



## MECHANICAL & HYDRAULIC

# JACKS



HYDRAULIC  
HAND PUMP

NEX-TYPE  
HYDRAULIC PUMP



G-TYPE  
HYDRAULIC PUMP

HYDRAULIC JACK



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## 1. Warranty

We shall warrant our products for one year after delivery from our factory.

In case there are some defects and damages from our workmanship and materials for which we are responsible during warranty period, we shall provide free replacement, or parts thereof and /or repairing of products.

Provided however, we shall be free from any damages and accidents resulting from wrong use, abuse and improper repairing.

In no event we shall be liable for indirect, incidental and consequential damages and/or loss of profits arising out of or in connection with the sale, use or performance of products.

Following items are regarded as out of our scope of warranty.

1. In case supplied products are used beyond our specifications and conditions agreed upon between our company and customers.
2. In case of breakdown happened by such disaster as force majeure and illegal conduct by third person.
3. In case of alterations or repairing of supplied products carried out by customers or other than our appointed repair person.
4. In case of such damages happened according to elapse of time as paintings, natural peel-off of plating and rusting.
5. In case of breakdown due to insufficient management of maintenance as described in our instruction manual.
6. In case of damages caused by wrong use and operations.
7. Circumstances of noise and vibration, which are generally not regarded as effecting quality and performance of supplied products.
8. Seal packings and such consuming products

## Cautions and Warnings to safety instructions

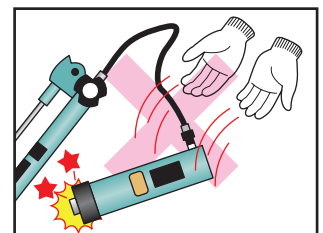
Read the manual carefully before operations and always keep manuals readable whenever necessary.

### 1. Cautions on how to choose equipment

- ① ⚠ Choose jack with enough capacity to lift load and use jack within 70~80% of max. load.
- ② ⚠ In case of connecting plural jacks, choose jack with enough capacity. (50~70% of jack Rated capacity.)
- ③ ⚠ If single acting jack used outdoors, inside of jack (some models) may get rusty causing malfunction of jack. In such case, inform to arrange inside plated of jack when ordering.
- ④ ⚠ In case of use jacks (E & ET type) at several ten thousand times with 70~80% of max. load, please consult us showing your use conditions.  
Attention must be paid that durability may be subject to use conditions. (spring and sealing packings are considered to be as consuming parts.)  
Also consult us for such application of jack with very high frequent use time.
- ⑤ ⚠ Scope of jack operating speed should be considered as follows.  
For general industries... less 300mm/sec at no load, 30mm/sec at load.  
For jacking up & down operations of heavy structures... less 5mm/sec normally approx.100mm/min
- ⑥ ⚠ Operate jack within the limit of stroke. (Avoid blowout of jack.)
- ⑦ ⚠ Select jack, pump, hose and fittings enough to endure max. system working pressure.
- ⑧ ⚠ For setting jack and pump, consider the circuit construction available for application.

### 2. Cautions to treat products

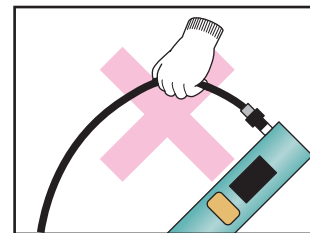
- ① ⚠ Take protection devices according to job circumstances to prevent injuries.
- ② ⚠ Pay attention to weight of equipment and postures to work and not to put your hands between materials or not to injure waist.
- ③ ⚠ Do not apply outer force to equipment to prevent them from bad operations, breakage, and oil leak.
- ④ ⚠ Wipe out oil leaked on floor or attached to equipment or machines before operation not to drop things or get slipped.



2-③

### 3. Cautions when mounting and dismantling equipment

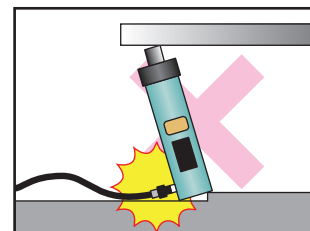
- ① ⚠ For such works as installing, dismantling and wiring arrangement must be carried out by some specialist. (licensed engineer or who experienced our service training.)
- ② ⚠ Before starting operations, make sure to turn off power source and motor and engine are being stopped. Also make sure no residual pressure is left.
- ③ ⚠ Be sure to do electric piping constructions after turned off power source.
- ④ ⚠ When connecting double acting jacks, do not block return circuit.
- ⑤ ⚠ Do not use oil hoses getting in danger of oil leak or bursting.
- ⑥ ⚠ Do not carry hydraulic equipment with having hoses by hands.
- ⑦ ⚠ Do not loosen pressurized coupling, plug and hose at pressure being advanced.



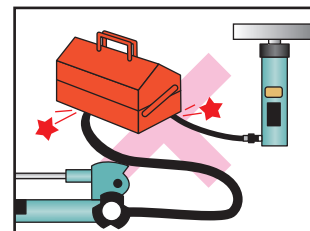
3-⑥

### 4. Cautions and Warnings when installing jack

- ① ⚠ Receive load vertically in the center of jack and install jack on solid base and properly support the jack to the direction of gravity.
- ② ⚠ When retaining load for long period, replace jack by cribbing or blocking and use jack with safety nut. Do not put yourself under load until safety device is secured.
- ③ ⚠ Take care of receiving pad durable enough proof load and of less elasticity deformation of pad so as to avoid any damage and falling down of jack.
- ④ ⚠ Receive load equally with entire area of head and bottom and if necessary install swivel nut (inclination head) on top of jack.
- ⑤ ⚠ Install jack on solid base and properly support the jack. Care must be taken not to receive wind, outer force, shock and vibration.
- ⑥ ⚠ Do not apply slant load or shock load to jack and do not apply lateral force to jack to avoid falling down of jack. Arrange protective device for fear jack may have a fall.
- ⑦ ⚠ Install relief valve on hydraulic pump to occur pressure not more than pressure equal to the rated load of jack.
- ⑧ ⚠ Install appropriate valves such as safety valve to prevent a fall or pilot check valve to avoid sudden falling by load in case piping is broken.
- ⑨ ⚠ Take enough care of contamination of working oil so that load retaining valve may be damaged its function by alien stuffs in working oil.
- ⑩ ⚠ Use friction material under the base and between jack and load to avoid slipping.
- ⑪ ⚠ Place jack, horse and fitting on to enough space and do not fall things on hoses. Avoid kink of hoses and do not use hoses around welding works or heating atmosphere.
- ⑫ ⚠ Operate equipment in safety position or secure enough space to do adjusting works. Avoid mounting jack where maintenance job is impossible.



4-④

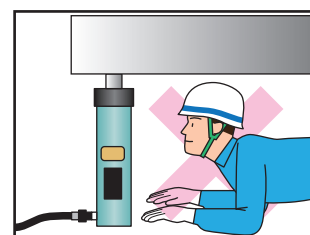


4-⑪

- ⑬ ⚠ Be sure to bleed air.
- ⑭ ⚠ High pressurized oil jumped from circuit may damage human skin causing serious wound.  
In case someone injured seriously due to jumped pressurized oil, take medical care immediately.
- ⑮ ⚠ Circumstance surrounded by operating jacks must be putting in order and keep job site from slippery area due to oil leak from connection and detaching couplings etc.
- ⑯ ⚠ Operation order of jacking up and down of heavy things must be confirmed before operations.
- ⑰ ⚠ Do not use damaged, remodeled and improper function jacks.
- ⑱ ⚠ Do not turn control valve to return circuit under load and jack may fall down suddenly in danger.  
Use flow control valve in the circuit to slow down jack.

## 5. Cautions and Warning during operations

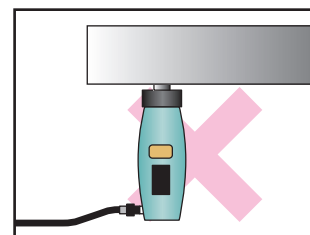
- ① ⚠ Do not use jack at explosive or burning circumstances in danger except jack was taken measures to stand such circumstances.
- ② ⚠ Install protection cover to rotary shaft of pump and motor to protect against involvement of hands and clothes.
- ③ ⚠ When unusual matters (oil leak and smoking) happened, stop operation and do necessary remedy at once.
- ④ ⚠ When start equipment for the first time, make sure that hydraulic circuit and electric circuit are in order and no loosening found in connection parts.
- ⑤ ⚠ Do not use manufacturing items except specifications mentioned in our catalog, drawing and spec sheet, otherwise it causes to make malfunction and injury.
- ⑥ ⚠ Use proper oil fluid and manage contamination degree by recommendation degree.
- ⑦ ⚠ Loosen air vent plug before operation of pump.
- ⑧ ⚠ Operate equipment at safety place away from the load.



5-⑧

## 6. Cautions and Warnings on use of plural jacks

- ① ⚠ In case of using plural jacks, unequal load may subject to happen. So choose jack enough capacity than actual rated capacity such as less than 50~70% of rated capacity.
- ② ⚠ Pay attention to parallel degree between head and bottom of jack. Fall of jacks may happen due to wrong lateral degree or deformation of jack. Arrange swivel bearing in case of need.
- ③ ⚠ Unbalance load may be subject to happen in jacking down operations that may cause damage of jack by overloading and falling down of jack by broken swivel bearing. So careful operations are required.
- ④ ⚠ Lateral movement of load supported by plural jacks is very dangerous. So, make sure to follow in accordance with determined operation order and instruction of experienced person.
- ⑤ ⚠ Monitor moving distance of jacks and follow the instruction of operator with watching total balance and gravity point of load.
- ⑥ ⚠ In case of using plural jacks, predetermine operation orders, signs of operation and command system before operation without failure.



6-①

## 7. Cautions and Warnings on maintenance management

- ① ⚠ Do not remodel equipment by yourselves. Unexpected movement may happen injury in danger.
- ② ⚠ Do not disassemble and reassemble equipment without notice, which may cause accident.  
These works must be carried out by technical specialist.
- ③ ⚠ In case of carrying and storing equipment, notice such environmental conditions as ambient temperature and moisture and arrange dust prevention and rust prevention.
- ④ ⚠ When storing equipment for long period, sealing packing are to be replaced.
- ⑤ ⚠ To keep jack in order, periodical check (once per month) is recommendable.

Cautions and Warnings mentioned here are not covering all.

Read instruction manual carefully and always consider safety first in operations.

Please consult us about speed beyond the scope of working speed.

- ⑥ ⚠ In case of high frequent use of jack, use stronger power jack.

- ⑦ ⚠ Environmental conditions
  - Use jack within the range of -5~40 degrees C.
  - Temperature used for packing in standard jack is -10~80 degrees C.
  - Standard jack is for indoor use. Consult with us when outside use.
  - Refer to the spec sheet for allowable side load.

# How to Choose Hydraulic Jack & Pump

## 1) Capacity of jack: Choose 20~30% bigger capacity than rated capacity.

- In case of using plural jacks, unbalanced load may take place, so select jack enough capacity.

## 2) Return system for single acting jack

- Spring return: Piston rod is returned by spring. So called "SR" type
- When top of piston rod is equipped with attachment or fittings in case of inverted use or lateral use of jack, returning may not easily be done.
- Gravity return: No spring built-in, some outer force is required to return piston rod.
- Gas return: Piston rod is returned by sealed "compressed air".

### Notices)

- According to piping lengths, piston rod may become hard or impossible to return.
- Return speed is not constant.
- No pulling force is available.

## 3) Return system for double acting jack

- Hydraulic return: Piston rod is returned by oil... So called "HR" type.
- Use when pulling force or fast return speed of jack are required.
- Applicable for inverted use or when top of piston rod equipped with attachment and fittings.
- Approximate pulling force is about 1/2 of pushing force. Refer to specs.

## 4) Cautions in use

- Jack can use at lengthwise, lateral, slant and inverted, but apply load vertically to jack.

