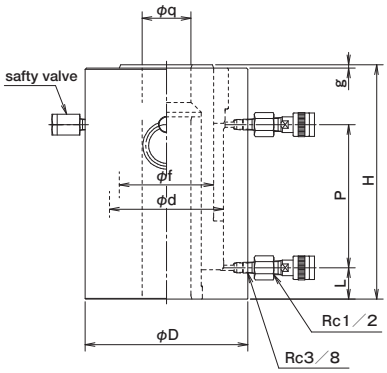
H(Hydraulic return) type

Model number: LC 20 H 15
- LC type
- Capacity (ton)
- Hydraulic return (H)
- Stroke (cm)

Features
- Made of aluminum tube and cover contribute to lightweight solution compared to steel-made jacks.
- Easy to carry to workplace.
- Please avoid high-frequency operation.
- Allowable lateral load is 1/20 of lifting capacity.

Dimensional drawing





Specifications

Items		Unit	Model LC20H15	LC40H15	LC60H15	LC100H15
Capacity	-	kN(ton)	200(20)	400(40)	600(60)	1000(100)
Stroke	-	mm	150			
Closed height	H	mm	308	325	340	360
Cyl. outer dia	D	mm	120	170	187	250
Cyl bore dia	d	mm	85	120	130	175
Center hole dia	q	mm	35	50	55	75
Cyl. effective area	-	cm²	32.99	62.83	88.55	153.94
Oil Capacity	-	mℓ	495	945	1330	2310
Weight approx.	-	kg	12	26	30	62
Height to coupler	L	mm	35	38	41	48
Distance between ports	P	mm	208	210	210	220
Included coupler	-	—	B-6J			Bushing+B-9J

The max. working pressure on the return side is 30MPa. Pressure of safety valve is set at 36MPa.

O.J. Power® / ETC series 72MPa (Made-to-order)

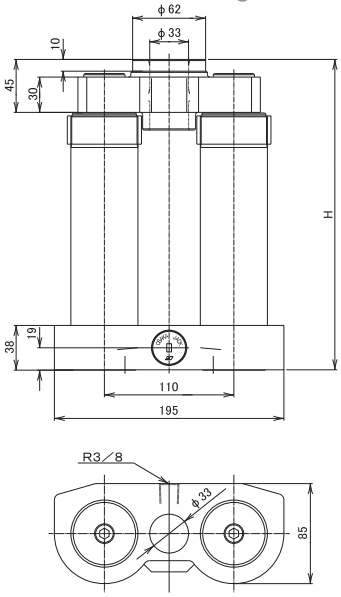
ETC type Twin-jack

S(Spring return) type

Model number: ETC 20 S 15
- Twin-jack
- Capacity (ton)
- Spring return (H)
- Stroke (cm)

Features
- By connecting 2 pcs of 100kN E type hydraulic jack with designated attachment, this twin-jack can work as hollow jack.
- A larger diameter center hole and less weight than standard hollow hydraulic jack is possible.
- Detachable, easy to carry.

Dimensional drawing



Specifications

Items		Unit	Model ETC20S15	ETC20S20	ETC20S25	ETC20S30
Capacity		kN(ton)	200(20)			
Stroke		mm	150	200	250	300
Closed height		mm	264	314	366	421
Center hole dia		mm	33			
Weight approx.		kg	10.7	11.9	13.5	15.1
Height to coupler		mm	19			
Pumps applicable	Hand pump	—	TWA-0.7		TWA-0.9	TWA-1.3
	Electric pump	—	PSP or QH1/2			
Included coupler		—	B-6J			

AE Type Spatter Resistant Jacks

S(Spring return) type

Model number: AE | 10 | S | 5
- AE type
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

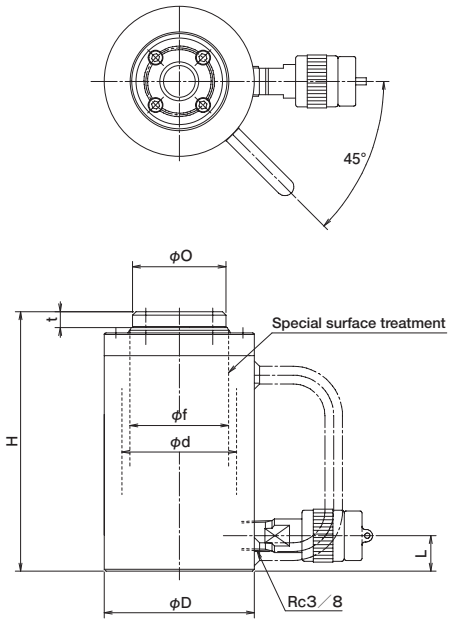
Features

- Special surface treatment on the piston rod drastically reduces weld spatter adhesion.
- Equipped with a special surface treated scraper metal. Weld spatter adhered on the piston rod can be easily removed.
- Carrying handle enables easy transportation.

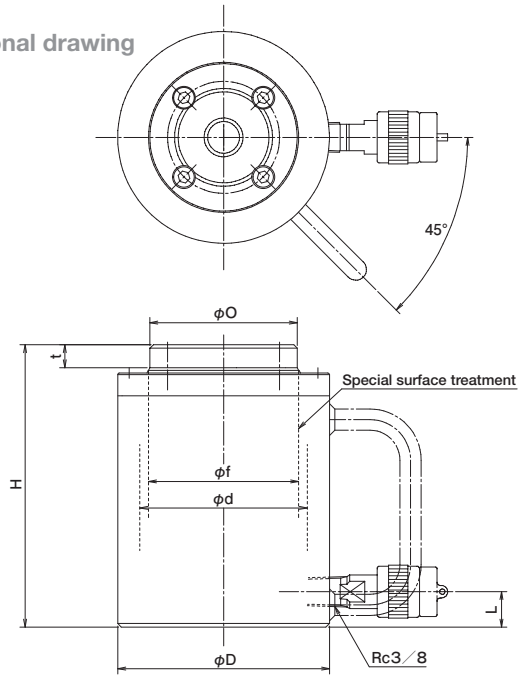
AE23S5

AE50S5

Dimensional drawing



Dimensional drawing



Specifications

Items		Unit	AE10S5	AE10S10	AE23S5	AE23S10	AE50S5
Capacity	-	kN(ton)	100(10)		230(23)		500(50)
Stroke	-	mm	50	100	50	100	50
Closed Height	H	mm	146	200	147	200	160
Cyl. Outer dia. (D)	D	mm	57		85		120
Cyl. Bore Dia. (d)	d	mm	43		65		95
Oil Capacity	-	mℓ	73	145	166	332	355
Weight Approx.	-	kg	2.5	3.2	5	6.5	11
Rod Dia (f)	f	mm	38		56		85
Saddle Dia (o)	o	mm	36		53		83.5
	t	mm	8.5		9		13
Port Size	-	—	Rc3／8				
Height to coupler	L	mm	20				
Pumps applicable: Hand pump	-	—	TWA-0.3 or TWA-0.7			TWA-0.7	
Pumps applicable: Electric pump	-	—	PSP or QH1／2				QH1
Included Coupler	-	—	B-6J				

LJA type Aluminum Jacks

S (Spring return) type / A (Gas return) type

Model number: LJA | 20 | S | 5
- LJA type
- Capacity (ton)
- Spring return (S), Gas return (A)
- Stroke (cm)

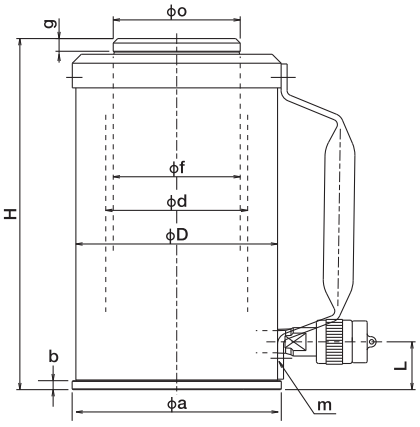
Features

- Lightweight compared to all-steel jacks.
- Main parts, such as tube and piston rod, are made of aluminum (except 100A10).
- Bottom and corner parts are made of steel (except 100A10).
- To avoid blowout, do not exceed jack limitations.

LJA20S10

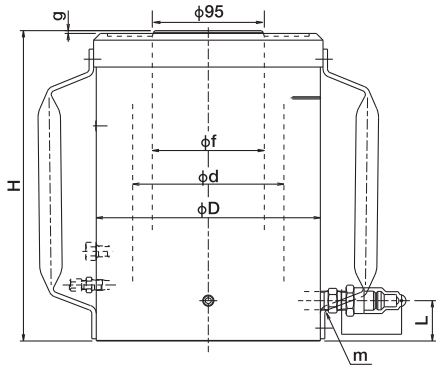
LJA100A10

Dimensional drawing



Applicable models
LJA20S5～
LJA50S15

Dimensional drawing



Applicable models
LJA100A10

Specifications

Items	Unit	LJA20S5	LJA20S10	LJA20S15	LJA30S5	LJA30S10	LJA30S15	LJA50S5	LJA50S10B	LJA50S15	LJA100A10
Capacity	kN(ton)	200 (20)			300 (30)			500 (50)			1000(100)
Stroke	mm	50	100	150	50	100	150	50	100	150	100
Closed height (H)	mm	170	220	270	178	228	283	185	260	294	277
Cyl. outer dia. (D)	mm	92			108			135			200
Cyl. bore dia. (d)	mm	63			75			95			135
Cyl. effective area	cm^2	31.17			44.17			70.88			143.1
Oil capacity	mℓ	155	310	470	220	440	665	355	710	1065	1430
Weight approx.	kg	3.8	4.7	5.6	5.5	6.5	8.0	8.5	13	12	29
Rod dia. (f)	mm	53			65			85			100
Saddle dia. (o)	mm	53			65			85			–
Port size (m)	–	Rc3/8									
Height to coupler (L)	mm	28			31			32		33	36
(g)		9			9			9	22.5	9	2.5
Bottom plate (a)	mm	97			113			140	135	140	–
Bottom plate thickness (b)	mm	4.5			6				19	6	–
Pumps applicable: Hand pump		LTWA–0.7					LTWA–0.9	LTWA–0.7	LTWA–0.9	–	–
Pumps applicable: Electric pump		PSP or QH1/2									–
Included coupler		B–6J									C–6J

JN type Jacks with Safety Nut

S (Spring return) / H (Hydraulic return) type

Model number: JN | 20 | S | 20
- JN: Jack with safety nut
- 20: Capacity (ton)
- S: Spring return (S), Hydraulic return (H)
- 20: Stroke (cm)

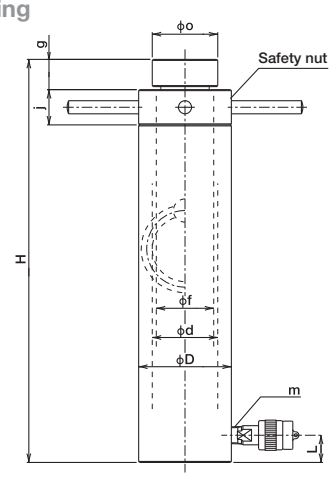
How to use
- Designed to hold loads for extended periods.
- For safety, use blocking or cribbing as well.

Features
- Allowable lateral load is 1/20 of lifting capacity.
- Hydraulic-return jack has a built-in safety valve in the return circuit.

JN20S20

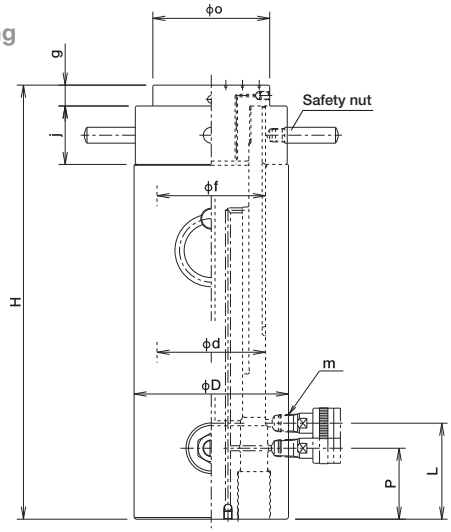
JN100H20

Dimensional drawing



Applicable models
JN20S20
JN50S20
(With carry ring)

Dimensional drawing



Applicable models
JN50H20
JN100H20
JN200H20
JN200H30

Specifications

Items	Unit	JN20S20	JN50S20	JN50H20	JN100H20	JN200H20	JN200H30
Capacity	kN(ton)	200 (20)	500 (50)		1000 (100)	2000 (200)	
Stroke	mm	200	200		200	200	300
Closed height (H)	mm	400	410	470	520	585	705
Cyl. outer dia. (D)	mm	92	136	150	182	230	
Cyl. bore dia. (d)	mm	65	95	112	130	180	
Cyl. effective area	cm^2	33.2	70.8	72.1	152.2	300.6	
Oil capacity	mℓ	664	1420	1445	3050	6020	9000
Weight approx.	kg	17	43	65	100	215	240
Head dia. (o)	mm	65	100	120	140	200	
(j)	mm	35	45	50	70	95	
(g)	mm	10	15	20	25	35	
Rod dia. (f)	mm	57	88	112	130	180	
Port size (m)	mm	Rc1/2	Rc3/8			Rc1/2	
Height to advance port (L)	mm	27	35	102	115	125	
Height to retract port (P)	mm	–	–	80	85	95	
Pumps applicable: Hand pump		TWA–0.9	TWA–2.3	TWAD–2.3	TWAD–6.5	TWAD–10	–
Pumps applicable: Electric pump		PSP or QH1/2	QH1		QH2	QH3	
Included coupler		B–6J			B–9J		

JFN type Low Profile Jacks with Safety Nut

S (Spring return) type

Model number: JFN | R | 100 | S | 3

- JFN type
- R: Spherical base / No mark: No spherical base
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

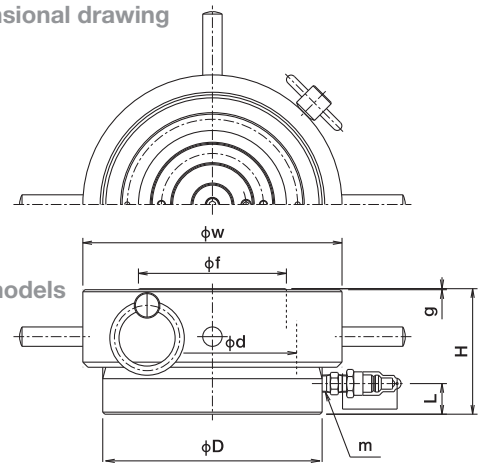
Features

- For maintenance of bridges, overpasses, or other heavy structures is required.
- Equipped with a safety nut for load holding.
- JFNR types (tilting saddle) are recommended for inclined surfaces.

JFN150S3

JFNR100S3

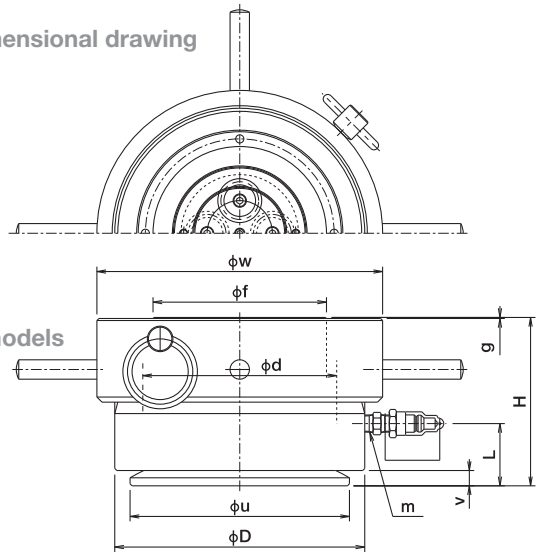
Dimensional drawing



Applicable models

JFN100S3
(No carry ring)
JFN150S3
JFN200S3
JFN300S5

Dimensional drawing



Applicable models

JFNR100S3
(No carry ring)
JFNR150S3
JFNR200S3
JFNR300S5

Specifications

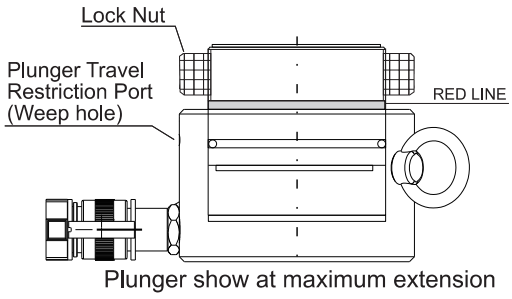
Items \ Model	Unit	JFN100S3	JFN150S3	JFN200S3	JFN300S5	JFNR100S3	JFNR150S3	JFNR200S3	JFNR300S5
Capacity	kN(ton)	1000(100)	1500(150)	2000(200)	3000(300)	1000(100)	1500(150)	2000(200)	3000(300)
Stroke	mm	30	30	30	50	30	30	30	50
Closed height (H)	mm	106	123	134	200	135	150	165	230
Cyl. outer dia. (D)	mm	175	215	245	305	175	215	245	305
Cyl. bore dia. (d)	mm	135	165	190	235	135	165	190	235
Cyl. effective area	cm^2	143.1	213.8	283.5	433.7	143.1	213.8	283.5	433.7
Oil capacity	mℓ	430	640	850	2200	430	640	850	2200
Weight approx.	kg	25	42	55	125	28	46	63	135
Rod dia. (f)	mm	120	145	170	205	120	145	170	205
Safety nut dia. (w)	mm	205	254	280	356	205	254	280	356
(g)	mm	1	1	1	2	1	1	1	2
(u)	mm	–	–	–	–	150	190	215	260
(v)	mm	–	–	–	–	15	20	15	22
Port size (m)	–	Rc3/8							
Height to coupler (L)	mm	22	23	33	44	47	52	64	72
Pumps applicable: Hand pump		TWA–0.7	TWA–0.9	TWA–1.3	TWA–2.3	TWA–0.7	TWA–0.9	TWA–1.3	TWA–2.3
Pumps applicable: Electric pump		PSP or QH1/2							
Included coupler		C–6J							
Head inclination degree		–				Not more than 3°			

OCLP type Low Profile Jack with Safety Nut

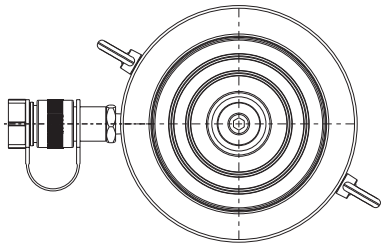
Gravity return (Made-to-order)

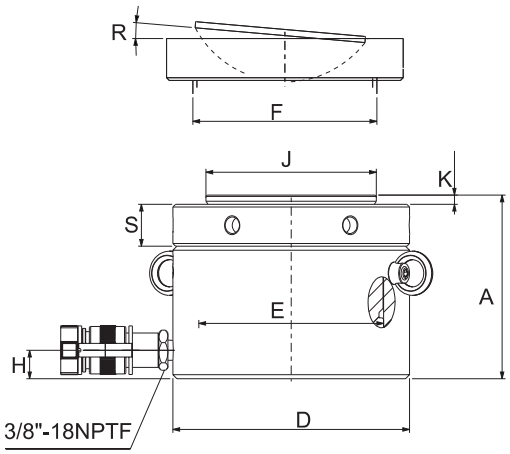
Features

- Low profile design for use in limited space.
- Safety nut provides mechanical lock for load holding.
- External force is required to return piston rod.
- No piston-stopper.
- An overflow port is provided to prevent beyond stroke limit operation.



Plunger show at maximum extension





Specifications

Items	Unit	OCLP-602	OCLP-1002	OCLP-1602	OCLP-2002	OCLP-2502	OCLP-4002	OCLP-5002
Cylinder Cap.	kN (ton)	606 (60)	1027 (100)	1619 (160)	1999 (200)	2567 (260)	3916 (400)	5114 (520)
Stroke	mm (in)	50 (1.97)	50 (1.97)	45 (1.77)	45 (1.77)	45 (1.77)	45 (1.77)	45 (1.77)
Coll.Height A	mm (in)	125 (4.92)	137 (5.39)	148 (5.83)	155 (6.10)	159 (6.26)	178 (7.01)	192 (7.56)
Ext.Height	mm (in)	175 (6.89)	187 (7.36)	193 (7.60)	200 (7.87)	204 (8.03)	223 (8.78)	237 (9.33)
Cyl. Outside Diam. D	mm (in)	140 (5.51)	175 (6.89)	220 (8.66)	245 (9.65)	275 (10.83)	350 (13.78)	400 (15.75)
Cyl. Bore Diam. E	mm (in)	105.0 (4.13)	136.7 (5.38)	171.6 (6.76)	190.7 (7.51)	216.1 (8.51)	267.0 (10.51)	350.0 (12.01)
Cyl. Effective Area	cm^2 (in^2)	86.6 (13.42)	146.8 (22.75)	231.3 (35.85)	285.6 (44.27)	366.8 (56.85)	559.5 (86.72)	730.6 (113.25)
Oil Cap.	cm^3 (in^3)	432 (26.42)	734 (44.78)	1040 (63.51)	1285 (78.43)	1650 (100.72)	2517 (153.64)	3287 (200.63)
Weigth	kg (lbs)	15 (33)	26 (57)	44 (97)	57 (125)	74 (163)	134 (295)	189 (416)
Saddle Diam. J	mm (in)	96 (3.78)	126 (4.96)	160 (6.30)	180 (7.09)	200 (7.87)	250 (9.84)	290 (11.42)
Safety nut height S	mm (in)	28 (1.10)	31 (1.22)	40 (1.57)	43 (1.69)	44 (1.73)	55 (2.17)	62 (2.44)
Saddle Protrusion from Plnger. K	mm (in)	6 (.24)	8 (.31)	9 (.35)	10 (.39)	11 (.43)	11 (.43)	10 (.39)
Saddle Max.Tilt Angle R	—	5°	5°	5°	5°	5°	4°	3°
Port size	—	NPT3/8						
Base to Advance Port H	mm (in)	19 (.75)	21 (.83)	27 (1.06)	30 (1.18)	32 (1.26)	39 (1.54)	48 (1.89)
Pumps applicable — Hand pump		TWA−0.7	TWA−0.9	TWA−1.3	TWA−2	TWA−2	TWA−4	TWA−6.5
Pumps applicable — Electric pump		PSP or QH1/2				QH1/2 or QH1		

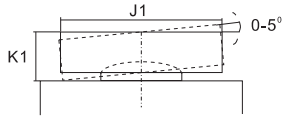
Please have load received evenly with the whole surface of cylinder head and base.

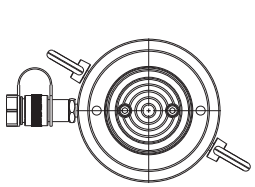
OCLSG type High Tonnage Jacks

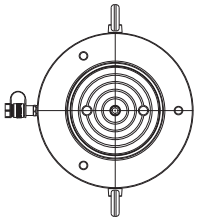
Gravity return (Made-to-order)

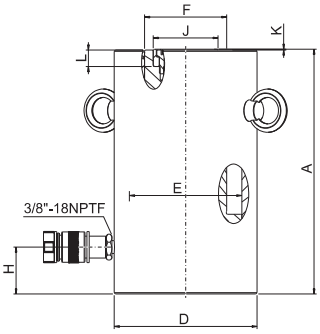
Features

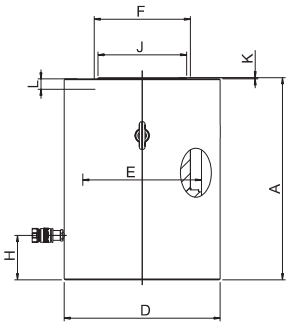
- All models come with mounting holes on the lower surface of jack
- Piston and cylinder inner tube are plated with hard chrome.
- Equipped with a dust wiper that prevent contamination which result in a prolonged life of jack.
- A built-in piston-stopper prevents piston rod from blowing out.
- Powder coat finish provides better resistance against corrosion and dust.

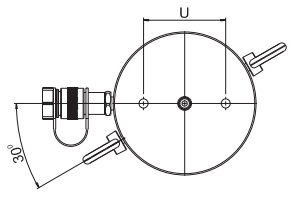


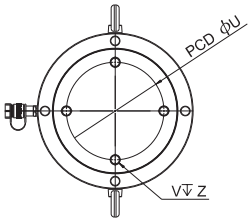












OCLSG-50 to OCLSG-150 models

OCLSG-200 to OCLSG-1000 models

Model Number	Cylinder Cap. kN (ton)	Stroke mm (in)	Effective Area cm² (in²)	Oil Cap. cm³ (in³)	Coll.Height A mm (in)
OCLSG-502	539 (50)	50 (1.97)	77.0 (11.81)	385 (23.25)	162 (6.38)
OCLSG-504		100 (3.94)		770 (46.50)	212 (8.35)
OCLSG-506		150 (5.91)		1155 (69.75)	262 (10.31)
OCLSG-508		200 (7.87)		1540 (93.00)	312 (12.28)
OCLSG-5010		250 (9.84)		1924 (116.25)	362 (14.25)
OCLSG-5012		300 (11.81)		2309 (139.50)	412 (16.22)
OCLSG-1002	929 (100)	50 (1.97)	132.7 (20.57)	664 (40.50)	182 (7.16)
OCLSG-1004		100 (3.94)		1327 (81.00)	232 (9.13)
OCLSG-1006		150 (5.91)		1991 (121.50)	282 (11.09)
OCLSG-1008		200 (7.87)		2655 (162.00)	332 (13.06)
OCLSG-10010		250 (9.84)		3318 (202.50)	382 (15.03)
OCLSG-10012		300 (11.81)		3982 (242.99)	432 (17.00)
OCLSG-1502	1390 (150)	50 (1.97)	198.6 (30.78)	993 (60.58)	196 (7.72)
OCLSG-1504		100 (3.94)		1986 (121.17)	246 (9.69)
OCLSG-1506		150 (5.91)		2978 (181.75)	296 (11.65)
OCLSG-1508		200 (7.87)		3971 (242.33)	346 (13.62)
OCLSG-15010		250 (9.84)		4964 (302.92)	396 (15,59)
OCLSG-15012		300 (11.81)		5957 (363.50)	446 (17.56)
OCLSG-2002	1861 (200)	50 (1.97)	265.9 (41.22)	1330 (81.13)	216 (8.50)
OCLSG-2006		150 (5.91)		3989 (243.40)	316 (12.44)
OCLSG-20012		300 (11.81)		7977 (486.79)	466 (18.35)
OCLSG-2502	2565 (250)	50 (1.97)	366.4 (56.80)	1832 (111.81)	235 (9.25)
OCLSG-2506		150 (5.91)		5497 (335.42)	335 (13.19)
OCLSG-25012		300 (11.81)		10993 (670.84)	485 (19.05)
OCLSG-3002	3193 (300)	50 (1.97)	456.2 (70.71)	2281 (139.19)	312 (12.28)
OCLSG-3006		150 (5.91)		6843 (417.56)	412 (16.22)
OCLSG-30012		300 (11.81)		13685 (835.11)	562 (22.13)
OCLSG-4002	3919 (400)	50 (1.97)	559.9 (86.78)	2800 (170.84)	375 (14.74)
OCLSG-4006		150 (5.91)		8399 (512.51)	475 (18.68)
OCLSG-40012		300 (11.81)		16797 (1025.02)	625 (24.59)
OCLSG-5002	5114 (500)	50 (1.97)	730.6 (113.25)	3653 (222.92)	419 (16.50)
OCLSG-5006		150 (5.91)		10959 (668.77)	519 (20.43)
OCLSG-50012		300 (11.81)		21918 (1337.55)	669 (26.34)
OCLSG-6002	5987 (600)	50 (1.97)	855.3 (132.57)	4276 (260.97)	429 (16.89)
OCLSG-6006		150 (5.91)		12829 (782.90)	529 (20.83)
OCLSG-60012		300 (11.81)		25659 (1565.81)	679 (26.73)
OCLSG-8002	8234 (800)	50 (1.97)	1176.3 (182.32)	5881 (358.91)	474 (18.66)
OCLSG-8006		150 (5.91)		17644 (1076.72)	574 (22.60)
OCLSG-80012		300 (11.81)		35288 (2153.44)	724 (28.50)
OCLSG-10002	10260 (1000)	50 (1.97)	1465.7 (227.19)	7329 (447.23)	564 (22.20)
OCLSG-10006		150 (5.91)		21986 (1341.68)	664 (26.14)
OCLSG-100012		300 (11.81)		43972 (2683.35)	814 (32.05)

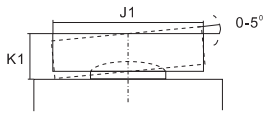
	Ext.Height mm (in)	Outside Diam. D mm (in)	Bore Diam. E mm (in)	Base to Advance Port H mm (in)	Standard Saddle Diam. J mm (in)	Saddle Protrusion from Plnger. K mm (in)	Depth of Plunger Hole L mm (in)	Base Mounting Holes Bolt Cir. Diam. U mm (in)	Thread V mm (in)	Thread Depth Z mm (in)	Weigth kg (lbs)
	212 (8.35)	130 (5.12)	98.6 (3.88)	52 (2.05)	50 (1.97)	1 (.04)	19 (.75)	65 (2.56)	M12	22 (.87)	17 (37)
	312 (12.28)										20 (44)
	412 (16.22)										23 (51)
	512 (20.16)										27 (60)
	612 (24.09)										31 (68)
	712 (28.03)										34 (75)
	232 (9.13)	165 (6.50)	130.0 (5.12)	54 (2.13)	75 (2.95)	1 (.04)	19 (.75)	95 (3.74)	M12	22 (.87)	19 (42)
	332 (13.06)										29 (64)
	432 (17.00)										40 (88)
	532 (20.94)										50 (110)
	632 (24.87)										61 (134)
	732 (28.81)										71 (157)
	246 (9.69)	205 (8.07)	159.0 (6.26)	61 (2.40)	94 (3.70)	1 (.04)	19 (.75)	130 (5.12)	M12	22 (.87)	39 (86)
	346 (13.62)										52 (115)
	446 (17.56)										65 (143)
	546 (21.50)										78 (172)
	646 (25.43)										92 (203)
	746 (29.37)										105 (231)
	266 (10.47)	235 (9.25)	184.0 (7.24)	67 (2.62)	113 (4.45)	1 (.04)	24 (.94)	165 (6.50)	M12	22 (.87)	68 (121)
	466 (18.35)										91 (201)
	766 (30.16)										146 (322)
	285 (11.22)	275 (10.83)	216.0 (8.50)	73 (2.87)	145 (5.71)	1 (.04)	24 (.94)	190 (7,48)	M12	22 (.87)	102 (196)
	485 (19.09)										136 (300)
	785 (30.91)										207 (456)
	362 (14.25)	310 (12.20)	241.0 (9.49)	101 (3.98)	177 (6.97)	1 (.04)	19 (.75)	180 (7.09)	M16	36 (1.42)	184 (406)
	562 (22.13)										232 (511)
	862 (33.94)										303 (668)
	425 (16.71)	350 (13.78)	267.0 (10.51)	114 (4.49)	196 (7.72)	3 (.12)	27 (1.06)	205 (8.07)	M16	36 (1.42)	270 (595)
	625 (24.59)										330 (728)
	925 (36.40)										421 (928)
	469 (18.46)	400 (15.75)	305.0 (12.01)	114 (4.49)	228 (8.98)	3 (.12)	27 (1.06)	250 (9.84)	M24	38 (1.50)	401 (884)
	669 (26.34)										480 (1058)
	969 (38.15)										599 (1321)
	479 (18.86)	430 (16.93)	330.0 (12.99)	114 (4.49)	247 (9.72)	3 (.12)	27 (1.06)	275 (10.83)	M24	38 (1.50)	474 (1045)
	679 (26.73)										565 (1246)
	979 (38.54)										701 (1545)
	524 (20.63)	505 (19.88)	387.0 (15.24)	149 (5.87)	297 (11.69)	3 (.12)	27 (1.06)	330 (12.99)	M24	38 (1.50)	741 (1634)
	724 (28.50)										880 (1914)
	1024 (40.31)										1058 (2332)
	614 (24.17)	560 (22.05)	432.0 (17.01)	174 (6.85)	323 (12.72)	3 (.12)	27 (1.06)	375 (14.76)	M24	38 (1.50)	1062 (2341)
	814 (32.05)										1213 (2674)
	1114 (43.86)										1439 (3172)

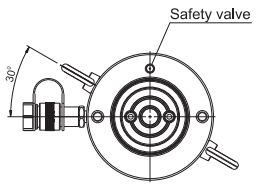
OCLRG type High Tonnage Jacks

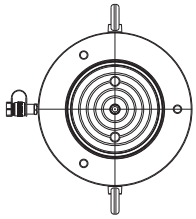
Gravity return (Made-to-order)

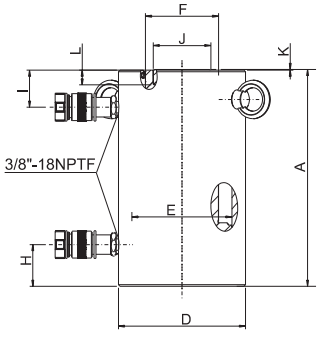
Features

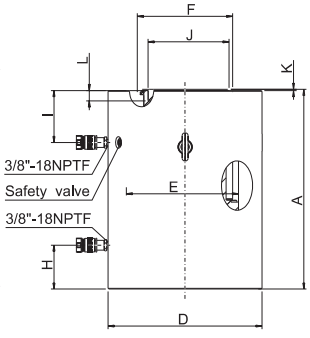
- All models come with mounting holes on the lower surface of jack
- Piston is plated with hard chrome.
- Safety valve in the return side prevents damage caused by accidental over-pressurization.
- Equipped with a dust wiper that prevent contamination which result in a prolonged life of jack.
- Come with an interchangeable hardened grooved saddle.
- Powder coat finish provides better resistance against corrosion and dust.

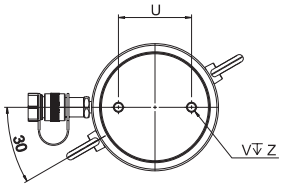


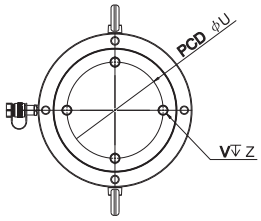












OCLRG-502 to OCLRG-15012

OCLRG-2002 to OCLRG-16006

Model Number	Cylinder Cap. kN (ton)	Stroke mm (in)	Max. Cylinder Cap. Push kN	Max. Cylinder Cap. Pull kN	Cylinder Effective Area Push cm² (in²)	Cylinder Effective Area Pull cm² (in²)	
OCLRG-502	539 (50)	50 (1.97)	539	269	76.2 (11.81)	37.7 (5.85)	
OCLRG-504		100 (3.94)					
OCLRG-506		150 (5.91)					
OCLRG-508		200 (7.87)					
OCLRG-5010		250 (9.84)					
OCLRG-5012		300 (11.81)					
OCLRG-1002	929 (100)	50 (1.97)	929	433	132.7 (20.75)	61.9 (9.59)	
OCLRG-1004		100 (3.94)					
OCLRG-1006		150 (5.91)					
OCLRG-1008		200 (7.87)					
OCLRG-10010		250 (9.84)					
OCLRG-10012		300 (11.81)					
OCLRG-1502	1390 (150)	50 (1.97)	1390	675	198.6 (30.78)	96.5 (14.96)	
OCLRG-1504		100 (3.94)					
OCLRG-1506		150 (5.91)					
OCLRG-1508		200 (7.87)					
OCLRG-15010		250 (9.84)					
OCLRG-15012		300 (11.81)					
OCLRG-2002	1861 (200)	50 (1.97)	1861	889	265.9 (41.22)	127.0 (19.68)	
OCLRG-2006		150 (5.91)					
OCLRG-20012		300 (11.81)					
OCLRG-2502	2565 (250)	50 (1.97)	2565	1068	366.4 (53.80)	152.6 (23.65)	
OCLRG-2506		150 (5.91)					
OCLRG-25012		300 (11.81)					
OCLRG-3002	3193 (300)	50 (1.97)	3193	1060	456.2 (70.71)	151.4 (23.46)	
OCLRG-3006		150 (5.91)					
OCLRG-30012		300 (11.81)					
OCLRG-4002	3919 (400)	50 (1.97)	3919	1354	559.9 (86.79)	193.5 (29.99)	
OCLRG-4006		150 (5.91)					
OCLRG-40012		300 (11.81)					
OCLRG-5002	5114 (500)	50 (1.97)	5114	1733	730.6 (113.25)	247.6 (38.37)	
OCLRG-5006		150 (5.91)					
OCLRG-50012		300 (11.81)					
OCLRG-6002	5987 (600)	50 (1.97)	5987	2068	855.3 (132.57)	295.4 (45.79)	
OCLRG-6006		150 (5.91)					
OCLRG-60012		300 (11.81)					
OCLRG-8002	8234 (800)	50 (1.97)	8234	2790	1176.3 (182.32)	387.0 (59.99)	
OCLRG-8006		150 (5.91)					
OCLRG-80012		300 (11.81)					
OCLRG-10002	10260 (1000)	50 (1.97)	10260	3792	1465.7 (227.19)	541.7 (83.97)	
OCLRG-10006		150 (5.91)					
OCLRG-100012		300 (11.81)					
OCLRG-16006	16024 (1600)	155 (6.10)	16024	4891	2289.1 (354.81)	699.3 (108.39)	

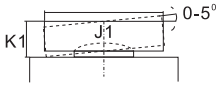
Oil Cap. Push cm³ (in³)	Oil Cap. Pull cm³ (in³)	Coll. Height A mm (in)	Ext. Height mm (in)	Outside Diam. D mm (in)	Cly. Bore Diam. E mm (in)	Base to Advance Port H mm (in)	Top to Retract Port I mm (in)	Standard Saddle Diam. J mm (in)	Saddle Protrusion from Plnger. K mm (in)	Depth of Plunger Hole L mm (in)	Base Mounting Holes Bolt Cir. Diam. U mm (in)	Base Mounting Holes Thread V mm (in)	Base Mounting Holes Thread Depth Z mm (in)	Weigth kg (lbs)
385 (23.25)	192 (11.51)	162 (6.38)	212 (8.35)	130 (5.12)	98.6 (3.88)	42 (2.05)	33 (1.29)	50 (1.97)	1 (.04)	19 (.75)	65 (2.56)	M12	22 (.87)	17 (37)
770 (46.50)	385 (23.02)	212 (8.35)	312 (12.28)											20 (44)
1155 (69.75)	577 (34.52)	262 (10.31)	412 (16.22)											23 (51)
1540 (93.00)	770 (46.03)	312 (12.28)	512 (20.16)											27 (60)
1924 (116.25)	962 (57.54)	362 (14.25)	612 (24.09)											31 (68)
2309 (139.50)	1155 (69.05)	412 (16.22)	712 (28.03)											34 (75)
664 (40.50)	309 (18.87)	182 (7.16)	232 (9.13)	165 (6.50)	130.0 (5.12)	54 (2.13)	48 (1.89)	75 (2.95)	1 (.04)	19 (.75)	95 (3.74)	M12	22 (.87)	29 (42)
1327 (81.00)	619 (37.74)	232 (9.13)	332 (13.06)											34 (64)
1991 (121.50)	928 (56.61)	282 (11.09)	432 (17.00)											40 (88)
2655 (162.00)	1237 (75.49)	332 (13.06)	532 (20.94)											46 (110)
3318 (202.50)	1546 (94.36)	382 (15.03)	632 (24.87)											52 (134)
3982 (242.99)	1856 (113.23)	432 (17.00)	732 (28.81)											65 (157)
993 (60.58)	482 (29.44)	196 (7.72)	246 (9.69)	205 (8.07)	159.0 (6.26)	61 (2.40)	56 (2.22)	94 (3.70)	1 (.04)	19 (.75)	130 (5.12)	M12	22 (.87)	39 (86)
1986 (121.17)	965 (58.88)	246 (9.69)	346 (13.62)											52 (115)
2978 (181.75)	1447 (88.32)	296 (11.65)	446 (17.56)											65 (143)
3971 (242.33)	1930 (117.76)	346 (13.62)	546 (21.50)											78 (172)
4964 (302.92)	2412 (147.20)	396 (15.59)	646 (25.43)											92 (203)
5957 (363.50)	2895 (176.64)	446 (17.56)	746 (29.37)											105 (231)
1330 (81.13)	635 (38.74)	216 (8.50)	266 (10.47)	235 (9.25)	184.0 (7.24)	67 (2.62)	56 (2.22)	113 (4.45)	1 (.04)	24 (.94)	165 (6.50)	M12	22 (.87)	68 (121)
3989 (243.40)	1905 (116.23)	316 (12.44)	466 (18.35)											93 (201)
7977 (486.79)	3809 (232.46)	466 (18.35)	766 (30.16)											146 (322)
1832 (111.81)	763 (46.56)	235 (9.25)	285 (11.22)	275 (10.83)	216.0 (8.50)	73 (2.87)	78 (3.07)	145 (5.71)	1 (.04)	24 (.94)	190 (7.48)	M12	22 (.87)	102 (196)
5497 (335.42)	2289 (139.69)	335 (13.19)	485 (19.09)											136 (300)
10993 (670.84)	4578 (279.39)	485 (19.09)	785 (30.91)											207 (456)
2281 (139.19)	757 (46.18)	312 (12.28)	362 (14.25)	310 (12.20)	241.0 (9.49)	101 (3.98)	75 (2.95)	177 (6.97)	1 (.04)	19 (.75)	180 (7.09)	M16	36 (1.42)	184 (406)
6843 (417.56)	2270 (138.55)	412 (16.22)	562 (22.13)											232 (511)
13685 (835.11)	4541 (277.10)	562 (22.13)	862 (33.94)											303 (668)
2800 (170.84)	967 (59.03)	375 (14.74)	425 (16.71)	350 (13.78)	267.0 (10.51)	114 (4.49)	105 (4.13)	196 (7.72)	3 (.12)	27 (1.06)	205 (8.07)	M16	36 (1.42)	270 (595)
8399 (512.51)	2902 (177.09)	475 (18.68)	625 (24.59)											330 (728)
16797 (1025.02)	5804 (354.18)	625 (24.59)	925 (36.40)											421 (928)
3653 (222.92)	1238 (75.54)	419 (16.50)	469 (18.46)	400 (15.75)	305.0 (12.01)	114 (4.49)	135 (5.31)	228 (8.98)	3 (.12)	27 (1.06)	250 (9.84)	M24	38 (1.50)	401 (884)
10959 (668.77)	3713 (226.61)	519 (20.43)	669 (26.34)											480 (1058)
21918 (1337.55)	7427 (453.22)	669 (26.34)	969 (38.15)											599 (1321)
4276 (260.97)	1477 (90.13)	429 (16.89)	479 (18.86)	430 (16.93)	330.0 (12.99)	114 (4.49)	135 (5.31)	247 (9.72)	3 (.12)	27 (1.06)	275 (10.83)	M24	38 (1.50)	474 (1045)
12829 (782.90)	4431 (270.39)	529 (20.83)	679 (26.73)											565 (1246)
25659 (1565.81)	8862 (540.79)	679 (26.73)	979 (38.54)											701 (1545)
5881 (358.91)	1935 (118.09)	474 (18.66)	524 (20.63)	505 (19.88)	387.0 (15.24)	149 (5.87)	135 (5.31)	297 (11.69)	3 (.12)	27 (1.06)	330 (12.99)	M24	38 (1.50)	741 (1634)
17644 (1076.72)	5806 (354.28)	574 (22.60)	724 (28.50)											868 (1914)
35288 (2153.44)	11611 (708.57)	724 (28.50)	1024 (40.31)											1058 (2332)
7329 (447.23)	2709 (165.29)	564 (22.20)	614 (24.17)	560 (22.05)	432.0 (17.01)	174 (6.85)	170 (6.69)	323 (12.72)	3 (.12)	27 (1.06)	375 (14.76)	M24	38 (1.50)	1062 (2341)
21986 (1341.68)	8126 (495.87)	664 (26.14)	814 (32.05)											1213 (2674)
43972 (2683.35)	16252 (991.75)	814 (32.05)	1114 (43.86)											1439 (3172)
35495 (1397.44)	10845 (661.80)	825 (32.48)	980 (38.58)	710 (27.95)	540.0 (21.26)	205 (8.07)	170 (6.69)	–	–	–	400 (15.75)	M24	30 (1.18)	2179 (4804)

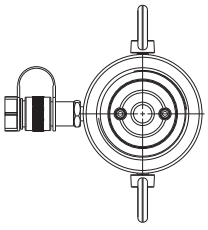
OCLL type High Tonnage Jacks

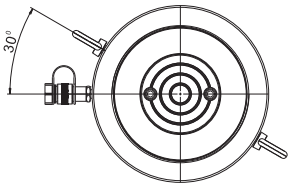
Gravity return (Made-to-order)

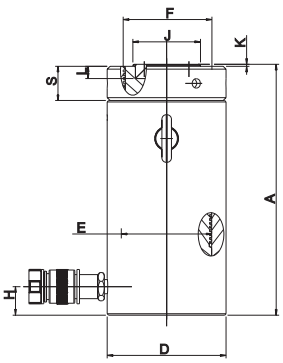
Features

- Cylinder inner tube is plated with hard chrome.
- Safety nut provides mechanical lock for load holding.
- Come with an interchangeable hardened grooved saddle.
- An overflow port is provided to prevent beyond stroke limit operation.
- Special coating on safety nut and piston provides better resistance against corrosion and abrasion.
- Powder coat finish provides better resistance against corrosion and dust.