## 5) Scope of working speed

- Max. 300mm/sec at no load, Max. 30mm/sec or less at on load.
- Appropriate up and down speed for heavy materials: 5mm/sec or less

### SI unit conversion table

Item	SI unit	Metric unit	Conversions
Mass (weight)	Kg	kgf	1kg = 1kgf
Force (load)	N	Kgf	1N = 0.102kgf 1kgf = 9.807N
Pressure	MPa	Kgf/cm <sup>2</sup>	1MPa = 10.2kgf/cm <sup>2</sup> 1kgf/cm <sup>2</sup> = 0.09807MPa
Torque	N·m	Kgf·m	1N·m = 0.102kgf·m 1kgf·m = 9.807N·m

# Typical Combination of Jack and Pump

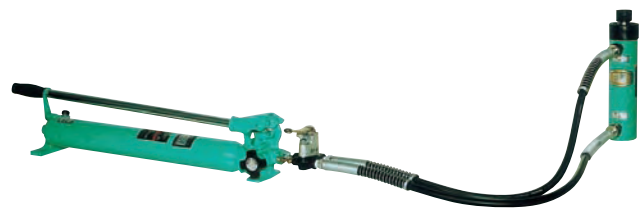
## ① Hand pump

Model	Item	Features	Suitable jack
TWA		Low & high pressure two stage pump	Single acting jack (spring & gravity return)
TSA		Single stage high pressure pump	
LTWA		Low & high pressure two stage pump made by aluminum	
TWAZ		200MPa low & high two stage pump	



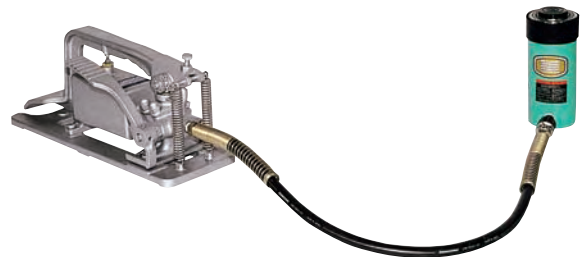
## ② Hand pump

Model	Item	Features	Suitable jack
TWAD		Low & high pressure two stage pump with control valve	Double acting jack (hydraulic return)



## ③ Foot pump

Model	Item	Features	Suitable jack
FPA		Foot operated pump	Single acting jack (spring & gravity return)



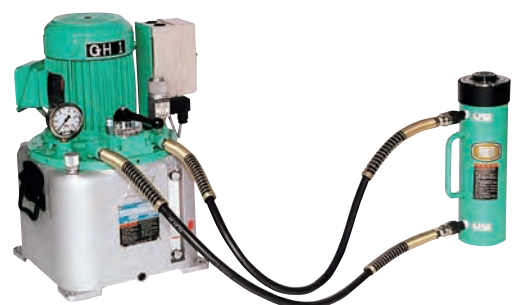
## ④ Air booster pump

Model	Item	Features	Suitable jack
GHA		Air driven pump	Single acting jack (spring & gravity return)



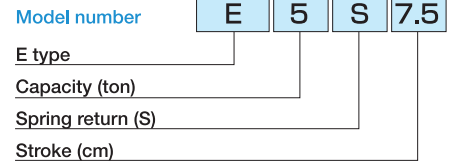
## ⑤ Motor pump

Model	Item	Features	Suitable jack
NEX		Light weight compact pump	Single acting jack (spring & gravity return)
G		0.4kW to 3.7kW	
A		5.5kW~15kW pump	Double acting jack (hydraulic return)
VZ		200MPa pump	



# E type Power Jack 50kN

## S (Spring return) type



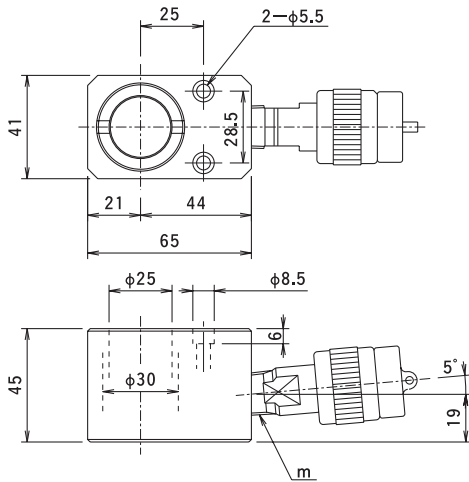
**Features**

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt (except E5S1.5).
- Saddle for insertable type, in case of use screwed type saddle, contact us.
- Use screwed type saddle when reverse use.
- Metric mounting threads in the base
- Metric mounting threads on cylinder collar
- Designed for light weight and compact type
- Allowable lateral load is 1/20 of lifting capacity.



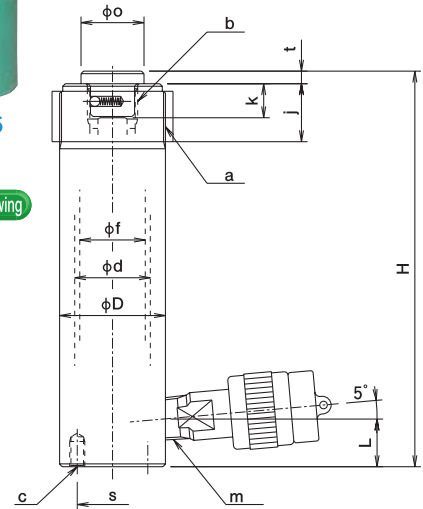
E5S1.5

Dimensional drawing



E5S7.5

Dimensional drawing



Applicable models  
E5S2.5 E5S7.5  
E5S12.7 E5S18

**Specifications**

Items	Model Unit	E5S1.5	E5S2.5	E5S7.5	E5S12.7	E5S18
Capacity	kN(tf)	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	cm <sup>2</sup>	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 Motor driven pump	TWA-0.3 or TWA-0.7 NEX-2 or GH1/2				
Included coupler		B-6JG				



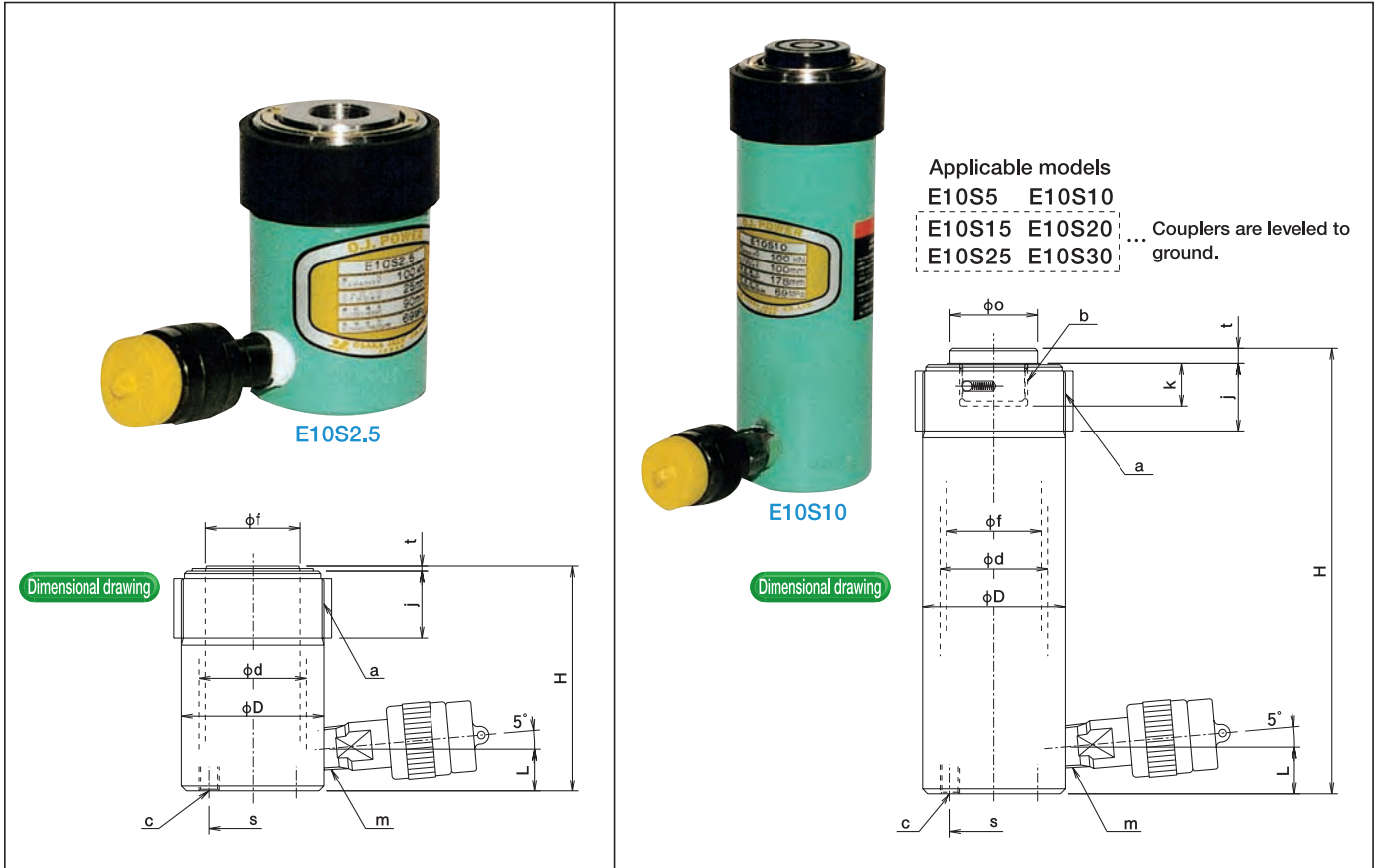
# E type Power Jack 100kN

## S (Spring return) type

Model number	<b>E</b>	<b>10</b>	<b>S</b>	<b>2.5</b>
E type				
Capacity (ton)				
Spring return (S)				
Stroke (cm)				

### Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Saddle for insertable type, in case of use screwed type saddle, contact us.
- Use screwed type saddle when reverse use.
- Metric mounting threads in the base
- Metric mounting threads on cylinder collar
- Designed for light weight and compact type
- Allowable lateral load is 1/20 of lifting capacity.



### Specifications

Items	Model Unit	E10S2.5	E10S5	E10S10	E10S15	E10S20	E10S25	E10S30	
Capacity	kN(tf)	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 <sup>2</sup>	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			
	Motor driven pump	NEX-2 or GH1/2							
Included coupler		B-6JG							

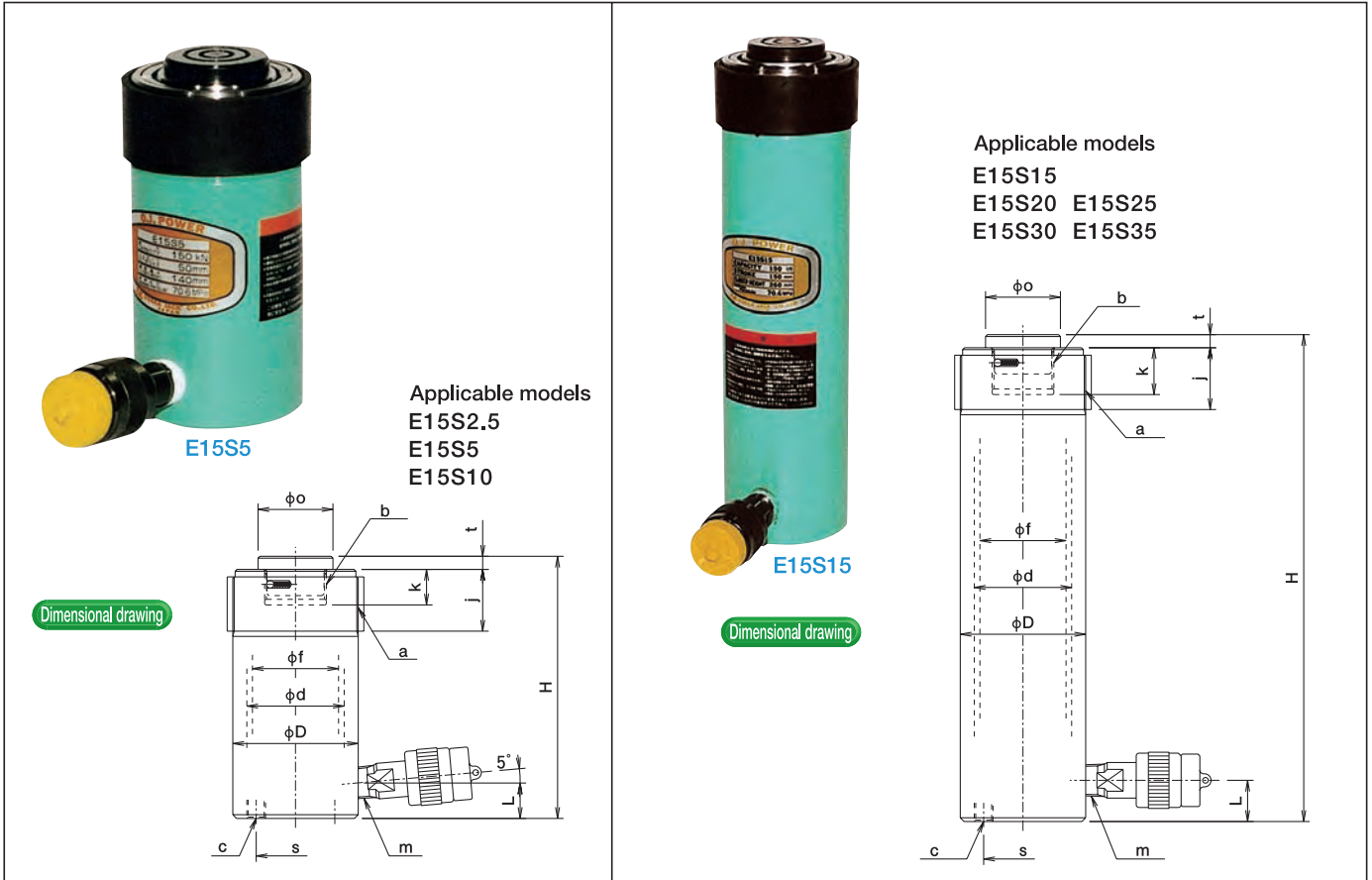
# E type Power Jack 150kN

## S (Spring return) type

Model number	<b>E</b>	<b>15</b>	<b>S</b>	<b>2.5</b>
E type				
Capacity (ton)				
Spring return (S)				
Stroke (cm)				

### Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Saddle for insertable type, in case of use screwed type saddle, contact us.
- Use screwed type saddle when reverse use.
- Metric mounting threads in the base
- Metric mounting threads on cylinder collar
- Designed for light weight and compact type
- Allowable lateral load is 1/20 of lifting capacity.



**TiD-extra**  
 d.o.o.  
 Industrial Technologies

### Specifications

Model		E15S2.5	E15S5	E15S10	E15S15	E15S20	E15S25	E15S30	E15S35	
Items	Unit									
Capacity	kN(tf)	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 <sup>2</sup>	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		
	Motor driven pump	NEX-2 or GH1/2								
Included coupler		B-6JG								

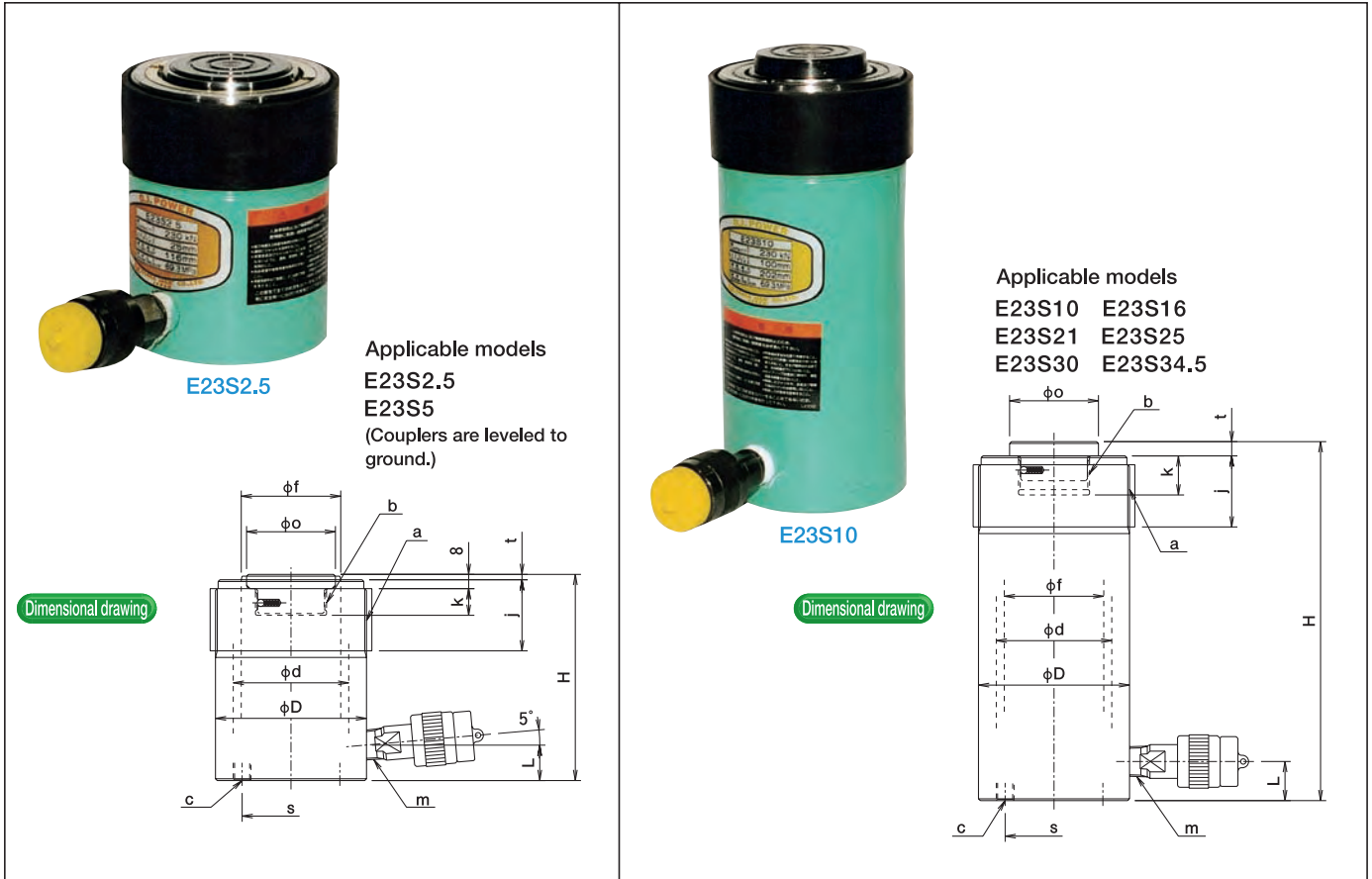
# E type Power Jack 230kN

## S (Spring return) type

Model number	<b>E</b>	<b>23</b>	<b>S</b>	<b>2.5</b>
E type				
Capacity (ton)				
Spring return (S)				
Stroke (cm)				

### Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Saddle for insertable type, in case of use screwed type saddle, contact us.
- Use screwed type saddle when reverse use.
- Metric mounting threads in the base
- Metric mounting threads on cylinder collar
- Designed for light weight and compact type
- Allowable lateral load is 1/20 of lifting capacity.

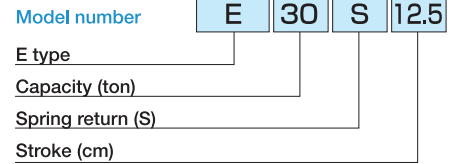


### Specifications

Items	Model Unit	E23S2.5	E23S5	E23S10	E23S16	E23S21	E23S25	E23S30	E23S34.5
Capacity	kN(tf)	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	cm <sup>2</sup>	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		
	Motor driven pump	NEX-2 or GH1/2							
Included coupler		B-6JG							

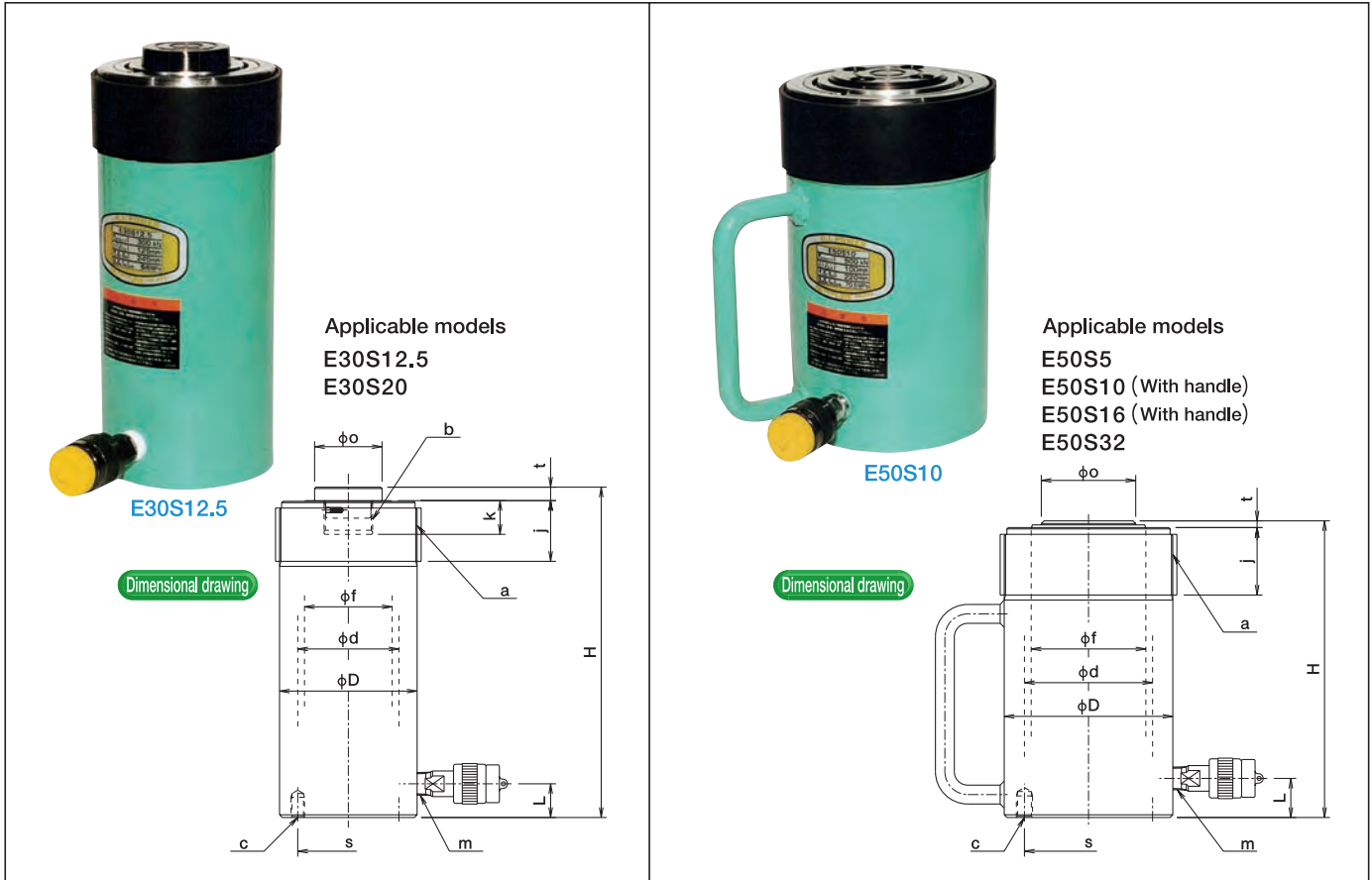
# E type Power Jack 300kN-500kN

## S (Spring return) type



**Features**

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- E30 is of built-in saddle type, E50 is of bolt mounting type.
- Use screwed type saddle when reverse use.
- Metric mounting threads in the base
- Metric mounting threads on cylinder collar
- Designed for light weight and compact type
- Allowable lateral load is 1/20 of lifting capacity.



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**Specifications**

Model		E30S12.5	E30S20	E50S5	E50S10	E50S16	E50S32
Items	Unit						
Capacity	kN(tf)	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	cm <sup>2</sup>	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-6
	Motor driven pump	NEX-2 or GH1/2		GH1			
Included coupler		B-6JG					

# E type Power Jack 700kN·1000kN

## S (Spring return) type

Model number	<b>E</b>	<b>70</b>	<b>S</b>	<b>15</b>
E type				
Capacity (ton)				
Spring return (S)				
Stroke (cm)				

### Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Saddle is bolt mounting type.
- Metric mounting threads in the base
- Metric mounting threads on cylinder collar
- Designed for light weight and compact type
- Allowable lateral load is 1/20 of lifting capacity.

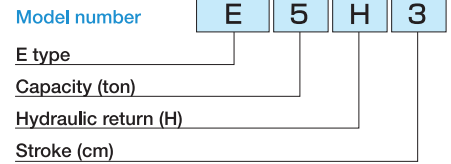


### Specifications

Items	Model Unit	E70S15	E70S33	E100S10	E100S20
Capacity	kN(tf)	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	cm <sup>2</sup>	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-2.3	TWA-6	TWA-2.3	TWA-6
	Motor driven pump	GH1			
Included coupler		B-6JG			

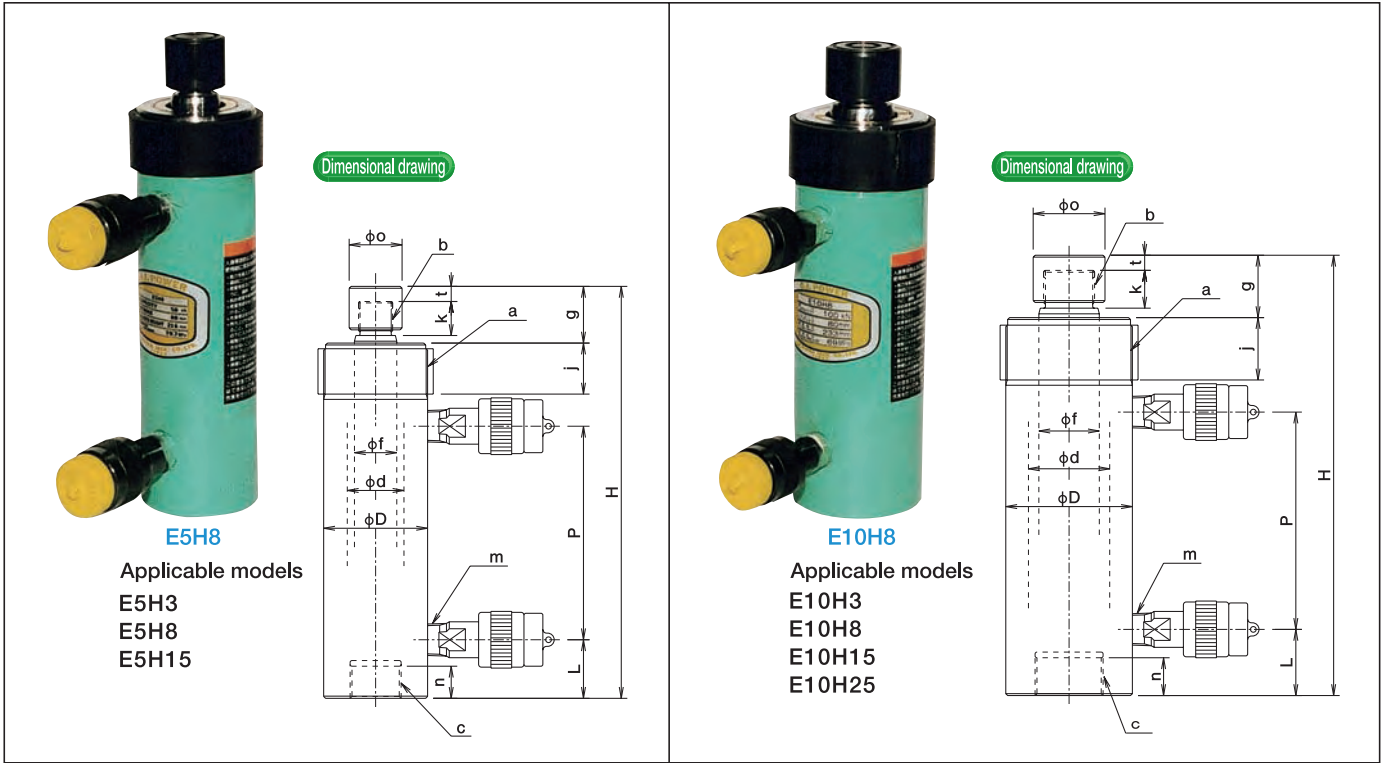
# E type Power Jack 50kN·100kN

## H (Hydraulic return) type



**Features**

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Dust cap included
- Hydraulic 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.