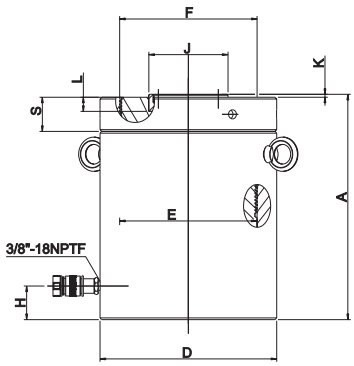








OCLL-502 to OCLL-25012



OCLL-3002 to OCLL-100012

Model Number	Cylinder Cap. kN (ton)	Stroke mm (in)	Effective Area cm² (in²)	Oil Cap. cm³ (in³)
OCLL-502	496 (50)	50 (1.97)	70.9 (10.99)	355 (21.63)
OCLL-504		100 (3.94)		709 (43.25)
OCLL-506		150 (5.91)		1064 (64.88)
OCLL-508		200 (7.87)		1418 (86.51)
OCLL-5010		250 (9.84)		1773 (108.14)
OCLL-5012		300 (11.81)		2127 (129.76)
OCLL-1002	929 (100)	50 (1.97)	132.7 (20.57)	664 (40.5)
OCLL-1004		100 (3.94)		1327 (81.00)
OCLL-1006		150 (5.91)		1991 (121.50)
OCLL-1008		200 (7.87)		2654 (162.00)
OCLL-10010		250 (9.84)		3318 (202.50)
OCLL-10012		300 (11.81)		3981 (242.99)
OCLL-1502	1390 (150)	50 (1.97)	198.6 (30.78)	993 (60.58)
OCLL-1504		100 (3.94)		1986 (121.17)
OCLL-1506		150 (5.91)		2979 (181.75)
OCLL-1508		200 (7.87)		3972 (242.33)
OCLL-15010		250 (9.84)		4965 (302.92)
OCLL-15012		300 (11.81)		5958 (363.50)
OCLL-2002	1859 (200)	50 (1.97)	265.6 (41.17)	1330 (81.04)
OCLL-2006		150 (5.91)		3989 (243.13)
OCLL-20012		300 (11.81)		7995 (486.27)
OCLL-2502	2562 (250)	50 (1.97)	366.1 (56.75)	1832 (111.70)
OCLL-2506		150 (5.91)		5496 (335.11)
OCLL-25012		300 (11.81)		10976 (670.22)
OCLL-3002	3193 (300)	50 (1.97)	456.2 (70.71)	2281 (139.19)
OCLL-3006		150 (5.91)		6843 (417.56)
OCLL-30012		300 (11.81)		13740 (835.11)
OCLL-4002	3919 (400)	50 (1.97)	559.9 (86.79)	2800 (170.84)
OCLL-4006		150 (5.91)		8399 (512.51)
OCLL-40012		300 (11.81)		16800 (1025.02)
OCLL-5002	5118 (500)	50 (1.97)	731.1 (113.25)	3653 (222.99)
OCLL-5006		150 (5.91)		10967 (668.77)
OCLL-50012		300 (11.81)		21930 (1337.55)
OCLL-6002	5983 (600)	50 (1.97)	845.8 (132.57)	4277 (260.97)
OCLL-6006		150 (5.91)		12830 (782.90)
OCLL-60012		300 (11.81)		25650 (1565.81)
OCLL-8002	8238 (800)	50 (1.97)	1176.9 (182.42)	5882 (359.09)
OCLL-8006		150 (5.91)		17645 (1077.27)
OCLL-80012		300 (11.81)		35370 (2154.55)
OCLL-10002	10260 (1000)	50 (1.97)	1466.4 (227.30)	7329 (447.43)
OCLL-10006		150 (5.91)		21986 (1342.30)
OCLL-100012		300 (11.81)		43980 (2684.59)

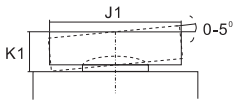
	Coll.Height A mm (in)	Ext.Height mm (in)	Outside Diam. D mm (in)	Bore Diam. E mm (in)	Base to Advance Port H mm (in)	Standard Saddle Diam. J mm (in)	Saddle Protrusion from Plnger. K mm (in)	Depth of Plunger Hole L mm (in)	Lock Nut Height S mm (in)	Weigth kg (lbs)
	164 (6.46)	214 (8.43)	125 (4.92)	95.0 (3.74)	30 (1.18)	71 (2.80)	2 (.08)	15 (.51)	36 (1.42)	15 (35)
	214 (8.43)	314 (12.36)								20 (46)
	264 (10.39)	414 (16.30)								25 (57)
	314 (12.36)	514 (20.24)								30 (68)
	364 (14.33)	614 (24.17)								35 (79)
	414 (16.30)	714 (28.11)								40 (90)
	187 (7.36)	237 (9.33)	165 (6.50)	130.0 (5.12)	30 (1.18)	71 (2.80)	2 (.08)	15 (.51)	44 (1.73)	30 (68)
	237 (9.33)	337 (13.27)								39 (87)
	287 (11.30)	437 (17.20)								48 (106)
	337 (13.27)	537 (21.14)								56 (125)
	387 (15.24)	637 (25.08)								64 (143)
	437 (17.20)	737 (29.02)								73 (162)
	209 (8.23)	259 (10.20)	205 (8.07)	159.0 (6.26)	39 (1.54)	130 (5.12)	2 (.08)	25 (.98)	44 (1.73)	53 (117)
	259 (10.20)	359 (14.13)								66 (146)
	309 (12.17)	459 (18.07)								78 (174)
	359 (14.13)	559 (22.01)								92 (203)
	409 (16.10)	659 (25.94)								104 (231)
	459 (18.07)	759 (29.88)								117 (260)
	243 (9.57)	293 (11.54)	235 (9.25)	184.0 (7.24)	50 (1.97)	130 (5.12)	2 (.08)	25 (.98)	50 (1.97)	83 (183)
	343 (13.50)	493 (19.41)								117 (260)
	493 (19.41)	793 (31.22)								170 (376)
	249 (9.80)	299 (11.77)	275 (10.24)	216.0 (8.50)	50 (1.97)	150 (5.91)	2 (.08)	25 (.98)	56 (2.20)	116 (256)
	349 (13.74)	99 (19.65)								162 (359)
	499 (19.65)	799 (31.46)								234 (515)
	295 (11.61)	345 (13.58)	310 (12.20)	241.0 (9.49)	59 (2.32)	139 (5.47)	5 (.20)	25 (.98)	60 (2.36)	173 (382)
	395 (15.55)	545 (21.46)								233 (514)
	545 (21.46)	845 (33.27)								323 (712)
	335 (13.19)	385 (15.16)	350 (13.78)	267.0 (10.51)	70 (2.76)	159 (6.26)	5 (.20)	25 (.98)	70 (2.76)	250 (553)
	435 (17.13)	585 (23.03)								327 (721)
	585 (23.03)	885 (34.84)								441 (972)
	375 (14.76)	425 (16.73)	400 (15.75)	305.0 (12.01)	80 (3.15)	179 (7.05)	5 (.20)	25 (.98)	80 (3.15)	367 (809)
	475 (18.70)	625 (24.61)								466 (1029)
	625 (24.61)	925 (36.42)								617 (1360)
	395 (15.55)	445 (17.52)	430 (16.93)	330.0 (12.99)	85 (3.35)	194 (7.64)	5 (.20)	25 (.98)	85 (3.35)	446 (985)
	495 (19.49)	645 (25.39)								562 (1241)
	645 (25.39)	945 (37.20)								737 (1625)
	455 (17.91)	505 (19.88)	505 (19.88)	387.0 (15.24)	100 (3.94)	224 (8.82)	5 (.20)	25 (.98)	100 (3.94)	709 (1565)
	555 (21.85)	705 (27.76)								870 (1918)
	705 (27.76)	1005 (39.57)								1110 (2446)
	495 (19.49)	545 (21.46)	560 (22.05)	432.0 (17.01)	110 (4.33)	249 (9.80)	5 (.20)	25 (.98)	110 (4.33)	949 (2094)
	595 (23.43)	745 (29.33)								1141 (2517)
	745 (29.33)	1045 (41.14)								1430 (3151)

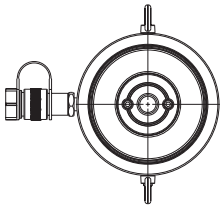
OCLS type High Tonnage Jacks

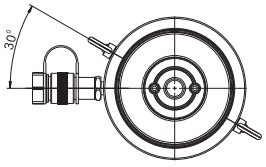
Gravity return (Made-to-order)

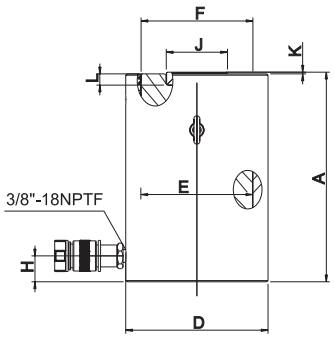
Features

- Low profile design for use in limited space.
- Come with an interchangeable hardened grooved saddle.
- An overflow port is provided to prevent beyond stroke limit operation.
- Piston is plated with hard chrome.
- Equipped with a wiper that prevent contamination which result in a prolonged life of jack.
- Powder coat finish provides better resistance against corrosion and dust.

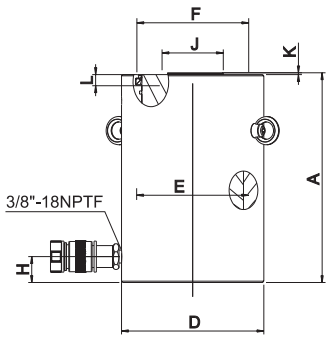








OCLS-502 to OCLS-25012



OCLS-3002 to OCLS-100012

Model Number	Cylinder Cap. kN (ton)	Stroke mm (in)	Effective Area cm² (in²)	Oil Cap. cm³ (in³)
OCLS-502	496 (50)	50 (1.97)	70.9 (10.99)	355 (21.63)
OCLS-504		100 (3.94)		709 (43.25)
OCLS-506		150 (5.91)		1064 (64.88)
OCLS-508		200 (7.87)		1418 (86.51)
OCLS-5010		250 (9.84)		1773 (108.14)
OCLS-5012		300 (11.81)		2127 (129.76)
OCLS-1002	929 (100)	50 (1.97)	132.7 (20.57)	664 (40.50)
OCLS-1004		100 (3.94)		1327 (81.00)
OCLS-1006		150 (5.91)		1991 (121.50)
OCLS-1008		200 (7.87)		2654 (162.00)
OCLS-10010		250 (9.84)		3318 (202.50)
OCLS-10012		300 (11.81)		3981 (242.99)
OCLS-1502	1390 (150)	50 (1.97)	198.6 (30.78)	993 (60.58)
OCLS-1504		100 (3.94)		1986 (121.17)
OCLS-1506		150 (5.91)		2979 (181.75)
OCLS-1508		200 (7.87)		3972 (242.33)
OCLS-15010		250 (9.84)		4965 (302.92)
OCLS-15012		300 (11.81)		5958 (363.50)
OCLS-2002	1859 (200)	50 (1.97)	265.6 (41.17)	1330 (81.04)
OCLS-2006		150 (5.91)		3989 (243.40)
OCLS-20012		300 (11.81)		7977 (486.79)
OCLS-2502	2562 (250)	50 (1.97)	366.1 (56.80)	1832 (111.81)
OCLS-2506		150 (5.91)		5496 (335.42)
OCLS-25012		300 (11.81)		10996 (670.84)
OCLS-3002	3193 (300)	50 (1.97)	456.2 (70.71)	2281 (139.19)
OCLS-3006		150 (5.91)		6843 (417.56)
OCLS-30012		300 (11.81)		13740 (835.11)
OCLS-4002	3919 (400)	50 (1.97)	559.9 (86.79)	2800 (170.84)
OCLS-4006		150 (5.91)		8399 (512.51)
OCLS-40012		300 (11.81)		16877 (1025.02)
OCLS-5002	5118 (500)	50 (1.97)	731.1 (113.25)	3653 (222.99)
OCLS-5006		150 (5.91)		10967 (668.77)
OCLS-50012		300 (11.81)		21900 (1337.55)
OCLS-6002	5983 (600)	50 (1.97)	845.8 (132.57)	4277 (260.97)
OCLS-6006		150 (5.91)		12830 (782.90)
OCLS-60012		300 (11.81)		25710 (1565.81)
OCLS-8002	8238 (800)	50 (1.97)	1176.9 (182.32)	5882 (358.91)
OCLS-8006		150 (5.91)		17645 (1076.72)
OCLS-80012		300 (11.81)		35370 (2153.44)
OCLS-10002	10260 (1000)	50 (1.97)	1466.4 (227.19)	7329 (447.23)
OCLS-10006		150 (5.91)		21986 (1341.68)
OCLS-100012		300 (11.81)		43980 (2683.35)

	Coll.Height A mm (in)	Ext.Height mm (in)	Outside Diam. D mm (in)	Bore Diam. E mm (in)	Base to Advance Port H mm (in)	Standard Saddle Diam. J mm (in)	Saddle Protrusion from Plnger. K mm (in)	Depth of Plunger Hole L mm (in)	Weigth kg (lbs)
	128 (5.04)	178 (7.01)	125 (4.92)	95.0 (3.74)	30 (1.18)	71 (2.80)	2 (.08)	15 (.51)	14 (31)
	178 (7.01)	278 (10.94)							18 (40)
	228 (8.98)	378 (14.88)							23 (51)
	278 (10.94)	478 (18.82)							28 (62)
	327 (12.91)	578 (22.76)							33 (73)
	378 (14.88)	678 (26.69)							38 (84)
	143 (5.63)	193 (7.60)	165 (6.50)	130.0 (5.12)	30 (1.18)	71 (2.80)	2 (.08)	15 (.51)	24 (53)
	193 (7.60)	293 (11.54)							32 (70)
	243 (9.57)	393 (15.47)							40 (90)
	293 (11.54)	493 (19.41)							49 (110)
	343 (13.50)	593 (23.35)							58 (128)
	392 (15.47)	693 (27.28)							66 (147)
	165 (6.50)	215 (8.46)	205 (8.07)	159.0 (6.26)	39 (1.54)	130 (5.12)	2 (.08)	25 (.98)	43 (95)
	215 (8.46)	315 (12.40)							55 (123)
	265 (10.43)	415 (16.34)							69 (154)
	315 (12.40)	515 (20.28)							82 (180)
	365 (14.37)	615 (24.21)							95 (209)
	414 (16.34)	715 (28.15)							108 (238)
	193 (7.60)	243 (9.57)	235 (9.25)	183.9 (7.24)	50 (1.97)	130 (5.12)	2 (.08)	25 (.98)	66 (145)
	293 (11.54)	443 (17.44)							101 (222)
	443 (17.44)	743 (29.25)							154 (339)
	193 (7.60)	243 (9.57)	275 (10.24)	215.9 (8.50)	50 (1.97)	150 (5.91)	2 (.08)	25 (.98)	90 (198)
	293 (11.54)	443 (17.44)							137 (301)
	443 (17.44)	743 (29.25)							208 (458)
	235 (9.25)	285 (11.22)	310 (12.20)	241.0 (9.49)	59 (2.32)	139 (5.47)	5 (.20)	25 (.98)	137 (301)
	335 (13.19)	485 (19.09)							198 (436)
	485 (19.09)	785 (30.91)							288 (636)
	265 (10.43)	315 (12.40)	350 (13.78)	267.0 (10.51)	70 (2.76)	159 (6.26)	5 (.20)	25 (.98)	200 (440)
	365 (14.37)	515 (20.28)							275 (605)
	515 (20.28)	815 (32.09)							390 (860)
	295 (11.61)	345 (13.58)	400 (15.75)	305.1 (12.01)	80 (3.15)	179 (7.05)	5 (.20)	25 (.98)	289 (636)
	395 (15.55)	545 (21.46)							390 (858)
	545 (21.46)	845 (33.27)							540 (1190)
	310 (12.20)	360 (14.17)	430 (16.93)	329.9 (12.99)	85 (3.35)	194 (7.64)	5 (.20)	25 (.98)	350 (770)
	410 (16.14)	560 (22.05)							465 (1023)
	560 (22.05)	860 (33.86)							640 (1410)
	355 (13.98)	405 (15.94)	505 (19.88)	387.1 (15.24)	100 (3.94)	224 (8.82)	5 (.20)	25 (.98)	549 (1208)
	455 (17.91)	605 (23.82)							709 (1560)
	605 (23.82)	905 (35.63)							950 (2090)
	385 (15.16)	435 (17.13)	560 (22.05)	432.1 (17.01)	110 (4.33)	249 (9.80)	5 (.20)	25 (.98)	729 (1604)
	485 (19.09)	635 (25.00)							921 (2026)
	635 (25.00)	935 (36.81)							1210 (2660)

SA type Water Pressure Jacks

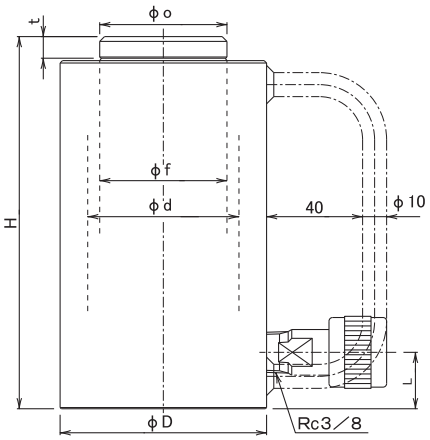
S (Spring return) type

Model number: SA 10 S 5
- Water pressure jack
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

Features

- Using water as a working fluid. No hazardous contaminants and no danger of catching fire.
- Stainless steel material is resistant to corrosion.
- Compact jacks that can withstand 72MPa. Attached handle. Easy to carry.

Dimensional drawing



Specifications

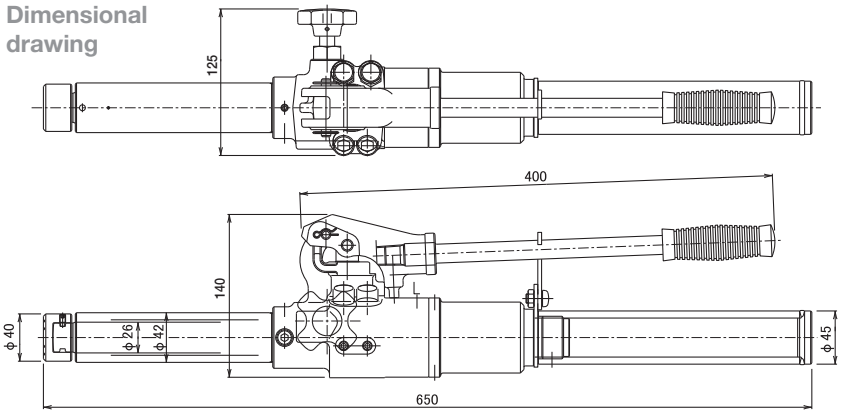
Items \ Model / Unit	Unit	SA10S5	SA10S10	SA22S5	SA22S10	SA50S5
Capacity	kN(ton)	100(10)		220(22)		500(50)
Stroke	mm	50	100	50	100	50
Closed Height	mm	142	197	155	210	175
Cyl.outer dia.(D)	mm	60		86		130
Cyl.bore dia.(d)	mm	43		63		95
Cyl.effective area	cm^2	14.52		31.17		70.88
Water capacity	mℓ	73	146	156	312	355
Weight approx.	kg	2.5	3.4	5.9	7.7	17
Rod dia.(f)	mm	38		53		85
Saddle dia.(o)	mm	38		53		70
Port size	—	Rc3/8				
Included coupler	—	B−6WJ				

SJW type Water Pressure Stick Jack

Features

- Jack and pump combined into one unit.
- Use in any orientation.

Dimensional drawing



Specifications

Items \ Model / Unit		Unit	SJW5S10
Capacity		kN(ton)	50(5)
Stroke		mm	100
Usable water volume		mℓ	80
Working pressure	High	MPa	71
	Low		1
Water delivery	High	mℓ	1
	Low		5
Weight approx.		kg	9.5

TWAS type Water Hand Pumps

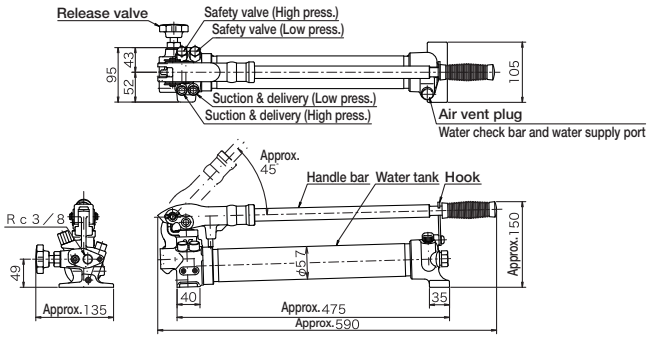
for single-acting jacks

Model number TWA S — 0.7
- Hand pump
- For water pressure
- Usable water volume (ℓ)

Features

• Using water as a working fluid. No hazardous contaminants and no danger of catching fire.

Dimensional drawing



Specifications

Items / Model	Usable water volume (ℓ)	Delivery Pressure (MPa)		Operational Delivery (mℓ)		Connection Port	Weight approx. (kg)
		High	Low	High	Low		
TWAS—0.7	0.7	72	1	2	11	Rc3/8	5.8

Note) Water may stagnate if used for an extended period of time. Change the water periodically or use a preservative.

Accessories

Water pressure hoses

Model number RW6 — 2 BW ※ ※
- Water pressure hose
- Length of hose (L) mm
- No.mark: Without coupler
  BW: B, single ended coupling (Hose side)
- No. mark: One side coupler
  BW: B, single ended coupling (Hose side)
- No mark: no cover
  S: Braided steel cover

•Fittings are stainless steel. Designed for water pressure use only.

RW6—※ ※Standard length 2m

Specifications

Items / Model	Max.working pressure (MPa)	Max.water flow (ℓ/min)	Connecting thread	Dimension				Weight approx. (kg)	
				Min. bend radius	Inside diameter φd	Outside diameter φd	A	Hose (kg/m)	Metal fitting
RW6	72	8	B—6WH	90	6.3	16.7	R3/8	0.45	0.6

Water pressure couplers

Model number B — 6 W J
- B-type
- Port diameter (mm)
- For water pressure
- J: Jack side H: Hose side

•Made by stainless steel coupler.

Jack side

Hose side

Specifications

Items / Model	Max.working pressure (MPa)	Jack side (J)		Hose side (H)		Remarks
		Model	Connection thread	Model	Connection thread	
B—6W	72	B—6WJ	R3/8	B—6WH	Rc3/8	For SA type

Pressure gauge / Gauge adapter (optional)

Pressure gauge specifications

Items / Model	Max.working pressure (MPa)	Max. Scale (MPa)	1 scale (MPa)	Size
PG0—63X1000	72	100	5	G1/4B
PG0—100X1000			2	G1/2B

Gauge adapter specifications

Items / Model	Max.working pressure (MPa)	Size
FGW—04	72	G1/4
FGW—08		G1/2

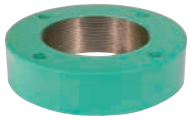
Accessories for jacks

Flange for E series jacks

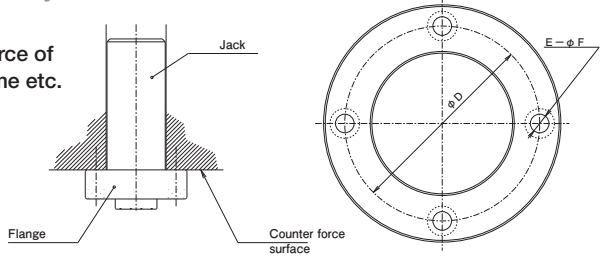
Model number: AF — 10 — S
- Flange
- Applicable Jack capacity(ton)
- S:for spring return type, H:for hydraulic return type, No Code:S & H(Common)

Features

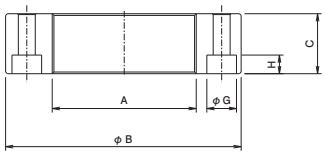
- For taking the counter force of the jack with a press frame etc.



AF-23



Dimensional drawing



Example of usage

Specifications

Model	Applicable Jacks	Dimension (mm) A	B	C	D	E	F	G	H	Allowable pulling load Bolt strength,above 10.9	Used bolt (Hexagon socket bolt)	Nos.of bolts	Weight approx. (kg)
AF−5S	E5S※	M42×1.5	80	20	65	4	7	11	7	15	M6×25L	4	0.6
AF−5H	E5H※	M55×1.5	90	24	75	4	7	11	7	15	M6×30L	4	0.8
AF−10S	E10S※	M57×1.5	100	24	80	4	9	14	9	30	M8×30L	4	1.0
AF−10H	E10H※	M67×1.5	110	27	90	4	9	14	9	30	M8×30L	4	1.3
AF−15	E15S※	M67×1.5	110	27	90	4	9	14	9	30	M8×30L	4	1.3
AF−20	E20H※	M85×2	140	35	115	4	11	17.5	11	45	M10×40L	4	2.7
AF−23	E23S※	M85×2	140	35	115	4	11	17.5	11	45	M10×40L	4	2.7
AF−30	E30S※ E30H※	M102×2	165	40	135	4	13.5	20	13	65	M12×45L	4	4.2
AF−50	E50S※ E50H※	M125×2	190	50	160	6	13.5	20	13	97	M12×55L	6	6.3
AF−70	E70S※ E70H※	M146×3	235	60	195	6	18	26	18	185	M16×70L	6	12.5
AF−100	E100S※ E100H※	M180×3	270	70	230	6	18	26	18	185	M16×80L	6	17.5
AF−200	E200H※	M250×4	360	8020	3156	84	227	3211	227	39015	M20×90LM	84	33.1

Notes.① Pushing load of the jack should be formed in a way that, it is received by entire flange surface.
② The allowable loading capacity is determined from the flange and bolt strength.
Besides, if additional load exceeding the above applies, it will be separately manufactured.

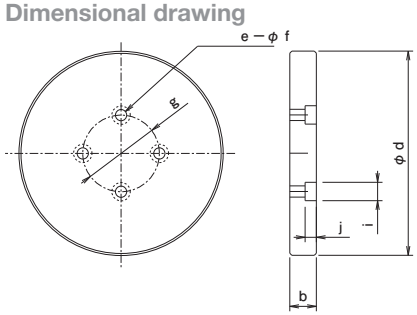
Base for E series single acting jacks

Features

- For stabilizing the hydraulic jack.

EB-23S

Dimensional drawing



Model number: EB — 10 — S
- Base
- Applicable jack capacity(ton)
- S:for spring return type

Example of usage

Specifications

Model	Applicable Jacks	Dimension (mm) b	d	e	f	g	i	j	Used bolt (Hexagon socket bolt)	Nos.of bolts	Weight approx. (kg)
EB−5S	E5S※	17	100	2	7	28	11	7	M6×20L	2	1.1
EB−10S	E10S※	20	135	2	9	35	14	9	M8×20L	2	2.3
EB−15S	E15S※	22	150	2	11	42	18	11	M10×25L	2	3.1
EB−23S	E23S※	25	165	4	11	55	18	11	M10×25L	4	4.2
EB−30S	E30S※	25	180	4	11	75	18	11	M10×25L	4	5.0

Notes.① This base is for stabilizing the hydraulic jack and doesnot consider the pulling force.

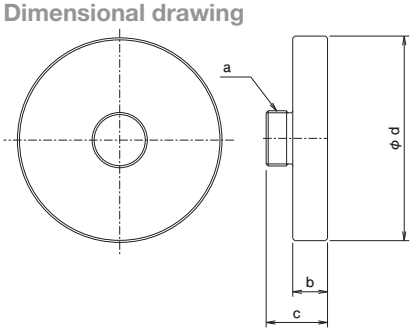
Base for E series double-acting jacks

Features

- For stabilizing the hydraulic jack.

EB-20H

Dimensional drawing



Model number: EB — 10 — H
- Base
- Applicable jack capacity(ton)
- H:for hydraulic return type

Example of usage

Specifications

Model	Applicable Jacks	Dimension (mm) a	b	c	d	Weight approx. (kg)
EB−5H	E5H※	M27×2	17	30	100	1.1
EB−10H	E10H※	M36×2	20	36	135	2.4
EB−20H	E20H※	M45×2	25	42	165	4.4
EB−30H	E30H※	M36×2	25	50	180	5.2

Notes.① This base is for stabilizing the hydraulic jack and pulling force is not considered.

Accessorie for jacks

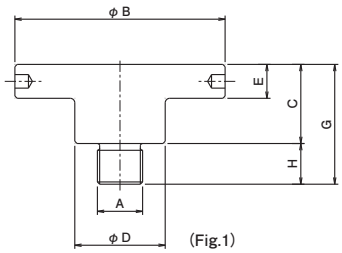
Piston base for E series jacks

Model number: EBP — 10 — S
- Piston base
- Applicable Jack capacity(ton)
- S:for spring return type, H:for hydraulic return type

Features
• To expand load receiving area by the rod end of the jack.

Dimensional drawing

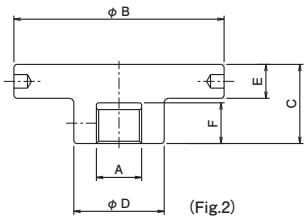
EBP−23S



(Fig.1)

Dimensional drawing

EBP−20H



(Fig.2)

Example of Usage

Specifications

Model	Applicable Jacks	Figure	Dimension (mm)								Weight approx. (kg)	Remarks
			A	B	C	D	E	F	G	H		
EBP−5S	E5S※	Fig.1	M20×2	70	25	32	15	–	36	11	0.5	E5S1.5 Not applicable
EBP−5H	E5H※	Fig.2	M18×1.5	70	25	32	15	17	–	–	0.5	–
EBP−10S	E10S※	Fig.1	M27×2	90	27	42	17	–	48	21	1.0	E10S2.5 Not applicable
EBP−10H	E10H※	Fig.2	M27×2	90	27	42	17	19	–	–	0.9	–
EBP−15S	E15S※	Fig.1	M33×2	105	30	48	20	–	54	24	1.7	–
EBP−20H	E20H※	Fig.2	M36×2	110	32	52	22	22	–	–	1.6	–
EBP−23S	E23S※	Fig.1	M40×2	120	35	58	22	–	59	24	2.4	–
EBP−30S	E30S※	Fig.1	M36×2	130	40	62	22	–	64	24	2.9	–
EBP−30H	E30H※	Fig.1	M36×2	130	40	62	22	–	64	24	2.9	–

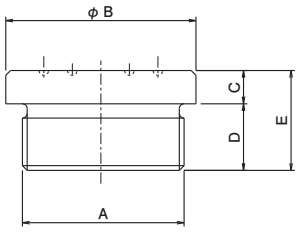
Screw-in type saddles for E series jacks

Model number: ETS — 10
- Screw-in type saddle
- Applicable jack capacity(ton)

Features
• Standard saddle is push-in type. When using upside down, please use screw-in type saddle.

Dimensional drawing

ETS−23



Specifications

Model	Applicable Jacks	Dimension (mm)					Weight approx. (kg)	Remarks
		A	B	C	D	E		
ETS−5	E5S※	M20×2	25	13	13	18	0.1	E5S1.5 Not applicable
ETS−10	E10S※	M27×2	35	16	16	22	0.1	E10S2.5 Not applicable
ETS−15	E15S※	M33×2	40	16	16	23	0.2	–
ETS−23A	E23S2.5	M40×2	$50^{-0.2}_{-0.4}$	14	14	22	0.3	E23S2.5 exclusive for
ETS−23B	E23S※	M40×2	50	21	21	29	0.3	E23S2.5 Not applicable
ETS−30	E30S※ E30H※	M36×2	50	24	24	34	0.3	–
ETS−50	E50H※	M45×2	65	29	29	41	0.7	–
ETS−70	E70H※	M50×3	75	33	33	47	1.0	–
ETS−100	E100H※	M65×3	90	38	38	53	1.7	–
ETS−200	E200H※	M90×3	127	53	53	72	4.5	–

Accessories for jacks

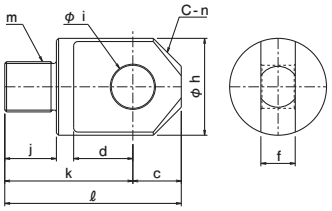
Clevis eye (Single) for E series jacks

Model number

E	C	I	—	10	S	R

E series Hydraulic jack
Clevis
Single
Applicable jack capacity(ton)
S:for spring return type, H:for hydraulic return type
R:Rod side, H:Head side

Dimensional drawing

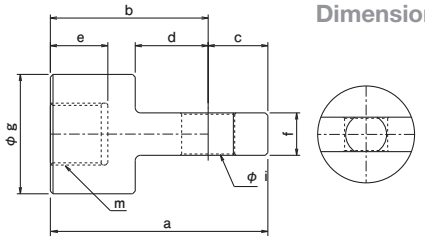


Specifications

Model	Applicable Jacks	Dimension (mm)										Weight approx. (kg)
		c	d	f $^{-0.1}_{-0.3}$	h	i $^{+0.3}_{+0.1}$	j	k	ℓ	m	n	
ECI-5SR	E5S2.5 E5S7.5 E5S12.7 E5S18	20	27	20	40	20	12	45	65	M20×2	11	0.3
ECI−10SR	E10S5 E10S10 E10S15 E10S20 E10S25 E10S30	28	38	28	56	28	15	62	90	M27×2	16	0.8
ECI−15SR	E15S2.5 E15S5 E15S10 E15S15 E15S20 E15S25 E15S30 E15S35	33	43	33	65	35	17	70	103	M33×2	19	1.3
ECI−23SR	E23S2.5 E23S5 E23S10 E23S16 E23S21 E23S25 E23S30 E23S34.5	40	52	40	80	40	20	85	125	M40×2	23	2.4
ECI−10HH	E10H3 E10H8 E10H15 E10H25	28	38	28	55	28	20	67	95	M36×2	16	0.9
ECI-20HH	E20H15 E20H25	40	52	40	80	40	22	87	127	M45×2	23	2.4

ECI−15SR

Dimensional drawing



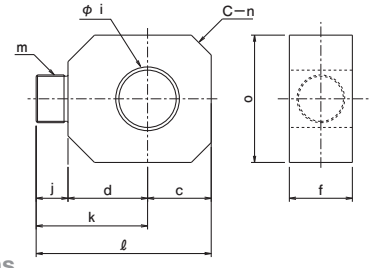
Specifications

Model	Applicable Jacks	Dimension (mm)										Weight approx. (kg)
		a	b	c	d	e	f $^{-0.1}_{-0.3}$	g	i $^{+0.3}_{+0.1}$	m	n	
ECI−5HR	E5H3 E5H8 E5H15	67	47	20	27	16	20	40	20	M18X1.5	11	0.4
ECI−10HR	E10H3 E10H8 E10H15 E10H25	90	62	28	38	18	28	55	28	M27×2	16	0.9
ECI−20HR	E20H5 E20H15 E20H25	120	80	40	52	20	40	80	40	M36×2	23	2.6

ECI−20HR

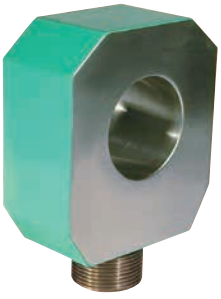
Notes.ECI-10SR will be used for the head side clevis of E5H※.