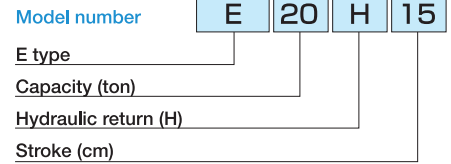


**Specifications**

Items	Model Unit	E5H3	E5H8	E5H15	E10H3	E10H8	E10H15	E10H25
Capacity	kN(tf)	50 (5)			100 (10)			
Pulling force	kN(tf)	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 <sup>2</sup>	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			
Length of between ports (P)	mm	63	113	183	65	115	185	285
Pumps applicable	Hand pump Motor driven pump	TWAD-0.9 NEX-2 or GH1/2, GH1						
Included coupler		B-6JG						

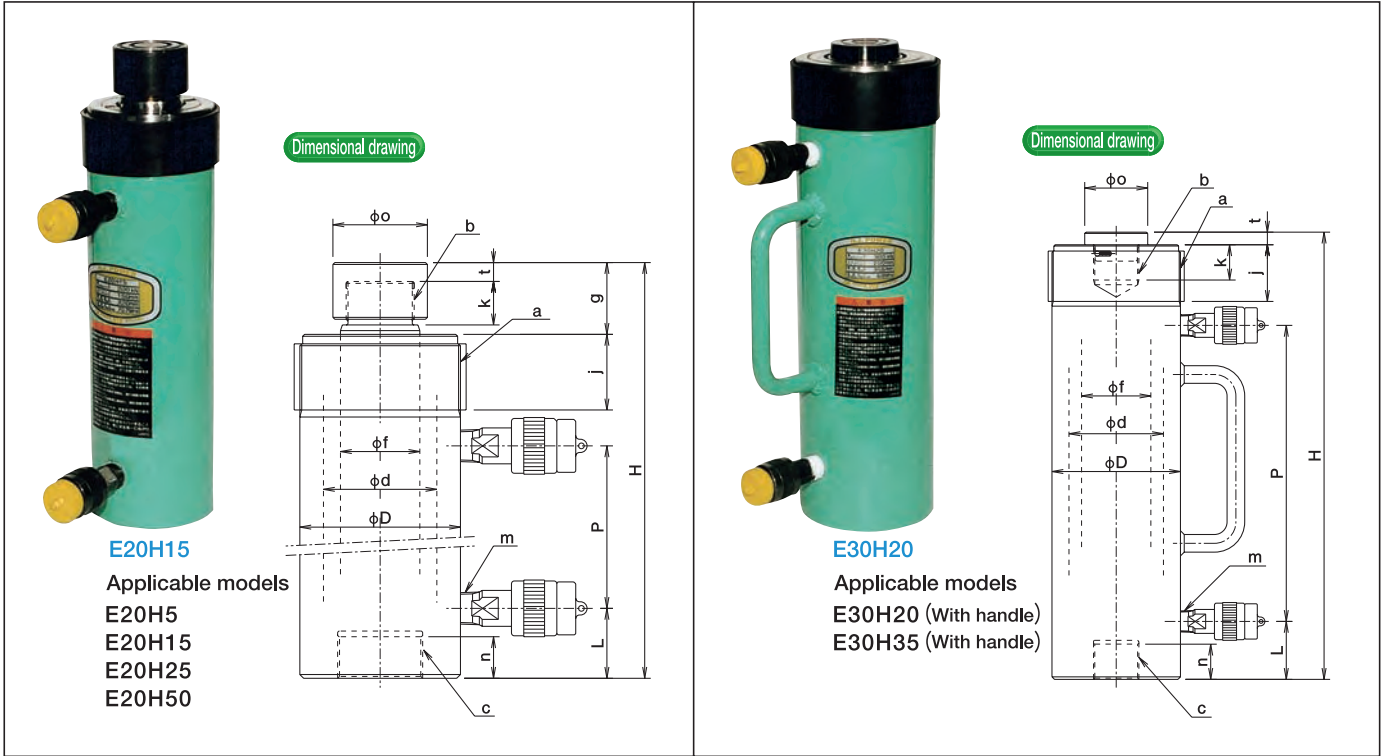
# E type Power Jack 200kN-300kN

## H (Hydraulic return) type



### Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Dust cap included for E20 E30, Saddle for insertable type. In case of use screwed type saddle, contact us.
- Use screwed type saddle when reverse use.
- Hydraulic 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.



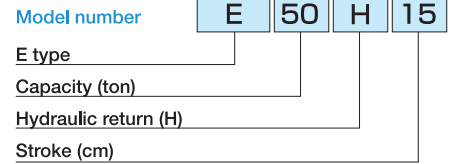
### Specifications

Items	Model Unit	E20H5	E20H15	E20H25	E20H50*	E30H20	E30H35
Capacity	kN(tf)	200 (20)				300 (30)	
Pulling force	kN(tf)	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 <sup>2</sup>	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	
Length of between ports (P)	mm	86	186	286	625	235	390
Pumps applicable	Hand pump	TWAD-0.9			TWAD-2.3	TWAD-1.3	TWAD-2.3
	Motor driven pump	NEX-2 or GH1/2, GH1					
Included coupler		B-6JG					

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

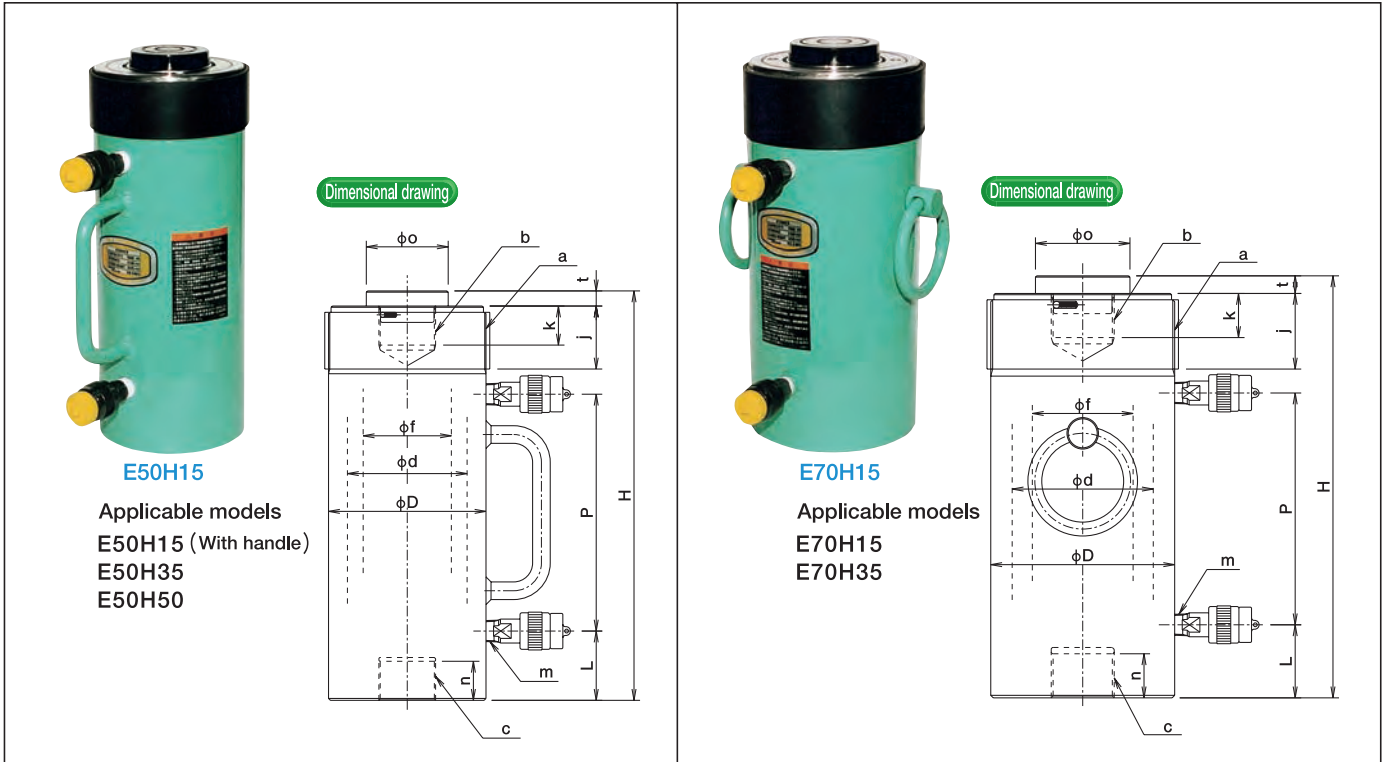
# E type Power Jack 500kN·700kN

## H (Hydraulic return) type



### Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Saddle for insertable type, in case of use screwed type saddle, contact us.
- Use screwed type saddle when reverse use.
- Hydraulic 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.



### Specifications

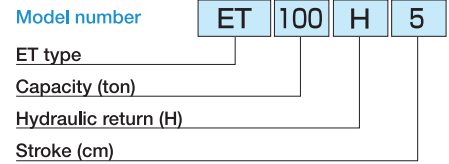
Items	Model Unit	E50H15	E50H35	E50H50*	E70H15	E70H35	E100H35	E200H35
Capacity	kN(tf)	500 (50)			700 (70)		1000 (100)	2000 (200)
Pulling force	kN(tf)	220 (22)			330 (33)		450 (45)	900 (90)
Stroke	mm	150	350	500	150	350		
Closed height (H)	mm	325	525	685	335	540	565	620
Cyl. outer dia. (D)	mm	125			146		180	250
Cyl. bore dia. (d)	mm	95			112		135	190
Cyl. effective area	cm <sup>2</sup>	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
Length of between ports (P)	mm	188	388	548	184	389	394	416
Pumps applicable	Hand pump	TWAD-2.3	TWAD-6				TWAD-8	—
	Motor driven pump	GH1, GH2, GH3-T2					GH2, GH3-T2	GH3, GH5-T2
Included coupler		B-6JG, B-9JG					Bushing + B-9J	

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



# ET type Power Jack 500kN·1000kN·2000kN

## H (Hydraulic return) type

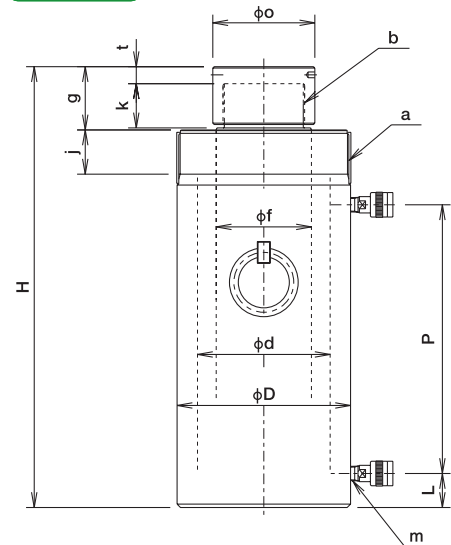


### Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Dust cap included
- Hydraulic 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).



Dimensional drawing



### Specifications

Items	Model		ET50H5	ET50H10	ET100H5	ET100H15	ET100H30	ET100H50 <sup>※1</sup>	ET200H15	ET200H30	ET200H50 <sup>※1</sup>	ET200H100 <sup>※2</sup>
	Unit											
Capacity	kN(tf)		500		1000 (100)				2000 (200)			
Pulling force	kN(tf)		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	cm <sup>2</sup>		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			
	mm		13		15				25			
	mm		48		68				93			
Port size (m)	—		Rc3/8		Rc1/2				Rc1/2			
Height to coupler (L)	mm		35		50		100		50		105	
Length of 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-2.3	TWAD-6	TWAD-8	TWAD-6	—	—	—
	Motor driven pump		GH1, GH2		GH2, GH3-T2			GH3, GH5-T2			GH5, GH5-T2	
Included coupler		B-6J		B-9J, B-12J				B-9J, B-12J				

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 Jack 3000kN·500kN·10000kN

## H (Hydraulic return) type

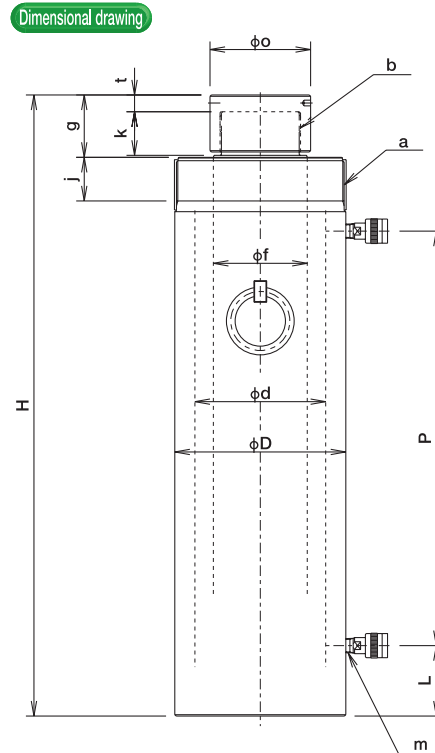
Model number	ET	300	H	30
ET type				
Capacity (ton)				
Hydraulic return (H)				
Stroke (cm)				

### Features

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Dust cap included
- Hydraulic 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



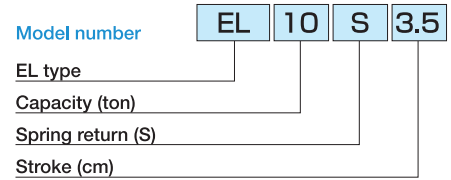
### Specifications

Items	Model Unit	ET300H30	ET300H50*1	ET300H100*2	ET500H30	ET500H50*1	ET500H100*2	ET1000H100*2
Capacity	kN(tf)	3000 (300)			5000 (500)			10000 (1000)
Pulling force	kN(tf)	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 <sup>2</sup>	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
	mm	30			35			50
	mm	115			115			240
Port size (m)	—	Rc1/2			Rc3/4			Rc1
Height to coupler (L)	mm	60	115		77	155		260
Length of between ports (P)	mm	390	630	1130	411	660	1160	1270
Pumps applicable	Hand pump	—			—			—
	Motor driven pump	GH5 or AH7.5		AH7.5	AH20		AH20	AH20
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.