Dimensional drawing



Specifications

Model	Applicable Jacks	Dimension (mm)										Weight approx. (kg)
		c	d	f $^{-0.1}_{-0.3}$	i $^{+0.3}_{+0.1}$	j	k	ℓ	m	n	o	
ECI−30 SR HH HR	E30S12.5 E30S20 E30H20 E30H35	48	60	48	48	24	84	132	M36×2	27	95	3.0
ECI−50 HH HR	E50H15 E50H35 E50H50	60	75	60	60	30	105	165	M45×2	35	120	5.8



ECI−30

Accessories for jacks

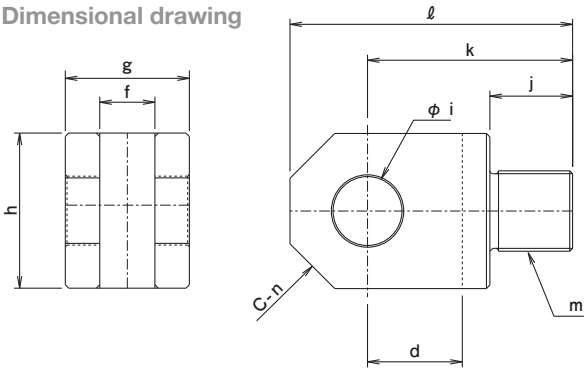
Clevis eye (double) for E series jacks

Model number E C Y — 10 S R

- E series Hydraulic jack
- Clevis
- Double
- Applicable jack capacity(ton)
- S:for spring return type, H:for hydraulic return type
- R:Rod side, H:Head side

ECY−15SR

Dimensional drawing

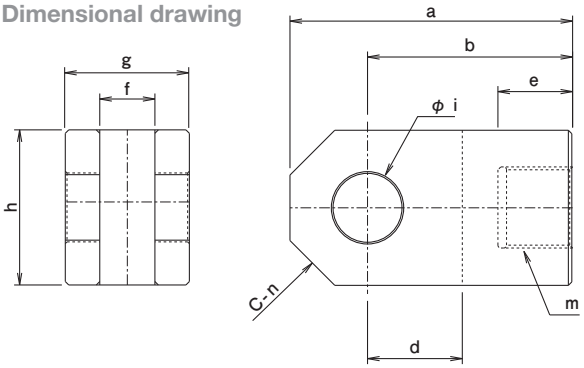


Specifications

Model	Applicable Jacks	Dimension (mm)											Weight approx. (kg)
		c	d	f $^{-0.1}_{-0.3}$	g	h	i $^{+0.3}_{+0.1}$	j	k	ℓ	m	n	
ECY−5SR	E5S2.5 E5S7.5 E5S12.7 E5S18	20	27	20	40	40	20	12	50	70	M20×2	11	0.4
ECY−10SR	E10S5 E10S10 E10S15 E10S20 E10S25 E10S30	28	38	28	55	55	28	15	68	96	M27×2	16	1.0
ECY−15SR	E15S2.5 E15S5 E15S10 E15S15 E15S20 E15S25 E15S30 E15S35	33	43	33	65	65	35	17	77	110	M33×2	19	1.6
ECY−23SR	E23S2.5 E23S5 E23S10 E23S16 E23S21 E23S25 E23S30 E23S34.5	40	52	40	80	80	40	20	92	132	M40×2	23	3.0
ECY−30SR	E30S12.5 E30S20	48	60	48	95	95	48	24	114	162	M36×2	27	5.2
ECY−10HH	E10H3 E10H8 E10H15 E10H25	28	38	28	55	55	28	20	75	103	M36×2	16	1.2
ECY−20HH	E20H15 E20H25	40	52	40	80	80	40	22	99	139	M45×2	23	3.3
ECY−30HH ECY−30HR	E30H20 E30H35	48	60	48	95	95	48	24	114	162	M36×2	27	5.2
ECY−50HH	E50H15 E50H35 E50H50	60	75	60	120	120	60	30	140	200	M45×2	35	10

ECY−20HR

Dimensional drawing



Specifications

Model	Applicable Jacks	Dimension (mm)										Weight approx. (kg)
		a	b	d	e	f $^{-0.3}_{-0.1}$	j	k	f $^{+0.3}_{+0.1}$	m	n	
ECY−5HR	E5H3 E5H8 E5H15	73	53	27	16	20	40	40	20	M18×1.5	11	0.5
ECY−10HR	E10H3 E10H8 E10H15 E10H25	97	69	38	18	28	55	55	28	M27×2	16	1.2
ECY−20HR	E20H5 E20H15 E20H25	132	92	52	20	40	80	80	40	M36×2	23	3.6

Notes.① Please use ECY-10SR, when mounting the clevis on the head side of E5H※.

Mounting example

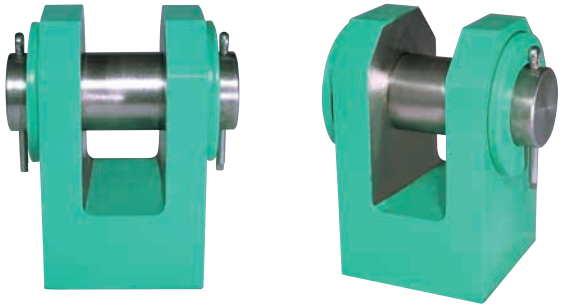
Rod clevis(ECY-30HR)and head clevis(ECY-30HH)mounted on E30H20

Accessories for jacks

Model number E C S — 10

- E series hydraulic jack
- Clevis
- Set items
- Applicable jack capacity(ton)

Accessories for E series clevis



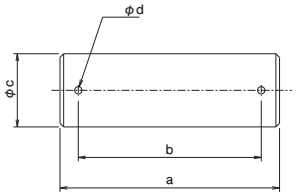
Specifications

	Parts name	Q'ty
ECS (Combination form)	Pin	1
	Washer	2
	Split pin	2

Pin

ECP

Dimensional drawing



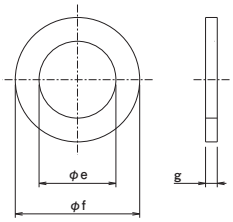
Specifications

Model	Applicable clevis		Dimension (mm) a	b	c	d
ECP−5	ECI−5SR	ECY−5HR	65	53	20	2.0
ECP−10	ECI−10SR ECI−10HR ECI−10HH	ECY−10SR ECY−10HR ECY−10HH	85	73	28	3.2
ECP−15	ECI−15SR	ECY−15SR	95	85	35	3.2
ECP−20	ECI −20HR ECI−23SR ECI−20HH	ECY−20HR ECY−23SR ECY−20HH	115	102	40	5.0
ECP−30	ECI−30	ECY−30	135	122	48	5.0
ECP−50	ECI−50	ECY−50	165	150	60	6.3

Washer(2pcs as 1set)

ECW

Dimensional drawing



Specifications

Model	Applicable clevis		Dimension (mm) e	f	g
ECW−5	ECI−5SR	ECY−5HR	22	37	3.2
ECW−10	ECI−10SR ECI−10HR ECI−10HH	ECY−10SR ECY−10HR ECY−10HH	30	50	4.5
ECW−15	ECI−15SR	ECY−15SR	36	60	6
ECW−20	ECI −20HR ECI−23SR ECI−20HH	ECY−20HR ECY−23SR ECY−20HH	42	72	6
ECW−30	ECI−30	ECY−30	52	92	8
ECW−50	ECI−50	ECY−50	62	105	9

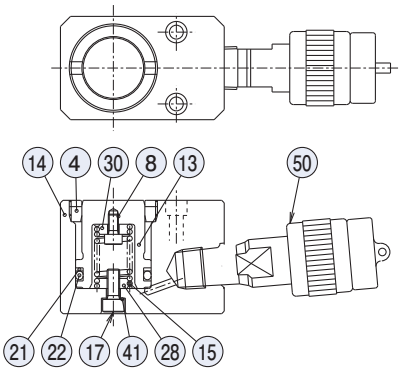
Split pin(2pcs as 1set)

ECC

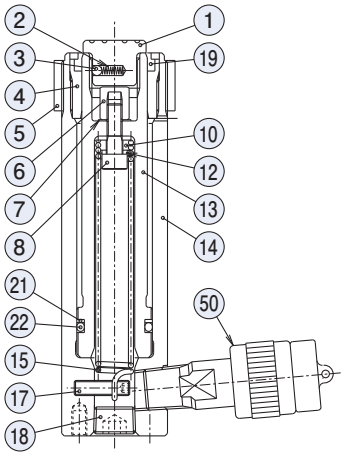
Specifications

Model	Applicable clevis		Dimension (mm) Outer dia×length
ECC−5	ECI−5SR	ECY−5HR	ϕ2×32L
ECC−10	ECI−10SR ECI−10HR ECI−10HH	ECY−10SR ECY−10HR ECY−10HH	ϕ3.2×40L
ECC−15	ECI−15SR	ECY−15SR	ϕ3.2×50L
ECC−20	ECI −20HR ECI−23SR ECI−20HH	ECY−20HR ECY−23SR ECY−20HH	ϕ5×56L
ECC−30	ECI−30	ECY−30	ϕ5×71L
ECC−50	ECI−50	ECY−50	ϕ6.3×80L

E series list of parts drawings

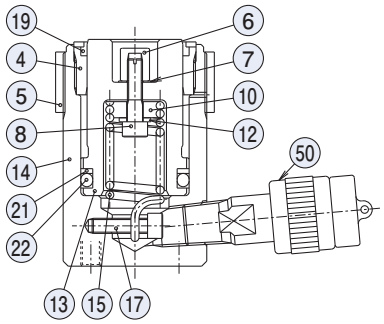


E5S1.5

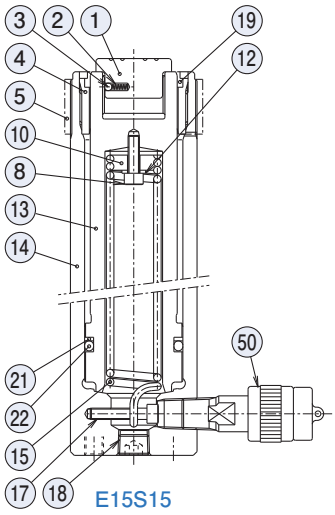


E5S7.5

E5S2.5～E5S18
E15S2.5　E23S2.5

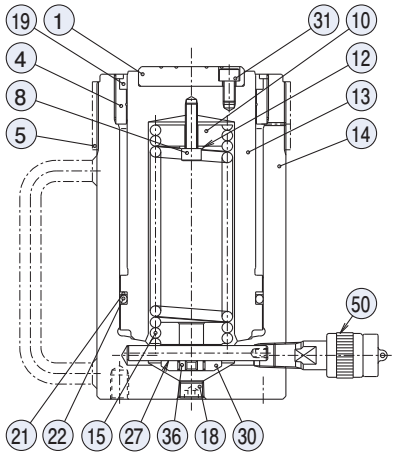


E10S2.5



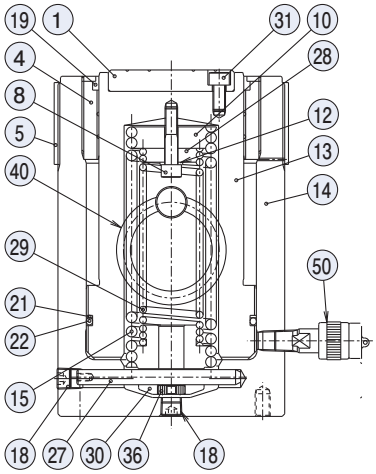
E15S15

E10S5～E10S30
E15S5～E15S35
E23S5～E23S34.5※
E30S12.5　E30S20※



E50S10（With handle）

E50S5
E50S10　E50S16（With handle）



E100S10

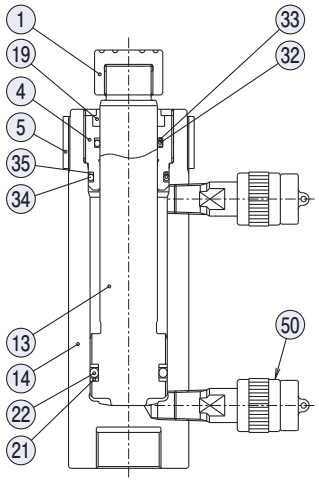
E50S32
E70S15　E70S33
E100S10　E100S20 of No.18 two pcs.

Warning: Jack marked with ※ No.17 (Bolt B) will become No.27 (Spring hanger) Regarding it's shape, please refer to No.27 on right figure.

Parts lists（E※※S※※type）

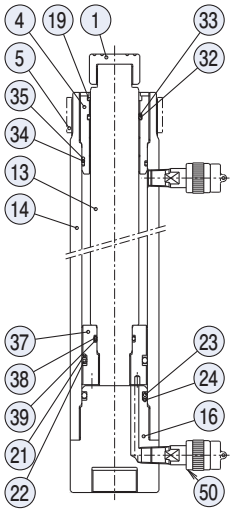
No.	Parts name	Q'ty	No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Saddle	1	12	Washer	1	27	Spring hanger	1
2	Spring-C	1	13	Piston rod	1	28	Spring holder-B	1
3	Steel ball	1	14	Cylinder tube	1	29	Spring-B	1
4	Rod cover	1	15	Spring-A	1	30	Spring holder-C	1
5	Thread protector	1	17	Bolt-B	1	31	Bolt-C	4
6	Cap nut	1	18	Plug	1or2	36	Bushing	1
7	Gasket	1	19	Dust seal	1	40	Carry ring	2
8	Bolt-A	1	21	Back up ring	1	41	Gasket-B	1
10	Spring holder	1	22	O−ring	1	50	Coupler	1

E series list of parts drawings

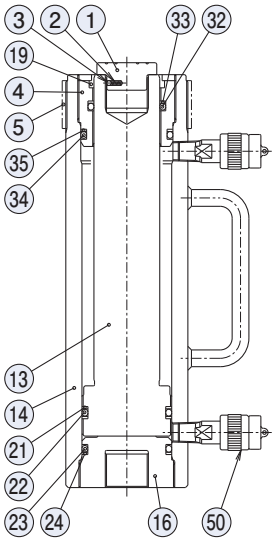


E10H8

E5H3～E5H15
E10H3～E10H25
E20H5～E20H25

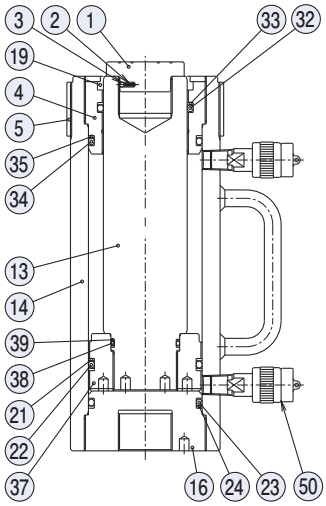


E20H50



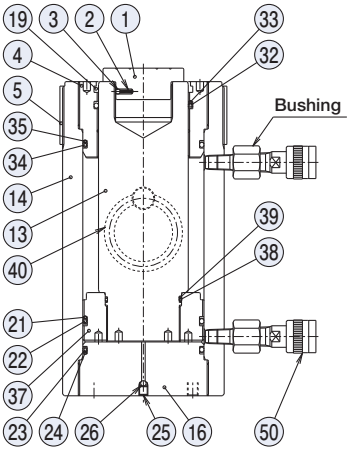
E30H20

E30H35



E50H15（with handle）

E50H35　E50H50（With carry ring）
E70H15　E70H35（With carry ring）



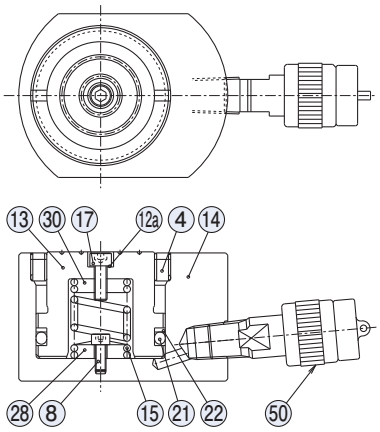
E100H35

E200H35

Parts lists（E※※H※※type）

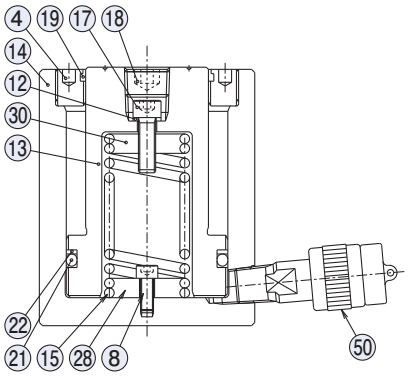
No.	Parts name	Q'ty	No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Cap or saddle	1	19	Dust seal	1	33	Back up ring	1
2	Spring-C	1	21	Back up ring	2	34	O−ring	1
3	Steel ball	1	22	O−ring	1	35	Back up ring	1
4	Rod cover	1	23	O−ring	1	37	Piston	1
5	Thread protector	1	24	Back up ring	1	38	O−ring	1
13	Piston rod	1	25	Screw	1	39	Back up ring	2
14	Cylinder tube	1	26	Steel ball	1	40	Carry ring	2
16	Jack end	1	32	O−ring	1	50	Coupler+Bushing(E100H35 Above)	2

E series list of parts drawings



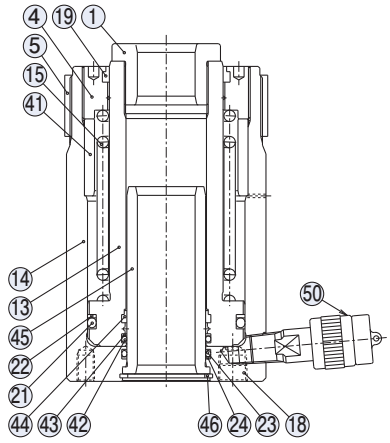
EF20S1.5

EF10S1.1～EF50S1.5
EL10S3.5　EL20S4.5
EF100S1.5（With handle）



EL30S6

EL50S6
EL100S5.5（With Carry ring）

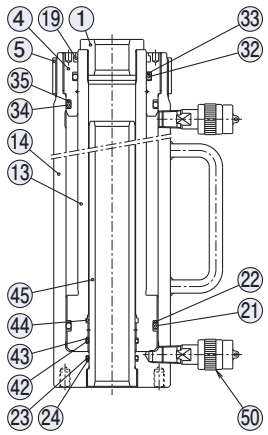


EC30S6

EC12S4（With No.46）　EC12S7.5
EC20S5（With No.46）
EC20S15（With handle）
EC30S15（With handle）

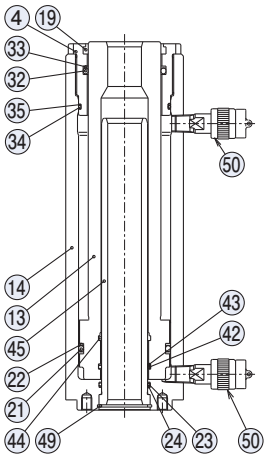
Parts listes（EL※※S※※、EF※※S※※、EC※※S※※type）

No.	Parts name	Q'ty	No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Saddle	1	17	Bolt-B	1	41	Stopper ring	2
4	Rod cover	1	18	Pulg	1	42	O−ring	1
5	Thread protector	1	19	Dust seal	1	43	Back up ring	1
8	Bolt-A	1	21	O−ring	1	44	Dust seal-B	1
12	Washer	1	22	Back up ring	1	45	Hollow rod	1
12a	Gasket-B	1	23	O−ring	1	46	Retaining ring	1
13	Piston rod	1	24	Back up ring	1	50	Coupler	1
14	Cylinder tube	1	28	Spring holder-B	1			
15	Spring-A	1	30	Spring holder-C	1			



EC30H25（With handle）

EC30H15　EC60H25（With Carry ring）
EC90H25（With Carry ring）
EC100H4　EC140H20（Without No.5）　（With Carry ring）



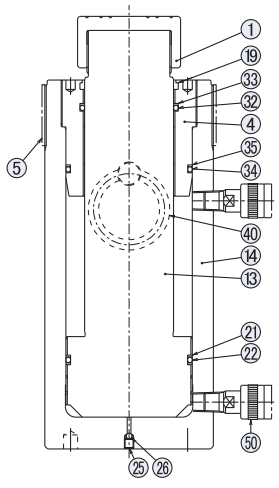
EC30H20

EC50H25　EC100H15
EC100H30　EC200H15　EC200H35

Parts listes（EC※※H※※type）

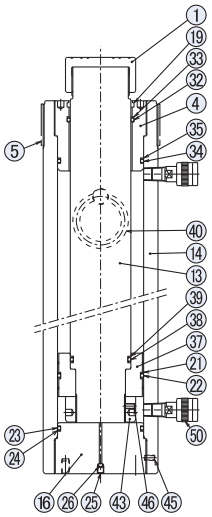
No.	Parts name	Q'ty	No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Saddle	1	23	O−ring	1	43	Back up ring	1
4	Rod cover	1	24	Back up ring	1	44	Dust seal-B	1
5	Thread protector	1	32	O−ring	1	45	Hollow rod	1
13	Piston rod	1	33	Back up ring	1	49	Retaining ring	1
14	Cylinder tube	1	34	O−ring	1	50	Coupler+Bushings(EC90H25 above)	2
19	Dust seal	1	35	Back up ring	1			
21	O−ring	1	40	Carry ring	2			
22	Back up ring	2	42	O−ring	1			

E series and SA Water pressure jacks list of parts drawings

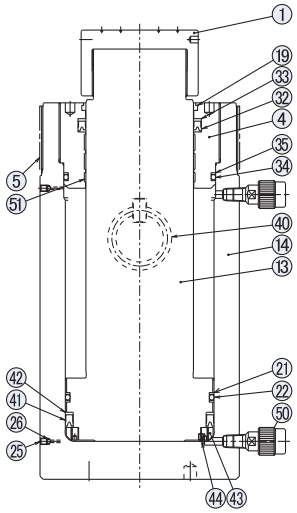


ET100H15

ET50H5 (Without No.25・26)
ET50H10 (Without No.25・26)
ET100H5 ET100H30

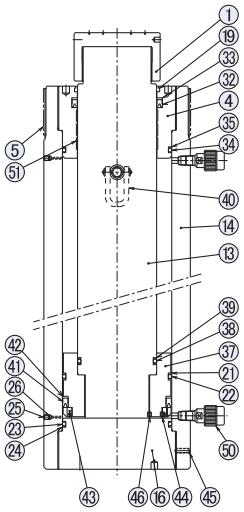


ET100H50



ET300H30

ET200H15 ET200H30
ET500H30

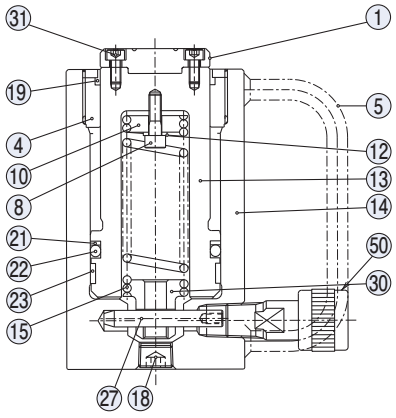


ET300H50

ET200H50 ET200H100
ET300H100
ET500H50 ET500H100

Parts listes (EL※※S※※、EF※※S※※、EC※※S※※type)

No.	Parts name	Q'ty	No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Head	1	24	Back up ring	1	40	Carry ring	2
4	Rod cover	1	25	Screw	2	41	Piston packing	1
5	Thread protector	1	26	Steel ball	2	42	Back up ring	1
13	Piston rod	1	32	U-packing	1	43	Piston nut	1
14	Cylinder tube	1	33	Back up ring	1	44	Hexagon socket set screw	1
16	Jack end	1	34	O-ring	1	45	Hexagon socket set screw	1
19	Dust seal	1	35	Back up ring	1	46	Hexagon socket set screw	1
21	Back up ring	2	37	Piston	1	50	Couplings	2
22	O-ring	1	38	O-ring	1	51	Wear ring	3
23	O-ring	1	39	Back up ring	2			



SA22S5

SA10S5 SA10S10
SA22S10 SA50S5

Parts listes (SA※※S※※type)

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Saddle	1	18	Pulg	1
4	Rod cover	1	19	Dust seal	2
5	Handle	1	21	Back up ring	2
8	Hexagon socket bolt	1	22	O-ring	1
10	Spring holder-A	1	23	Wear ring	1
12	Washer	1	27	Spring hanger	1
13	Piston rod	1	30	Spring holder-B	1
14	Cylinder tube	2	31	Hexagon socket bolt	1
15	Spring	1	50	Coupler	1

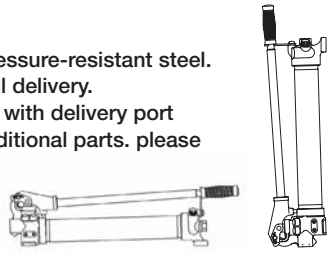
TWA type Hand Pumps

for single-acting jacks(low-pressure relief)

Model number: TWA — 0.3
Hand pump
Usable oil volume (ℓ)

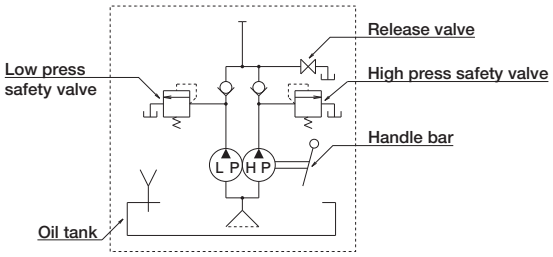
Features

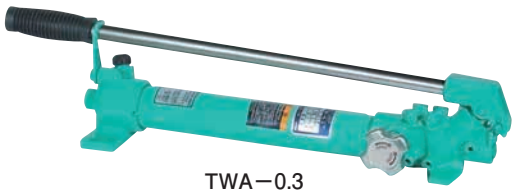
- Pump body is made of a special, pressure-resistant steel.
- High and low pressure, two-stage oil delivery.
- For horizontal usage. Vertical usage with delivery port downward is possible by adding additional parts. please contact us for further information.



Horizontal usage　Vertical usage
Nots) Additional parts is required

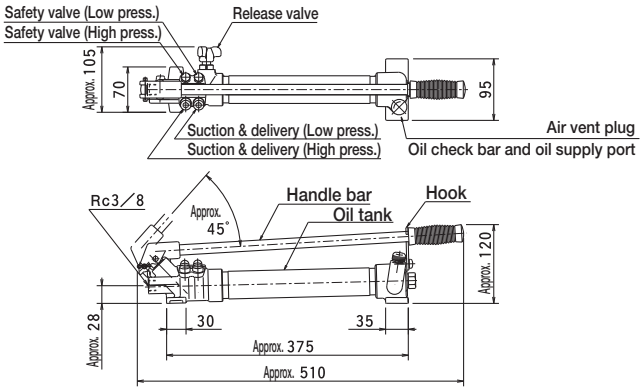
Hydraulic circuit diagram (Low-pressure relief type)

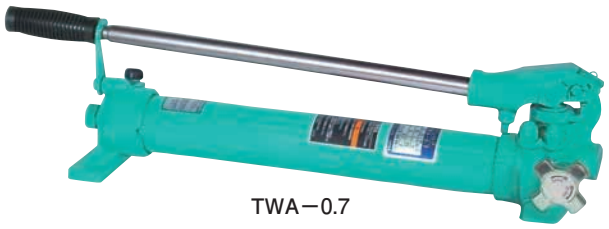




TWA−0.3

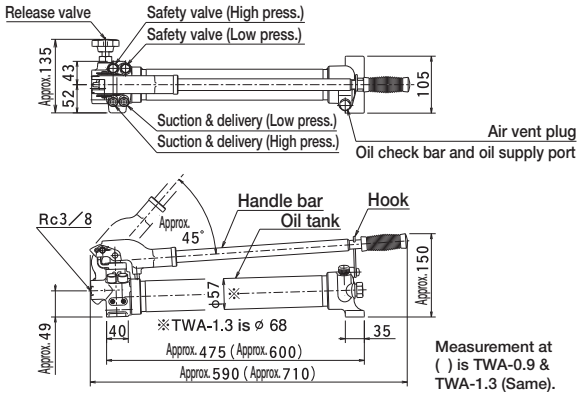
Dimensional drawing





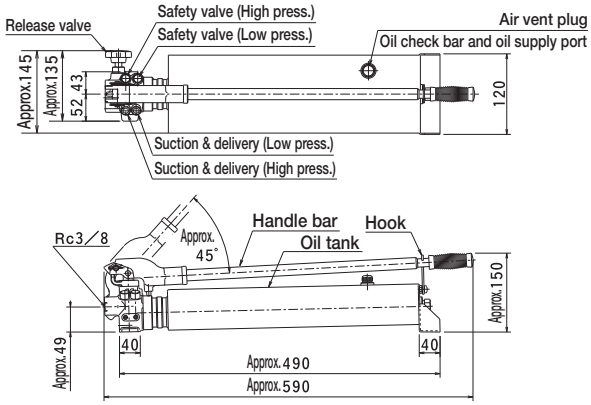
TWA−0.7

Dimensional drawing



TWA−2

Dimensional drawing



Specifications

Model \ Items	Usable oil volume (ℓ)	Working pressure (MPa)		Oil delivery (mℓ/stroke)		Connection port	Weight approx. (kg)
		High	Low	High	Low		
TWA−0.3	0.3	72	3	1	5	NPT3/8 or Rc3/8	3.5
TWA−0.7	0.7			2	11		6.6
TWA−0.9	0.9						7.8
TWA−1.3	1.3						8.5
TWA−2	2						10.0

Note) Use ISO VG10 hydraulic working oil or equivalent oil.

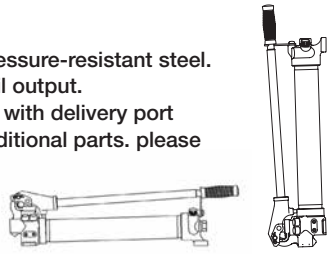
TWA type Hand Pumps

for single-acting jacks(low-pressure relief)

Model number: TWA — 4
Hand pump
Usable oil volume (ℓ)

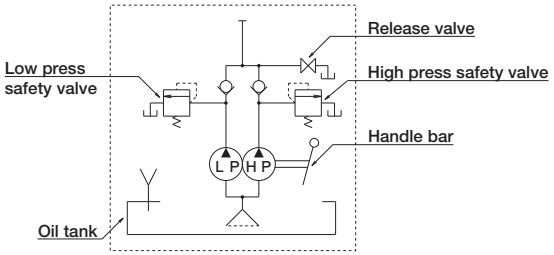
Features

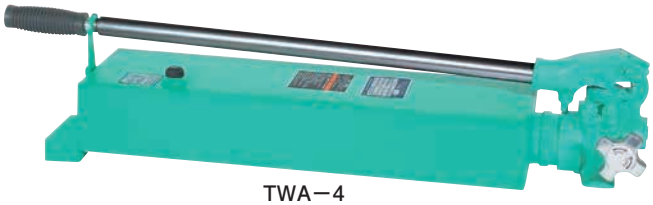
- Pump body is made of a special, pressure-resistant steel.
- High and low pressure, two-stage oil output.
- For horizontal usage. Vertical usage with delivery port downward is possible by adding additional parts. please contact us for further information.



Horizontal usage　Vertical usage
Nots) Additional parts is requived

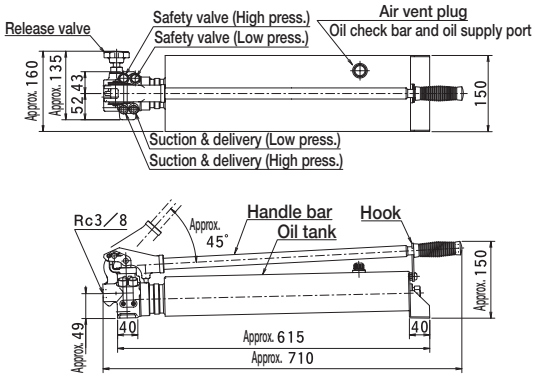
Hydraulic circuit diagram (Low-pressure relief type)

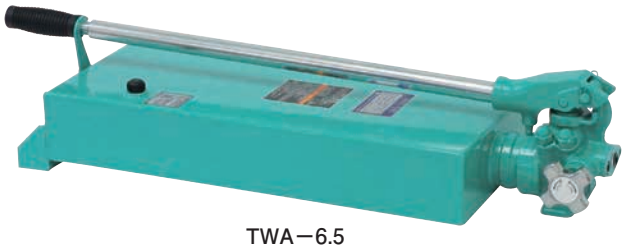




TWA—4

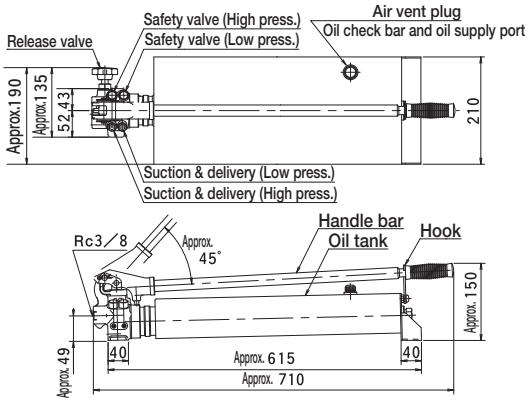
Dimensional drawing

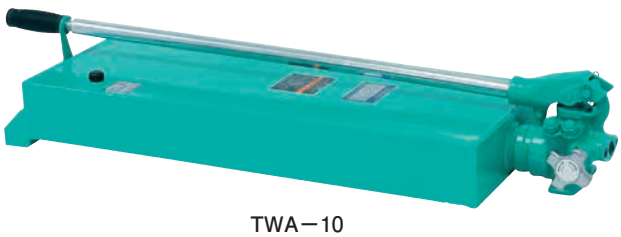




TWA—6.5

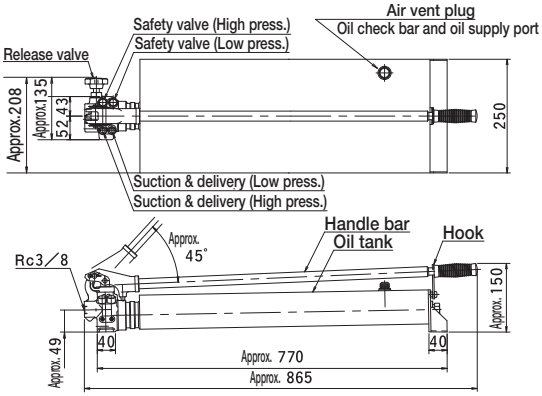
Dimensional drawing





TWA—10

Dimensional drawing



Specifications

Items / Model	Usable oil volume (ℓ)	Working pressure (MPa)		Oil delivery (mℓ/stroke)		Connection port	Weight approx. (kg)
		High	Low	High	Low		
TWA—4	4	72	3	2	11	NPT3/8 or Rc3/8	13.0
TWA—6.5	6						16.5
TWA—10	10						24.0

Note) Use ISO VG10 hydraulic working oil or equivalent oil.

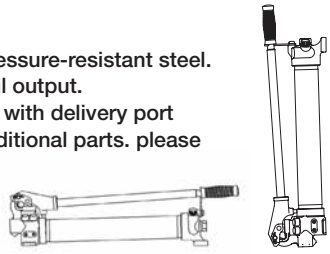
TWA type Hand Pumps

Model number: TWA — 2.3
Hand pump
Usable oil volume (ℓ)

for single-acting jacks(low-pressure unload)

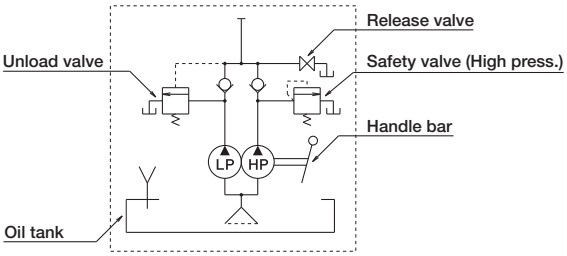
Features

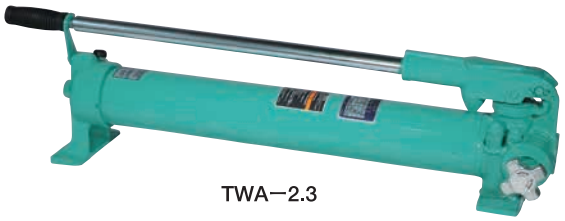
- Pump body is made of a special, pressure-resistant steel.
- High and low pressure, two-stage oil output.
- For horizontal usage. Vertical usage with delivery port downward is possible by adding additional parts. please contact us for further information.



Horizontal usage　Vertical usage
Nots) Additional parts is required

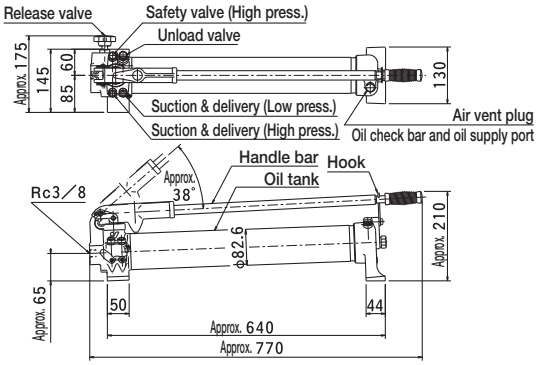
Hydraulic circuit diagram (Low-pressure unload type)

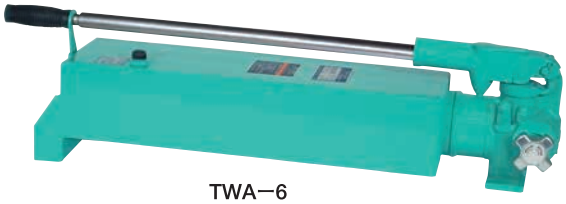




TWA—2.3

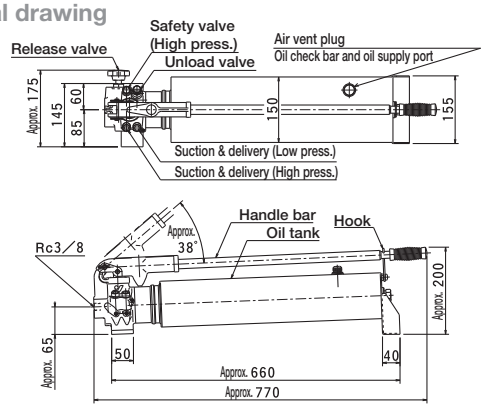
Dimensional drawing





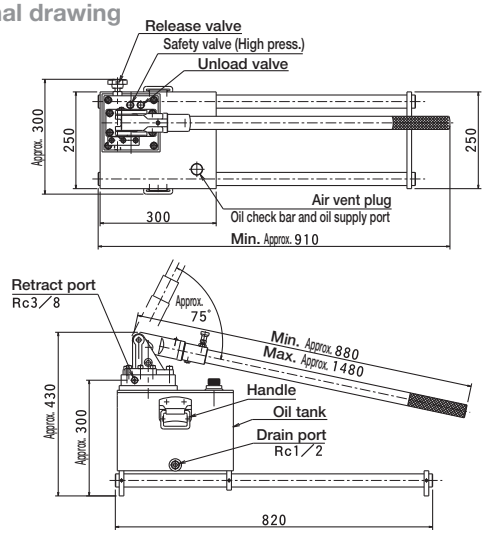
TWA—6

Dimensional drawing



TWA—8

Dimensional drawing



Features

- Low/high two-stage large output pump.
- High quantity of usable oil.
- Suitable for large jacks.

※Not applicable for vertical usage.

Specifications

Model \ Items	Usable oil volume (ℓ)	Working pressure (MPa)		Oil delivery (mℓ/stroke)		Connection port	Weight approx. (kg)
		High	Low	High	Low		
TWA—2.3	2.3	72	3	2	24	Rc3/8	13.8
TWA—6	6	72					19.5
TWA—8	8	72	2	9	90		57.0
TWA—8M	8	21		22			57.0

Note) Use ISO VG10 hydraulic working oil or equivalent oil.

TWAD type Hand pumps

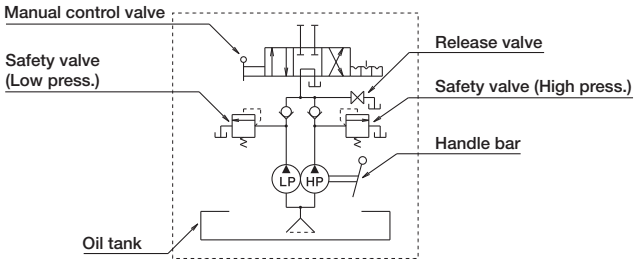
for double-acting jacks(low-pressure relief)

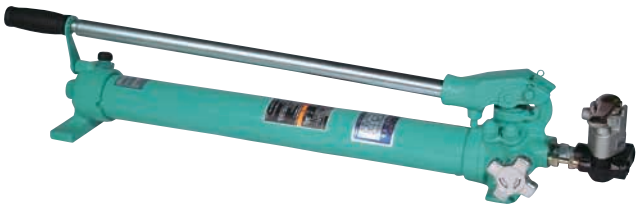
Model number: TWA D — 0.9
- Hand pump
- with manual control valve
- Usable water volume (ℓ)

Features

- Pump body is made of a special, pressure-resistant steel.
- High and low pressure, two-stage oil output.
- For horizontal usage. Vertical usage with delivery port downward is possible by adding additional parts. please contact us for further information.

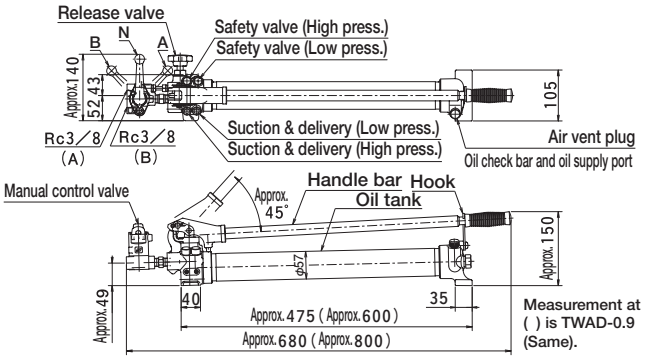
Hydraulic circuit diagram (Low-pressure relief type)

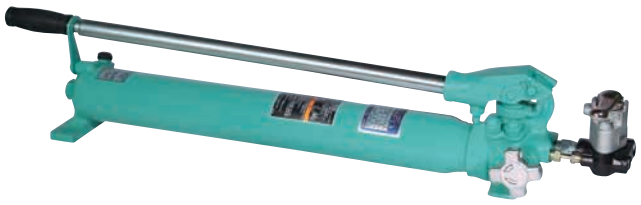




TWAD−0.7 or TWAD−0.9

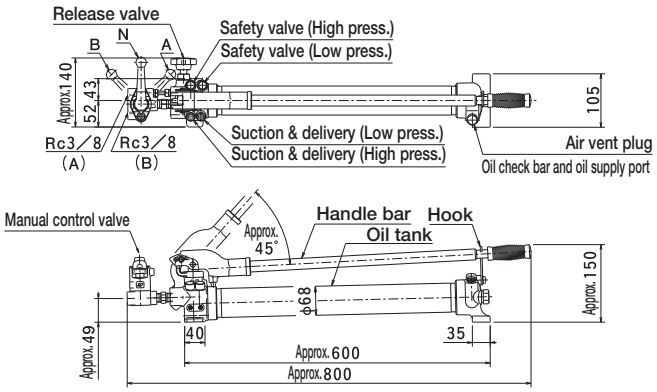
Dimensional drawing





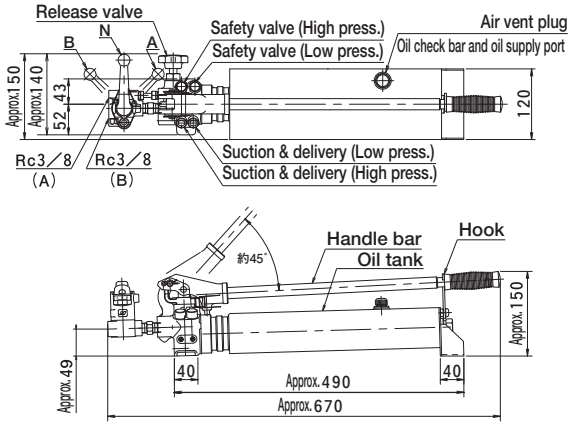
TWAD−1.3

Dimensional drawing



TWAD−2

Dimensional drawing



Specifications

Items / Model	Usable oil volume (ℓ)	Working pressure (MPa)		Oil delivery (mℓ/stroke)		Connection port	Weight approx. (kg)
		High	Low	High	Low		
TWAD−0.7	0.7	72	3	2	11	NPT3/8 or Rc3/8	7.6
TWAD−0.9	0.9						8.8
TWAD−1.3	1.3						9.5
TWAD−2	2						11.0

Note) Use ISO VG10 hydraulic working oil or equivalent oil.