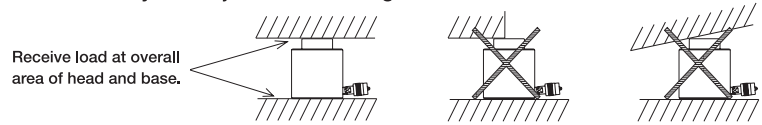
# EL type Low Profile Jack

## S (Spring return) type



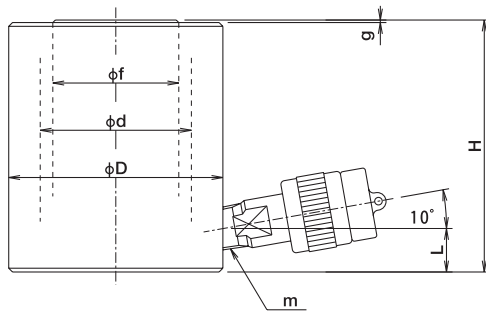
**Features**

- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Compact & flat design
- Fine adjustment for use in confined areas
- Low profile jack (EL series)  
Usable for fine adjustment and installation of machines extremely narrow space  
Receive load equally and at overall area of base  
Side load may cause jack to be damaged



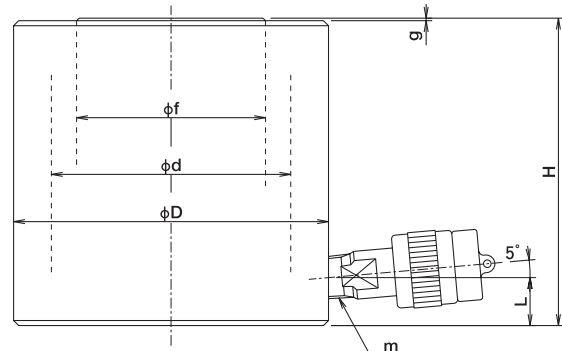
**EL20S4.5** Applicable models  
EL10S3.5  
EL20S4.5

**Dimensional drawing**



**EL50S6** Applicable models  
EL30S6  
EL50S6  
EL100S5.5  
(Couplers are leveled to ground.)

**Dimensional drawing**



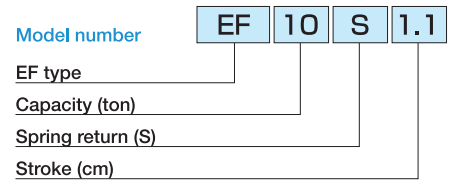
**Specifications**

Items	Model Unit	EL 10S3.5	EL 20S4.5	EL 30S6	EL 50S6	EL 100S5.5
Capacity	kN(tf)	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 <sup>2</sup>	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
	Motor driven pump	NEX-2 or GH1/2				
Included coupler		B-6JG				

Note) Receive load vertically to avoid side load.

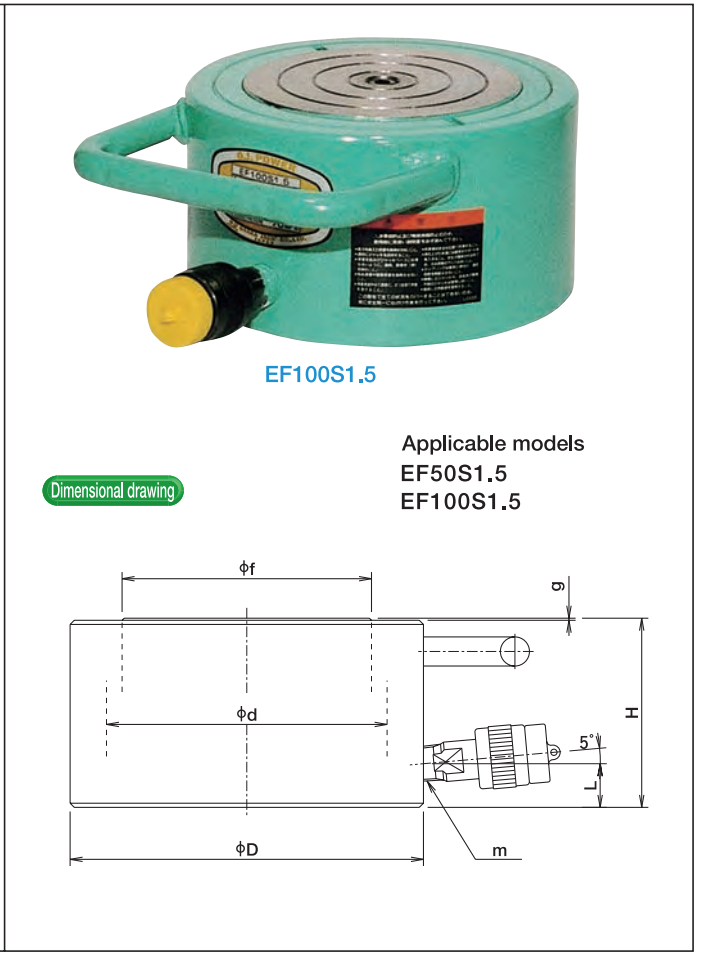
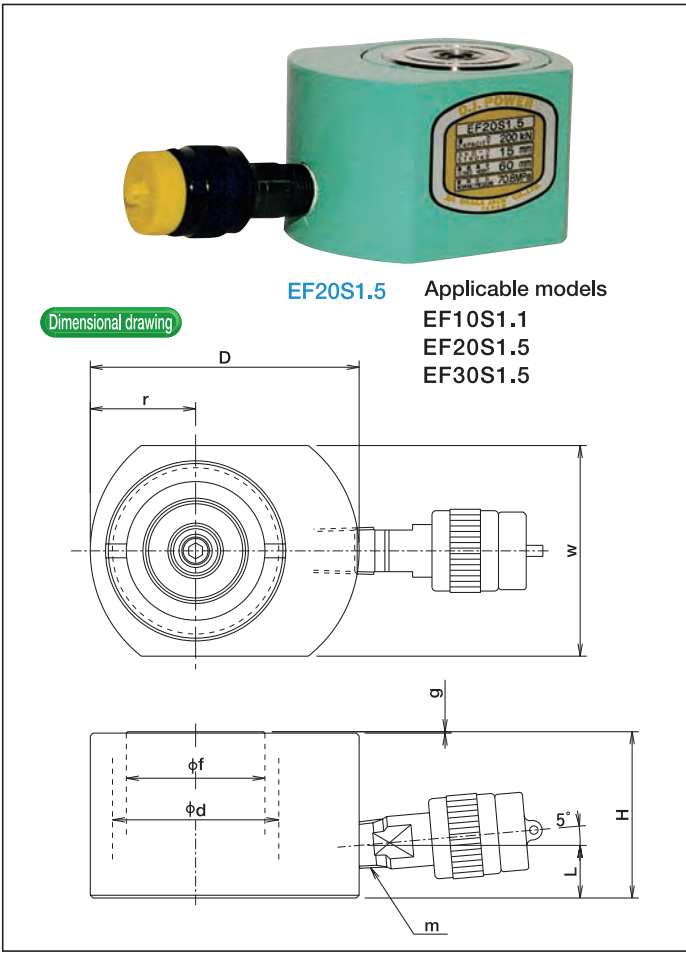
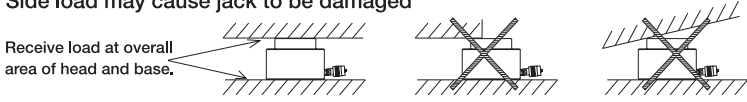
# EF type Flat Jack

## S (Spring return) type



### Features

- Piston rod is plated with hard chrome.
- Compact & flat design
- Fine adjustment for use in confined areas
- Handle included for only EF100S1.5
- Flat jack stroke under 15mm
- Flat Jack (EF series)  
Usable for fine adjustment and installation of machines extremely narrow space  
Receive load equally and at overall area of base  
Side load may cause jack to be damaged



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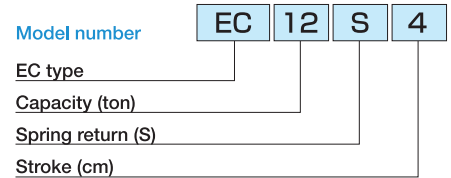
### Specifications

Items	Model Unit	EF10S1.1	EF20S1.5	EF30S1.5	EF50S1.5	EF100S1.5
Capacity	kN(tf)	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 <sup>2</sup>	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	—	—
	(g)	mm	0.8	0.5	—	—
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				TWA-0.7
	Motor driven pump	—	NEX-2 or GH1/2			—
Included coupler	—	B-6JG				

Note) Receive load vertically to avoid side load.


# EC type Hollow Jack

## S (Spring return) type



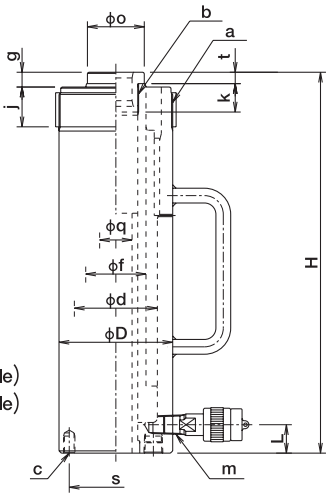
### Features

- This jack has hollow in the center. Adopted to pre-stressed concrete method such as a nuclear power plant, a tunnel and under ground construction and other various applications.
- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Saddle for screwed type
- Inside of piston rod is screwed.
- Allowable lateral load is 1/20 of lifting capacity.




**EC20S15**

Dimensional drawing

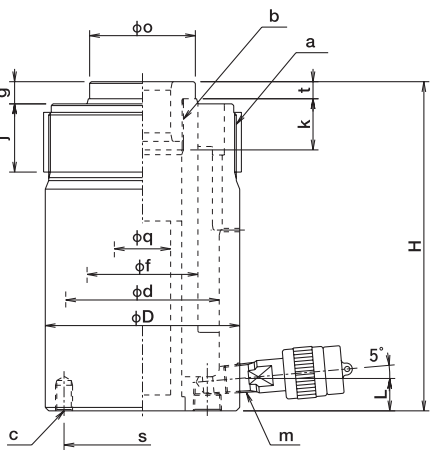


Applicable models  
 EC20S15 (With handle)  
 EC30S15 (With handle)  
 EC50S7  
 EC60S15  
 EC90S7.5



**EC30S6**

Dimensional drawing



Applicable models  
 EC12S4  
 EC12S7.5  
 EC20S5  
 EC30S6

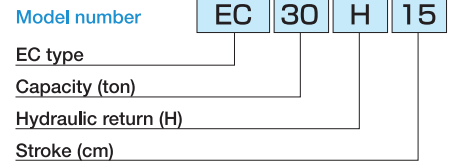
### Specifications

Items	Model Unit	EC12S4	EC12S7.5	EC20S5	EC20S15	EC30S6	EC30S15	EC50S7	EC60S15	EC90S7.5
Capacity	kN(tf)	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	cm <sup>2</sup>	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-M8×12 ℓ		2-M10×12 ℓ		4-M10×15 ℓ		4-M12×20 ℓ	4-M12×16 ℓ	4-M16×20 ℓ
	(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-2.3	TWA--1.3
	Motor driven pump	NEX-2 or GH1/2						GH1		
Included coupler		B-6JG								