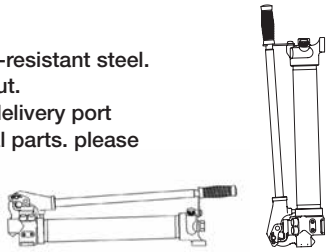
TWAD type Hand pumps

for double-acting jacks(low pressure relief)

Model number: TWA D — 4
- Hand pump
- with manual control valve
- Usable water volume (ℓ)

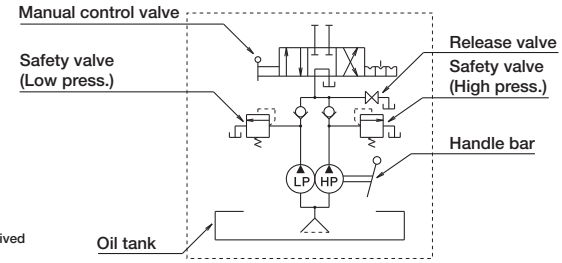
Features

- Pump body is made of a special, pressure-resistant steel.
- High and low pressure, two-stage oil output.
- For horizontal usage. Vertical usage with delivery port downward is possible by adding additional parts. please contact us for further information.



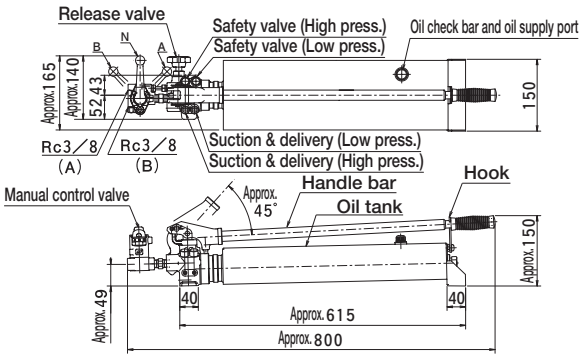
Horizontal usage　Vertical usage
Nots) Additional parts is required

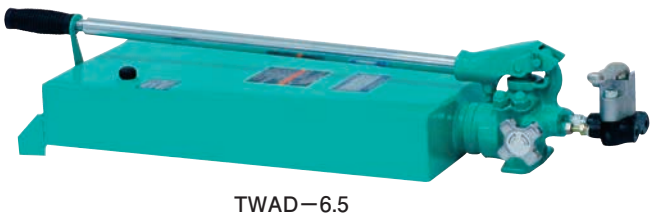
Hydraulic circuit diagram (Low-pressure relief type)



TWAD−4

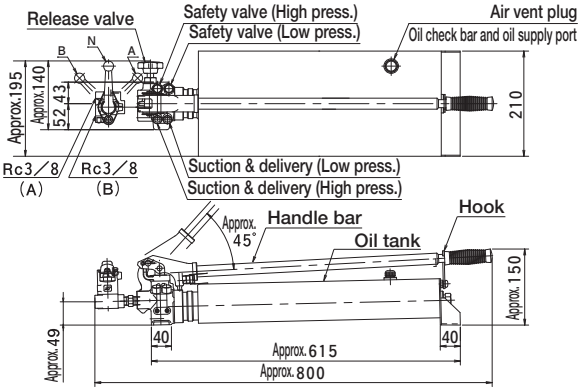
Dimensional drawing

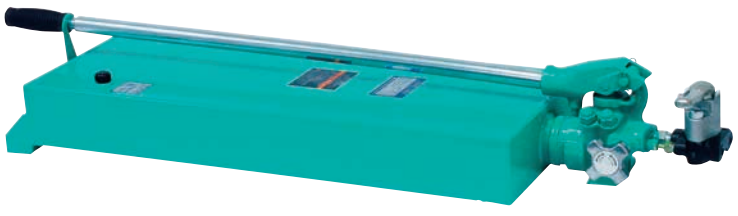




TWAD−6.5

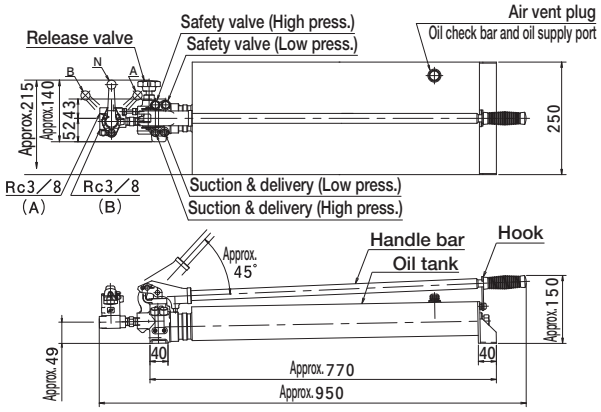
Dimensional drawing





TWAD−10

Dimensional drawing



Specifications

Model \ Items	Usable oil volume (ℓ)	Working pressure (MPa)		Oil delivery (mℓ/stroke)		Connection port	Weight approx. (kg)
		High	Low	High	Low		
TWAD−4	4	72	3	2	11	NPT3/8 or Rc3/8	14.0
TWAD−6.5	6						17.5
TWAD−10	10						25.0

Note) Use ISO VG10 hydraulic working oil or equivalent oil.

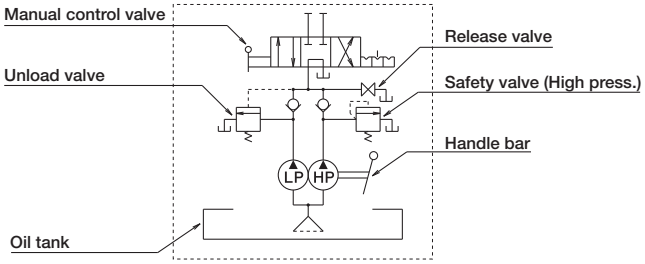
TWAD type Hand Pumps

for double-acting jacks(low-pressure unload)

Model number: TWA D — 2.3
- Hand pump
- With manual control valve
- Usable oil volume (ℓ)

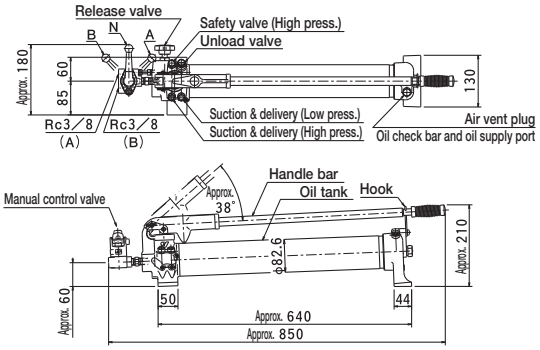
Features
- Pump body is made of a special, pressure-resistant steel.
- High and low pressure, two-stage oil output.
- For horizontal usage. Vertical usage with delivery port downward is possible by adding additional parts. please contact us for further information.

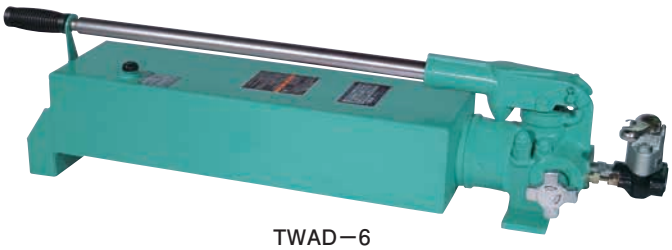
Hydraulic circuit diagram (Low-pressure unload type)



TWAD−2.3

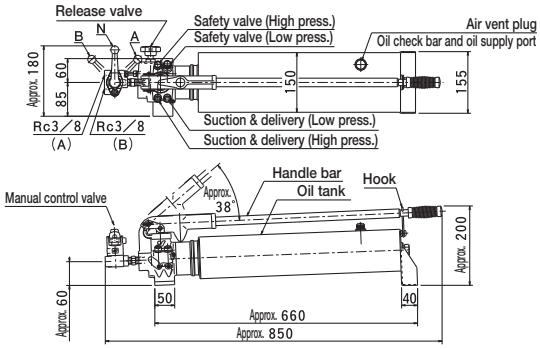
Dimensional drawing

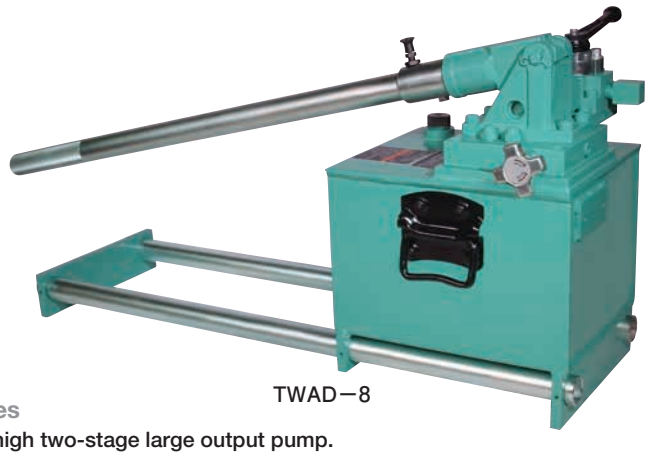




TWAD−6

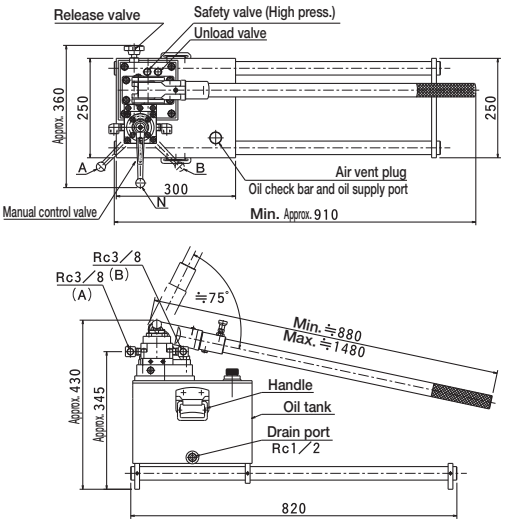
Dimensional drawing





TWAD−8

Dimensional drawing



Features
- Low/high two-stage large output pump.
- High quantity of usable oil.
- Suitable for large jacks.

※Not applicable for vertical usage.

Specifications

Model \ Items	Usable oil volume (ℓ)	Working pressure (MPa)		Oil delivery (mℓ/stroke)		Connection port	Weight approx. (kg)
		High	Low	High	Low		
TWAD−2.3	2.3	72	3	2	24	Rc3/8	14.8
TWAD−6	6	72					20.5
TWAD−8	8	72	2	9	90		59
TWAD−8M	8	21		22			59

Note) Use ISO VG10 hydraulic working oil or equivalent oil.

LTWA type Lightweight Hand Pumps

for single-acting jacks

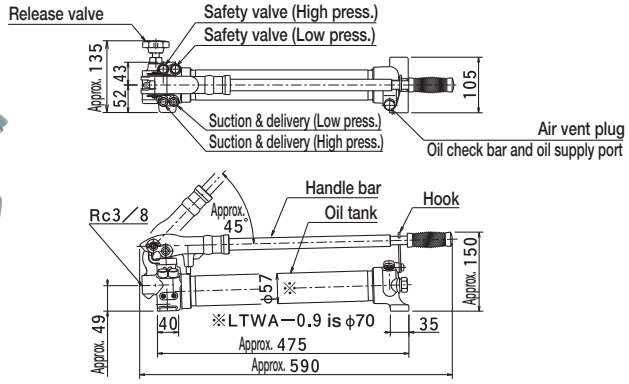
Model number: LTWA — 0.7
- Lightweight hand pump
- Usable oil volume (ℓ)

Features

- Ultralight, rust-resistant construction.
- Setions of the tank that will not be pressurized, the handle socket, stand, and other parts are made of aluminum.

LTWA—0.7

Dimensional drawing



Specifications

Items / Model	Usable oil volume (ℓ)	Working pressure (MPa)		Oil delivery (mℓ/stroke)		Connection port	Weight approx. (kg)
		High	Low	High	Low		
LTWA—0.7	0.7	72	1	2	11	Rc3/8	5.5
LTWA—0.9	0.9						5.9

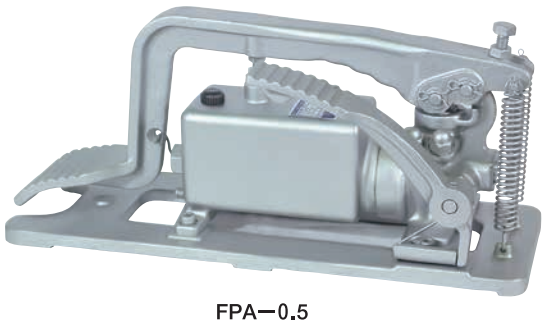
FPA type Foot Pumps

for single-acting jacks

Model number: FPA — 0.5
- Foot pump
- Usable oil volume (ℓ)

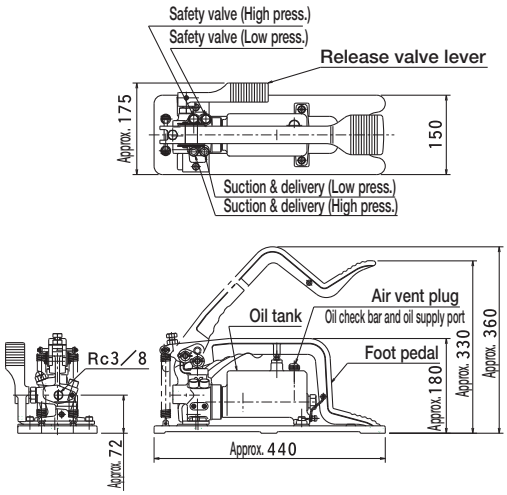
Features

- Foot control pump.
- Hands-free operation.
- Unpressurized parts i.e.oil tank, foot pedal and base plate etc. are made of alumium.

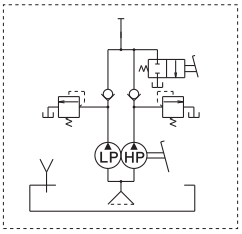


FPA—0.5

Dimensional drawing



Hydraulic circuit diagram



Specifications

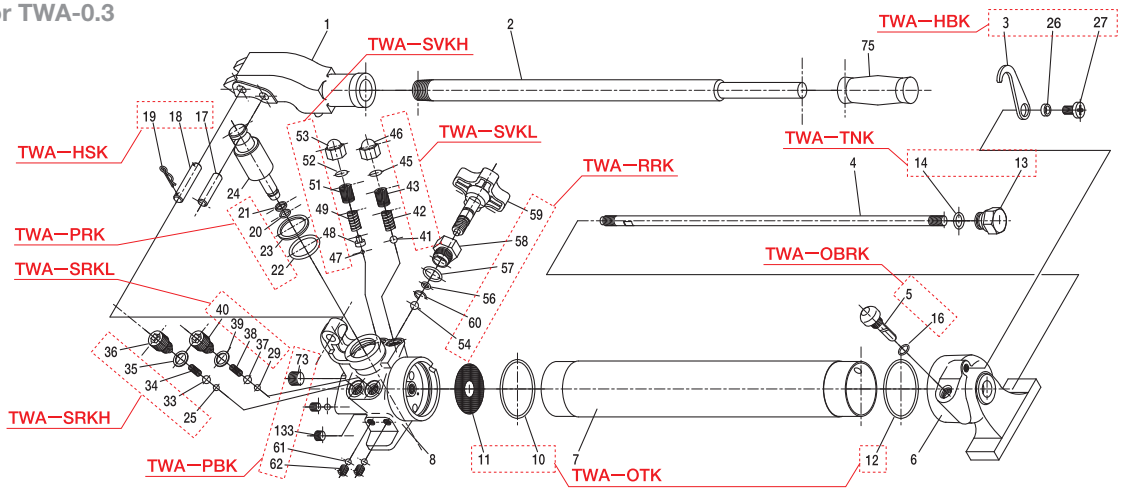
Items / Model	Usable oil volume (ℓ)	Working pressure (MPa)		Oil delivery (mℓ/stroke)		Connection port	Weight approx. (kg)
		High	Low	High	Low		
FPA—0.5	0.5	72	1	2	11	Rc3/8	7.0

Hand Pump Parts Drawings

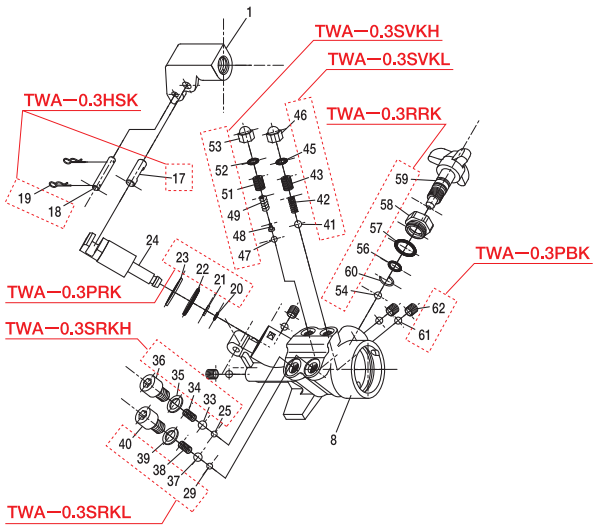
Model number TWA−0.3 PRK
Hand pump type
Parts kits

Refer to the next page for part names.

Parts drawing for TWA, LTWA, and TWAD types
※See below for TWA-0.3



Parts drawing for TWA-0.3

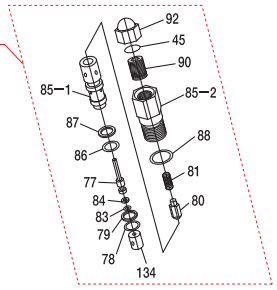


Parts drawing for unload type.

Unload valve
(TWA−AVK)

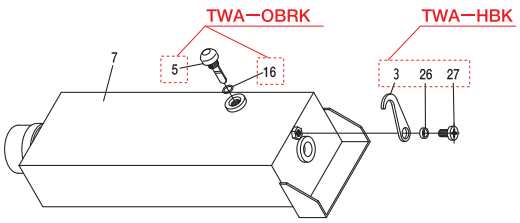
TWA-2.3
TWAD-2.3

TWA-6
TWAD-6



Parts drawing for Oil tank

TWA-2
TWA-4
TWA-6
TWA-6.5
TWA-10
TWAD-2
TWAD-4
TWAD-6
TWAD-6.5
TWAD-10



Specifications

Part kits	Parts No.
TWA−PRK	20·21·22·23
TWA−RRK	54·56·57·58·59·60
TWA−SRKH	25·33·34·35·36
TWA−SRKL	29·37·38·39·40
TWA−OBRK	5·16
TWA−SVKL	41·42·43·45·46
TWA−SVKH	47·48·49·51·52·53
TWA−PBK	61·62·73·133
TWA−OTK	10·11·12
TWA−HBK	3·26·27
TWA−TNK	13·14
TWA−HSK	17·18·19
TWA−AVK	Shown above

Parts are sold by the kit.
Note) TWA−PBK is for TWA−0.3 only.
No.61·62·73·133 are not included.

Hand Pump Parts Lists

TWA・LTWA・TWAD types

(Part names are identical for each pump.)

Notes. ① O-rings for [ ] are hardness: 90°.
② TWAD type is attached ODV–3 to TWA type.
③ Q'ty of No.61, No.62 for TWA–0.3, 2.3, 6 is 4.

No.	Parts name	Q'ty	TWA-0.3	TWA-0.7	TWA-0.9	TWA-1.3	TWA-2.3	TWA-2、-4、-6.5、-10	TWA-6	LTWA-0.7	LTWA-0.9
1	Handle socket	1	○	○	○	○	○	○	○	○	○
2	Handle bar	1	○	○	○	○	○	○	○	○	○
3	Hook	1	○	○	○	○	○	○	○	○	○
4	Tie rod	1	○	○	○	○	○	—	—	○	○
5	Oil check bar	1	○	○	○	○	○	○	○	○	○
6	Tank stand	1	○	○	○	○	○	—	—	○	○
7	Oil tank	1	○	○	○	○	○	○	○	○	○
8	Pump body	1	○	○	○	○	○	○	○	○	○
10	O-ring	1	G40	G55	G55	G55	G75	G55	G75	G55	G55
11	Net	1	○	○	○	○	○	○	○	○	○
12	O-ring	1	G40	G55	G55	G60	G80	—	—	G55	G55
13	Nut	1	○	○	○	○	○	—	—	○	○
14	O-ring	1	P11	P12	P12	P12	P12	P12	P12	P12	P12
16	O-ring	1	P10	P10	P10	P10	P10	P10	P10	P10	P10
17	Plunger pin	1	○	○	○	○	○	○	○	○	○
18	Handle pin	1	○	○	○	○	○	○	○	○	○
19	Snap pin	2	5	8	8	8	8	8	8	8	8
20	O-ring	1	P6	P9	P9	P9	P9	P9	P9	P9	P9
21	Back-up ring	1	P6	P9	P9	P9	P9	P9	P9	P9	P9
22	O-ring	1	NO.16	P28	P28	P28	P40	P28	P40	P28	P28
23	Back-up ring	1	NO.16	P28	P28	P28	P40	P28	P40	P28	P28
24	Plunger	1	○	○	○	○	○	○	○	○	○
25	Steel ball	1	ϕ5	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6
26	Spacer	1	○	○	○	○	○	○	○	○	○
27	Pan head screw	1	○	○	○	○	○	○	○	○	○
29	Steel ball	1	ϕ5	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6
33	Steel ball	1	ϕ7.2	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8
34	Spring	1	○	○	○	○	○	○	○	○	○
35	Copper packing	1	○	○	○	○	○	○	○	○	○
36	Delivery plug	1	○	○	○	○	○	○	○	○	○
37	Steel ball	1	ϕ7.2	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8
38	Spring	1	○	○	○	○	○	○	○	○	○
39	Copper packing	1	○	○	○	○	○	○	○	○	○
40	Delivery plug	1	○	○	○	○	○	○	○	○	○
41	Steel ball	1	ϕ6	ϕ7.2	ϕ7.2	ϕ7.2	—	ϕ7.2	—	ϕ7.2	ϕ7.2
42	Spring	1	○	○	○	○	—	○	—	○	○
43	Adjusting screw	1	○	○	○	○	—	○	—	○	○
45	O-ring	1	S9	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5
46	Cap	1	○	○	○	○	—	○	—	○	○
47	Steel ball	1	ϕ5	ϕ3.5	ϕ3.5	ϕ3.5	ϕ3.5	ϕ3.5	ϕ3.5	ϕ3.5	ϕ3.5
48	Ball stay	1	○	○	○	○	○	○	○	○	○
49	Spring	1	○	○	○	○	○	○	○	○	○
51	Adjusting screw	1	○	○	○	○	○	○	○	○	○
52	O-ring	1	S9	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5
53	Cap	1	○	○	○	○	○	○	○	○	○
54	Steel ball	1	ϕ6	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8	ϕ8
56	O-ring	1	No.7	No.7	No.7	No.7	No.7	No.7	No.7	No.7	No.7
57	O-ring	1	P16	P16	P16	P16	P16	P16	P16	P16	P16
58	Gland nut	1	○	○	○	○	○	○	○	○	○
59	Release valve grip	1	○	○	○	○	○	○	○	○	○
60	Stop ring	1	—	○	○	○	—	○	—	○	○
61	Steel ball	(3)	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6	ϕ6
62	Hex. socket Head-less set screw	(3)	M8×8	M8×8	M8×8	M8×8	M8×8	M8×8	M8×8	M8×8	M8×8
73	Plug	1	—	○	○	○	—	○	—	○	○
75	Rubber grip	1	○	○	○	○	○	○	○	○	○
77	Poppet	1	—	—	—	—	○	—	○	—	—
78	O-ring	1	—	—	—	—	P10	—	P10	—	—
79	Back-up ring	1	—	—	—	—	P10	—	P10	—	—
80	Cone valve	1	—	—	—	—	○	—	○	—	—
81	Spring	1	—	—	—	—	○	—	○	—	—
83	O-ring	1	—	—	—	—	P3	—	P3	—	—
84	Back-up ring	1	—	—	—	—	P3	—	P3	—	—
85	Valve body	1	—	—	—	—	○	—	○	—	—
86	O-ring	1	—	—	—	—	P10A	—	P10A	—	—
87	Back-up ring	1	—	—	—	—	P10A	—	P10A	—	—
88	O-ring	1	—	—	—	—	P15	—	P15	—	—
90	Adjusting screw	1	—	—	—	—	○	—	○	—	—
92	Cap	1	—	—	—	—	○	—	○	—	—
133	Plug	1	—	○	○	○	○	○	○	○	○
134	Spacer	1	—	—	—	—	○	—	○	—	—

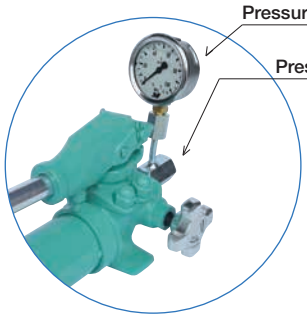
Hand Pump Accessories

Model number TWA — 0.7 — M 4 PG ※ P

- Pump type
- Usable oil (ℓ)
- M: Manifold with stop valve
  B: Branch (without stop valve)
- Number of jack connections
- With pressure gauge stand, pressure gauge (100MPa)
- K: with coupler (B-6J)
  C: with coupler (C-6J)
- Non-standard specifications (Ex: kN scale gauge)

Hand pump with pressure gauge (for single-acting jacks)

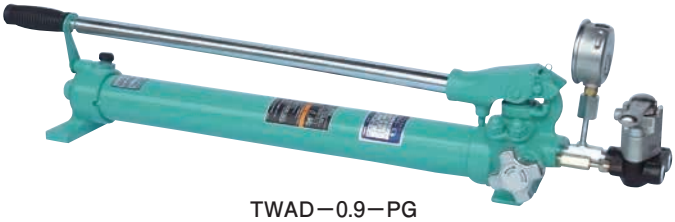
TWA−0.7−PG



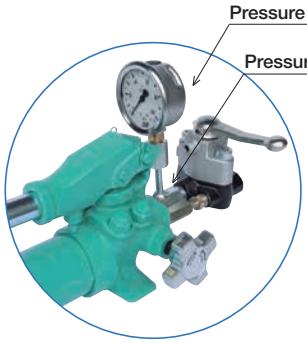
Combination contents

·Hand pump	TWA−0.7
·Pressure gauge	PGO−63×1000
·Pressure gauge adapter	FGS−700−04
·Copper gasket	CPG−04

Hand pump with pressure gauge (for double-acting jacks)



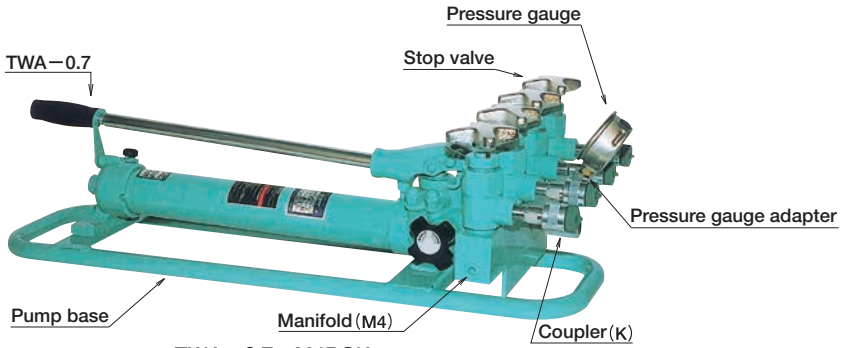
TWAD−0.9−PG



Combination contents

·Hand pump	TWAD−0.9
·Pressure gauge	PGO−63×1000
·Pressure gauge adapter	FGS−700AD−04
·Copper gasket	CPG−04

Hand pump with quadruple manifold (for single-acting jacks)



TWA−0.7−M4PGK

Combination contents

·Hand pump	TWA−0.7
·Manifold	DS6−4−V1
·Pressure gauge	PGO−63×1000
·Pressure gauge adapter	FGS−700−04
·Copper gasket	CPG−04
·Pump base	
·Coupler	B−6J×4pcs.

Hand pump with twin manifold (for double-acting jacks)

TWAD−1.3−M2K

Combination contents

·Hand pump	TWAD−1.3
·Manifold	DW6−2−V1
·Pump base	
·Coupler	B−6J×4pcs.

Hand Pump Accessories

Pressure gauges

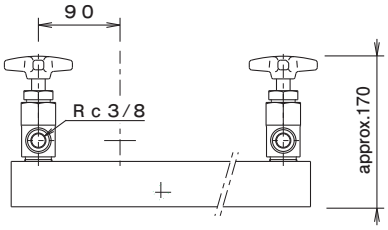
Features

- The display unit is MPa.
- Model number is displayed with the diameter of pressure gauge and the full scale.
- When attaching a kN-scale hydraulic pressure guage,the bore and effective area of the jack cylinder must be specified. The pressure gauge can only be used with that jack.
- If kN-scale is necessary, please let us know while ordering.
- Please oriented the direction of pressure gauge with the thickness of copper packing.

Pressure gauge combination list

Parts / Pressure gauge	Pressure gauge adapter		Copper packing
	for single-acting jacks	for double-acting jacks	
PGO−63×1000	FGS−700−04	FGS−700−04D	CPG−04−※
PGO−75×1000	FGS−700−06	FGS−700−08D+Bushing	CPG−06−※
PGO−100×1000	FGS−700−08	FGS−700−08D	CPG−08−※

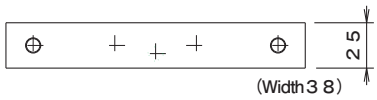
Manifolds



Features

- Manifolds (M)
  - ·Used for operating two or more jacks at the same time.
  - ·Jack to be operated is selectable.

Branch



Features

- Branch (B)
  - ·Used for operating two or more jacks at the same time.
  - ·Jack to be operated is unselectable.

Manifold combination table

Manifolds or Branch / Hand pump		TWA										TWAD					
		0.3	0.7	0.9	1.3	2	2.3	4	6	6.5	10	0.7	0.9	1.3	2.3	4	6
Manifolds (M)	2 ports	−	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	3 ports	−	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	4 ports	−	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Branch (B)	2 ports	○	○	○	○	○	○	○	○	○	○	−	−	−	−	−	−
	3 ports	−	○	○	○	○	○	○	○	○	○	−	−	−	−	−	−
	4 ports	−	○	○	○	○	○	○	○	○	○	−	−	−	−	−	−

Accessory combination table

Jacks		Type of accessories / Handpump	Combination				
Type	Quantity used		Manifolds (M)	Buranch (B)	Pressure guage & installing fittings installing fittings in installing fillitng	Coupler	Pump base
Single acting Type (S・G・A)	2pcs	TWA	2 ports	2 ports	1set	2 pcs	−
	3pcs		3 ports	3 ports		3 pcs	○
	4pcs		4 ports	4 ports		4 pcs	○
Double acting type (H)	2pcs	TWAD	2 ports	−	1set	4 pcs	○
	3pcs		3 ports	−		6 pcs	○
	4pcs		4 ports	−		8 pcs	○

Portable Battery Pumps

PBP-0.6, PBP-1.0 (for single-acting jacks)

Model number: PBP — 0.6 — B — 31 — R1 — 14

- Battery pump: PBP: Oil type; PBPW: water type
- Usable Oil(ℓ) 0.6: 0.6ℓ, 1.0: 1.0ℓ
- Coupler No mark: No coupler, B: with B-6J, C: with C-6J
- Battery No mark: no battery, 3: 3Ah, 5: 5Ah, 1: 1pc, 2: 2pc……
- Rapid charger No mark: No charger, R1: 1pc
- Voltage(V) 14: 14.4V, 18: 18V

Features

- Lightweight
  Only 5.0kg including the battery, compared to our 6.6kg TWA-0.7 and 5.5kg LTWA-0.7 hand pumps.
- Compact design
  There are no protrusions on the battery. The 14.4V battery and oil tank are protected by an aluminum cover. Possibility of damage is largely decreased
- No ventilation required
  A rubber tank inside the aluminum cover eliminates the need for ventilation. Consequently, there are no worries about dust entering the tank or oil leaking out.
- Use at every orientation:
  Vertical, horizontal, or at any other orientation.
- Variable lever
  The position of release valve lever is variable.
- Easy to carry
  A removable shoulder strap is included.
- Low-noise design
  Noise measurement: Load and no-load both approximately 70dB (A)
- Optional pressure gauge
  A 63mm diameter pressure gauge can be mounted with an adapter.

PBP-0.6

Performance

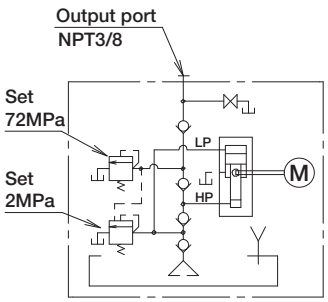
- Battery performance (full charge)
  Approx.50 times of full stroke for E23S5

Battery
(DC14.4V or 18V3Ah/5Ah)
HITACHI:
BSL1430 · BSL1830

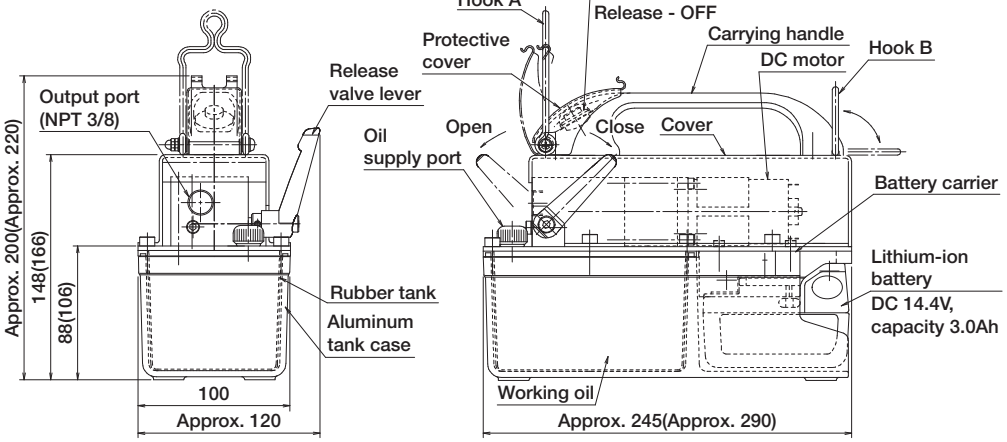
Rapid charger
HITACHI:
UC18YSL3

Gauge Adapter

Hydraulic circuit



Dimensional drawing



※Drawing of PBP-0.6-31 (Option accessories included).
Unit in parentheses shows dimension for PBP-1.0

Specifications

Items		Unit	PBP-0.6	PBP-1.0	PBPW-0.6	PBPW-1.0
Working pressure	High pressure	MPa	MAX72	MAX72	MAX72	MAX72
	Low pressure	MPa	2	2	2	2
Delivery	High pressure	L/min	0.06	0.06	0.06	0.06
	Low pressure	L/min	0.7	0.7	0.7	0.7
Port thread		—	NPT3/8	NPT3/8	NPT3/8	NPT3/8
Fluid volume	Total fluid volume	mℓ	680	1050	680	1050
	Usable fluid volume	mℓ	600	1000	600	1000
Working fluid		—	Machine oil ISO-VG10	Machine oil ISO-VG10	Tap water	Tap water
Voltage		V	DC14.4·DC18	DC14.4·DC18	DC14.4·DC18	DC14.4·DC18
Mass Approx.		kg	5	6.3	5	6.3

Time table of battery charger

Capacity Unit (Ah)	Standard Unit (min)	Charging voltage Unit (V)
3.0	approx. 22	AC:100
5.0	approx. 35	

Notes. ①There is no pressure switch installed in this pump. To protect equipment, please refrain from continuous use with the safety valve pressure set at 72MPa.
②Use this product with care. Although the battery is covered, it is not waterproof.
③Use only 14.4V or 18V DC batteries.
④There will be a bit protrusion when 18V battery is mounted on PBP-0.6.

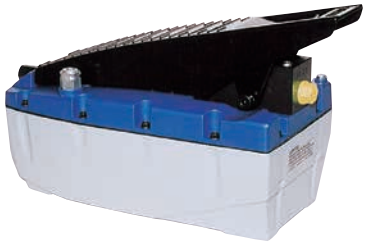
AB type Air Booster Pumps

for single-acting jacks

Model number: AB — 2.5
Air booster pump
Total oil (ℓ)

Features

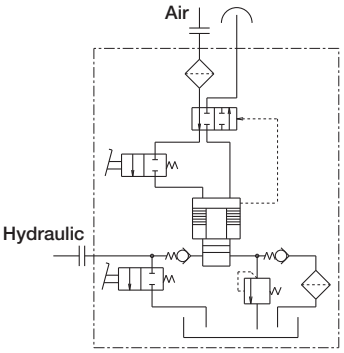
- Can only be connected to air hoses.
- Output or release fuctions are activated simply by stepping on the pedal.
- The oil tank is made of sturdy plastic.
- Compact, lightweight, and convenient.



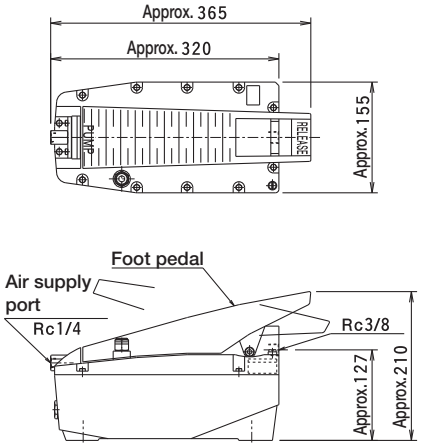
AB−2.5

AB−7.5

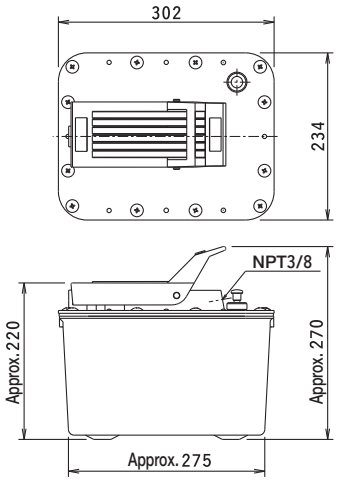
Hydraulic circuit diagram



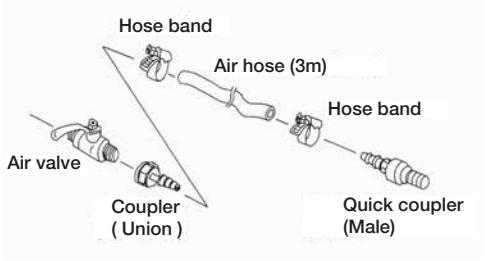
Dimensional drawing



Dimensional drawing



Component of air hoses

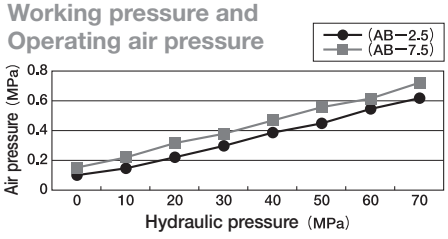


Note) (1) When pressing the “RELEASE” side of the pedal, the pressure releases rapidly.
There is a danger of the load falling rapidly if the “RELEASE” side of the pedal is pressed while a load is being supported.
(2) Do not loosen couplings, plugs, or hoses when the pump is pressurizing. Otherwise, falling loads, spraying oil, flying parts and other hazards may occur.
(3) Consult with us before placing the pump vertically or using the pump with a double-acting hydraulic jack.
(4) Be careful about using the pump in places where ambient temperature is over 50℃ or corrosive chemicals are present.
(5) Immediately after the pump is installed the circuit may contain air locks that prevent pressurization. Use your hands to press and hold the “RELEASE” side of the pedal and the “PUMP” pushbutton (under the pedal) for about 15 seconds.