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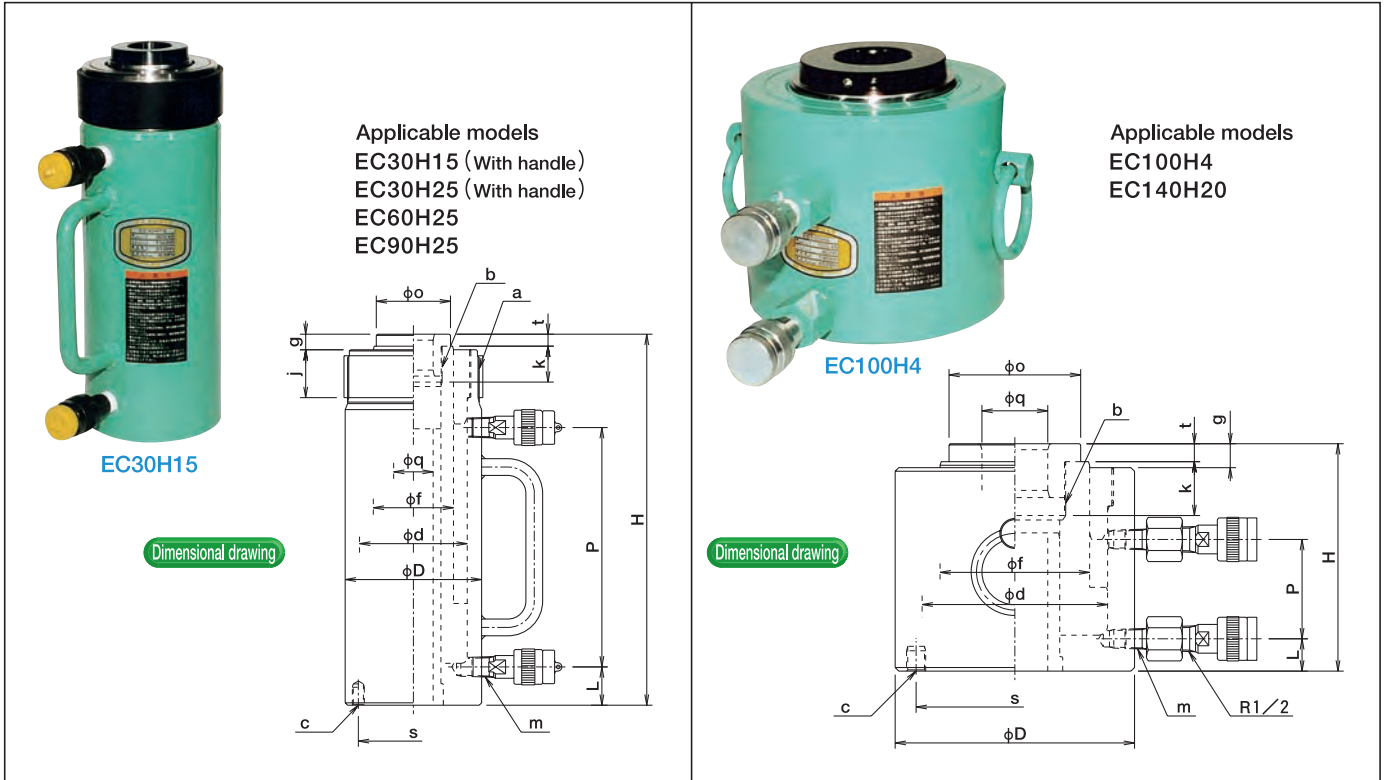
# EC type Hollow Jack

## H (Hydraulic return) type



**Features**

- This jack has hollow in the center. Adopted to pre-stressed concrete method such as a nuclear power plant, a tunnel and under ground construction and other various applications.
- Piston rod is plated with hard chrome.
- Piston rod seal protects against dirt.
- Hydraulic push & return jack
- Saddle for screwed type
- Inside of piston rod is screwed.
- Allowable lateral load is 1/20 of lifting capacity.



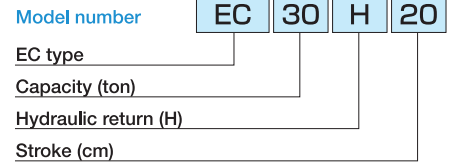
**TiD-extra**  
 Industrial Technologies d.o.o.

**Specifications**

Model	EC30H15	EC30H25	EC60H25	EC90H25	EC100H4	EC140H20	
Capacity	300 (30)		600 (60)	900 (90)	1000 (100)	1400 (140)	
Pulling force	180 (18)		300 (30)	450 (45)	—	—	
Stroke	150	250	250	250	40	200	
Closed height (H)	310	415	452	465	190	383	
Cyl. outer dia. (D)	114		163	193	200	253	
Cyl. bore dia. (d)	90		130	150	155	195	
Center hole dia. (q)	33		55	55	55	80	
Cyl. effective area	47.71		88.55	132.54	144.51	203.61	
Oil capacity	716	1200	2220	3320	578	4080	
Weight approx.	19	25	55	82	38	115	
Collar screw dia. (a)	M110×2		M160×3	M190×3	—	—	
Collar screw length (j)	40		50	65	—	—	
Rod screw dia. (b)	M48×1.5		M78×2	M85×2	M85×2	M115×2	
Rod screw length (k)	30		40	45	45	50	
Base screw dia. (c)	4-M10×15 ℓ		4-M12×24 ℓ	4-M16×24 ℓ	4-M16×17 ℓ	4-M16×20 ℓ	
(s)	92		135	160	165	210	
Rod dia. (f)	67		105	120	125	160	
Saddle dia. (o)	62		96	110	110	145	
(t)	10		12	15	15	18	
(g)	13		17	20	20	23	
Port size (m)	NPT3/8						
Height to coupler (L)	32		42	42	27	32	
Length of between ports (P)	200		305	308	313	83	
Pumps applicable	Hand pump	TWAD-0.9 TWAD-1.3		TWAD-4		TWAD-0.9	TWAD-6
	Motor driven pump	NEX-2 or GH1/2		GH1		GH1	GH2
Included coupler	B-6JG					Bushing + B-9J	

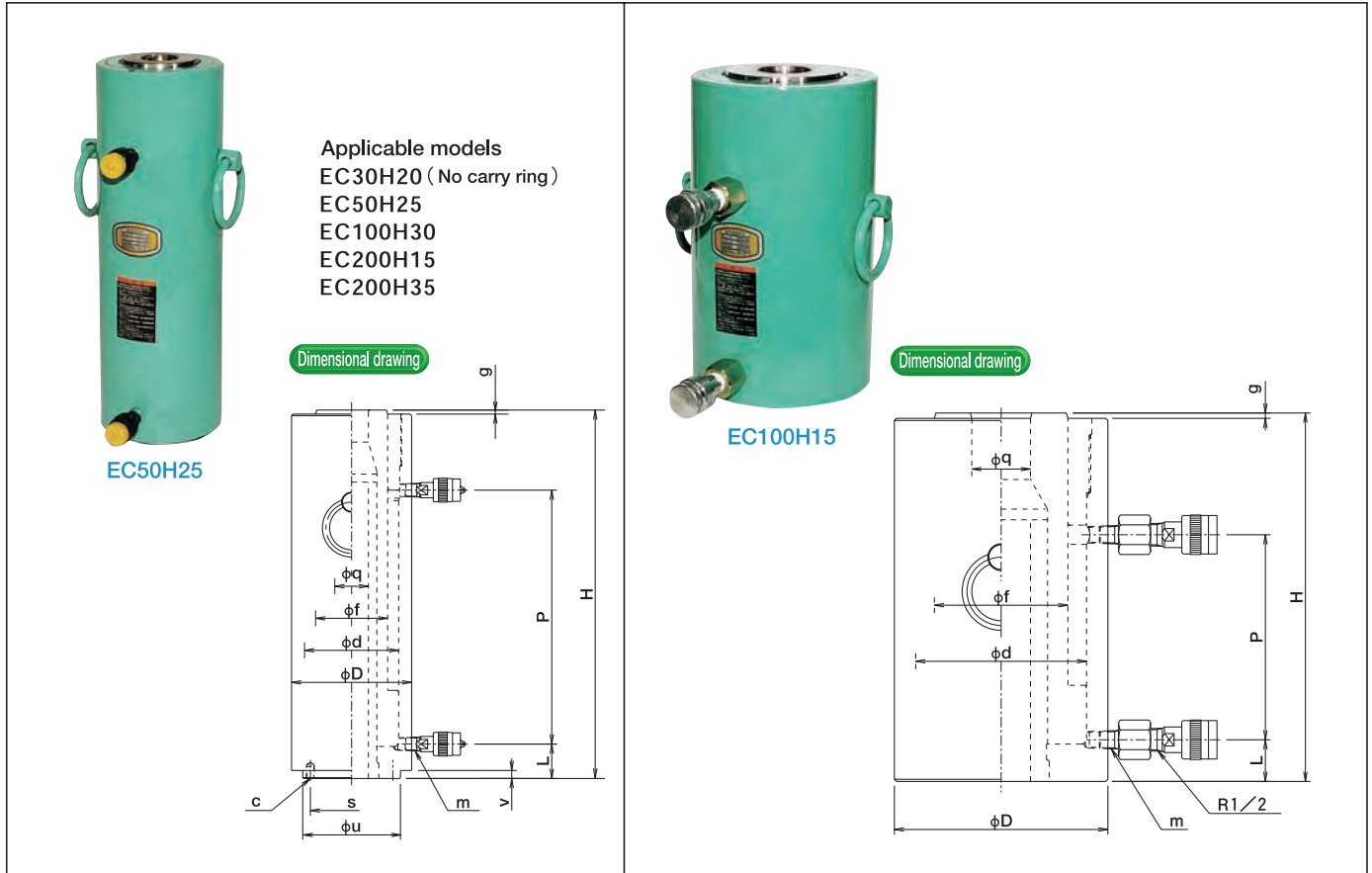
# EC type Hollow Jack

## H (Hydraulic return) type / For PC construction



**Features**

- This jack has hollow in the center. Adopted to pre-stressed concrete method such as a nuclear power plant, a tunnel and under ground construction and other various applications.
- Piston rod is plated with hard chrome.
- Allowable lateral load is 1/20 of lifting capacity.
- Hydraulic push & return jack
- Ram chair is equipped with hollow jack (Except EC100H15).



**TiD-extra**  
 d.o.o.  
 Industrial Technologies

**Specifications**

Model		EC30H20	EC50H25	EC100H15	EC100H30	EC200H15	EC200H35	
Items	Unit							
Capacity	kN(tf)	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 <sup>2</sup>	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-M12×15 ℓ		2-M16×32 ℓ	
(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	
Length of between ports (P)	mm	245	317	192	352	207	415	
Pumps applicable	Hand pump	TWAD-1.3	TWAD-2.3	TWAD-4	TWAD-6or8		—	
	Motor driven pump	NEX-2 or GH1/2	GH1	GH2, GH3-T2		GH3, GH5-T2		
Included coupler		B-6JG		Bushing + B-9J, B-12J				

# Bolt Tensioner

Model number

**B A 36 — M 36**

Bolt tensioner

A: General purpose, B: Strong type

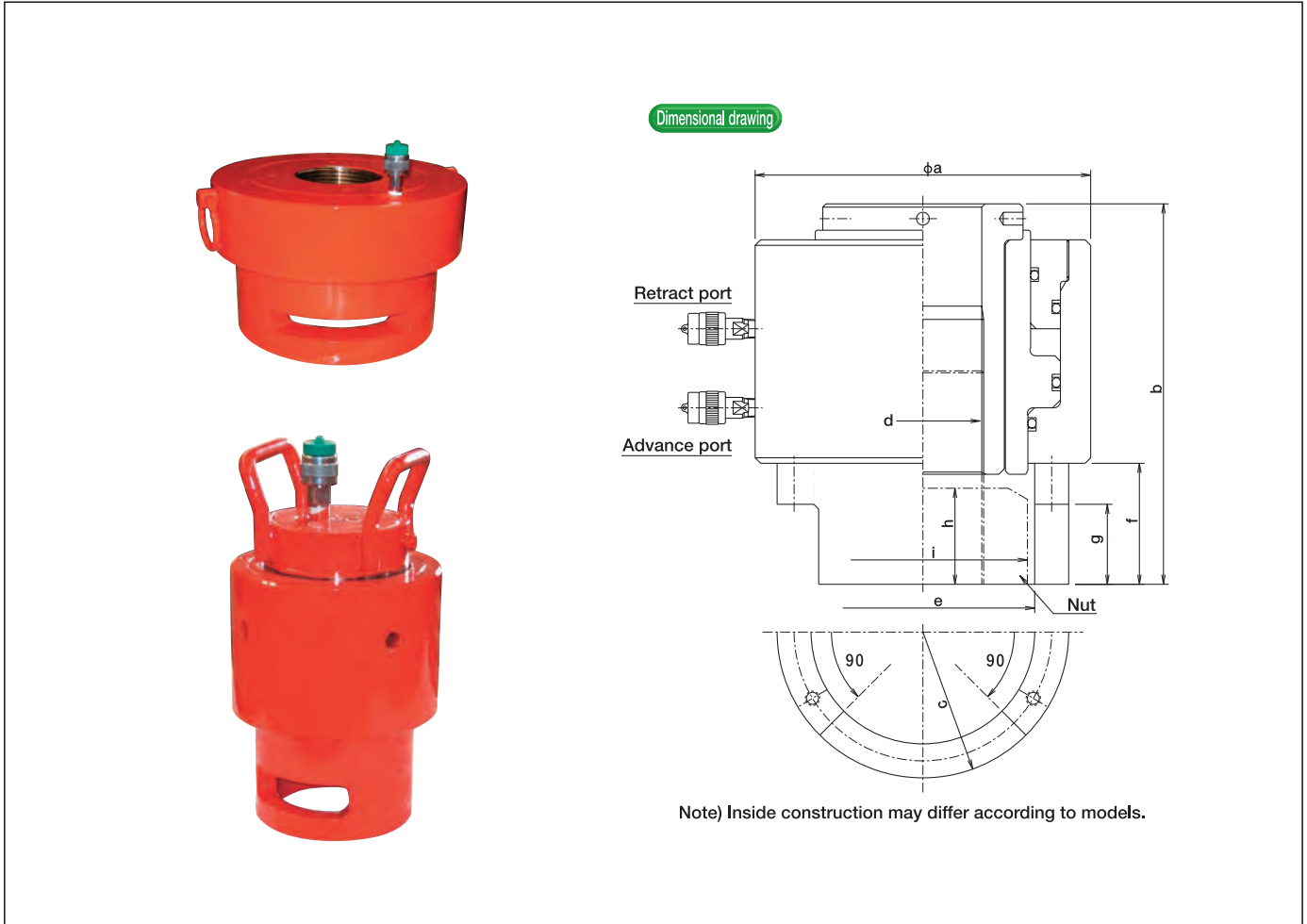
Max. thread diameter

M: Metric thread, W: Whit thread, PF: Thread

Thread diameter

## Application

Applicable for bigger size of bolt & nut impossible to work by hydraulic torque wrench