Specifications

Items / Model	Max. rated flow (MPa)	Max. Working pressure (MPa)	Output flow ml/min/70MPa	Usable oil capacity (ℓ)	Weight approx. (kg)
AB−2.5	max 0.8	70	150	2.1	6.8
AB−7.5	max 1.0	70	150	7.2	13.6

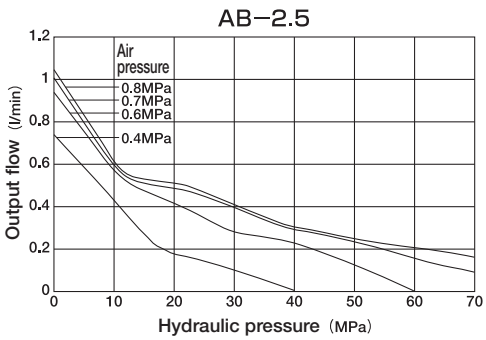
Working pressure and Operating air pressure



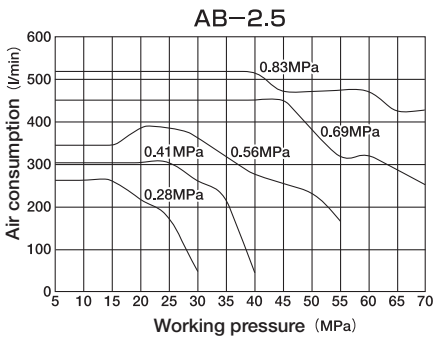
Performance

Hydraulic pressure (MPa)	Min. air pressure (MPa) AB−2.5	AB−7.5
0	0.1	0.15
10	0.15	0.22
20	0.22	0.32
30	0.3	0.38
40	0.39	0.47
50	0.45	0.55
60	0.55	0.62
70	0.62	0.72

Performance



Air consumption



PSP type low-noise compact electric hydraulic pump

for single-acting jack

Model number PSP — 1.6 J GS T 2.2

- PSP type
- Usable oil volume (ℓ)
- J: Release valve
  E: Solenoid valve for single acting
  R: Return valve
- G: With pressure gauge
  S: With pressure switch
  GS: With pressure gauge, pressure switch
- No mark: Aluminum reservoir
  T: Resin reservoir
- 2.2: Single phase 220V
  2.3: Single phase 230V

Application

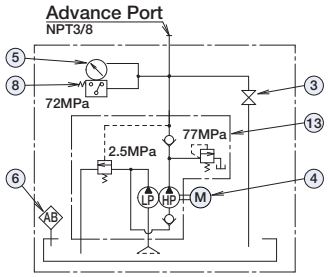
- High pressure hydraulic pump with max. discharge pressure of 72 MPa with extreme low noise.
- Slim body with enlarged grip part greatly improves portability.
- Selectable oil reservoirs of 1.6L and 2.7L make it possible to operate with bigger jack.
  The selectable resin made reservoir (for 1.6L only) provides even better portability.
- Excellent driving source for hydraulic punch, cutter, bender, shop press and other work tools.
- For lifting/lowering heavy load application, please use PSP-J type.
  Please do not use PSP-E/PSP-R for lifting/lowering heavy load application for falling loads is dangerous.
- Please avoid continuous operation. For continuous application, please use QH type hydraulic pump instead.

How to operate

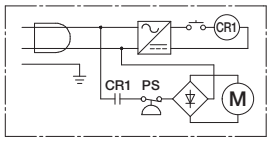
- Close the release valve, then press the 'A' button to start the motor and deliver the oil.
- When you release the 'A' button, the motor will stop. The jack will remain pressurized and maintain its position.
- Open the release valve to allow the jack to return.

PSP-1.6JGS (Release valve)

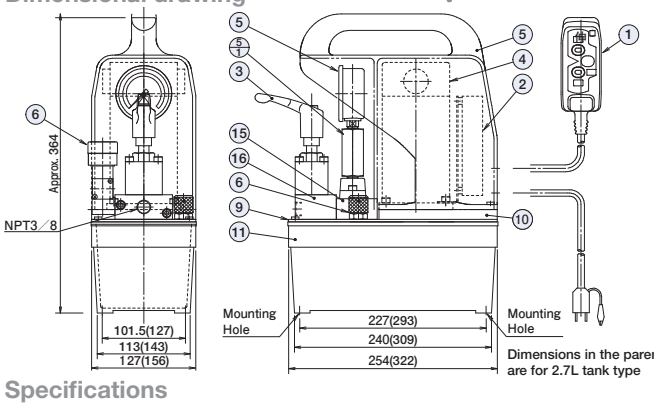
Hydraulic circuit diagram



Electric circuit diagram



Dimensional drawing

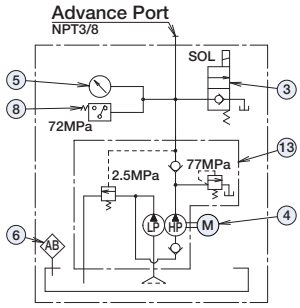


How to operate

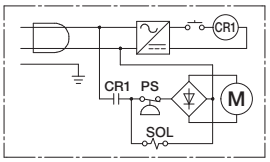
- Press the 'A' button to start the motor and pressurize the jack.
- When you release the 'A' button, the motor will stop. The jack will remain pressurized.
- Press the 'B' button to retract the jack.

PSP-1.6EGS (Solenoid valve)

Hydraulic circuit diagram



Electric circuit diagram

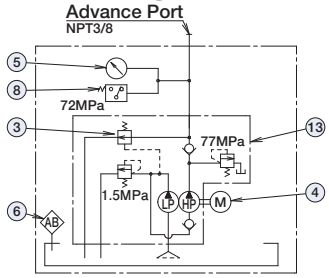


How to operate

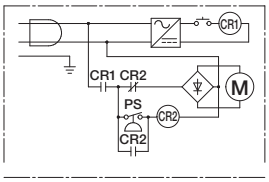
- Press the "A" button to start the motor and pressurize the jack.
- When "A" button is released, the motor will stop and jack will be returned by return valve.

PSP-1.6RGS (Return valve)

Hydraulic circuit diagram



Electric circuit diagram



Parts list

No.	Parts name	Q'ty
1	Hand Switch	1
2	Substrate	1
3	Release Valve	1
4	Motor	1
5	Pressure Gauge	1
5-1	Bushing	1
6	Automatic Ventilation Valve	1

※No.3 E: Poppet Valve
R: Return Valve

No.	Parts name	Q'ty
8	Pressure Switch	1
9	Plate	1
10	Adapter Plate	1
11	Oil Tank	1
14	Cover	1
15	Valve Block	1
16	Port Block	1

※No.16 For J, R type only

Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor		Oil (ℓ)		Weight approx. (kg)		Connection port
	High	Low	High	Low	Capa (kw)	Voltage (V)	Usable	Required	Aluminum	Resin	
PSP-1.6JGS	72	2.5	0.2	2.2	0.35	Single ph. 220V or 230V	1.6	2	15.3	14.5	NPT3/8 or Rc3/8
PSP-1.6EGS									15.3	14.5	
PSP-1.6RGS		1.5		2					14.3	13.5	
PSP-2.7JGS		2.5		2.2			2.7	3	17.5	—	
PSP-2.7EGS									17.5	—	
PSP-2.7RGS		1.5		2					16.5	—	

Notes. ① Figures of oil delivery at 50/60Hz are same. ② Working oil: ISO-L-HV-VG32 or equivalent. ③ Resin tank is for 1.6ℓ model only.
④ The tip of power cord is without plug.

PSP type low-noise compact electric hydraulic pump

for double-acting jacks

Model number PSP — 1.6 D GS T 2.2

- PSP type
- Usable oil volume (ℓ)
- D: Manual valve
  K: Solenoid valve
- G: With pressure gauge
  S: With pressure switch
  GS: With pressure gauge, pressure switch
- No mark: Aluminum reservoir
  T: Resin reservoir
- 2.2: Single phase 220V
  2.3: Single phase 230V

Application

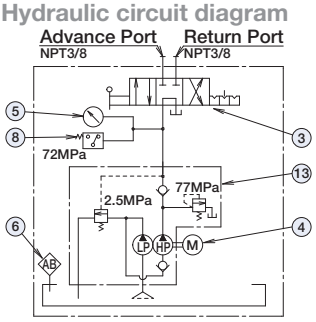
- High pressure hydraulic pump with max. discharge pressure of 72 MPa with extreme low noise.
- Slim body with enlarged grip part greatly improves portability.
- Selectable oil reservoirs of 1.6L and 2.7L enable working with bigger jack.
  The selectable resin made reservoir (for 1.6L only) provides even better portability.
- Excellent driving source for work tools i.e. shop press etc.
- For lifting/lowering heavy load application, please use PSP-J type.
  Please do not use PSP-D/PSP-K for lifting/lowering heavy load application for falling loads is dangerous.
- Please avoid continuous operation. For continuous application, please use QH type hydraulic pump instead.

How to operate

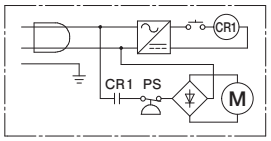
- Select either “Advance” or “Return” on the D type switching valve. Press “ON” button on the pendant switch to start motor. Oil will be delivered from the selected port.

PSP-1.6DGS (Manual valve)

Hydraulic circuit diagram



Electric circuit diagram

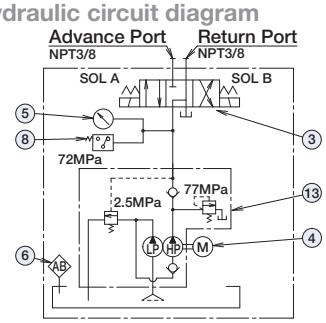


How to operate

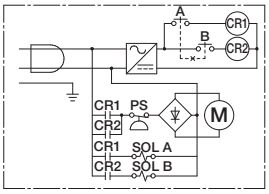
- Select port first and then press the “ON” button on the pendant switch to start motor and deliver the oil. Press “A” button to advance jack and “B” to return jack.

PSP-1.6KGS (Solenoid valve)

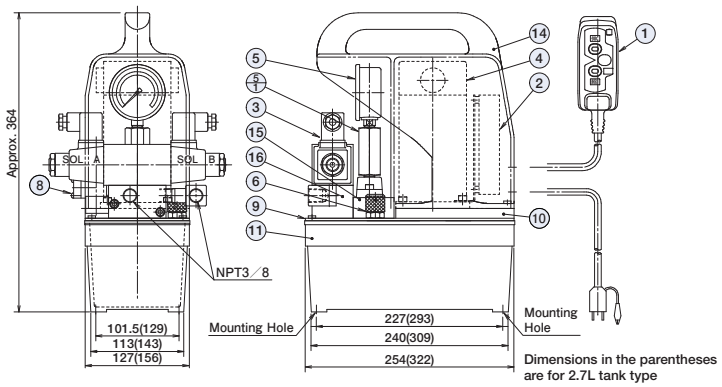
Hydraulic circuit diagram



Electric circuit diagram



Dimensional drawing



Dimensions in the parentheses are for 2.7L tank type

Parts list

No.	Parts name	Q'ty
1	Hand Switch	1
2	Substrate	1
3	Solenoid Valve	1
4	Motor	1
5	Pressure Gauge	1
5-1	Bushing	1
6	Automatic Ventilation Valve	1
8	Pressure Switch	1
9	Plate	1
10	Adapter Plate	1
11	Oil Tank	1
14	Cover	1
15	Valve Block	1
16	Port Block	1

※No.3 D: Manual valve

Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor		Oil (ℓ)		Weight approx. (kg)		Connection port
	High	Low	High	Low	Capa (kw)	Voltage (V)	Usable	Required	Aluminum	Resin	
PSP-1.6DGS	72	1	0.2	2.2	0.35	Single ph. 220V or 230V	1.6	2	15.3	14.5	NPT3/8 or Rc3/8
PSP-1.6KGS									17.3	16.5	
PSP-2.7DGS							2.7	3	17.5	—	
PSP-2.7KGS									19.0	—	

Notes. ① Figures of oil delivery at 50/60Hz are same. ② Working oil: ISO-L-HV-VG32 or equivalent. ③ Resin tank is for 1.6ℓ model only.
④ The tip of power cord is without plug.

QH-type Electric Pumps

for single-acting jacks

Model number: QH | 1/2 | — | J | — | A | 3.8

- QH type
- Horsepower
- J : Release valve
  G: Manual control valve
- A: With step-down transformer
  B: Without step-down transformer
- Voltage

Features

- Even more compact design and light-weight compared to previous GH type pump.
- Extreme low noise during low pressure discharging.
- Pressure gauge (PGO-63X1000) is equipped as a standard accessory for all models.

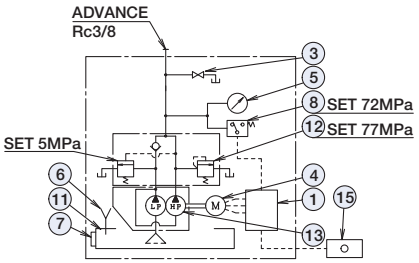
QH1/2—J

How to operate

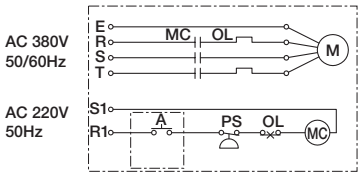
- Close release valve. Press the 'A' button to start the motor and pressurize the jack.
- When you release the 'A' button, the motor will stop. The jack will remain pressurized.
- Open the release valve to allow the jack to return.

Notes:
① Motor and hydraulic circuit are determined after consultation.
② Circuit operation requires a separate power source unless a step-down transformer is installed.

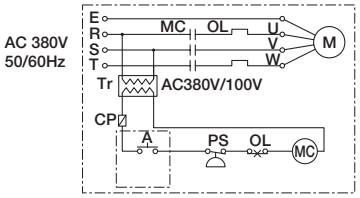
Hydraulic circuit diagram



Electric circuit diagram



Electric circuit diagram with step-down transformer



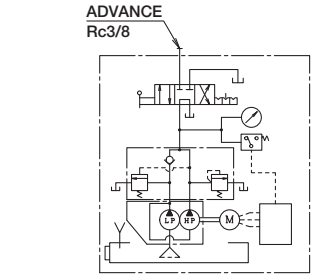
QH1/2—G

How to operate

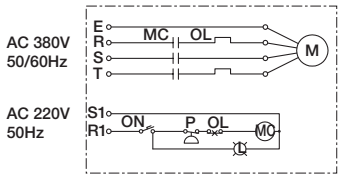
- Turn on rocker switch to start motor.
- Manual control valve operation:
  ADVANCE starts pump.
  NEUTRAL stops pump.
  RETRACT returns jack.
- Model QH1/2-G is NOT designed for raising and lowering heavy loads. We recommend QH1/2-J for this type of application.

Notes:
① Motor and hydraulic circuit are determined after consultation.
② Circuit operation requires a separate power source unless a step-down transformer is installed.

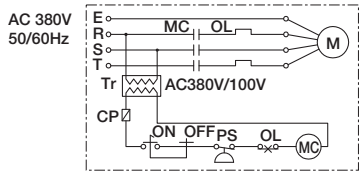
Hydraulic circuit diagram



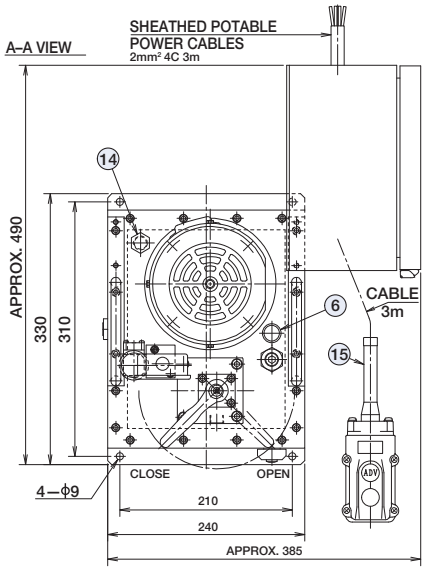
Electric circuit diagram

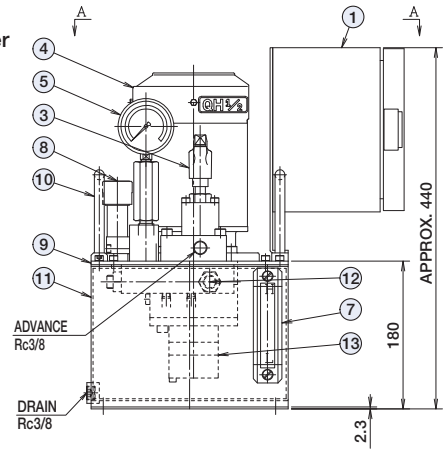


Electric circuit diagram with step-down transformer



Dimensional drawing with step-down transformer





QH1/2—J ┌ Operational switch
└ A: Advance

Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Electric box	1	8	Pressure switch	1
2	ON/OFF switch (Only QH1/2-G)	1	9	Plate	1
			10	Carrying handle	2
3	Valve J: Release G: manual	1	11	Oil tank	1
			12	Safety valve	1
4	Electric motor	1	13	Hydraulic pump	1
5	Pressure gauge	1	14	Oil supply plug	1
6	Air breather	1	15	Hand switch	1
7	Oil level gauge	1			

Options

- Step-down transformer

Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)					Oil (ℓ)		Weight approx. (kg)	Connection port
	High	Low	High	Low	Capa (kW)	Insu	Pole	Rpm	Voltage	Usable	Required	3 ph.	
QH1/2—J	72	5	0.35 / 0.29	2.4 / 2.0	0.4	E	4	1800 / 1500	3 ph. 380V	5	8	43 / 44	Rc3/8
QH1/2—G													

Notes. ① Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. ② working oil: ISO-L-HV-VG32 or equivalent.
③ Motor is 120% load at 60Hz. ※ Specifications and size may subject to change without notice.

QH-type Electric Pumps

for single-acting jacks

Model number: QH | 1/2 | E | A | 3.8

- QH type
- Horsepower
- E: Solenoid valve, halfway stop, pressure retention
  F: Solenoid valve, no halfway stop, no pressure retention
- A: With step-down transformer
  B: Without step-down transformer
- Voltage

Features

- Even more compact design and light-weight compared to previous GH type pump.
- Extreme low noise during low pressure discharging.
- Pressure gauge (PGO-63X1000) is equipped as a standard accessory for all models.

QH1/2—E (Solenoid valve)

How to operate

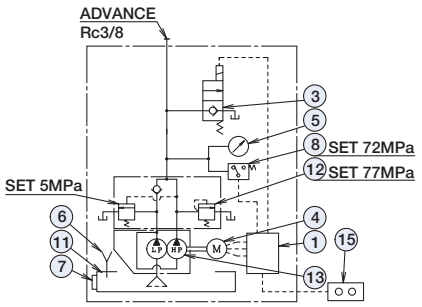
- Press the 'A' button to start the motor and deliver the oil.
- When you release the 'A' button, the motor will stop. The jack will remain pressurized and stay in its current position. Press "B" button to return jack.
- Open the release valve to allow the jack to return.
- Models QH1/2-E and QH1/2-F are NOT designed for raising and lowering heavy loads. We recommend QH1/2-J for this application.

Notes:

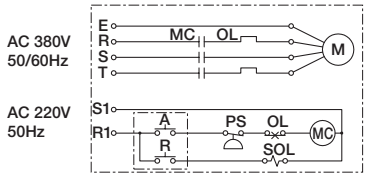
① Motor and hydraulic circuit are determined after consultation.

② Circuit operation requires a separate power source unless a step-down transformer is installed.

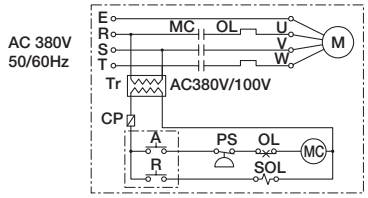
Hydraulic circuit diagram



Electric circuit diagram



Electric circuit diagram with step-down transformer



QH1/2—F (Solenoid valve)

How to operate

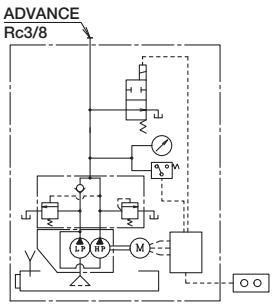
- Press the 'A' button to start the motor and deliver the oil.
- When you release the 'A' button, the motor will stop and the jack will return. Midway stop and pressure hold are not applicable for QH1/2-F.
- Models QH1/2-E and QH1/2-F are NOT designed for raising and lowering heavy loads. We recommend QH1/2-J for this application.

Notes:

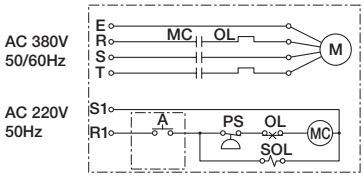
① Motor and hydraulic circuit are determined after consultation.

② Circuit operation requires a separate power source unless a step-down transformer is installed.

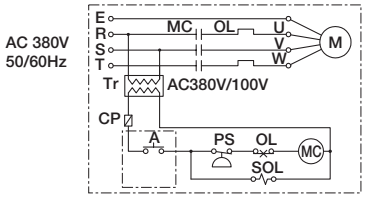
Hydraulic circuit diagram



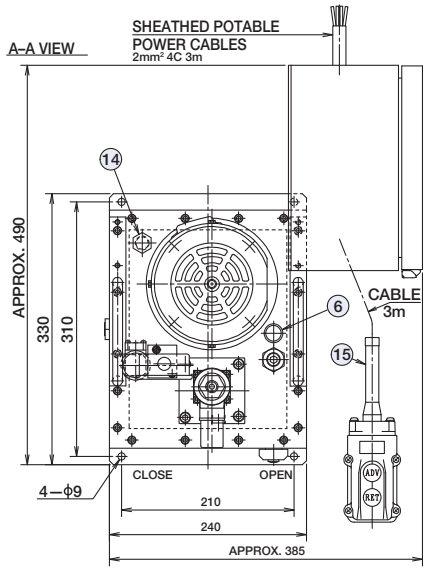
Electric circuit diagram

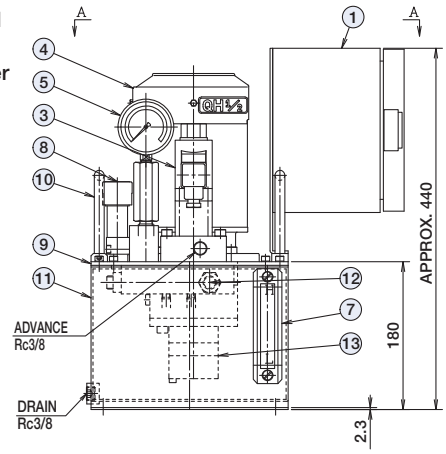


Electric circuit diagram with step-down transformer



Dimensional drawing with step-down transformer





Operational switch

QH1/2-E: A: Advance, R: Retract

QH1/2-F: A: Advance

Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Electric box	1	9	Plate	1
3	Poppet valve	1	10	Carrying handle	2
4	Electric motor	1	11	Oil tank	1
5	Pressure gauge	1	12	Safety valve	1
6	Air breather	1	13	Hydraulic pump	1
7	Oil level gauge	1	14	Oil supply plug	1
8	Pressure switch	1	15	Hand switch	1

Options

- Step-down transformer

Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)					Oil (ℓ)		Weight approx. (kg)	Connection port
	High	Low	High	Low	Capa (kW)	Insu	Pole	Rpm	Voltage	Usable	Required	3 ph.	
QH1/2—E	72	5	0.35	2.4	0.4	E	4	1800	3 ph. 380V	5	8	43	Rc3/8
QH1/2—F			0.29	2.0				1500					

Notes. ① Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. ② working oil: ISO-L-HV-VG32 or equivalent.
③ Motor is 120% load at 60Hz. ※ Specifications and size may subject to change without notice.

QH-type Electric Pumps

for double-acting jacks

Features

- Even more compact design and light-weight compared to previous GH type pump.
- Extreme low noise during low pressure discharging.
- Pressure gauge (PGO-63X1000) is equipped as a standard accessory for all models.

Model number: QH | 1/2 | D | A | 3.8

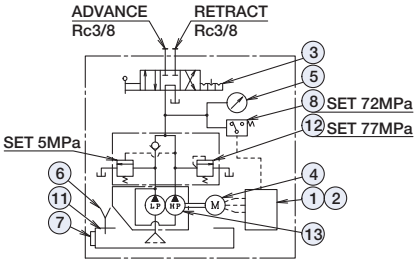
- QH type
- Horsepower
- O : With manifold & pressure switch (In case of separate control valve)
- D : With manual control valve & pressure switch
- K : With solenoid valve (KSV) & pressure switch (For high-frequency use)
- W: With solenoid valve (Poppet valve) & pressure switch (For extended use)
- A: With step-down transformer
- B: Without step-down transformer
- Voltage

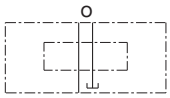
QH1/2—D

QH1/2—K

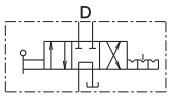
Notes: ① Motor and hydraulic circuit are determined after consultation.
② Circuit operation requires a separate power source unless a step-down transformer is installed.

Hydraulic circuit diagram

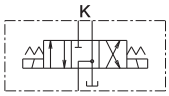




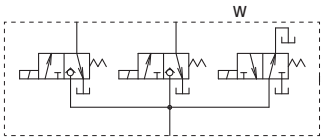
- A separate, directional control valve is required.



- Directional control valve is operated by a hand lever.

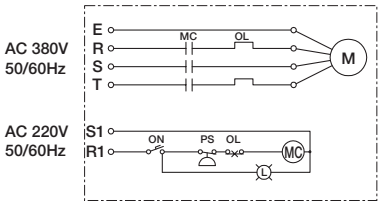


- Directional control valve is an electromagnetically switched type. Electrical signals control the switching. Excitation time is within 1 minute. Useful for high-frequency applications.

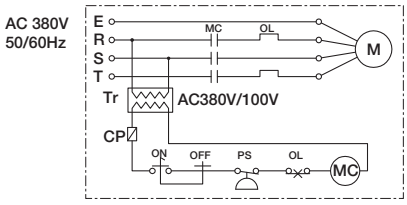


- Directional control valve is an electromagnetically switched type. Electrical signals control the switching. Excitation time is 30 minutes. Useful for applications with a frequency of 15 times/min or less.

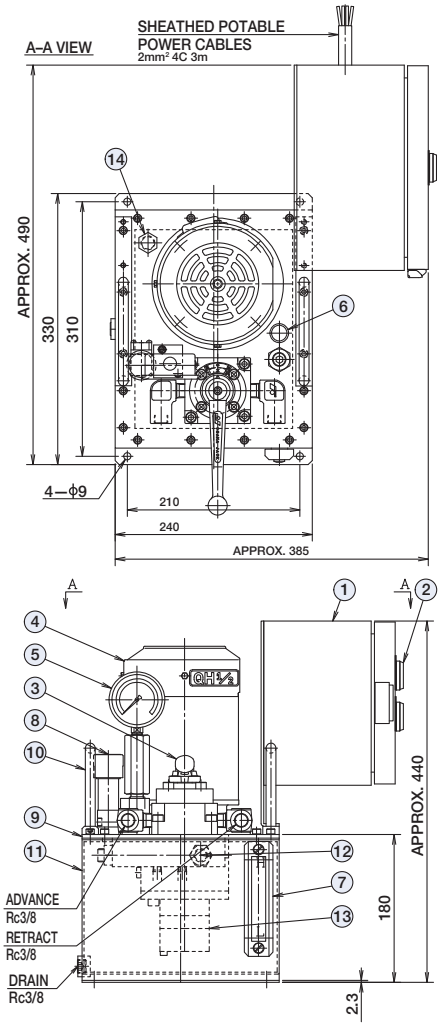
Electric circuit diagram



Electric circuit diagram with step-down transformer



Dimensional drawing with step-down transformer



Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Electric box	1	7	Oil level gauge	1
2	ON/OFF switch	1	8	Pressure switch	1
3	Valve O: Port block D: Manual control K: Solenoid valve (KSV) W: Solenoid valve (Poppet valve)	1	9	Plate	1
			10	Carrying handle	2
			11	Oil tank	1
			12	Safety valve	1
4	Electric motor	1	13	Hydraulic pump	1
5	Pressure gauge	1	14	Oil supply plug	1
6	Air breather	1			

Options

- Step-down transformer

Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)					Oil (ℓ)		Weight approx. (kg)	Connection port
	High	Low	High	Low	Capa (kW)	Insu	Pole	Rpm	Voltage	Usable	Required	3 ph.	
QH1/2—O	72	5	0.35 / 0.29	2.4 / 2.0	0.4	E	4	1800 / 1500	3 ph. 380V	5	8	40	Rc3/8
QH1/2—D												43	
QH1/2—K												45	
QH1/2—W												54	

Notes.① Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. ② Voltage available on request
③ Motor is 120% load at 60Hz. ※ Specifications and size may subject to change without notice.

QH-type Electric Pumps

for single-acting jacks

Model number: QH 1 — J — A 3.8

- G type
- Horsepower
- J : Release valve / G: Manual control valve
- A: With step-down transformer / B: Without step-down transformer
- Voltage

Features

- Even more compact design and light-weight compared to previous GH type pump.
- Extreme low noise during low pressure discharging.
- Pressure gauge (PGO-63X1000) is equipped as a standard accessory for all models.
- IE3 motor is equipped as standard a part which contributes to energy saving.

QH1—J

How to operate

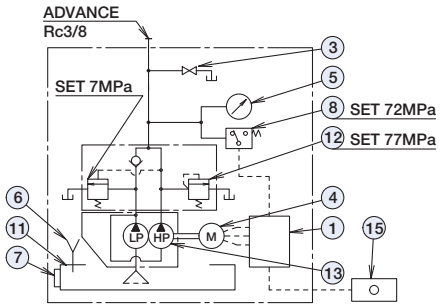
- Close release valve. Press the 'A' button to start the motor and deliver the oil.
- When you release the 'A' button, the motor will stop. The jack will remain pressurized and stay in its current position.
- Open the release valve to allow the jack to return.

Notes:

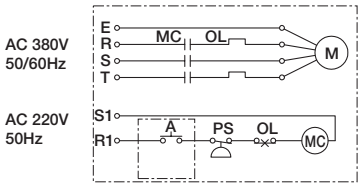
① Motor and hydraulic circuit are determined after consultation.

② Circuit operation requires a separate power source unless a step-down transformer is installed.

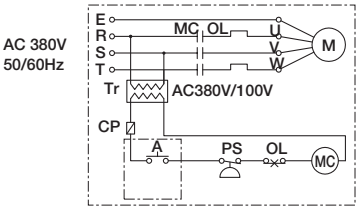
Hydraulic circuit diagram



Electric circuit diagram



Electric circuit diagram with step-down transformer



QH1—G

How to operate

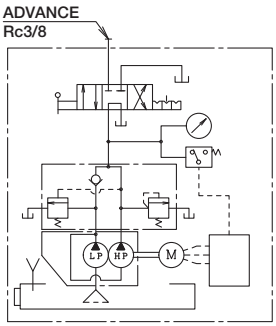
- Turn on rocker switch to start motor.
- Manual control valve operation:
  ADVANCE starts pump.
  NEUTRAL stops pump.
  RETRACT allows jack to return.
- Model QH1-G is NOT designed for raising and lowering heavy loads. We recommend QH1-J for this type of application.

Notes:

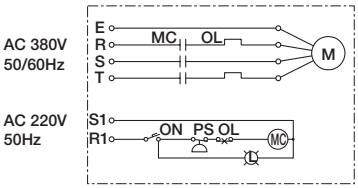
① Motor and hydraulic circuit are determined after consultation.

② Circuit operation requires a separate power source unless a step-down transformer is installed.

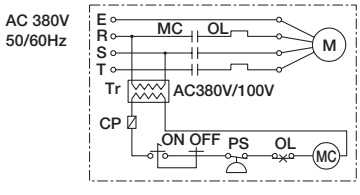
Hydraulic circuit diagram



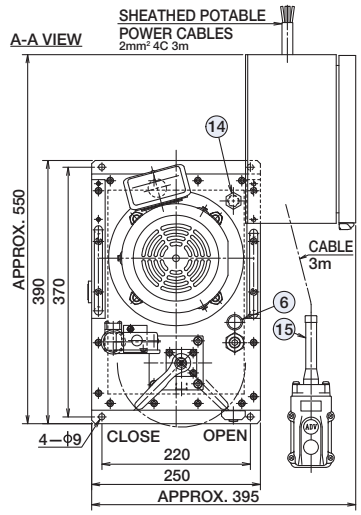
Electric circuit diagram

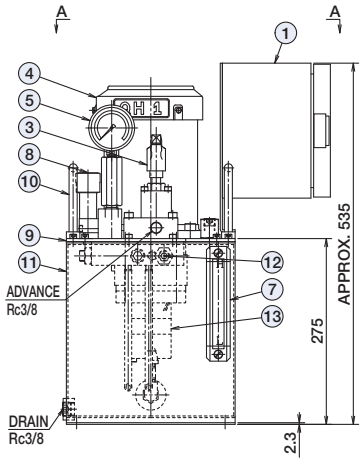


Electric circuit diagram with step-down transformer



Dimensional drawing with step-down transformer





Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Electric box	1	8	Pressure switch	1
2	ON/OFF switch (Only QH1-G)	1	9	Plate	1
			10	Carrying handle	2
3	Valve J: Release valve G: Manual control valve	1	11	Oil tank	1
			12	Safety valve	1
4	Electric motor	1	13	Hydraulic pump	1
5	Pressure gauge	1	14	Oil supply plug	1
6	Air breather	1	15	Hand switch	1
7	Oil level gauge	1			

Options

- Step-down transformer

Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)					Oil (ℓ)		Weight approx. (kg)	Connection port
	High	Low	High	Low	Capa (kW)	Insu	Pole	Rpm	Voltage	Usable	Required		
QH1—J	72	7	0.6	4	0.75	E	4	1800	3 ph.	10	14	61	Rc3/8
QH1—G			0.5	3.3				1500	380V			61	

Notes. ① Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. ② Voltage available on request
③ Motor is 120% load at 60Hz. ※ Specifications and size may subject to change without notice.

QH-type Electric Pumps

for single-acting jacks

Model number: QH 1 — E — A 3.8

- QH type
- Horsepower
- E: Solenoid valve, halfway stop, pressure retention
  F: Solenoid valve, no halfway stop, no pressure retention
- A: With step-down transformer
  B: Without step-down transformer
- Voltage

Features

- Even more compact design and light-weight compared to previous GH type pump.
- Extreme low noise during low pressure discharging.
- Pressure gauge (PGO-63X1000) is equipped as a standard accessory for all models.
- IE3 motor is equipped as standard a part which contributes to energy saving.

QH1—E

How to operate

- Press the 'A' button to start the motor and deliver the oil.
- When you release the 'A' button, the motor will stop. The jack will remain pressurized and stay in its current position. Press "B" button to return jack.
- Open the release valve to allow the jack to return.
- Models QH1-E and QH1-F are NOT designed for raising and lowering heavy loads. We recommend QH1-J for this application.

Notes:

① Motor and hydraulic circuit are determined after consultation.

② Circuit operation requires a separate power source unless a step-down transformer is installed.

QH1—F

How to operate

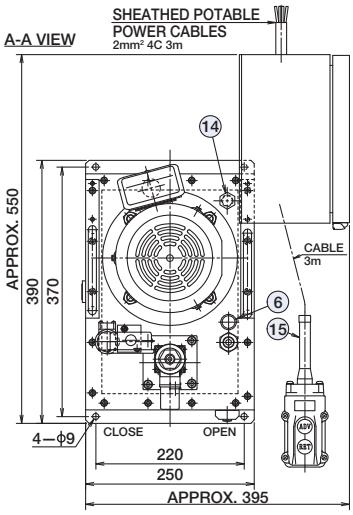
- Press the 'A' button to start the motor and deliver the oil.
- When you release the 'A' button, the motor will stop and the jack will return. Midway stop and pressure hold are not applicable for QH1-F.
- Models QH1-E and QH1-F are NOT designed for raising and lowering heavy loads. We recommend QH1-J for this application.

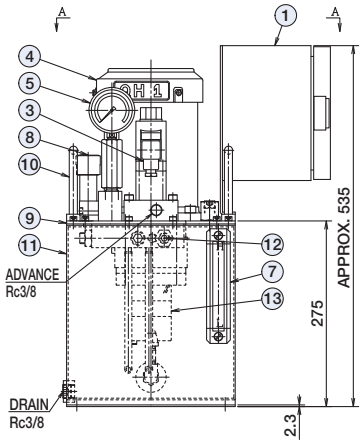
Notes:

① Motor and hydraulic circuit are determined after consultation.

② Circuit operation requires a separate power source unless a step-down transformer is installed.

Dimensional drawing with step-down transformer



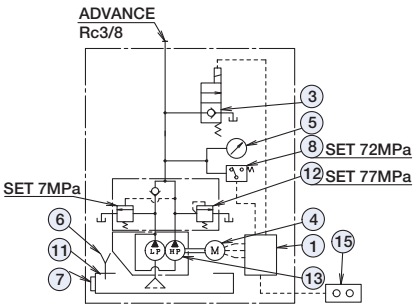


Operational switch

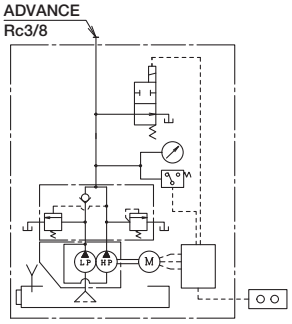
QH1-E: A: Advance, R: Retract

QH1-F: A: Advance

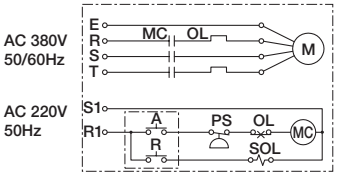
Hydraulic circuit diagram



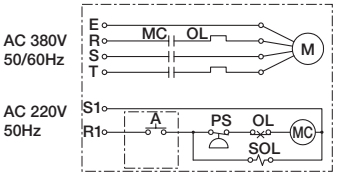
Hydraulic circuit diagram



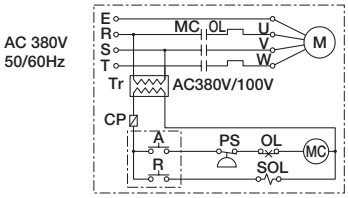
Electric circuit diagram



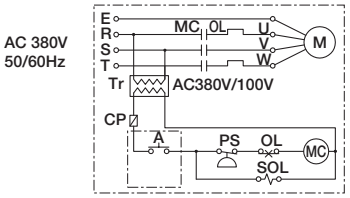
Electric circuit diagram



Electric circuit diagram with step-down transformer



Electric circuit diagram with step-down transformer



Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Electric box	1	9	Plate	1
3	Poppet valve	1	10	Carrying handle	2
4	Electric motor	1	11	Oil tank	1
5	Pressure gauge	1	12	Safety valve	1
6	Air breather	1	13	Hydraulic pump	1
7	Oil level gauge	1	14	Oil supply plug	1
8	Pressure switch	1	15	Hand switch	1

Options

- Step-down transformer

Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)					Oil (ℓ)		Weight approx. (kg)	Connection port
	High	Low	High	Low	Capa (kW)	Insu	Pole	Rpm	Voltage	Usable	Required		
QH1—E	72	7	0.6	4	0.75	E	4	1800	3 ph. 380V	10	14	62	Rc3/8
QH1—F			0.5	3.3				1500				62	

Notes. ① Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. ② woking oil: ISO-L-HV-VG32 or equivalent.
③ Motor is 120% load at 60Hz. ※ Specifications and size may subject to change without notice.

QH-type Electric Pumps

for double-acting jacks

Model number QH 1 — D — A 3.8

QH type

Horsepower

O : With port block & pressure switch (In case of separate control valve)
D : With manual control valve & pressure switch
K : With solenoid valve (KSV) & pressure switch (For high-frequency use)
W: With solenoid valve (Poppet valve) & pressure switch (For extended use)

A: With step-down transformer
B: Without step-down transformer

Voltage

Features

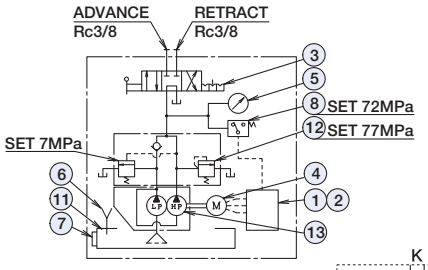
- Even more compact design and light-weight compared to previous GH type pump.
- Extreme low noise during low pressure discharging.
- Pressure gauge (PGO-63X1000) is equipped as a standard accessory for all models.
- IE3 motor is equipped as standard a part which contributes to energy saving.

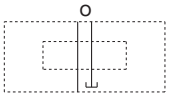
QH1—D

QH1—K

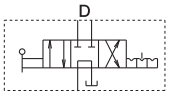
Notes: ① Motor and hydraulic circuit are determined after consultation.
② Circuit operation requires a separate power source unless a step-down transformer is installed.

Hydraulic circuit diagram

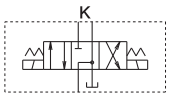




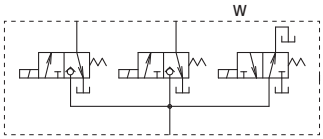
- A separate, directional control valve is required.



- Directional control valve is operated by a hand lever.

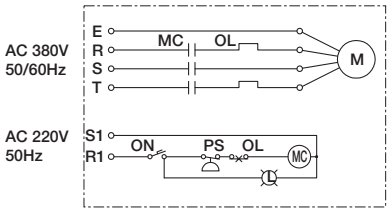


- Directional control valve is an electricomagnetically switched type. Electrical signals control the switching. Excitation time is within 1 minute. Useful for high-frequency applications.

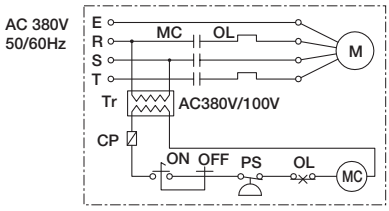


- Directional control valve is an electricomagnetically switched type. Electrical signals control the switching. Excitation time is 30 minutes. Useful for applications with a frequency of 30 times/min or less.
※After 30 minutes of continuos energization, set a break time of 30 minutes is recommended.

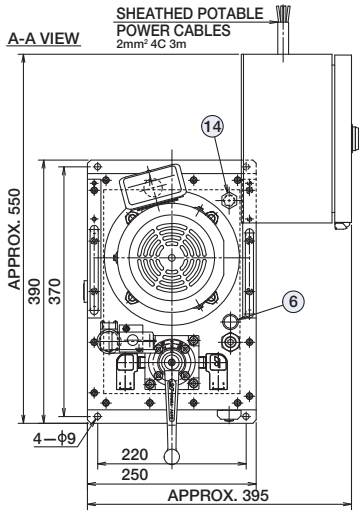
Electric circuit diagram

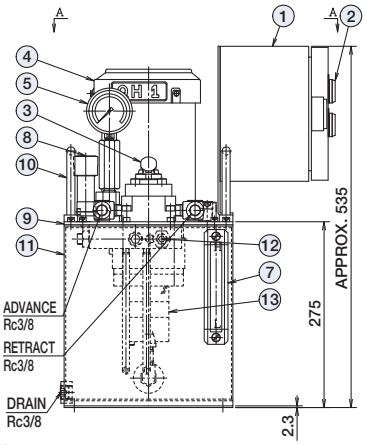


Electric circuit diagram with step-down transformer



Dimensional drawing with step-down transformer





Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Electric box	1	7	Oil level gauge	1
2	ON/OFF switch	1	8	Pressure switch	1
3	Valve O: Port block D: Manual control K: Solenoid valve (KSV) W: Solenoid valve (Poppet valve)	1	9	Plate	1
			10	Carrying handle	2
			11	Oil tank	1
			12	Safety valve	1
4	Electric motor	1	13	Hydraulic pump	1
5	Pressure gauge	1	14	Oil supply plug	1
6	Air breather	1			

Options

- Step-down transformer

Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)					Oil (ℓ)		Weight approx. (kg)	Connection port
	High	Low	High	Low	Capa (kW)	Insu	Pole	Rpm	Voltage	Usable	Required		
QH1—O	72	7	0.6/0.5	4/3.3	0.75	E	4	1800/1500	3 ph. 380V	10	14	59	Rc3/8
QH1—D												62	
QH1—K												65	
QH1—W												70	

Notes.① Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. ② working oil: ISO-L-HV-VG32 or equivalent.
③ Motor is 120% load at 60Hz. ※ Specifications and size may subject to change without notice.

QH-type Electric Pumps

for single- or double-acting jacks

Features

- Even more compact design and light-weight compared to previous GH type pump.
- Extreme low noise during low pressure discharging.
- Pressure gauge (PGO-63X1000) is equipped as a standard accessory for all models.
- IE3 motor is equipped as standard a part which contributes to energy saving.

Model number: QH — 2 — D — A — 3.8

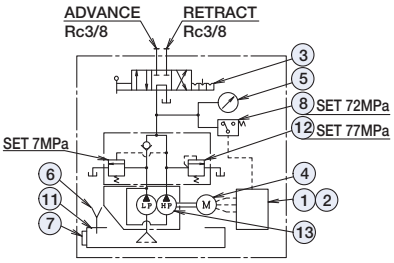
- QH type
- Horsepower
- O : With port block & pressure switch (In case of separate control valve)
- D : With manual control valve & pressure switch
- G : With manual control valve & pressure switch (For single-acting jacks)
- K : With solenoid valve (KSV) & pressure switch (For high-frequency use)
- W: With solenoid valve (Poppet valve) & pressure switch (For extended use)
- A: With step-down transformer
- B: Without step-down transformer
- Voltage

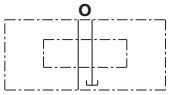
QH2—D

QH2—K

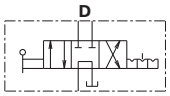
Notes: ① Motor and hydraulic circuit are determined after consultation.
② Circuit operation requires a separate power source unless a step-down transformer is installed.

Hydraulic circuit diagram

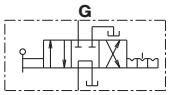




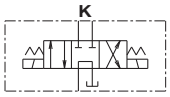
- A separate directional-control valve is required.



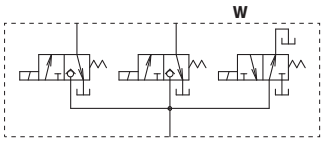
- Directional control valve is manually operated by a hand lever. For double-acting jacks.



- Directional control valve is manually operated by a hand lever. For single-acting jacks.



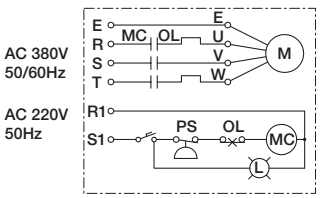
- Directional control valve is an electricomagnetically switched type. Electrical signals control the switching. Excitation time is within 1 minute. Useful for high-frequency applications.



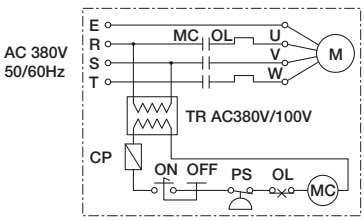
- Directional control valve is an electricomagnetically switched type. Electrical signals control the switching. Excitation time is 30 minutes. Useful for applications with a frequency of 30 times/min or less.

※After 30 minutes of continuos energization, set a break time of 30 minutes is recommended.

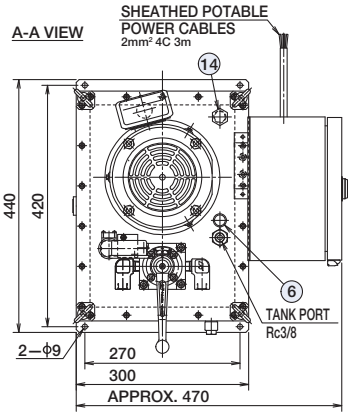
Electric circuit diagram

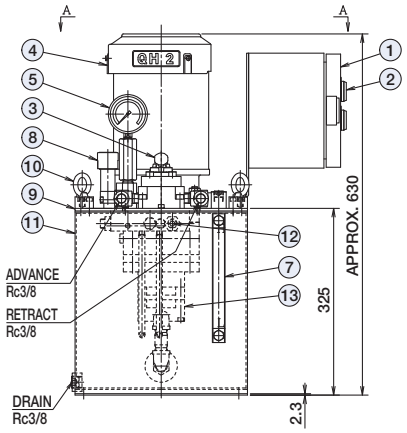


Electric circuit diagram with step-down transformer



Dimensional drawing with step-down transformer





Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	6	Air breather	1
2	ON/OFF switch	1	7	Oil level gauge	1
3	Valve O: Port block D: Manual control G: Manual control K: Solenoid valve (KSV) W: Solenoid valve (Poppet valve)	1	8	Pressure switch	1
			9	Plate	1
			10	Eye bolt	4
			11	Oil tank	1
			12	Safety valve	1
4	Electric motor	1	13	Hydraulic pump	1
5	Pressure gauge	1	14	Oil supply plug	1

Options

- Step-down transformer

Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)					Oil (ℓ)		Weight approx. (kg)	Connection port
	High	Low	High	Low	Capa (kW)	Insu	Pole	Rpm	Voltage	Usable	Required		
QH2—O	72	7	1.2 / 1.0	8 / 6.6	1.5	E	4	1800 / 1500	3 ph. 380V	20	30	87	Rc3/8
QH2—D												90	
QH2—G												90	
QH2—K												100	
QH2—W												105	
QH3—O			1.8 / 1.5	12 / 10	2.2					20	30	105	
QH3—D												107	
QH3—K												120	
QH3—W												123	

Notes.① Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. ② working oil: ISO-L-HV-VG32 or equivalent.
③ Motor is 120% load at 60Hz. ※ Specifications and size may subject to change without notice.

QH-type Electric Pumps

for double-acting jacks

Features

- Even more compact design and light-weight compared to previous GH type pump.
- Extreme low noise during low pressure discharging.
- Pressure gauge (PGO-63X1000) is equipped as a standard accessory for all models.
- IE3 motor is equipped as standard a part which contributes to energy saving.

Model number QH 5 — D — A 3.8

QH type

Horsepower

O : With port block & pressure switch (In case of separate control valve)
D : With manual control valve & pressure switch
K : With solenoid valve (KSV) & pressure switch (For high-frequency use)
W: With solenoid valve (Poppet valve) & pressure switch (For extended use)

A: With step-down transformer
B: Without step-down transformer

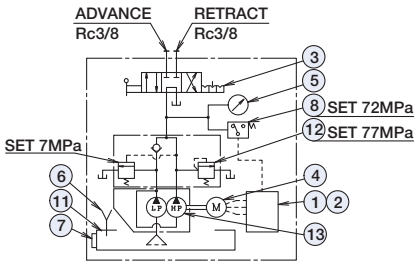
Voltage

QH5—D

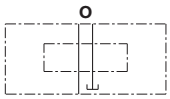
QH5—K

Notes: ① Motor and hydraulic circuit are determined after consultation.
② Circuit operation requires a separate power source unless a step-down transformer is installed.

Hydraulic circuit diagram

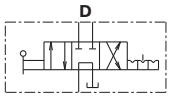


O



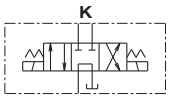
- A separate direction-al-control valve is required.

D



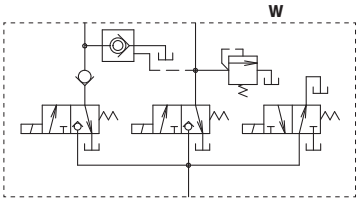
- Directional control valve is manually operated by a hand lever.

K



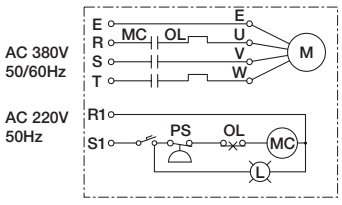
- Directional control valve is an electricomagnetically switched type. Electrical signals control the switching. Excitation time is within 1 minute. Useful for high-frequency applications.

W

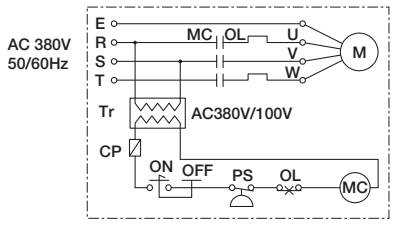


- Directional control valve is an electricomagnetically switched type. Electrical signals control the switching. Excitation time is 30 minutes. Useful for applications with a frequency of 30 times/min or less.
※After 30 minutes of continuos energization, set a break time of 30 minutes is recommended.

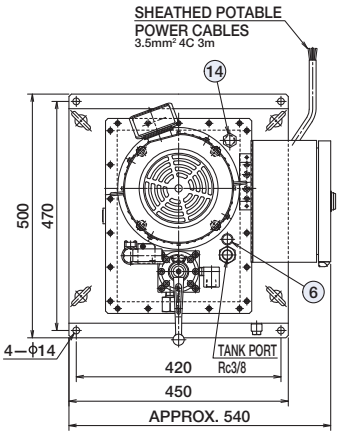
Electric circuit diagram

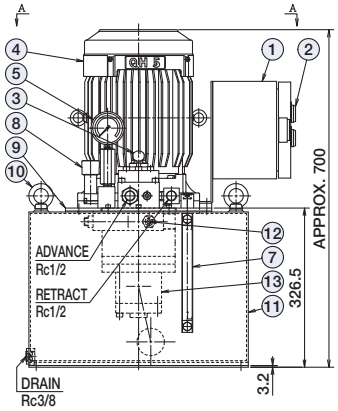


Electric circuit diagram with step-down transformer



Dimensional drawing with step-down transformer





Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Electric box	1	7	Oil level gauge	1
2	ON/OFF switch	1	8	Pressure switch	1
3	Valve O: Port block D: Manual control K: Solenoid valve (KSV) W: Solenoid valve (Poppet valve)	1	9	Plate	1
			10	Eye bolt	4
			11	Oil tank	1
			12	Safety valve	1
4	Electric motor	1	13	Hydraulic pump	1
5	Pressure gauge	1	14	Oil supply plug	1
6	Air breather	1			

Options

- Step-down transformer

Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)					Oil (ℓ)		Weight approx. (kg)	Connection port
	High	Low	High	Low	Capa (kW)	Insu	Pole	Rpm	Voltage	Usable	Required		
QH5—O	72	7	3.0 / 2.5	20 / 16.6	3.7	E	4	1800 / 1500	3 ph. 380V	35	50	146	Rc1/2
QH5—D												150	
QH5—K												163	
QH5—W												184	

Notes.① Figures of delivery and r.p.m. of motor showing at 50Hz right side, at 60Hz in left side. ② working oil: ISO-L-HV-VG32 or equipment.
③ Motor is 120% load at 60Hz. ※ Specifications and size may subject to change without notice.

AH-type Electric Pumps

for double-acting jacks

AH10—KS

Model number

AH — 7.5 — KS — A — 3.8

AH type

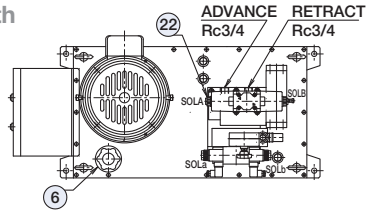
Horsepower

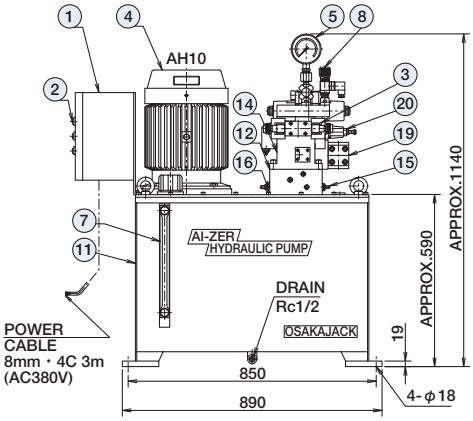
SS: With port block & pressure switch (in case of separate control valve)
SR: With port block & relief valve (in case of separate control valve)
DS: With manual control valve & pressure switch
DR: With manual control valve & relief valve
KS: With solenoid valve (KSV) & pressure switch (for high-frequency use)
KR: With solenoid valve (KSV) & relief valve (for high-frequency use)
LS: With solenoid valve (OSLV) & pressure switch (for extended use)
LR: With solenoid valve (OSLV) & relief valve (for extended us)

A: With step-down transformer
B: Without step-down transformer

Voltage

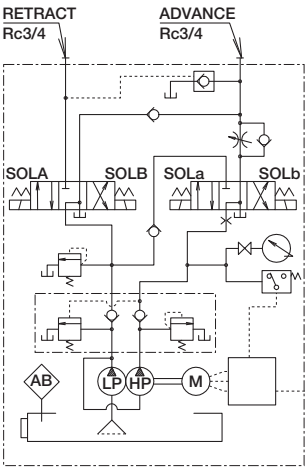
Dimensional drawing with step-down transformer

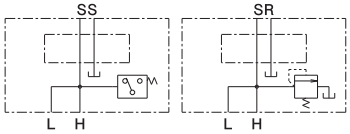




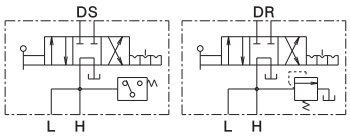
Notes: ① Motor and hydraulic circuit are determined after consultation.
② Circuit operation requires a separate power source unless a step-down transformer is installed.

Hydraulic circuit diagram

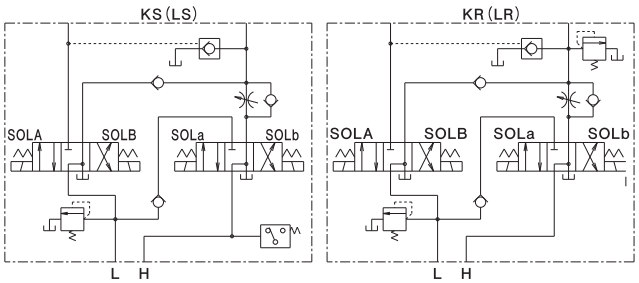




A separate directional-control valve is required.
• SS type: maximum pressure is controlled by a pressure switch.
• SR type: maximum pressure is controlled by a relief valve.



Directional control valve is manually operated by a hand lever.
• DS type: Maximum pressure is controlled by a pressure switch.
• DR type: Maximum pressure is controlled by a relief valve.



Directional control valve is an electricomagnetically switched type. Electrical signals control the switching.
• KR & LR types: Excitation time is within 1 minute. Useful for high-frequency applications.
Maximum pressure is controlled by a relief valve.
• KS & LS types: Excitation time is 30 minutes. Useful for applications with a frequency of 30 times/min or less.
Maximum pressure is controlled by a pressure switch.
※After 30 minutes of continuos energization, set a break time of 30 minutes is recommended.

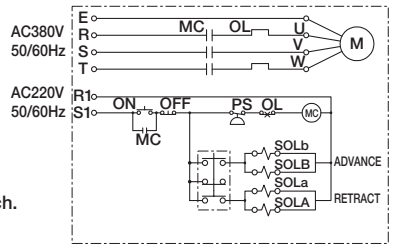
Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	11	Oil tank	1
2	ON/OFF switch	1	12	Valve block	1
3	Solenoid valve	1	14	Valve stand	1
4	Motor	1	15	Unload valve	1
5	Pressure gauge	1	16	Safety valve	1
6	Air vent plug (Oil supply port)	1	19	Pilot check valve	1
			20	Relief modular valve	1
7	Oil gauge	1	22	Solenoid valve	1
8	Pressure switch	1	25	Operation switch	1

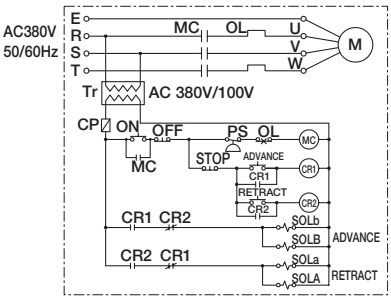
Options

• Step-down transformer

Electric circuit diagram



Electric circuit diagram with step-down transformer



Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)					Oil (ℓ)		Weight approx.(kg)	Connection port
	High	Low	High	Low	Capa(kW)	Insu	Pole	rpm	Voltage	Usable	Required		
AH7.5—DS	72	7	4.5/3.7	34/28	5.5	B	4	1800/1500	3 ph. 380V	70	115	430	Rc3/4
AH7.5—KS												440	
AH7.5—LS												450	
AH10—DS			6/5	48/40	7.5					100	150	480	
AH10—KS												490	
AH10—LS												500	

Notes.① Figures of oil delivery and r.p.m. of motor showing at 50Hz right side, at 60Hz in left side. ② working oil: ISO-L-HM-VG32 or equipment.
③ Motor is 120% load at 60Hz.

QH type Custom Build Pump

Features

- You can easily build your custom pump with desired options and hydraulic circuit that best fit your application.
- Inquire with the coding below. We can also build pump other than the coding listed below upon request.

Motor Horse Power / Motor Voltages / Valve Operation / Pressure Gauge / Operation Switch / Coupler / Manifolds / Hydraulic Circuit / Pressure Control / Magnetic Switch

Coding example: **QH 1／2 T3 - K - A1 B1 C1 D1 E13 F0 G0**

(A) (B) (C) (D) (E) (F) (G)

Motor Horse Power

QH	1／2(0.4kW)
	1(0.75kW)
	2(1.5kW)
	3(2.2kW)
	5(3.7kW)

Motor Voltages

No mark	200V 60Hz
T3	380V 50/60Hz
T4	440V 50/60Hz

Valve Operation

J	For single acting jacks with manual valve	with pressure holding function
E	For single acting jacks with solenoid valve	with pressure holding function
F	For single acting jacks with solenoid valve	automatically return
G	For single acting jacks with manual valve	—
D	For double acting jacks with manual valve	—
K	For double acting jacks with solenoid valve	for high frequency application
W	For double acting jacks with solenoid valve	for extended excitation application

※J, E, F types are not available for QH2, QH3 and QH5

Pressure Gauge

A0	Without Pressure Gauge
A1	ϕ63×1000 (Standard equipped)
A2	ϕ75×1000
A3	ϕ100×1000

※Gauge cock is standard equipped for solenoid type

Operation Switch

No mark	Without operation switch
B1	Pendant switch with 3m cord.
B2	Pendant switch with 5m cord.
B3	Foot switch with 3m cord.
B4	Foot switch with 5m cord.

※1 Standard cord length for J, E, F type is 3m.
※2 Pendant switch and foot switch is not available for G and D types.

Coupler

No mark	No coupler
C1	Jack side B type coupler
C2	Hose side B type coupler
C3	Jack side C type coupler
C4	Hose side C type coupler

Manifolds

No mark	without manifolds
D1	Single acting 2 ports manifolds
D2	Double acting 2 ports manifolds
D3	Single acting 4 ports manifolds
D4	Double acting 4 ports manifolds

Hydraulic Circuit

E1	Circuit for press (Double-acting)
E2	Circuit for press (Double-acting) with pressure gauge in pressure line
E3	Manual circuit for jack-up (Single-acting)
E4	Manual circuit for jack-up (Single-acting) with pressure gauge in pressure line
E5	Solenoid circuit for jack-up (Single-acting)
E6	Solenoid circuit for jack-up (Single-acting) with pressure gauge in pressure line
E7	Manual circuit for jack-up (Double-acting)
E8	Manual circuit for jack-up (Double-acting) with pressure gauge in pressure line
E9	Solenoid circuit for jack-up (Double-acting)
E10	Solenoid circuit for jack-up (Double-acting) with pressure gauge in pressure line
E11	Circuit for pressure hold (Single-acting)
E12	Circuit for pressure hold (Single-acting) with pressure gauge in pressure line
E13	Circuit for pressure hold (Double-acting)
E14	Circuit for pressure hold (Double-acting) with pressure gauge on pressure line
E15	Manual circuit for clamp (Single-acting) with pressure gauge on pressure line
E16	Manual circuit for clamp (Double-acting) with pressure gauge on pressure line
E17	Solenoid valve circuit for clamp (Double-acting) with pressure gauge on pressure line

※1 Gauge cock is standard equipped for solenoid type with pressure gauge on pressure line.
※2 Pressure gauge on pressure line is standard equipped for E15, E16, E17 circuits.
※3 Some hydraulic circuit is not available for certain valve operation. Please refer to "QH customaization pump hydraulic circuit adaptation table".

Magnetic Switch

No mark	With magnetic switch
G0	Without magnetic switch

Pressure Control

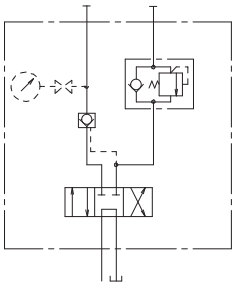
No mark	with pressure switch
F0	Without pressure switch
F1	Without pressure switch, with relief valve.

QH type Custom Build Pump

• Hydraulic circuit

E1 E2

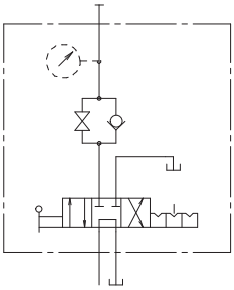
Circuit for press (Double-acting)



Pilot check valve maintains the pressure on the advance as well as hold position. Counterbalance valve prevents cylinder from lowering by its own weight.

E3 E4

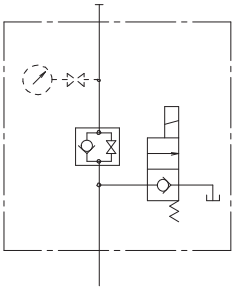
Manual circuit for jack-up (single-acting)



Stop check valve maintains the pressure on the advance as well as hold position. When retract, flow rate can be adjusted by the valve aperture.

E5 E6

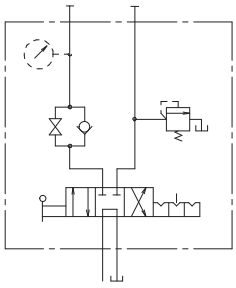
Solenoid circuit for jack-up (single-acting)



Stop check valve maintains the pressure on the advance as well as hold position. When retract, flow rate can be adjusted by the valve aperture.

E7 E8

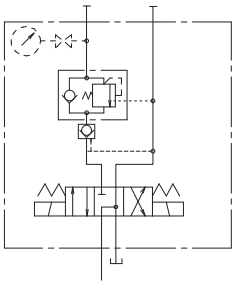
Manual circuit for jack-up (double-acting)



Stop check valve maintains the pressure on the advance as well as hold position. When retract, flow rate can be adjusted by the valve aperture.

E9 E10

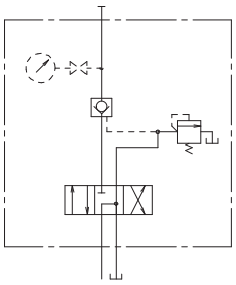
Solenoid circuit for jack-up (double-acting)



Pilot check valve maintains the pressure on the advance position. When retract, cylinder can be lowered by brake applied by the counterbalance valve.

E11 E12

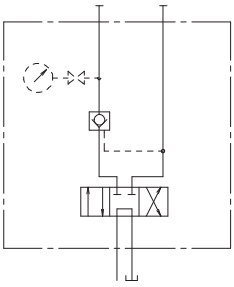
Circuit for pressure hold (single-acting)



Pilot check valve maintains the pressure on the advance as well as hold position.

E13 E14

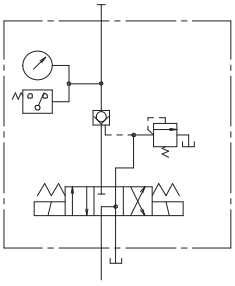
Circuit for pressure hold (double-acting)



Pilot check valve maintains the pressure on the advance as well as hold position.

E15

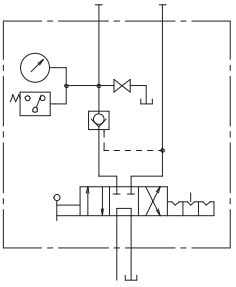
Manual circuit for clamp (single-acting)



Pilot check valve maintains the pressure on the advance as well as hold position. When setting pressure on the pressure switch is reached, motor will stop and pressure will be maintained.

E16

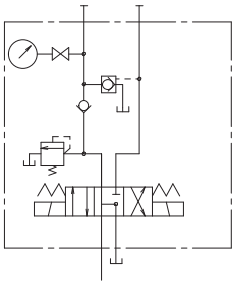
Manual circuit for clamp (double-acting)



Pilot check valve maintains the pressure on the advance as well as hold position. When setting pressure on the pressure switch is reached, motor will stop and pressure will be maintained.

E17

Solenoid valve circuit for clamp (double-acting)



Pilot check valve maintains the pressure on the advance position. The clamp pressure can be adjusted by relist valve

QH customization pump hydraulic circuit adaptation table (○ mark means available for selection)

Valve Operation \ Hydraulic Circuit	E1 E2	E3 E4	E5 E6	E7 E8	E9 E10	E11 E12	E13 E14	E15	E16	E17
J	—	—	—	—	—	—	—	—	—	—
E	—	—	○	—	—	—	—	—	—	—
F	—	—	○	—	—	—	—	—	—	—
G	—	○	—	—	—	○	—	—	—	—
D	○	—	—	○	—	—	○	—	○	—
K	○	—	—	—	○	○	○	○	—	○
W	○	—	—	—	○	○	○	○	—	○

※1 Pressure gauge on pressure line is standard equipped for E15, E16, E17 circuits. ※2 Gauge cock is standard equipped for solenoid type with pressure gauge on pressure line.

QH type Custom Build Pump Examples

QH1-K-F0G0
HYDRAULIC PUMP
(DOUBLE ACTING SOLENOID VALVE)
Without pressure gauge, pressure switch, magnetic switch

QH1-K-A1B1
HYDRAULIC PUMP
(DOUBLE ACTING SOLENOID VALVE)
With pressure gauge(ϕ63), pendant switch (3m)

QH1-K-A1E13
HYDRAULIC PUMP
(DOUBLE ACTING SOLENOID VALVE)
With pressure gauge(ϕ63), pressure hold circuit

QH1-K-A1E1
HYDRAULIC PUMP
(DOUBLE ACTING SOLENOID VALVE)
With pressure gauge(ϕ63), circuit for press

QH1-E-A1B1E5
HYDRAULIC PUMP
(SINGLE ACTING SOLENOID VALVE)
With pressure gauge(ϕ63), jack-up solenoid circuit

QH1-J-A1D1
HYDRAULIC PUMP
(SINGLE ACTING WITH RELIEF VALVE)
With pressure gauge(ϕ63), 2-port manifolds

QH1-K-A1B1D1
HYDRAULIC PUMP
(DOUBLE ACTING SOLENOID VALVE)
With pressure gauge(ϕ63), pendant switch (3m), 2-port manifolds

QH1-D-A1D4E13
HYDRAULIC PUMP
(DOUBLE ACTING MANUAL VALVE)
With pressure gauge(ϕ63), 4-port manifolds, pressure hold circuit

QH1-D-A1D4
HYDRAULIC PUMP
(DOUBLE ACTING MANUAL VALVE)
With pressure gauge(ϕ63), 4-port manifolds

GHA type Air Driven Pumps

for single-and double-acting jacks

Model number GH A 1 — DR

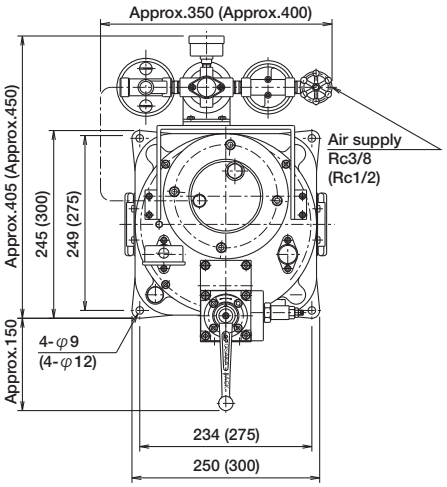
- GHA type
- Air driven
- Horsepower
- DR: With manual control valve & relief valve
- GR: With manual control valve & relief valve

Features

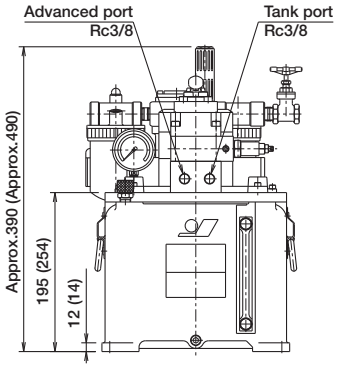
- Use an air source of 0.6Mpa to create ultra-high hydraulic pressure of 72Mpa.
- Can be used in locations without electricity or where explosions must be prevented.

GHA1/2

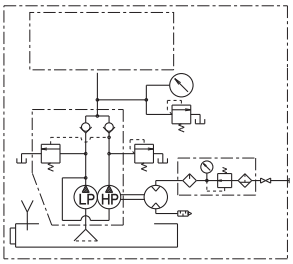
Dimensional drawing with step-down transformer

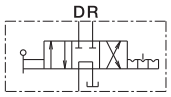


( ) dimension shows GHA1–DR type.

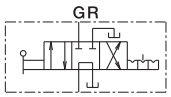


Hydraulic circuit diagram





- Directional control valve is manually operated. Direction is changed by a hand lever. For double-acting jacks.



- Directional control valve is manually operated. Direction is changed by a hand lever. For single-acting jacks.

Items / Model	Working pressure (MPa)		Oil delivery (ℓ/min)/1100min⁻¹		Air driven		Oil (ℓ)		Weight approx. (kg)	Connection port
	Low	High	High	Low	Boost pressure (MPa)	Consumption (m³/min)	Usable	Required		
GHA1/2–DR	5	72	1.6	0.30	0.6	0.79	5	8	40	Rc3/8
GHA1–DR	7		2.6	0.39		1.52	10	14	55	

Notes. ① Specifications may change without notice. Check with us before ordering.
② Use air motor less than 2,000 minutes under no-load conditions. The RPM and discharge rate will vary depending on the load.
③ To help prevent rust, periodically run the pump at no-load.

Inverter Pumps

- Available for QH or AH-type pumps.
- Allows the motor to run only when needed (idling stop).
  ※Only models equipped with solenoid valves.
- Compared to regular pumps, less startup power is required and the motor's load can be reduced.
- Compared to flow-control valves, inverters generate less heat, have a more stable discharge rate, and reduce RPM variation in response to load fluctuations.
  These characteristics make inverter-equipped pumps ideal for high-precision tuning control.
- Delivers the same discharge rate at 50Hz or 60Hz.

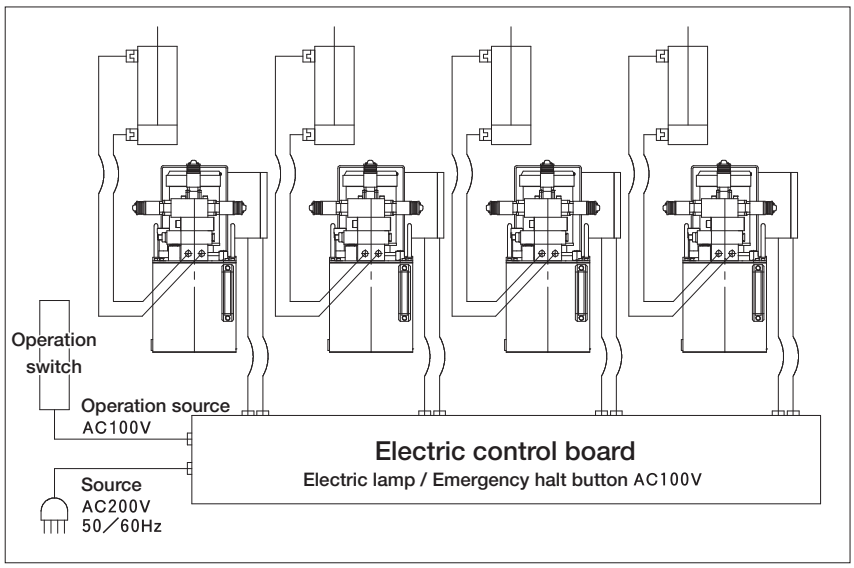
Option

- Hand operated switch with speed adjustment dial.
  Speed can be adjusted even during operation by turning the dial.
  *Only models equipped with solenoid valves.
- High pressure valves, stack valves.

Example — press work

Decelerate speed and pressurize the material step by step.

Synchronized inverter pump configuration



Example — in case of jack up

As shown in the left figure, inverter pumps can be used with a flow controller to jack up uneven, heavy loads. In this example, a 1-to-1 pump-to-jack ratio is used.
(Synchronization error within 5%)

Inverter Pumps

Example type QH5 — V2TF54VF — K
Pump selection chart
Inverter selection chart
Valve selection chart

How to choose

1. Choose pump type from pump selection chart.
2. Choose inverter type from inverter selection chart.
   (Only inverters marked ○ can be used with the pump you selected in step 1)
3. Choose valve type from valve selection chart.
   (Only valves marked ○ can be used with the pump you selected in step 1)

Pump selection chart

Items / Pump type	Motor Capa (kw)	Working pressure (MPa)		Oil delivery (ℓ/min)		Oil amount (ℓ)	
		High	Low	High	Low	Usable	Required
QH1/2	0.4	72	5	0.03~0.35	0.24~2.4	5	8
QH1	0.75		7	0.06~0.6	0.4~4	10	14
QH2	1.5			0.12~1.2	0.8~8	20	30
QH3	2.2			0.18~1.8	1.2~12	20	30
QH5	3.7			0.3~3	2~20	35	50
AH7.5	5.5			0.45~4.5	3.4~34	70	115
AH10	7.5			0.6~6	4.8~48	100	150
AH20	15			1.2~12	8~80	200	300

Inverter selection chart (Only inverters marked ○ can be used)

Inverter type / Pump type						QH1/2	QH1	QH2	QH3	QH5	AH7.5	AH10	AH20
V	1	S				○	○						
V	1	S			VF	○							
V	2	S	F			○	○	○	○				
V	2	S	F		VF	○							
V	2	T				○	○	○	○	○			
V	2	T			VF	○							
V	2	T	F			○	○	○	○	○	○	○	○
V	2	T	F		VF	○							
V	2	T	F	54		○	○	○	○	○			
V	2	T	F	54	VF	○							
V	4	T	F		VF	○							

Motor option → No mark: Standard motor / VF: Motor exclusive for Inverter
Enclosure → No mark: No enclosure / 54: Fully enclosed
Noise filter → No mark: No filter / F : With noise filter
Phase → S : Single phase / T : 3 phase
Voltage → 1: 100V grade (AC100~115V) 2: 200V grade (AC200~240V) 4: 400V grade (AC380~500V)
Inverter

Note) In case standard motor, 120% load at 60Hz.

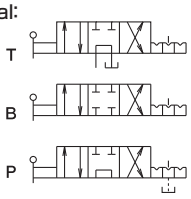
Valve selection chart (Only valves marked ○ can be used. Valves marked △ can be used under certain conditions.)