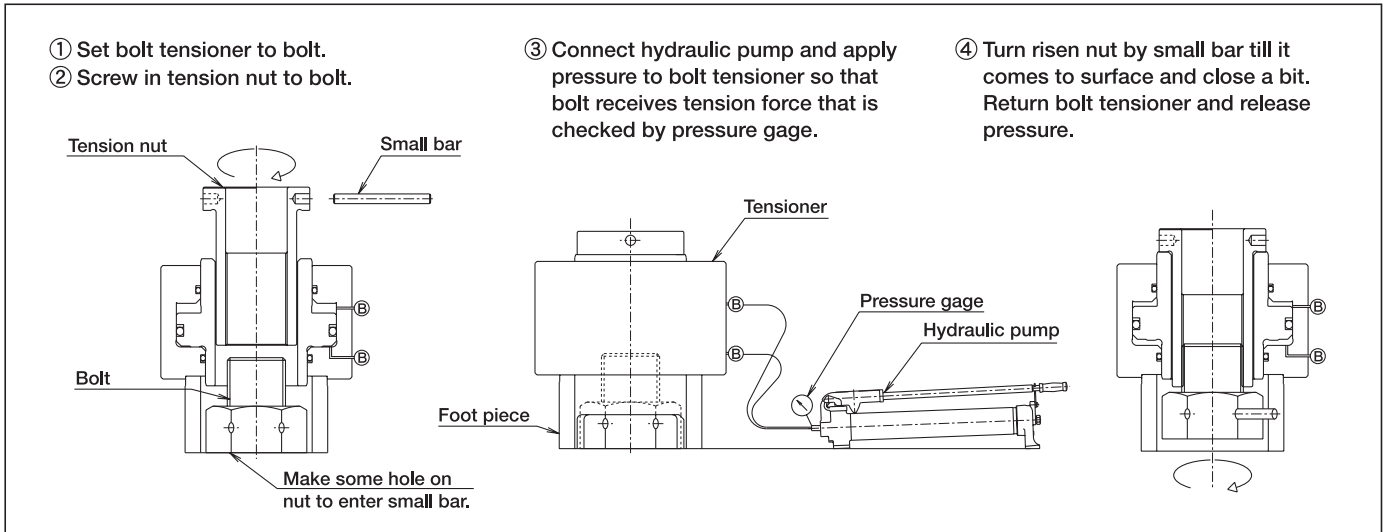


## Specifications

Model	Items			Stroke (mm)	Capacity (kN)	Weight approx. (kg)	Oil capacity (ml)	Dimensions of bolt tensioner						Dimensions of nut	
	M	W	PF					a	b	c	e	f	g	h	i
BA36—**	~36	~1 <sup>3</sup> / <sub>8</sub>	~1	8	150	6	17	103	143	90	72	44	24	20	63.5
BB36—**				10	340	10	38	127	153	96		47			
BA48—**	~48	~1 <sup>3</sup> / <sub>4</sub>	~1 <sup>1</sup> / <sub>2</sub>	8	300	12	34	143	160	120	95	54	30	38	80.5
BB48—**				10	620	20	70	172	178	130		57			
BA60—**	~60	~2	~2	10	480	21	68	178	185	145	115	68	42	48	104
BB60—**					910	35	128	210	204	160					
BA72—**	~72	~2	~2	10	650	35	92	210	220	170	135	79	50	58	121
BB72—**					1370	53	102	254	220	190					
BA85—**	~85	~3 <sup>1</sup> / <sub>4</sub>	~2 <sup>3</sup> / <sub>4</sub>	10	980	51	138	254	232	200	160	93	60	68	138
BB85—**					1980	82	270	305	240	225					
BA100—**	~100	~3 <sup>3</sup> / <sub>4</sub>	~3 <sup>1</sup> / <sub>2</sub>	10	1300	70	104	298	252	240	190	104	70	80	167
BB100—**					2300	110	382	343	205	260					
BA120—**	~120	~4	~4	10	2120	110	300	350	285	275	210	124	80	90	190
BB120—**					3680	183	512	350	375	300					
BA140—**	~140	~5	~5	10	2080	188	622	413	335	320	245	140	90	112	230
BB140—**				15	5000	278	1060	460	480	350		127			
BA165—**	~165	~6	~6	10	4040	265	843	483	380	370	285	170	100	132	270
BB165—**				15	6980	410	1400	470	500	410		152			



# Bolt Tensioner



• How to determine custom made bolt tensioner

Apply tension to bolt and make the nut seat but 100% tension can not necessarily be obtained. Due to length of bolt, torque of nut and the state of seat surface and thread face, effective tension become 60~90%. So, take this into consideration and determine tension force.

• Following is formula to get residual tension force (shaft force).

$$F = \frac{A_1 E}{L} \left\{ \frac{W L}{A_1 E} - \frac{W H}{2 A_2 E} - \frac{W H}{A_3 E} - C \right\}$$

F= Residual tension force (shaft force kN)

W= Lifting force of bolt tensioner (kN)

C= Overall contact of seat face of nut and thread (in case of M42, C = approx. 0.03 - 0.04)

L= Length of bolt (mm)

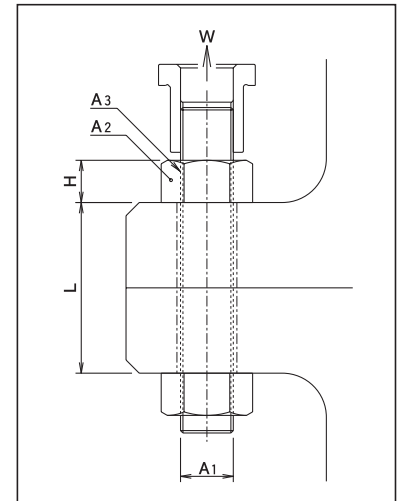
E= Lengthy elastic factor 210kN/mm<sup>2</sup> (21 x 10<sup>4</sup>N/mm<sup>2</sup>)

H= Length of nut (mm)

A<sub>1</sub>= Bolt effective section area (mm<sup>2</sup>)

A<sub>2</sub>= Nut section area (mm<sup>2</sup>)

A<sub>3</sub>= Thread area of nut (mm<sup>2</sup>)



<p>Double acting type, 2 stage piston</p>	<p>Double acting type, large capacity</p>	<p>Single acting type, returned by outer force, threaded piston inside</p>
<p>Single acting type, returned by outer force, no stopper</p>	<p>Single acting type, spring return</p>	<p>Single acting type, spring return and two stage piston</p>

# LJA type Aluminum Jack

## S (Spring return) type

Model number

LJA 20 S 5

LJA type

Capacity (ton)

Spring return (S)

Stroke (cm)

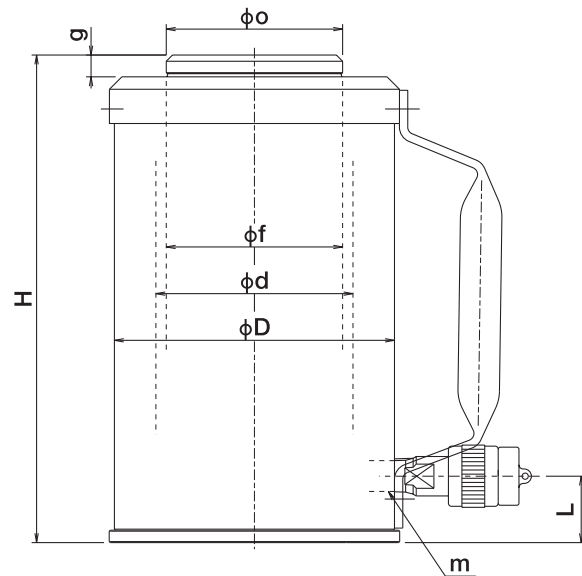
### Features

- Main parts such as tube and piston rod are of aluminum and so lightweight compared with steel materials.
- Bottom and corner parts are of steel made.
- Avoid high frequent use and blowout of jack.

### Dimensional drawing



LJA30S10



### Specifications

		Model	LJA20S5	LJA20S10	LJA20S15	LJA30S5	LJA30S10	LJA30S15	LJA50S5	LJA50S10B	LJA50S15
Items	Unit										
Capacity	kN(tf)		200 (20)			300 (30)			500 (50)		
Stroke	mm		50	100	150	50	100	150	50	100	150
Closed height (H)	mm		170	220	270	178	228	283	185	260	294
Cyl. outer dia. (D)	mm		92			108			135		
Cyl. bore dia. (d)	mm		63			75			95		
Cyl. effective area	cm <sup>2</sup>		31.17			44.17			70.88		
Oil capacity	mℓ		155	310	470	220	440	665	355	710	1065
Weight approx.	kg		3.8	4.7	5.6	5.5	6.5	8.0	8.5	13	12
Rod dia. (f)	mm		53			65			85		
Saddle dia. (o)	mm		53			65			85		
Port size (m)	—		Rc3/8								
Height to coupler (L)	mm		28			31			32		33
	(g)		9			9			9	22.5	9
Pumps applicable	Hand pump		LTWA-0.7					LTWA-0.9	LTWA-0.7	LTWA-0.9	—
	Motor driven pump		NEX-2								
Included coupler			B-6J								

# JN type Jack with Safety Nut

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

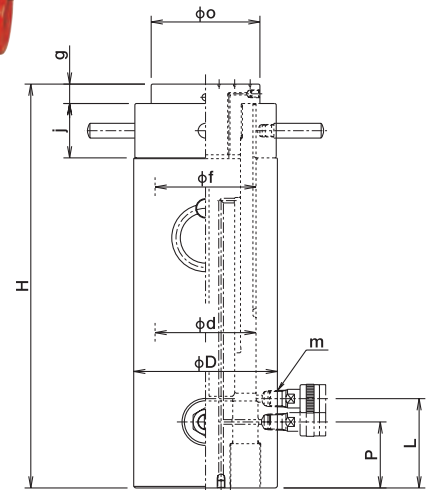
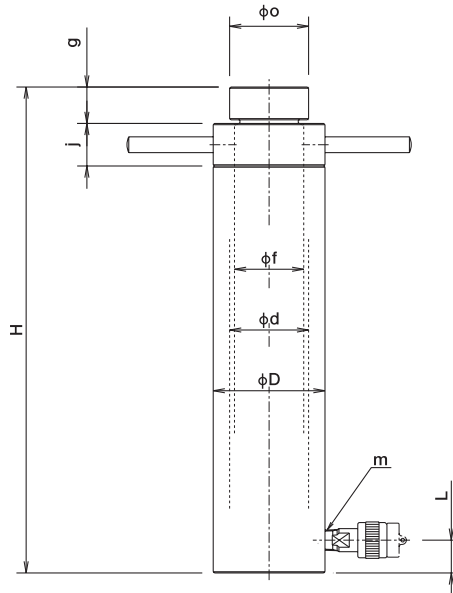
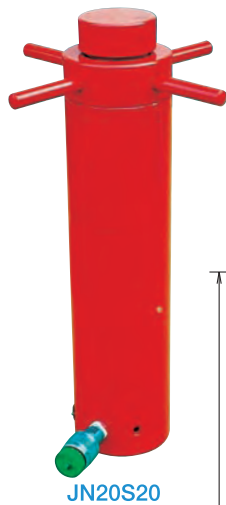
Model number	JN	20	S	20
Jack with safety nut				
Capacity (ton)				
Spring return (S), Hydraulic return (H)				
Stroke (cm)				

### How to use

- Use this jack to hold loaded jack for longer hours.
- Use block or crib as well for safety.