Inverter type / Pump type		QH1/2	QH1	QH2	QH3	QH5	AH7.5	AH10	AH20
O	Without valve	○	○	○	○	○			
J	Single Manual Valve (With Pressure holding)	○	○	○	○	○			
E	Single Manual Valve (With Pressure holding)	○	○						
F	Single Manual Valve	○	○						
G	Single Manual Valve	○	○	○					
D	Double Manual Valve	○	○	○	○	○			
K	Double Solenoid Valve (For high frequency usage)	○	○	○	○	○			
W	Double Solenoid Valve (For long excitation usage)	○	○	○	○	○			
SS	Without valve						○	○	○
DS	Double Manual Valve						○	○	○
KS	Double Solenoid Valve (For high frequency usage)						○	○	○
WS	Double Solenoid Valve (For long excitation usage)						○	○	○

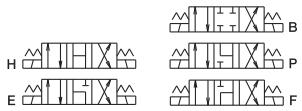
O.J.High Pressure Valves List

Directional Control valves(Valves that control the directions of oil flow)

Manual Switching Valves

Items / Model	Max.working pressure (MPa)	Rating flow (ℓ/min)	Max.oil flow (ℓ/min)	Allowable back pressure (MPa)	Mounting Type	Weight approx. (kg)	Hydraulic symbol
ODV-3N-T	72	2	3	5	Rc3/8(P.A.Bport) NPT1/4(T port)	1.0	N:Thread connection A:Thread connection(Indoor use) B:Thread connection(Outdoor use) G:Gasket type Neutral: 
ODV-6(N/G)-(T/B/P)		8	16	2	N:Rc3/8 G:Gasket	N:2.4 G:2.6	
ODV-9N-(T/B/P)		20	40		Rc3/8	5.5	
ODV-12(A/B)-(T/B/P)		40	60		Rc1/2	8.0	
ODV-16(A/B)-(T/B/P)		80	120		Rc3/4	11.0	

Super High Pressure Electromagnetic Switching Valves

Items / Model	Max.working pressure (MPa)	Rating flow (ℓ/min)	Max.oil flow (ℓ/min)	Allowable back pressure (MPa)	Mounting Type	Weight approx. (kg)	Voltage	Hydraulic symbol
KSV3(G/T)-6-(B/E/F/H/P)	72	8	10	7	G:Gasket	2.6	1:AC100V 2:AC200V D01:DC12V D02:DC24V	
					T:Rc3/8	5.5		
KSV3G-9-T		20	40	7	G:Gasket	11.0	1:AC100V 2:AC200V	

Check Valves

Items / Model	Max.working pressure (MPa)	Rating flow (ℓ/min)	Max.oil flow (ℓ/min)	Mounting Type	Cracking pressure (MPa)	Weight approx. (kg)	Hydraulic symbol
OCV-6G	72	8	12	G:Gasket	0.07	0.4	A:Thread connection (Indoor use) G:Gasket type 
OCV-9(A/G)		20	40	A:Rc3/8	0.05	0.6	
				G:Gasket	0.13	0.9	
OCV-12(A/G)		40	80	A:Rc1/2	0.05	1.5	
				G:Gasket	0.08	1.7	
OCV-16(A/G)		80	120	A:Rc3/4	0.05	2.5	
				G:Gasket	0.04	4.5	
OCV-19(A/G)		120	180	A:Rc1	0.1	3.7	
				G:Gasket	0.03	7	
OCV-25G		200	300	G:Gasket	0.03	14	

Pilot Check Valves

Items / Model	Area ratio Samll pilot	Area ratio Great pilot	Max.working pressure (MPa)	Rating flow (ℓ/min)	Max.oil flow (ℓ/min)	Pilot Allowable back pressure (MPa)	Mounting Type	Min. Pilot Pressure (At Max.Pressure) (MPa)	Cracking pressure (MPa)	Weight approx. (kg)	Hydraulic symbol
OPCV-6A	1:20		72	8	20	0.3	A:Rc3/8	5	0.2	3	A:Thread connection (Indoor use) G:Gasket type 
OPCV-9A	1:5.8			20	40		A:Rc3/8	14	0.1	3.8	
OPCV-12G	1:8			40	80	0.5	G:Gasket	11		9.5	
OPCV-16G	1:5.8		45	80	120	0.2	G:Gasket	10	0.05	13	
OPCV-19G	1:5			120	180		G:Gasket	11	0.03	16.5	
OPCV-25G	1:5			260	325		G:Gasket		0.5	34	
OPDV-9G	1:22	1:0.9	72	20	40	0.5	G:Gasket	5	0.1	3.2	
OPDV-12A	1:21	1:2.3		40	80		A:Rc1/2		0.05	8	
OPDV-16G	1:21	1:2.3		80	120		G:Gasket			10	

O.J.High Pressure Valve List

Pressure Control Valves (that control the oil pressure)

Model \ Items		Max.working pressure (MPa)	Pressure adjusting range (MPa)	Rating flow (ℓ/min)	Max.oil flow (ℓ/min)	Mounting Type	Cracking pressure (MPa)	Weight approx. (kg)	Remarks	Hydraulic symbol
Relief valves	DDV-6A-H	72	10~72	8	12	Thraead connection		0.6	Direct operated type	
	DDV-6A-L	31.5	0~31.5	12	20					
	DDV-6G-H	72	10~72	8	12	Gasket installat type		1.0		
	DDV-6G-L	31.5	0~31.5							
	ORV-16G	72	10~72	80	120			5	Pilot operapion type	
Counterbalance valves	OBV-9	72	2~10	20 (40)	40 (60)	Rc1/2	0.05	2.5	( )indicate free flow	B A
	OBV-12			40 (60)	80 (90)	Rc3/4	0.05	4.9		
Pressure reducing valves	ORD-6	72	5~21	0.3~12	—	Gasket		2	Variable direct operated type	Drain volume 0.1~0.2 ℓ/min
	ORD-9		Proportional type 3.4:1	0.3~20	—	Gasket		2.8	Proportional pressure reducing operapion type	0.15~0.3 (ℓ/min)

Flow Control Valves (that control the flow rate of oil)

Model \ Items		Max.working pressure (MPa)	Rating flow (ℓ/min)	Max.oil flow (ℓ/min)	Mounting Type	Cracking pressure (MPa)	Weight approx. (kg)	Remarks	Hydraulic symbol
Stop valves	OSV-6 (A B BI G)	72	8	20	Rc3/8 M30×P1.5 BI:Rc3/8 G:GasketRc3/8		A:1.2 B:1.2 BI:0.8 G:2	A:Thread connction (Indoor use) B:Thread connction (Outdoor use) G:Gasket type	A B C (Additional Machining required)
	OSV-9 (A B)		20	40	Rc3/8		2.5		
	OSV-12 (A B)		40	80	Rc1/2		2.5		
	OSV-16 (A B)		80	120	Rc3/4		2.5		
	OSV-19 (A B)		120	180	Rc1		2.5		
	OSV-9G	60	20	40	G:GasketRc1/2		2.5		
Stop valve with check	OCSV-4 (B)	72	5	8	Rc3/8	0.13	1	( )indicate free flow	B A
	OCSV-6 (A B)		8 (20)	20 (40)	Rc3/8	0.25	2		
	OCSV-9 (A B)		20 (40)	40 (80)	Rc3/8	0.2	3.8		
Throttle valve	OTV-6 (A B)	72	8	20	Rc3/8 M30×P1.5		1.2	With lock nut Thread connction (Outdoor use)	
	OTV-6G		8	20	Gasket		1.0	With lock nut	
	OTV-9G		20	40	Gasket		1.3		
Throttle check valves	OTCV-9G	72	8 (20)	16 (40)	Gasket	0.13	1.5	With lock nut ( )indicate free flow	
	OTCV-12G		8 (40)	16 (80)	Gasket	0.08	2.6		

Prefill Valves

Model \ Items		Max.working pressure (MPa)	Prefill volume (MPa)	Exhaust volume (ℓ/min)	Minimum pilot pressure (ℓ/min)	Pilot max.working pressure (ℓ/min)	Cracking pressure (ℓ/min)	Pilot allowable back pressure (ℓ/min)	Pilot operated required oil (mℓ)	Weight approx. (kg)	Hydraulic symbol
Prefill valves	OPFV-35	60	100	350	Cylinder inner pressure ×1.7 +0.8	14	0.022	0.28	5	7.5	
	OPFV-60	72	300	1000			0.018	0.30	26	14	
	OPFV-105	45	900	3000			0.036	0.30	165	63	

Directional Control Valves

Manual switching valves

Model number ODV — 6 N — T

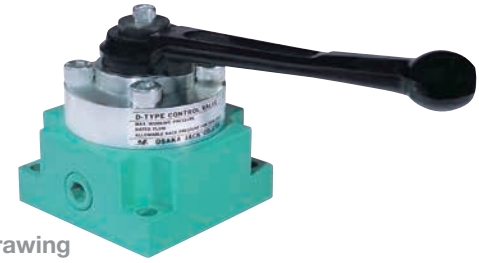
- D type switching valve
- Port diameter
- Mounting; N: Thread connection, G: Gasket type
- Neutral; T: Tandem center, B: All port blocked, P: Tank port pressure

Features

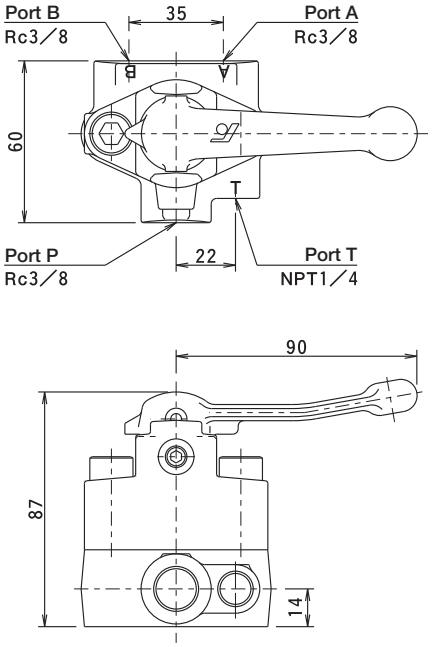
- These valves are for manually switching the flow of oil.
- They control the movement (start, stop, and direction) of jacks and other equipment.
- Rotary disk construction offers excellent pressure retention while minimizing leakage.

ODV−3N

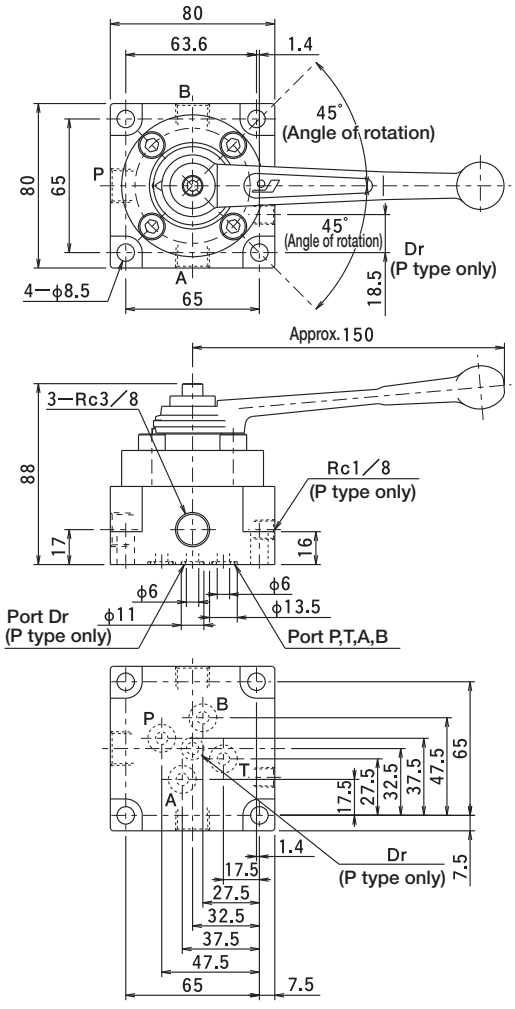
ODV−6G



Dimensional drawing



Dimensional drawing



Notes. 1. By shifting hand lever to advance side, the oil flows from P to A, B to T.
Turning to retract side, the oil flows from P to B, A to T.
While shifting hand lever, all ports connect to port T (Dr).
2. Neutral-and P-type valves (tank port pressure) have a drain port. Connect to tank directly.
Allowable backpressure of tank line is 72Mpa for P-type only.

Specifications

Items / Model	Max. working pressure (MPa)	Rating flow (ℓ/min)	Max. oil flow (ℓ/min)	Allowable back pressure (MPa)	Weight approx. (kg)	Hydraulic symbol	Mounting Type
ODV−3N−T	72	2	3	5	1	Neutral: T, B, P	N: Thread connection G: Gasket type
ODV−6G−(T/B/P)		8	16	2	2.6		

Directional Control Valves

Manual switching valves

Model number ODV — 6 N — T

- D type switching valve
- Port diameter
- Mounting; N: Thread connection, G: Gasket type
- Neutral; T: Tandem center, B: All port blocked, P: Tank port pressure

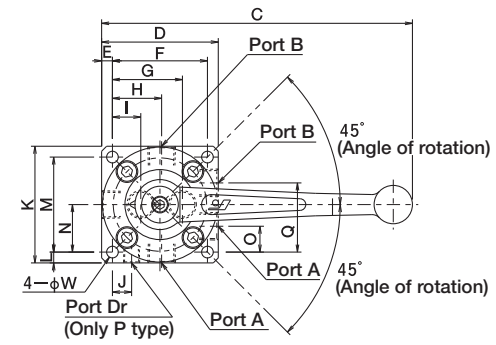
Features

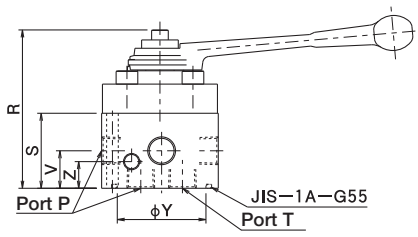
- These valves are for manually switching the flow of oil.
- They control the movement (start, stop, and direction) of jacks and other equipment.
- Rotary disk construction offers excellent pressure retention while minimizing leakage.

ODV−6N

ODV−12A

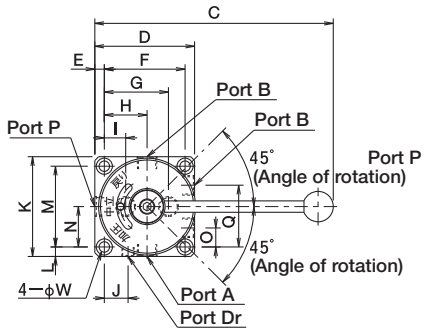
Dimensional drawing

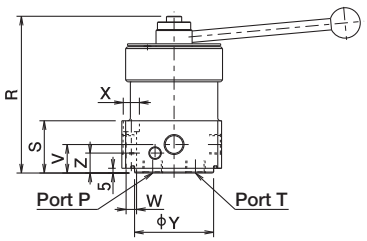




Note) Close any ports that are not being used.

Dimensional drawing





Specifications

Items / Model	Max. working pressure (MPa)	Rating flow (ℓ/min)	Max. oil flow (ℓ/min)	Allowable back pressure (MPa)	Weight approx. (kg)	Hydraulic symbol	Mounting Type
ODV−6N−(T/B/P)	72	8	16	2	2.4	Neutral: T, B, P	N: Thread connection A: Thread connection (For indoor use) Usable items ODV-12,16 B: Thread connection (For outdoor use) Usable items ODV-12,16
ODV−9N−(T/B/P)		20	40		5.5		
ODV−12(A/B)−(T/B/P)		40	60		8		
ODV−16(A/B)−(T/B/P)		80	120		11		

Dimension chart

Items / Model	Dimension (mm)																							
	C	D	E	F	G	H	I	J	K	L	M	N	O	Q	R	S	U	V	W	X	Y	Z	ABPT	DR
ODV−6N	186	70	6.5	57	42	29.5	17	11.5	70	6.5	57	28.5	15.5	41.5	95	45	—	22.5	7	—	53.2	22.5	Rc3/8	Rc1/8
ODV−9N	193	85	8	69	60	42.5	25	15.5	85	8	69	34.5	17	52	109	53	—	25	9	—	68.2	16	Rc3/8	Rc1/4
ODV−12(A/B)	251	105	10	85	67.5	45	22.5	25	105	10	85	42.5	20	65	165/175	55	45	30	11	17	83.2	16	Rc1/2	Rc1/4
ODV−16(A/B)	312.5	120	11.5	92	76	51	—	—	125	11.5	102	51	23.5	78.5	161/180	55	44	30	11	17.5	99	—	Rc3/4	—

Solenoid Valves Directional control valves

Electromagnetic switching valves

KSV type

Features

- Easy to carry out the circuit configuration according to various applications by combining with the high-pressure stack valves.
- High frequency switching occures smoothly.
- Excellent durability.
- Compact and mounting method is simple.
- Five types of neutral formats of spool are available.
- Possibility of low pressure lossing characteristics is achieved.
- Usage of wet type solenoid,low switching sound,less shock,long life.
- Improvement of machining methods contributes to stable performance.

Model number KSV 3 G 6 F 2

Solenoid valve

Number of switching positions

Mounting Type:G··Gasket type
N··Thread connection
(with sub plate KSVM-6)

Port diameter

Spool type··- see chart below

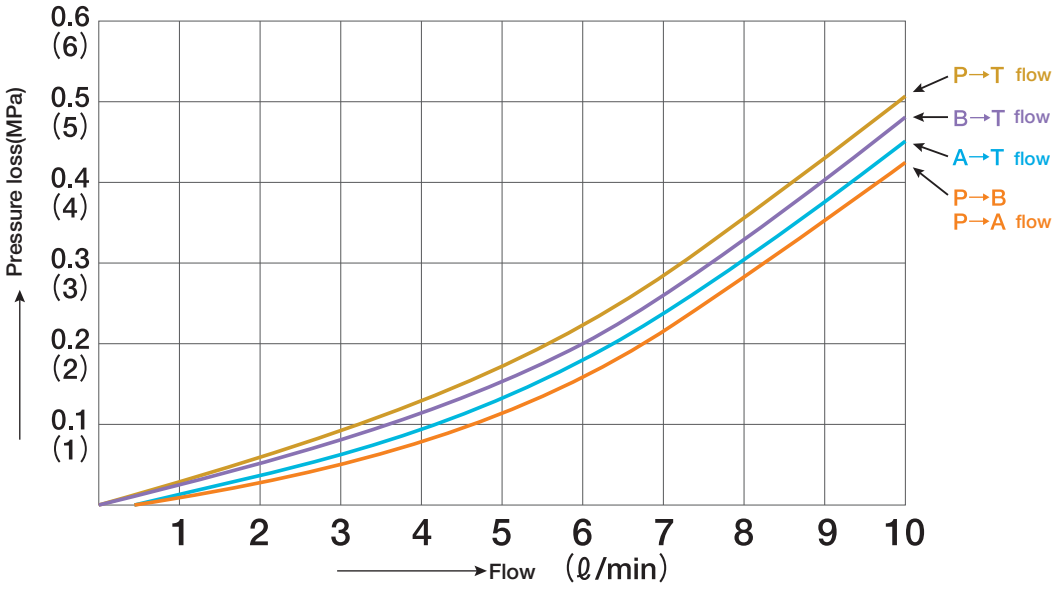
Rated voltage 1·AC100V DO1·DC12V D1· DC100V
2·AC200V DO1·DC24V D1.1·DC110V

Main performance

Pressure resistance...1.2 times (86Mpa) of the maximum use pressure (72MPa)

Work... Please use within ± 10% of rated voltage ltage.

Flow - Characteristics of pressure dropping.



1. Both of the tank port (left & right) of the sub plate should have the circuit holes.
2. Continuous excitation time should be limited to 1 minute or less.
3. Use hex bolts(M6×20L). Tightening torque 1.3kN·cm is recommended.
4. Please always use clean oil above NAS9 level as a working oil.
5. The valve installation surface roughness must be 6S and flatness should be within 1μm. Use sufficient rigid sub plate for bottom.
6. The excitation of solenoid should be continued only after finishing up first excitation.
7. KSV3T-6 is attached with sub plate KSVM-6.

Solenoid characteristics

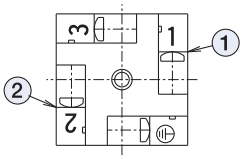
AC

Rated voltage		AC100V	AC200V
Starting current	50Hz	2.6A	1.3A
	60Hz	2.4A	1.2A
Holding current	50Hz	0.59A	0.3A
	60Hz	0.46A	0.23A

DC

Rated voltage	DC12V	DC24V	DC100V	DC110V
Starting current	2.61A	1.35A	0.39A	0.35A
Holding current				

Solenoid wiring connecting method
Connect Terminal ① ②



working voltage
(Replacement of wire connection is not necessary according to region 50/60Hz)

for 100V	100V 50/60Hz,110V60Hz
for 200V	200V 50/60Hz,220V60Hz

Solenoid Valves

Electromagnetic switching valves

Features

- These valves use a solenoid to change the direction of oil flow. The solenoid is controlled by electrical signals.
- They control the movement (start, stop, and direction) of jacks and other equipment.

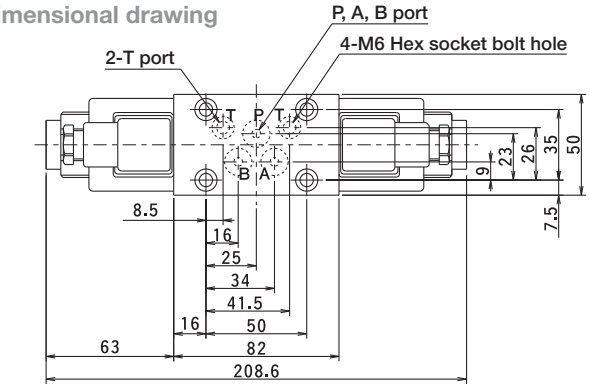
Model number: KSV | 3 | G | 6 | F | 2

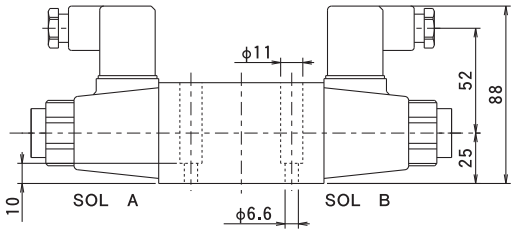
- Solenoid valve
- Number of switching positions
- Mounting Type;
  G: Gasket type
  T : Thread type (with subplate KSVM-6)
- Port diameter
- Spool type - see chart below
- Rated voltage 1…AC100V D01…DC12V D1…DC100V 2…AC200V D02…DC24V D1.1…DC110V

KSV3G-6 (Gasket type)

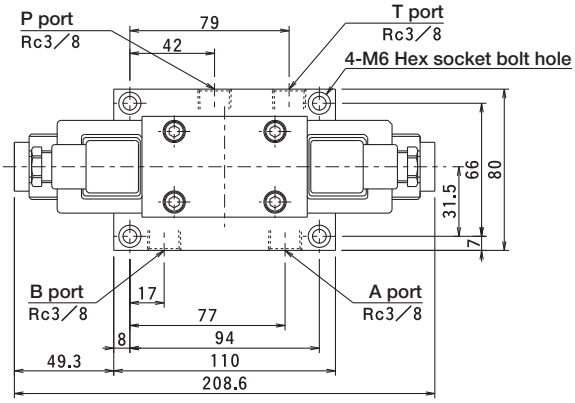
KSV3T-6 (Thread type)

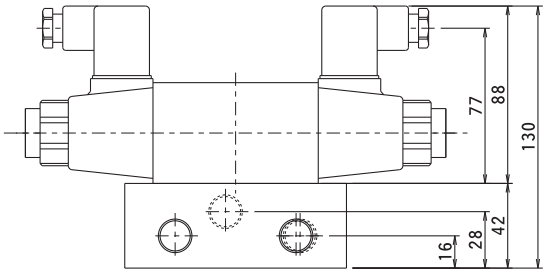
Dimensional drawing





Dimensional drawing

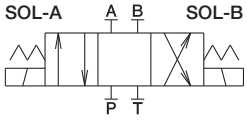




Specifications

Items / Model	Max. working pressure (MPa)	Rating flow (ℓ/min)	Max. oil flow (ℓ/min)	Allowable back pressure (MPa)	Allowable changeover time (time /min)	Weight approx. (kg)
KSV3G−6 (B、H、E、P、F)	72	8	10	7	60	2.6
KSV3T−6 (B、H、E、P、F)						5.5
KSV3G−6S (B、H、E、P、F)		10	12		20	4.5
KSV3G−9 (T)		12	30		20	11

Spools at neutral position



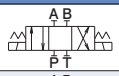
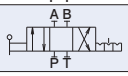
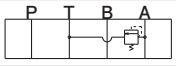
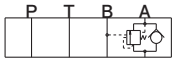
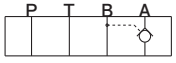
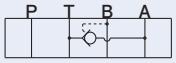
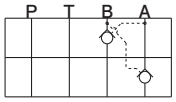
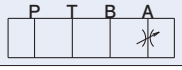
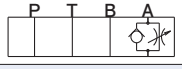
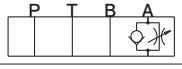
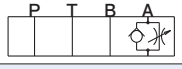
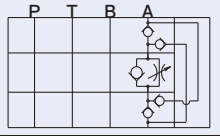
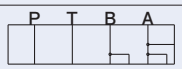
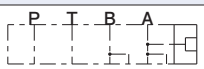
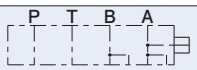
Model	B	E	F	H	P	T
Symbol of spool						

High Pressure Stack Valve List

Features

- Circuit can be easily configured according to various applications.
- Applicable pumps are QH1/2～QH2.
- Change or adding hydraulic circuit is easy. Very compact.
- No pipings are required.Reliable and easy to maintain.

Valve List

Name		Model	Hydraulic symbol	Note
Swiching valves	Eletromagnetic Switching Valve	KSV3G−6		
	Manual Swiching Valve	ODV−6G		
Pressure control valves	Direct relief valve	S−DDV−6 (A/B/P) − (L/H)	 ※	3 types for pressure control, i.e. P line, A line and B line. 2 types for pressure adjustment, i.e. H and L.
	Counterbalance valve	S−CDV−6 (A/B) − (L/H)	 ※	Prevent load from dropping due to gravity for press machine etc. A line and B line, 2 types.
	Counterbalance valve (External Pilot Type)	S−RCV−6 (A/B)	 ※	Mainly for jack-down application by applying return-pressure.
Directional control valves	Check valve	S−CV−6 (A/B)	 ※	Control the flow in one direction in the circuit. To prevent backflow. A line, B line,2 types.
	Pilot check valve (For in-line use)	S−PCV−6 (A/B) −I−(F)	 ※	Backflow is possible by applying pilot pressure. For A line, B line, 2 types.
	Pilot check valve (For off-line use)	S−PCV−6(A)−O−(F)		Oil can flow directly to tank line without passing through switching valve.
	Double pilot check valve	S−PCV−6W		
Flow control valves	Throttle valve	S−TV−6 (A/B)	 ※	For A line and B line, 2 types.
	Throttle check valve	S−TCV−6 (A/B)	 ※	For A line and B line, 2 types.
	Stop valve with check	S−OSCV−6A		
Flow control valves (Pressure-compensation type)	Flow control valve	S−FCV−6 (A/B) −I−(L)	 ※	Meter-in. for A line and B line, 2 types
		S−FCV−6 (A/B) −O−(L)	 ※	Meter-out. For A line and B line, 2 types
	Flow control with check block	S−FCV−6 (A/B) IO−(L)	 ※	Meter-in/out 2 way control valve with check block.
Mounting Plate for Solenoid Valve	Valve plate	VP−KS1		For KSV3G−6
Mounting Port Block for Q type pump	Base plate	BP−G01		For QH1/2・QH1・QH2
		BP−G03		For QH3・QH5(Pline below 8ℓ/min)
		BP−G01−PG		BP-G01 with pressure gauge line. Use by mounting KGS. Also mounting BP-003 is possible.
	Mounting block for PG, PS	BP−003		Used when 2 lines of pressure gauge and pressure switch are necessary for BP-G01. Use by mounting KGS.
	Oval shape gauge stand	KGS− (04/06/08)		For mounting fittings of pressure gauge or pressure switch. For P-G01-PG and BP-003. 3 types of screw size i.e.G1/4, G3/8 and G1/2.
	Mounting Bolt for stack valve	SB10～15		6 types of SB10・SB11・SB12・SB13・SB14・SB15

Notes.
①※ Shows A line hydraulic symbol.
② A and B line are exchangable by revolving 180°of Counterbalance Valve, Check Valve, Pilot Check Valve, Throttle Valve, Throttle Check Valve.(The off-line pilot check valve is for A line only.)

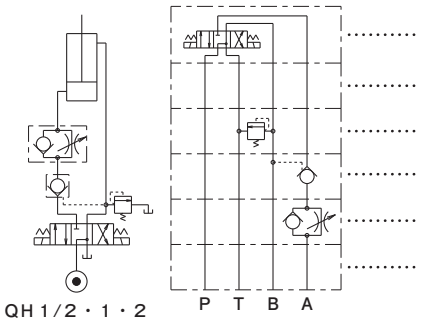
High Pressure Stack Valves Circuit Application Example

Features

- Combination of high pressure stack valves enables circuit configuration suitable for various applications.
- QH 1/2 ·QH 1 pumps are compatible for stack valves.
- Furthermore,we propose circuit configurations suitable for your application. Please contact us separately.

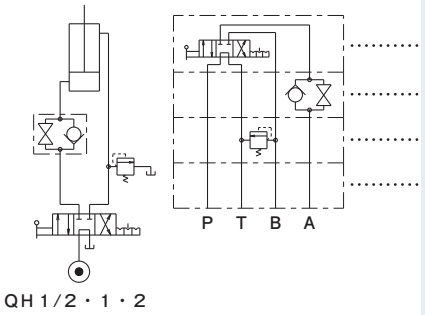
QH1－K type
(5) Pressure holding (Press work purpose)

(1) Jack Up Circuit



- KSV3G－6－F
- VP－KS1
- S－DDV－6B－L
- S－PCV－6A－I
- S－FLV－6A－O
- BP－G01

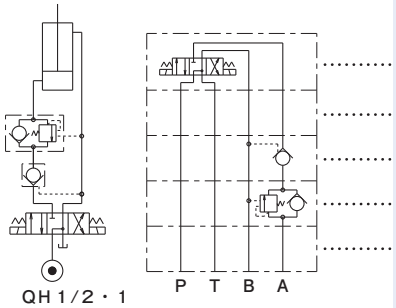
(2) Jack Up Circuit (Manual Operation)



- ODV－6G－T
- S－OSCV－6A
- S－DDV－6B－L
- BP－G01

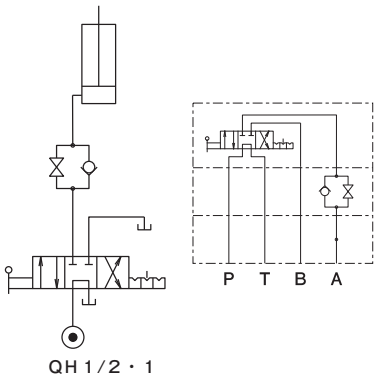
(3) Jack Up Down Circuit

The speed of the jack-down will be faster by the area ratio of the jack.S-PCV is also not necessary, if the load upholding stop is short time or not needed.



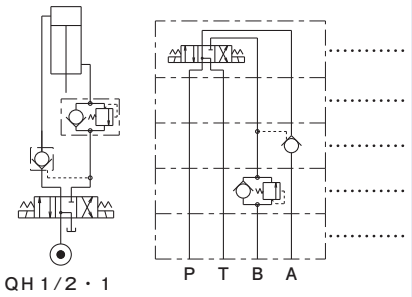
- KSV3G－6－F
- VP－KS1
- S－PCV－6A－I
- S－RCV－6A
- BP－G01

(4) Jack Up Circuit (Manual operation for single acting)



- ODV－6G－T
- S－OSCV－6A
- BP－G01

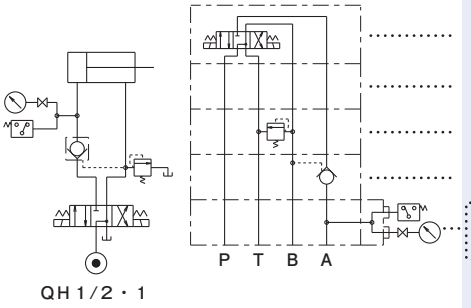
(5) Pressure Holding (Press work purpose)



- KSV3G－6－E
- VP－KS1
- S－PCV－6A－I
- S－CBV－6B－L
- BP－G01

(6) Pressure Holding (Press work,Filter press etc.)

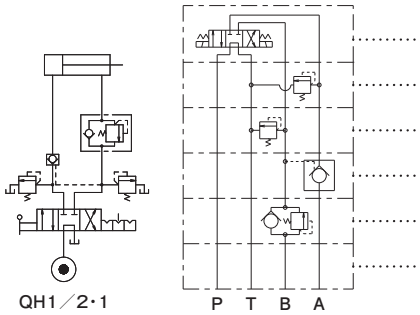
Long period holding by PS control



- KSV3G－6－E
- VP－KS1
- S－DDV－6B－L
- S－PCV－6A－I
- BP－G01－PG
- BP－003
- KGS(2pcs)

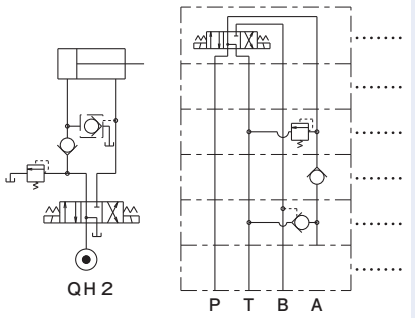
High Pressure Stack Valves Circuit Application Example

7.Pressure Holding (Powder molding,Press work purpose)



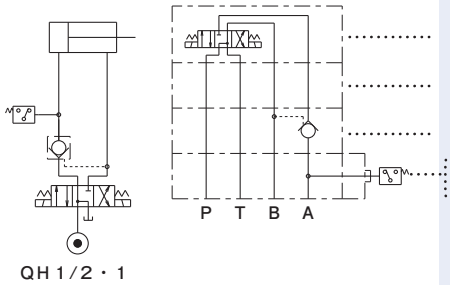
- ODV−6G−T
- S−DDV−6A−H
- S−DDV−6B−L
- S−PCV−6A−I
- S−CDV−6B−L
- BP−G01

8.Pressure Holding (Clamping,Press work purpose)



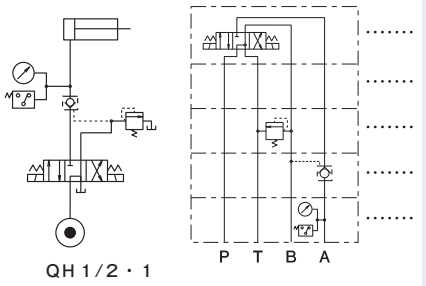
- KSV3G−6−E
- VP−KS1
- S−DDV−6A−H
- S−CV−6A
- S−PCV−6A−O
- BP−G01

9.Clamping (In case of short time, PS not needed)



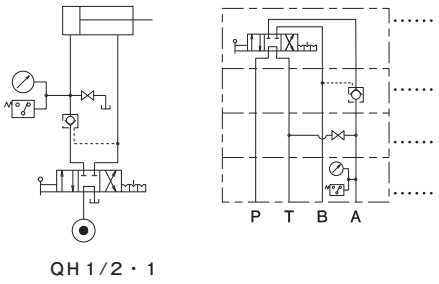
- KSV3G−6−F
- VP−KS1
- S−PCV−6A−I
- BP−G01−PG
- KGS

10. Clamping (For single acting)



- KSV3G−6−F
- VP−KS1
- S−DDV−6B−H
- S−PCV−6A−I
- BP−G01-PG

11. Clamping (Manual Operation)



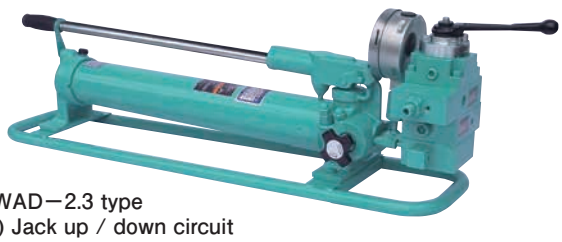
- ODV−6G-T
- S−PCV−6A−I
- OSV-6GN +S-DM-S-AT
- BP−G01−PG

Hand pump

- We can manufacture hydraulic pump unit that fits your applications through combination of gasket mounting type high pressure valves and manifolds for QH type (QH1/2, QH1 excluded) and AH type pump.
- Compact,leakage lesser than steel piping and easy maintenance.
- Most suitable circuit configurations can be proposed, please consult with us.

Hand pump

- Stack valves can also be mounted on hand pumps.
- For outdoor work that requires hydraulic control where there power supply is not available.



TWAD−2.3 type
(3) Jack up / down circuit

- While adjusting the position of the load, you can lower the load with brake function provided by the valve.This can prevent sudden dropping of load during switching lever from advance to return.

O.J. Standard Accessories

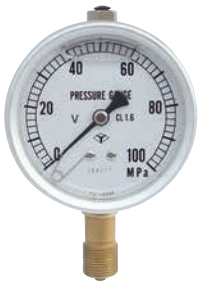
Pressure gauges

Model number PGO — 100 × 1000
- Pressure gauge
- O.D. of gauge (mm)
- Full scale (MPa×10)

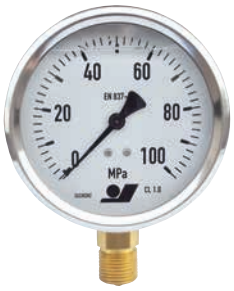
Features

- Glycerin-filled gauges (PGO-type) reduce deviations caused by vibrations, making it easy to read the needle.
- Gauges report hydraulic pressure in MPa.
- If special scales (kN, Pa, PSI, etc.) or high-precision (0.6 or 1.0 degree) are required, please specify when ordering.
- When attaching a kN-scale hydraulic pressure gauge, the bore and effective area of the jack cylinder must be specified. The pressure gauge can only be used with that jack.
- The orientation of the gauge will determine the amount of packing required.

PGO−63×1000

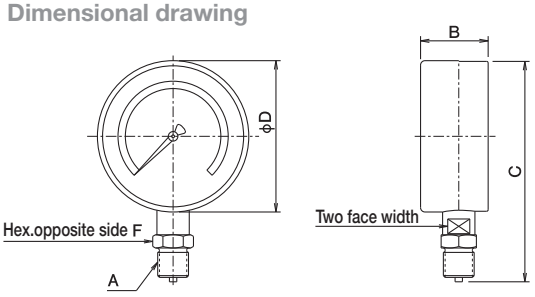


PGO−75×1000



PGO−100×1000

Dimensional drawing



Specifications

Model \ Items	Max. working pressure (MPa)	Max. scale (MPa)	1 scale (MPa)	Precision (±FS)	Dimension chart (mm) A	B	C	ϕD	E
PGO−63×1000	72	100	5	1.6	G1/4B	32	90	68	14
PGO−75×1000	72	100	5	1	G3/8 JIS	44	122	81	14
PGO−100×1000	72	100	2	1	G1/2B JIS	48	144	107	22
PGO−100×1200	100	120	2	1	G1/2B JIS	50	141	101	22

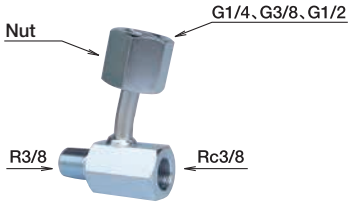
Notes.① Glycerin-filled gauges (PGO-type) reduce deviations caused by vibrations, making it easy to read the needle.
② If special scales (kN, Pa, PSI, etc.) or high-precision (0.6 or 1.0 degree) are required, please specify when ordering.

Gauge adapters

Model number FGS — 700 — 04
- Pressure gauge adapter
- Pressure
- Connection thread

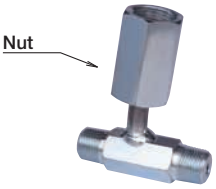
Application

Use a gauge adapter to install a pressure gauge midway through a hydraulic circuit.



FGS−700 (TWA type)

Tighten the nut while holding the pressure gauge in the direction you want it to face.



FGS−700AD (TWAD type)

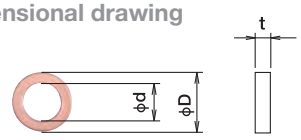
Specifications

Model \ Items		Max. working pressure (MPa)
FGS−700−04	G1/4	72
FGS−700−06	G3/8	
FGS−700−08	G1/2	100
FGS−700AD−04	G1/4	72
FGS−700AD−08	G1/2	100

Copper packing for attached pressure gauge

Model number CPG — 04 — 0.5
- Copper packing for pressure gauge
- Nominal port diameter 04:G1/4、06:G3/8、08:G1/2
- 0.5:T=0.5、0.3:T=0.3 set:T=0.3×2、T=0.5×2

Dimensional drawing



G3/8

Specifications

Model \ Items		ϕD	ϕd	T	
CPG−04−※	G1/4	10	6	0.3	0.5
CPG−06−※	G3/8	13	6	0.3	0.5
CPG−08−※	G1/2	17	6	0.3	0.5

Gauge cocks

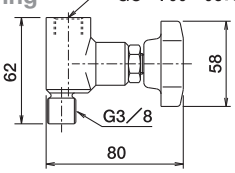
The orientation of the gauge will determine the amount of packing required.

GC−700−06

Model number GC — 700 — 04
- Gauge cock
- Max. working pressure
- Port diameter 04:G1/4、06:G3/8

Dimensional drawing

GC−700−04:G1/4
GC−700−06:G3/8



Specifications

Model \ Items		Max. working pressure (MPa)
GC−700−04	G1/4	72
GC−700−06	G3/8	

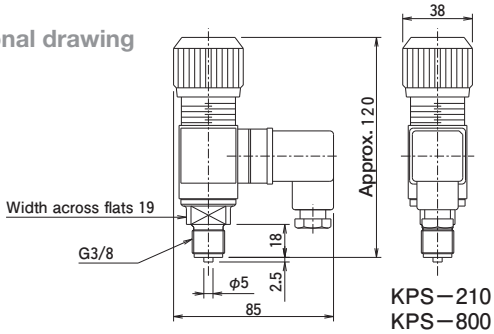
Standard Accessories

Pressure switches

Model number: KPS — 800
Pressure switche
Max. working pressure

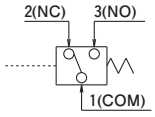
KPS−800

Dimensional drawing



KPS−210
KPS−800

Specifications

Model \ Items	Pressure setting range (MPa)	Difference of switching point (MPa)	Repeat accuracy (MPa)	Contact configuration 1a,1b	Contact capacity,Resistance load(A) AC125V	Contact capacity,Resistance load(A) AC250V	Weight approx.(kg)	Hydraulic symbol
KPS−210	3~21	1~3	±0.5	1a,1b	10.1	10.1	0.4	
KPS−800	10~80	2~4	±1	1a,1b	10.1	10.1	0.4	

Falling prevention valves

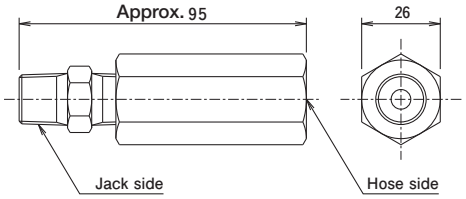
Model number: ESV — 6
Falling prevention valve
Port diameter (mm)

Features

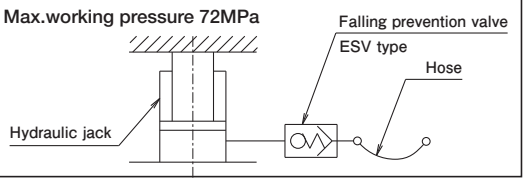
- For stopping the flow of oil immediately even if the piping is damaged at the time of heavy load, so that the jack does not descend rapidly due to the load.
  Install on the jack according to the actual needs.


ESV-6

Dimensional drawing



Specifications

Model \ Items	Max.working pressure (MPa)	Shut off flow (ℓ/min)	Connection thread Jack side	Connection thread Hose side	Hydraulic symbol
ESV−6	72	15	R3/8	Rc3/8	
ESV−6N		15	NPT3/8	Rc3/8	
ESV−9		25	R1/2	Rc1/2	

Safety valves for hydraulic jack

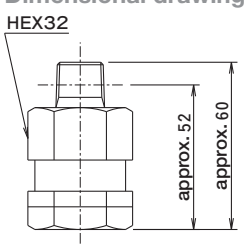
Model number: JSV — 6
Safety valve
Port diameter (mm)

Features

- Screw directly into the return port of the double acting jack.
  To prevent breakage of hydraulic jack when return circuit is blocked due to ill connection of self-sealing coupler. Please install on the jack according to the actual needs.


JSV-6
(Safety valve)

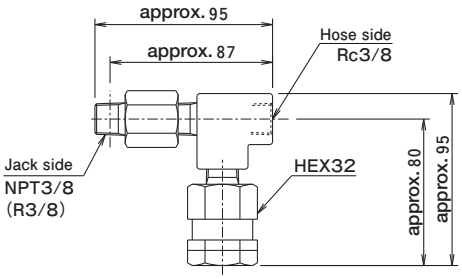
Dimensional drawing



JSV-6

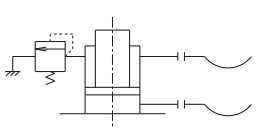
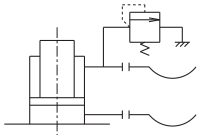

ERV-6N
(Safety valve+Cheese+Bushing)

Dimensional drawing



ERV−6N
(ERV−6)

Specifications

Model \ Items	Max.working pressure (MPa)	Max.oil flow (ℓ/min)	Connection thread Jack side	Connection thread Hose side	Hydraulic symbol
JSV−6	72	2	R3/8	−	Safety valve JSV type  Safety valve ERV type 
ERV−6			R3/8	Rc3/8	
ERV−6N			NPT3/8	Rc3/8	

O.J. Standard Accessories

B-type couplers

Model number: B — 6 — J
- B-type coupler
- Port diameter (mm)
- Jack side (J), Hose side (H)

Features

- B-type couplers are a self-sealing, hand-tighten type.
- Do not use tools to connect or disconnect these couplers.

How to opearate

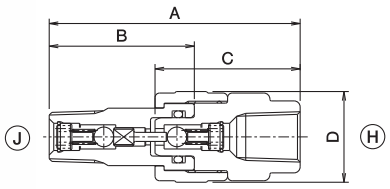
- Connect: Push hose-side male coupler into jack-side female coupler. Completely tighten the union nut by hand.
- Disconnect: After completely loosening the union nut, disconnect the couplers.

Jack side

Hose side

B—6

Dimensional drawing



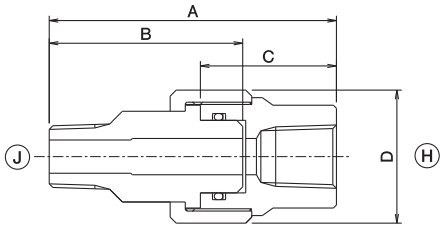
Self seal
B—6、B—9、
B—6S、B—9S (Stainless steel)

Jack side

Hose side

B—12

Dimensional drawing



Without self seal
B—12、B—16

Specifications

Items / Model	Max. working pressure (MPa)	Jack side (J)		Hose side (H)		Remarks
		Model	Connection thread	Model	Connection thread	
B—10	72	B—10JG	NPT3/8 male thread	B—10HG	NPT3/8 female thread	E, EC, EL, EF type
B—6	72	B—6J	R3/8 male thread	B—6H	Rc3/8 female thread	T, JN, LJA type
		B—6JG	NPT3/8 male thread	B—6H	Rc3/8 female thread	E, EC, EL, EF type
B—6S	72	B—6SJ	R3/8 male thread	B—6SH	Rc3/8 female thread	Stainless steel used for rust prevention.
B—9	72	B—9J	R1/2 male thread	B—9H	Rc3/8 female thread	
B—9S	72	B—9SJ	R1/2 male thread	B—9SH	Rc3/8 female thread	Stainless steel used for rust prevention.
B—12	72	B—12J	R1/2 male thread	B—12H	Rc1/2 female thread	
B—16	72	B—16J	R3/4 male thread	B—16H	Rc3/4 female thread	

Note) Available for combination B6-JG & B-6H.

Dimension chart

Items / Model		Dimension (mm)				Clamping width		O-ring, B-ring	Weight approx. (kg)	
		A	B	C	D	Jack side	Hose side		Jack side	Hose side
B—10		86.6	62.6	40	36.95	25.4	32	NBR PTFE	0.23	0.12
B—6	J	83	59	48	30	15	24	NBR PTFE	0.12	0.12
	JG									
B—6 (S)		83	59	48	30	15	24	NBR PTFE	0.12	0.12
B—9、B—9(S)		86	64	46	37	21	26	NBR PTFE	0.34	0.22
B—12		95	67	45	44	27	27	NBR PTFE	0.46	0.34
B—16		88	71.2	36	45	26	38	NBR(HS90°) PTFE	0.55	0.52

Standard Accessories

C-type quick-lock couplers

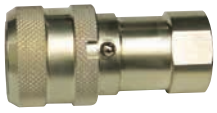
Model number C — 6 — J
C-type
Port diameter (mm)
Jack side (J), Hose side (H)

Features

- Working pressure is 72MPa.
- Quick connect couplers are easy to operate, making them ideal for a wide range of applications.
- No oil leakage when disconnecting.
- Equipped with a locking system to prevent disonnections during use.

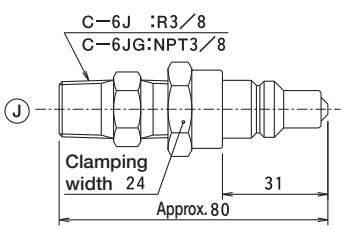
Jack side

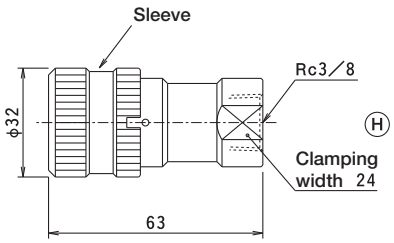
Hose side



C—6

Dimensional drawing



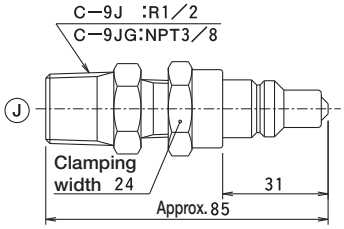


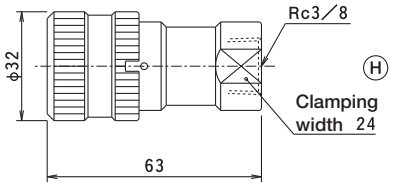
Jack side

Hose side

C—9

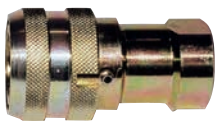
Dimensional drawing





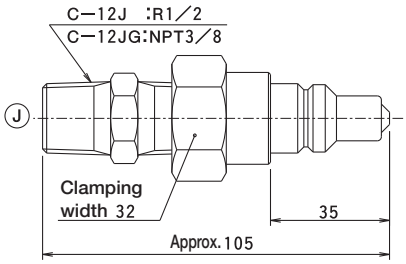
Jack side

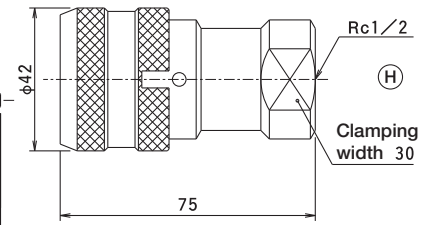
Hose side



C—12

Dimensional drawing





Specifications

Items / Model	Max. working pressure (MPa)	Jack side (J)		Hose side (H)		Applicable jacks	Applicable pumps
		Model	Connection thread	Model	Connection thread		
C—6	72	C—6J	R3/8	C—6H	Rc3/8	All items for O.J. Power Jack	All items for hand pumps All items for electric pumps
		C—6JG	NPT3/8				
C—9	72	C—9J	R1/2	C—9H	Rc3/8		
		C—9JG	NPT3/8				
C—12	72	C—12J	R1/2	C—12H	Rc1/2		
		C—12JG	NPT3/8				

Note) C-6 is combined with one set between C-6J for jack and C-6H for hose. (As well C-9, C-12)

How to operate

- How to connect

(1) Pull back collar on hose coupler and insert it into the jack coupler.
(2) After inserting, let go of the collar and the couplers are connected.
(3) Turn the collar 90° to activate the lock.
(4) Always lock the coupler after connecting.

- How to disconnect

(1) Release lock.
(2) While pulling the collar back, pull out the hose coupler.
Notes. ① Do not pressurize a hose without connecting it to a jack.
② Release any residual hydraulic pressure before connecting or disconneting couplers.

O.J. Standard Accessories

Model number RH6 — 2 ※ ※ ※ ※ K

- RH: Rubber hose / NH: Nylon hose
- Hose length (m)
- No mark : no coupler this side / B: B coupler, C: C coupler
- No mark: H side; J: J side
- B: B coupler C: C coupler / No mark: one side has no coupler
- No mark: H side; J: J side
- Protective cap: No mark: No wire / K: With wire

High-pressure rubber hoses

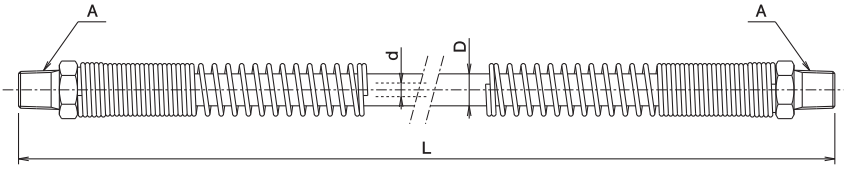
• Usable fluid : General mineral oil.

Features

Both ends have metal R fittings with male threads.

High pressure rubber hose RH

Dimensional drawing



• Fitting weight includes both springs.

Specifications

Items / Model	Max. working pressure (MPa)	Max. oil flow (ℓ/min)	Connection thread	Dimension (mm) Min. bend radius	Inside diameter φd	Outside diameter φD	A	Weight approx. (kg) Hose (kg/m)	Metal fitting
RH6N	72	8	B-10H, B-10J	90	6.3	15	NPT3/8	0.45	0.6
RH6		8	B-6H, B-6J C-6H, C-6J	90	6.3	16.7	R3/8	0.45	0.6
RH9		20	B-9H, B-9J C-9H, C-9J	140	9.5	20.6	R3/8	0.65	0.7
RH12		40	B-12H, B-12J C-12H, C-12J	180	12.7	27.8	R1/2	1.36	0.8

Hose length

Hose type		Standard dimensions (m)		Special order hose length (m)
Rubber hose	RH6~12	L	1 2 3 4 5 10	0.3~20

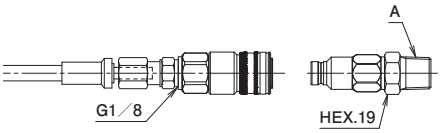
High-pressure nylon hoses

• Usable fluid: General mineral oil or phosphoric ester-base hydraulic fluid.

Features

• Both ends have metal R fittings with male threads.

High pressure nylon hose NH4

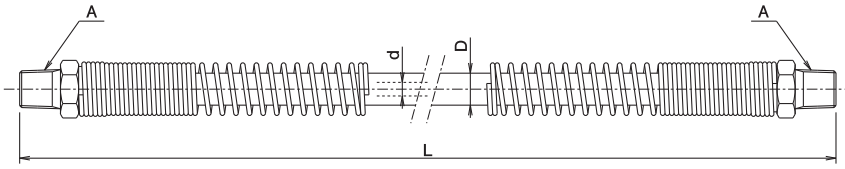


※Both ends of NH4 hose do not come with springs.
※If couplers are to be attached to NH4 hose, the couplers will be both male and female as 1 set.

• C-type couplers will only fit R3/8 or R1/2 threads (see A).

High pressure nylon hose NH5·NH8·NH11·NH15

Dimensional drawing



• Fitting weight includes both springs.

Specifications

Items / Model	Max. working pressure (MPa)	Max. oil flow (ℓ/min)	Connection thread	Dimension (mm) Min. bend radius	Inside diameter φd	Outside diameter φD	A	Weight approx. (kg) Hose (kg/m)	Metal fitting
NH4	72	2	Coupler for NH4 hose use only	60	4	8	R3/8	0.04	0.5
NH5	100	8	B-6H, B-6J C-6H, C-6J	60	6.3	13.0	R3/8	0.31	0.5
NH8	72	20	B-9H, B-9J C-9H, C-9J	85	8.2	14.1	R3/8	0.32	0.6
NH11		40	B-12H, B-12J C-12H, C-12J	140	12.8	20.4	R1/2	0.54	1.2
NH15		80	B-16H, B-16J	225	16.3	25	R3/4	1.05	1.6

Hose length

Hose type		Standard dimensions (m)		Special order hose length (m)
Nylon hose	NH4~15	L	1 2 3 4 5 10	0.3~20

O.J. Standard Accessories

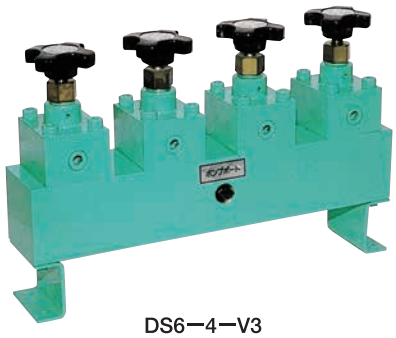
Manifolds

Model number: DS 6 — 2 — V1

- Manifold: DS: Single, DW: Double
- Port diameter: φ6、φ9、φ12
- Number of jack connections
- V0: Without stop valve, V1: With OSV-6A, V2: With OSV-6B, V3: With OSV-6G, V4: With OSV-9A, V5: With OSV-12A

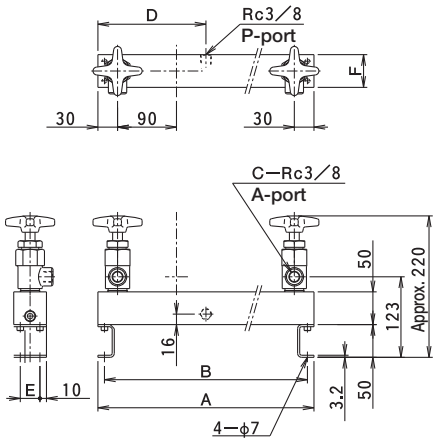
Features

- Designed to operate multiple jacks or hydraulic tools, simultaneously or individually, with only one pump.
  Single-acting (DS) and double-acting (DW) manifolds are available.



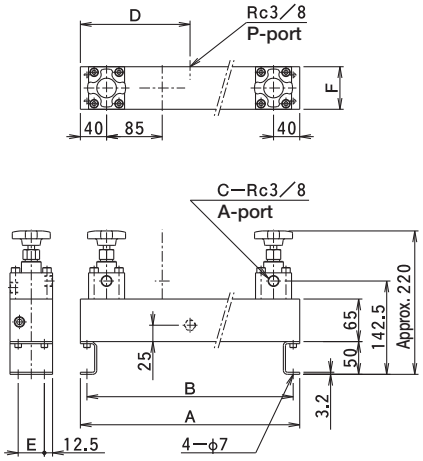
DS6—4—V3

Dimensional drawing



DS6—※—V1

Dimensional drawing



DS6—※—V3

Dimension chart

(unit: mm)

Model \ Dimension	A	B	C	D	E	F
DS6—2—V1	150	130	2	75	30	50
DS6—3—V1	240	220	3	75	30	50
DS6—4—V1	330	310	4	165	30	50
DS6—5—V1	420	400	5	165	30	50

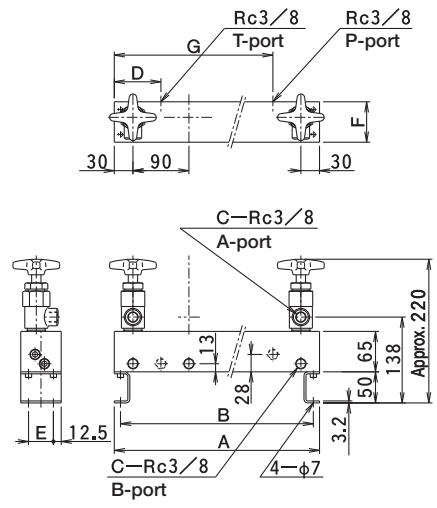
Dimension chart

(unit: mm)

Model \ Dimension	A	B	C	D	E	F
DS6—2—V3	165	145	2	82.5	40	65
DS6—3—V3	250	230	3	125	40	65
DS6—4—V3	335	315	4	167.5	40	65
DS6—5—V3	420	400	5	210	40	65
DS6—6—V3	505	485	6	252.5	40	65

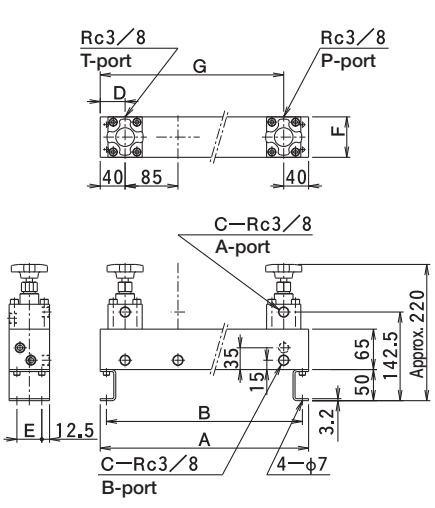
DW6—4—V3

Dimensional drawing



DW6—※—V1

Dimensional drawing



DW6—※—V3

Dimension chart

(unit: mm)

Model \ Dimension	A	B	C	D	E	F	G
DW6—2—V1	150	130	2	55	40	65	95
DW6—3—V1	240	220	3	75	40	65	165
DW6—4—V1	330	310	4	75	40	65	255
DW6—5—V1	420	400	5	75	40	65	345

Dimension chart

(unit: mm)

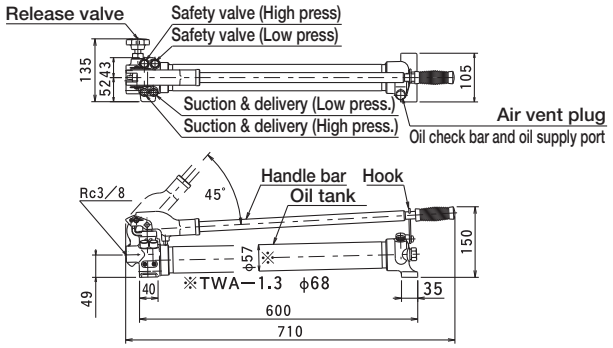
Model \ Dimension	A	B	C	D	E	F	G
DW6—2—V3	165	145	2	40	40	65	125
DW6—3—V3	250	230	3	40	40	65	210
DW6—4—V3	335	315	4	125	40	65	210
DW6—5—V3	420	400	5	125	40	65	295
DW6—6—V3	505	485	6	210	40	65	295

TWAX Hand Pumps

for single-acting jacks

Model number: TWA X — 1.3
- Hand pump
- Pressure: 100MPa
- Usable oil volume (ℓ)

TWAX—1.3



Specifications

Items / Model	Usable oil volume (ℓ)	Working pressure MPa		Oil delivery (mℓ/stroke)		Connection port	Weight approx. (kg)
		High	Low	High	Low		
TWAX—0.9	0.9	100	3	2	11	Rc3/8	7.8
TWAX—1.3	1.3						8.5

Note) ①Use ISO VG10 hydraulic working oil or equivalent. ②For double-acting jack type is available upon request.

XEX Compact Electric Pumps

for single-acting jacks

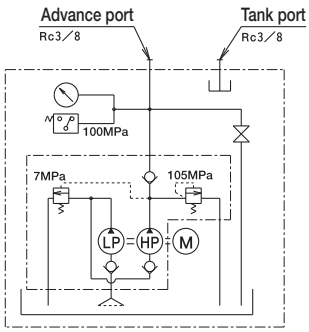
Model number: XEX — 2 J G
- XEX-type pump
- Usable oil volume (L)
- J : Release valve
- G: With pressure gauge
- S: With pressure switch
- GS: With pressure gauge & pressure switch

Application

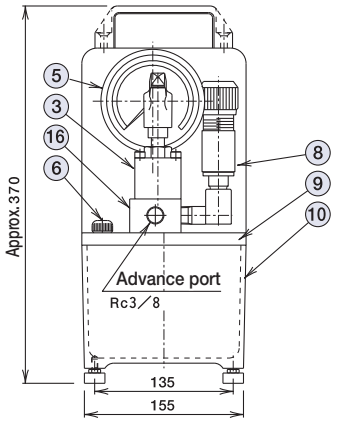
- Ideal as a hydraulic power source when installing or working on marine engines.
- A compact, lightweight pump for 220V power sources.

XEX—2JGS

Hydraulic circuit diagram



Dimensional drawing



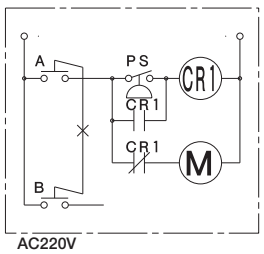
How to operate

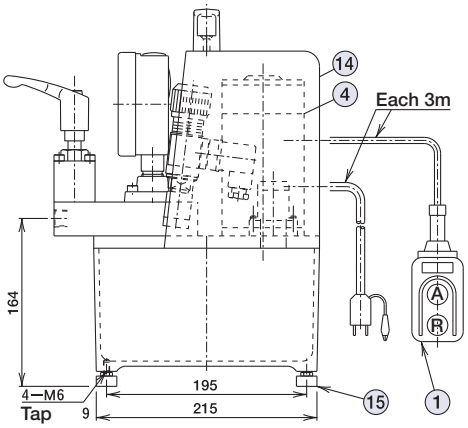
- Close release valve, then press the 'A' button to start the motor and deliver the oil.
- When you release the 'A' button, the motor will stop.
  The jack will remain pressurized and stay in its current position.
- Open the release valve to allow the jack to return.

Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Operation switch	1	8	Pressure switch	1
3	Release valve	1	9	Plate	1
4	Motor	1	10	Oil tank	1
5	Pressure gauge	1	14	Cover	1
6	Air vent plug (Oil supply port)	1	15	Rubber feet	1
			16	Port Block	1

Electric circuit diagram





Specifications

Items / Model	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor		Oil (ℓ)		Weight approx. (kg)	Connection port
	High	Low	High	Low	Capa (kW)	Voltage (V)	Usable	Required		
XEX—2JGS	100	7	0.15	2	0.35	Single ph.220V	2	2.5	15	Rc3/8

Notes.① Oil delivery for 50Hz is the same as 60Hz. ②Working oil: ISO-L-HV-VG15. ③For double-acting jack type is available upon request.

GX-type Electric Pumps

for single-acting jacks

Model number GX 1 — J A 3.8
- GX type
- Horsepower
- J: Release valve
- A: With stepdown transformer
  B: Without step-down transformer
- Voltage

Application

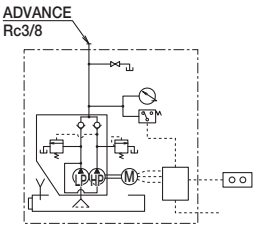
- Ideal as a hydraulic power source when installing or working on marine engines.

How to operate

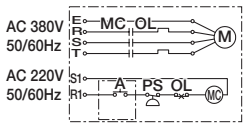
- Close release valve, then press the 'A' button to start the motor and deliver the oil.
- When you release the 'A' button, the motor will stop. The jack will remain pressurized and stay in its current position.
- Open the release valve to allow the jack to return.

GX1

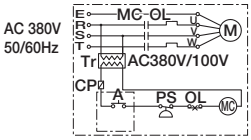
Electric circuit diagram



Electric circuit diagram



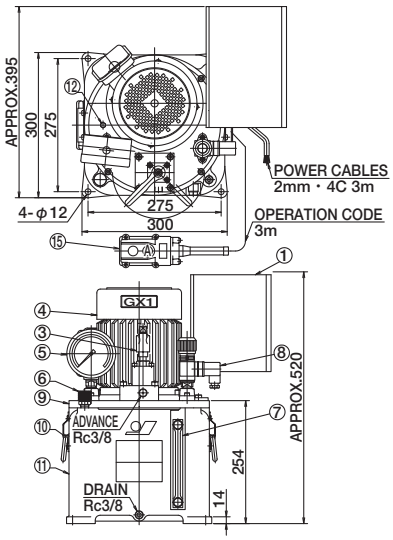
Electric circuit diagram with step-down transformer



Option

- Pressure Gauge, PGO—100X1200
- Step-down transformer

Dimensional drawing with step-down transformer



Specifications

Model \ Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)					Oil (ℓ)		Weight approx.(kg)
	High	Low	High	Low	Capa (kW)	Insu	Pole	Rpm	Voltage	Usable	Required	
GX1—J※※	100	7	0.4 / 0.33	3.0 / 2.5	0.75	E	4	1800 / 1500	3 ph. 380V	10	14	52

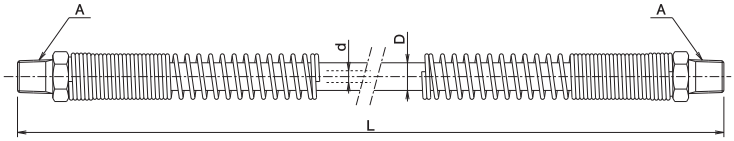
Notes. ① Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. ② Voltage available on request
③ Motor is 120% load at 60Hz.

Accessories (100MPa)

Nylon hoses

Model number NH — 2 C ※ C ※
- Nylon hose for 100MPa
- Hose length (m)
- Quick coupler for 100MPa
- No mark; H side J: J side
- Quick coupler for 100MPa
- No mark; H side J: J side

Dimensional drawing



Specifications

Model \ Items	Max. working pressure (MPa)	Max. oil flow (ℓ/min)	Connection Coupler	Dimension (mm)				Weight approx. (kg)	
				Min. bend radius	Inside diameter φ d	Outside diameter φ D	A	Hose (kg/m)	Metal fittings
NH5	100	8	CX—6H CX—6J	60	6.3	13.0	R3/8	0.31	0.5

Hose length

Hose model		Standard length (m)		Special order hose length (m)
Nylon hose	NH5	L	1 2 3 4 5 10	0.3~20

Quick couplers

Jack side Hose side

Model number CX — 6 J
- CX-type
- Port diameter (mm)
- J: Jack side H: Hose side

Specifications

Model \ Items	Max. working pressure (MPa)	Jack side (J)		Hose side (H)		Remarks
		Model	Connection thread	Model	Connection thread	
CX—6	100	CX—6J	R3/8	CX—6H	Rc3/8	100MPa equipment

Z type Power Jacks

S (Spring return) type

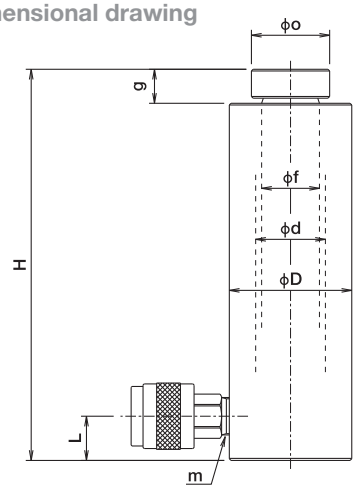
Model number: Z 30 S 10
- Z type
- Capacity (ton)
- Spring return (S)
- Stroke (cm)

Features

- Piston rod is plated with hard chrome.
- Special steel was used to make every part, allowing the jack to be lightweight and compact.
- Used in precision molding presses, nuclear power plants, shipyards, diamond processing, and other super-high pressure applications.
- Allowable lateral load is 50% of lifting capacity.

Z25S10

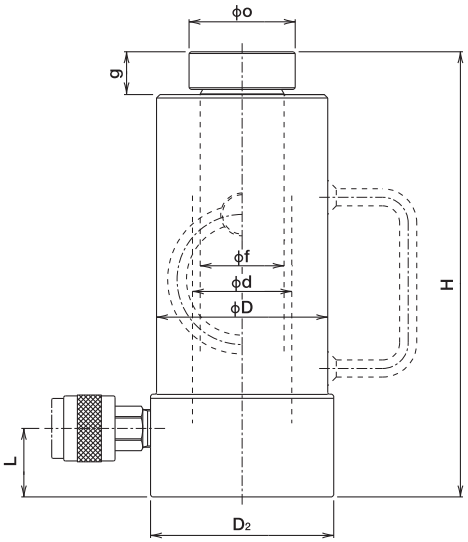
Dimensional drawing



Applicable models
Z25S5
Z25S10

Z100S20

Dimensional drawing



Applicable models
Z30S5～Z150S5
※Z100S20
(With carry ring)
Z150S5
(With handle)

Specifications

Items \ Model	Unit	Z25S5	Z25S10	Z30S5	Z50S5	Z50S10	Z50S20	Z75S5	Z100S5	Z100S10	Z100S20	Z150S5
Capacity	kN(ton)	250(25)		300(30)	500(50)			750(75)	1000(100)			1500(150)
Stroke	mm	50	100	50	50	100	200	50	50	100	200	50
Closed height (H)	mm	170	230	170	190	260	380	200	200	280	420	230
Cyl. outer dia. (D)	mm	72		85	100			112	127	130		160
Cyl. bore dia. (d)	mm	41		45	58			70	80			100
Cyl. effective area	cm^2	13.20		15.90	26.42			38.48	50.27			78.54
Oil capacity	mℓ	66	132	80	128	265	530	193	252	503	1010	393
Weight approx.	kg	5	7	8	11	15	22	15	16.5	26	40	32
Rod dia. (f)	mm	34		38	49			59	66			84
Head dia. (o)	mm	46		50	62			75	85			105
(g)	mm	20		23	25			33	35			38
Port size (m)	—	M22×1.5										
Height to coupler (L)	mm	26		32	34	40		35	37	45		54
Pumps applicable: Hand pump		TWAZ−0.7									TWAZ−1.3	TWAZ−0.7
Pumps applicable: Electric pump		VZ2 or VZ5										
Included coupler		BZ−4J										

Z type Power Jacks

H (Hydraulic return) type

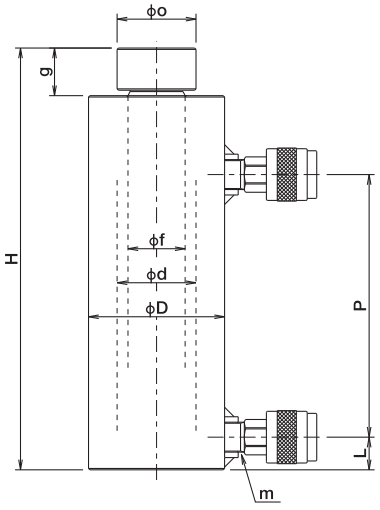
Model number: Z | 30 | H | 10
- Z type
- Capacity (ton)
- Hydraulic return (H)
- Stroke (cm)

Features

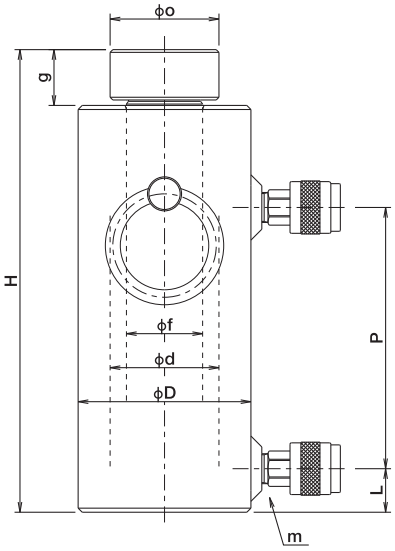
- Piston rod is plated with hard chrome.
- Special steel was used to make every part, allowing the jack to be lightweight and compact.
- Used in precision molding presses, nuclear power plants, shipyards, diamond processing, and other super-high pressure applications.
- Returns by hydraulic pressure.
- Allowable lateral load is 50% of lifting capacity.

Z50H15

Z100H15



Applicable models
Z30H10
Z50H15



Applicable models
Z75H15～Z500H20

Specifications

Items \ Model	Unit	Z30H10	Z50H15	Z75H15	Z100H10	Z100H15	Z150H10	Z150H15	Z200H5	Z200H10	Z200H15	Z200H20	Z250H20	Z300H20	Z500H20
Capacity	kN(ton)	300(30)	500(50)	750(75)	1000(100)		1500(150)		2000(200)				2500(250)	3000(300)	5000(500)
Stroke	mm	100	150	150	100	150	100	150	50	100	150	200	200	200	200
Closed height (H)	mm	240	310	330	290	340	320	370	290	340	390	440	445	460	540
Cyl. outer dia. (D)	mm	85	100	112	127		160		185				210	225	290
Cyl. bore dia. (d)	mm	45	58	70	80		100		115				130	140	180
Cyl. effective area	cm²	15.90	26.42	38.48	50.27		78.54		103.87				132.73	153.94	254.47
Oil capacity	mℓ	160	400	580	503	754	786	1,180	520	1,040	1,560	2,100	2,660	3,080	5,100
Weight approx.	kg	9	17	24	25	28	44	52	56	66	75	85	105	125	240
Rod dia. (f)	mm	33.25	42	50	56		71		85				95	102	130
Head dia. (o)	mm	45	58	70	80		100		115				130	140	170
(g)	mm	23	35	37	41		45		48				50	52	60
Port size (m)	—	M22×1.5													
Height to coupler (L)	mm	24		30	32		38		40				45	50	70
Distance between ports (P)	mm	139	193	193	142	192	147	197	97	147	197	247	250	250	262
Pumps applicable: Hand pump		TWAZ−0.7P			TWAZ−1.3P		TWAZ-2.3P		TWAZ-0.7P	TWAZ-1.3P	TWAZ−2.3P		—	—	—
Pumps applicable: Electric pump		VZ2 or VZ5													
Included coupler		BZ−4J													

Note) TWAZ-※P pumps require a manual, directional control valve.

Z type Low Profile Jacks

G (Gravity return) type

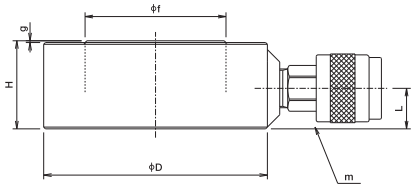
Model number: Z 75 G 1
- Z: 200MPa Low profile
- 75: Capacity (ton)
- G: Gravity return
- 1: Stroke (cm)

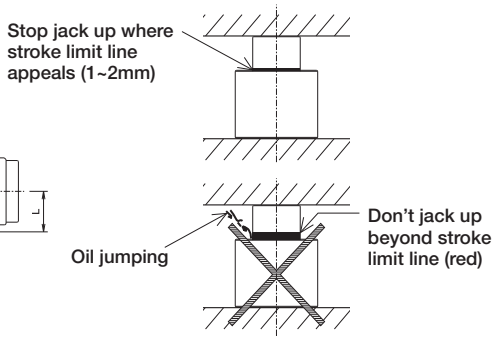
Features

- Outer force is required when piston rod returns.
- Light-weight, compact type used special steel to each parts.
- Applicable for propeller setting.
- Take care that piston has no stopper.
- Piston rod may fall down when it turns up-side down.

Z100G1

Dimensional drawing





Specifications

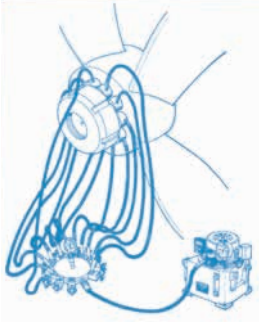
Items	Unit	Z75G1	Z100G1	Z150G1	Z200G1
Capacity	kN(ton)	750(75)	1000(100)	1500(150)	2000(200)
Stroke	mm	10	10	10	10
Closed height (H)	mm	50	50	55	60
Cyl. outer dia. (D)	mm	112	127	160	185
Cyl. bore dia. (d)	mm	70	80	100	115
Rod dia. (f)	mm	70	80	100	115
Cyl. effective area	cm^2	38.48	50.27	78.54	103.87
Oil capacity	mℓ	39	51	79	104
Weight approx.	kg	4	5	8	12
	mm	1	1	1	1
Port size (m)	—	M22 × 1.5			
Height to coupler (L)	mm	23	23	24	28
Pumps applicable		TWAZ−0.7			
Included coupler		BZ−4J			
Required outer force	kN	0.4	0.5	0.8	1.05

Propeller Setting Machines

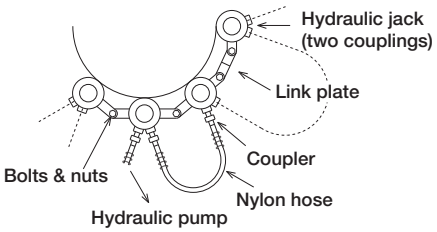
Model number: PPA — 100 G 1 — 10
- PPA: Propeller setting machine
- 100: Capacity (ton)
- G: Gravity return (G)
- 1: Stroke (cm)
- 10: Number of jack

- This equipment is applied for both press-in and extraction of propeller to and from shaft. Following sketch is shown to press in propeller shaft which hydraulic jacks are set. According to propeller size or its setting way, arrangement of jacks can be changed. Also piping arrangement can be made as kind of vessels.

※Contact us for specific in detail.



Reference

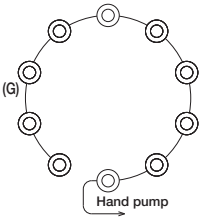


Piping

Hydraulic jack
Capacity ··· 1000kN
Q'ty ··· 10 units
Model ··· Gravity return (G)
Stroke ··· 10mm
Closed height ··· 50mm
Max. usable pressure ··· 200MPa

Hand pump
Type TWAZ−2.3

Piping
Series piping

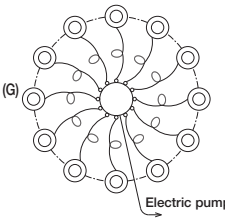


Series piping

Hydraulic jack
Capacity ···· 2000kN
Q'ty ···· 12 units
Model ···· Gravity return (G)
Stroke ···· 10mm
Closed height ···· 60mm
Max. usable pressure ···· 200MPa

Electric pump
Type VZ2−GS

Piping
Parallel piping with manifolds

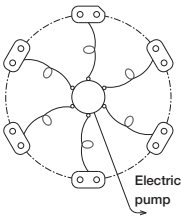


Parallel piping of single-acting jacks with manifolds

Hydraulic jack
Capacity ···· 2000kN (Two 1000kN jacks)
Q'ty ···· 6 units
Model ···· Spring return (S)
Stroke ···· 20mm
Closed height ···· 130mm
Max. usable pressure ···· 70MPa

Electric pump
Type QH1−DS

Piping
Parallel piping with manifolds



Parallel piping of twin-type jacks with manifolds

ZR Type Ultraslim Power Jacks

G (Gravity return) type

Model number: ZR | 100 | G | 1 — A1 | B1

- ZR Type
- Capacity (ton)
- Gravity return (G)
- Stroke (cm)
- Tilting angle
- Bushing

Features

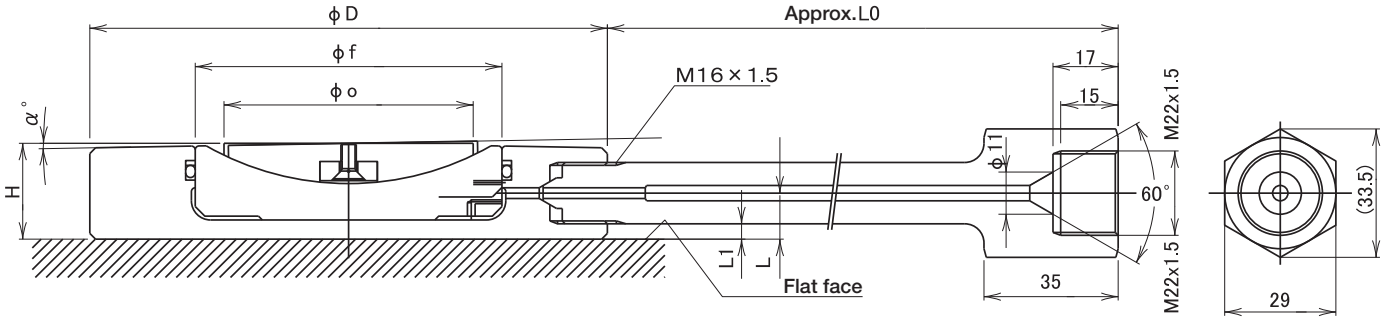
- Available for installation of marine engine.
- Outer force is required when piston rod returns.
- When being above limitation of stroke, alarm works to spatter around here with working oil from Jack.
  In case of working alarm, take care that seals are broken and cannot use. (Replacement seals are available.)
- Piston rod may fall out when turned up-side down.
- Make sure to place Jack on flat face and use the jack.
  If not flat on ground surface of jack, bottom of jack may become deformed.
- Applicable for the inclination of load face.
- Tilting degree can hold regardless of stroke position.
- Applicable for attached couplings for 200MPa.

How to select

- Based on model number, decide model in following procedure.

①Select Jack model in accordance with Jack select chart.
②Select tilting degree in accordance with tilting degree required.
③Select bushing length in accordance with bushing required.

Dimensional drawing



Specifications

Items / Unit / Model	Capacity	Stroke	Working Pressure	Test Pressure	Required Oil Volume	Mass (Jack)	Dimension (mm)										
							H			D	f	o	L	L1		Long Bushing L0 (Mass Approx. kg)	
							Head Inclination Degree (a°)										
	KN (ton)	mm	Approx. MPa	MPa	Approx. mL	Approx. kg	1°	2°	3°								
ZR100G0.5	1000	5	199	200	25	2.8	25	26	27.5	135	80	65	12	4		105 (0.3)	205 (0.4)	305 (0.6)
ZR100G1	(100)	10			51	3.4	30	31	32.5									
ZR200G0.5	2000	5	193		52	6.2	28	29.5	31	190	115	94	13	5				
ZR200G1	(200)	10			104	7.3	33	34.5	36									