### Features

- Allowable lateral load is 1/20 of lifting capacity.
- Safety valve built-in at return circuit of hydraulic return jack



### Specifications

Model		JN20S20	JN50S20	JN50H20	JN100H20	JN200H20	JN200H30
Items	Unit						
Capacity	kN(tf)	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 <sup>2</sup>	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	Rc 1/2	Rc 3/8			Rc 1/2	
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	TWAD-8	—
	Motor driven pump	NEX-2 or GH1/2	GH1		GH2	GH3	
Included coupler		B-6J			B-9J		

# JFN type Low Profile Jack with Safety Nut

## S (Spring return) type

Model number	JFN	R	100	S	3
JFN type					
R: With swivel head No mark: Without swivel head					
Capacity (ton)					
Spring return (S)					
Stroke (cm)					

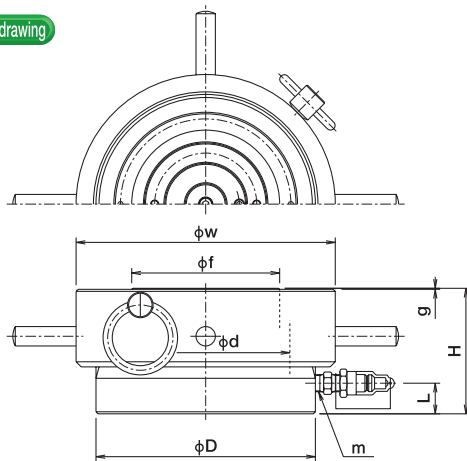
### Features

- This jack can be used for replacement of shoes laid on between bridge grid of railway bridge and high way bridge.
- Safety nut is equipped for load holding.
- JFNR types are recommended when using jacks at slant object surfaces.



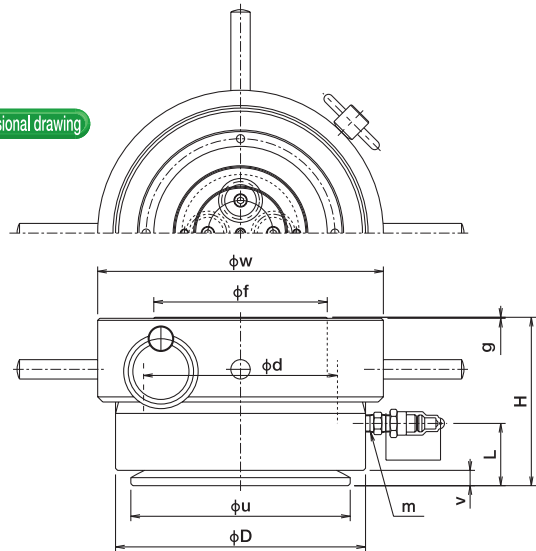
JFN150S3

Dimensional drawing



JFNR200S3

Dimensional drawing

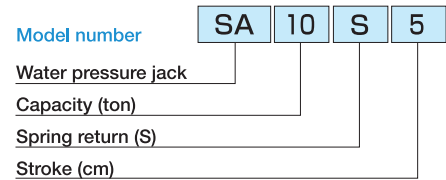


### Specifications

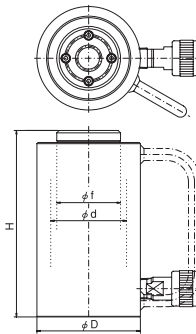
Items	Model Unit	JFN100S3	JFN150S3	JFN200S3	JFN300S5	JFNR100S3	JFNR150S3	JFNR200S3	JFNR300S5
Capacity	kN(tf)	1000(100)	1500(150)	2000(200)	3000(300)	1000(100)	1500(150)	2000(200)	3000(300)
Stroke	mm	30	30	30	50	30	30	30	50
Closed height (H)	mm	106	123	134	200	135	150	165	230
Cyl. outer dia. (D)	mm	175	215	245	305	175	215	245	305
Cyl. bore dia. (d)	mm	135	165	190	235	135	165	190	235
Cyl. effective area	cm <sup>2</sup>	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
	Motor driven pump	NEX-2 or GH1/2				NEX-2 or GH1/2			
Included coupler	—	C-6J							
Head inclination degree	—	—				Not more than 3°			

# SA type Water Pressure Jack for single type

## S (Spring return) type



Dimensional drawing



**Application**

- Shipbuilding
- Oil hesitant use
- Medical fields
- Clean room etc.

**Features**

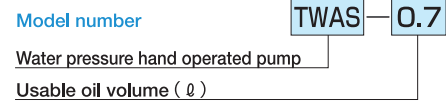
- Free from pollution
- No fire accident
- Lightweight & compact due to stainless steel

**Specifications**

Items	Model Unit	SA10S5	SA10S10	SA22S5	SA22S10	SA50S5
Capacity	kN(tf)	100 (10)	100 (10)	220 (22)	220 (22)	500 (50)
Stroke	mm	50	100	50	100	50
Rod dia. (f)	mm	38	38	53	53	85
Cyl. bore dia. (d)	mm	43	43	63	63	95
Cyl. outer dia. (D)	mm	60	60	86	86	130
Closed height (H)	mm	142	197	155	210	175
Weight	approx. kg	2.5	3.4	5.9	7.7	17

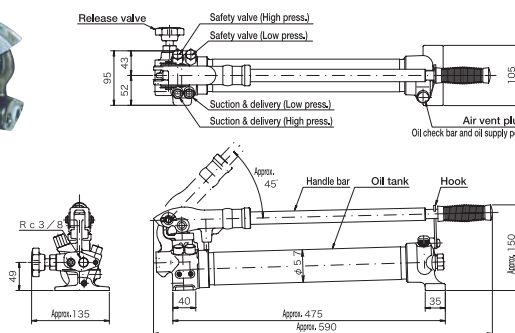
TID-extra Industrial Technologies d.o.o.

# TWAS type Water Pressure Hand Operated Pump



TWAS-0.7

Dimensional drawing



**Application**

- Water pressure test and where high pressure water pressure is required.

**Features**

- Pump body is of stainless steel forged.
- Excellent durability
- Available for city water

Note) Water put into tank for a long time goes rot. Consult with us on preservative.

**Specifications**

Water pressure hand operated pump

Model	Items	Usable oil volume (ℓ)	Working pressure MPa		Oil delivery (ml/stroke)		Connection port	Weight approx. (kg)
			High	Low	High	Low		
TWAS-0.7		0.7	72	1	2	11	Rc3/8	5.8

Note) Ambient temperature: available between 0°C to 60°C. When you handle under freezing point, please use special working oil.

Rubber hose

Model	Items	Max. working pressure MPa
RW6-2BWG		72

- RW6 ... With SUS fittings on both ends
- BW ... With water pressure coupler at single end
- G ... Wound by glass wool

**Option**

- Pressure gauge

# TWA type Hand Operated Pump for single (S.G.A) type

## Low pressure relief type

Model number	TWA-0.3
Hand operated pump	
Usable oil volume (ℓ)	

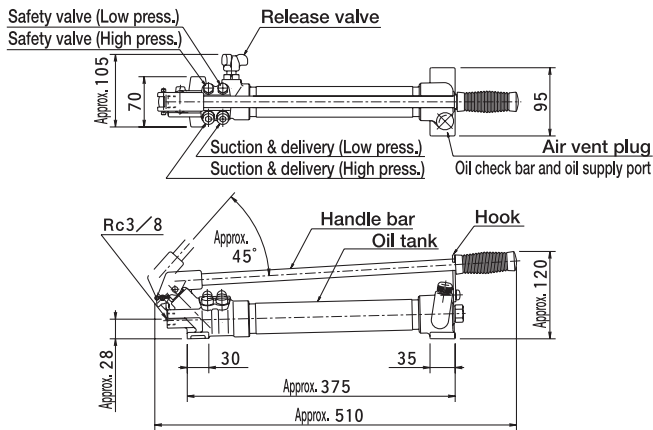
### Features

- Pump body is made of special steel and having enough pressure resistant.
- High and low pressure, two stage oil output
- Use this pump with horizontal and contact us when using with other uses.



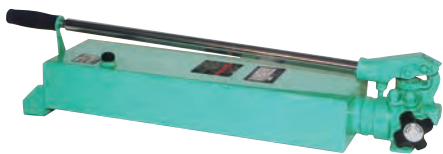
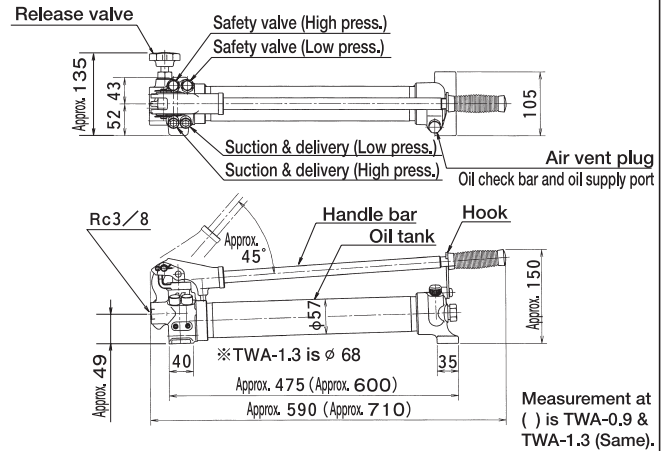
TWA-0.3

### Dimensional drawing



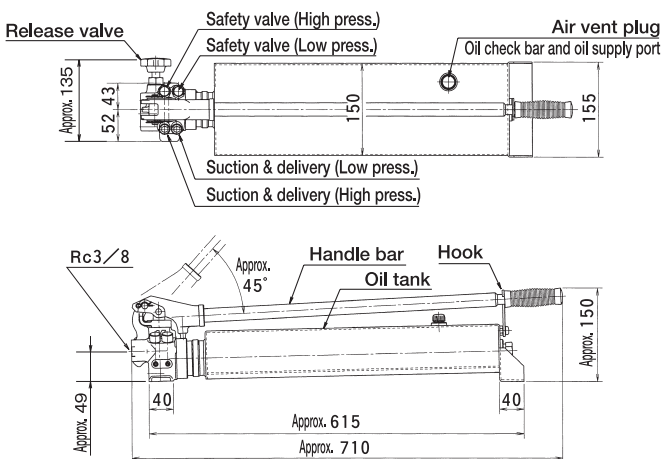
TWA-0.7

### Dimensional drawing

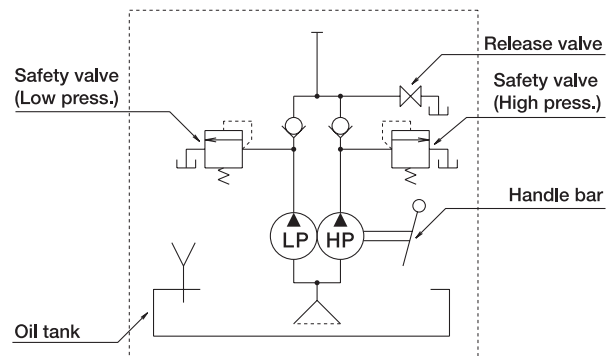


TWA-4

### Dimensional drawing



### Hydraulic circuit



### 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	Rc3/8	3.5
TWA-0.7		0.7			7.0			
TWA-0.9		0.9			7.9			
TWA-1.3		1.3			9.0			
TWA-4		4			2	11		13.2

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

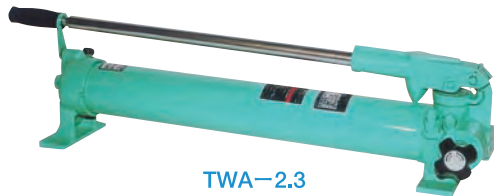
# TWA type Hand Operated Pump for single (S.G.A) type

## Low pressure unload type

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

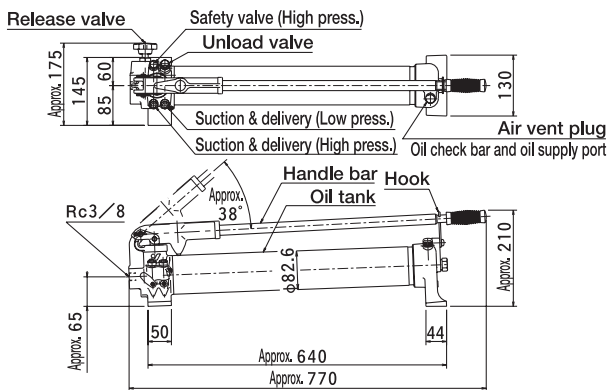
### Features

- Pump body is made of special steel and having enough pressure resistant.
- High and low pressure, two stage oil output
- Use this pump with horizontal and contact us when using with other uses.



TWA-2.3

### Dimensional drawing

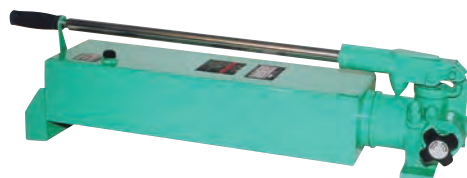
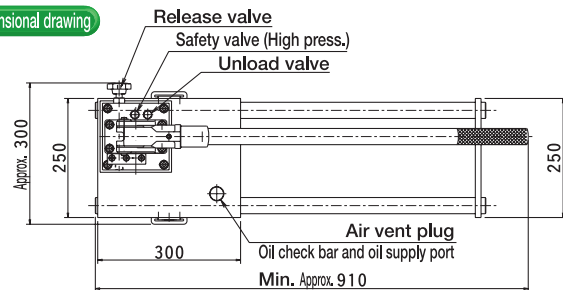


TWA-8

### Features

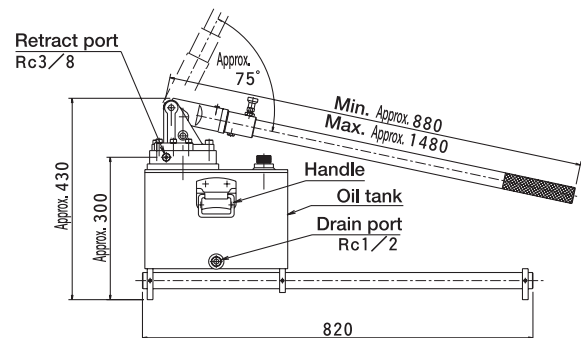
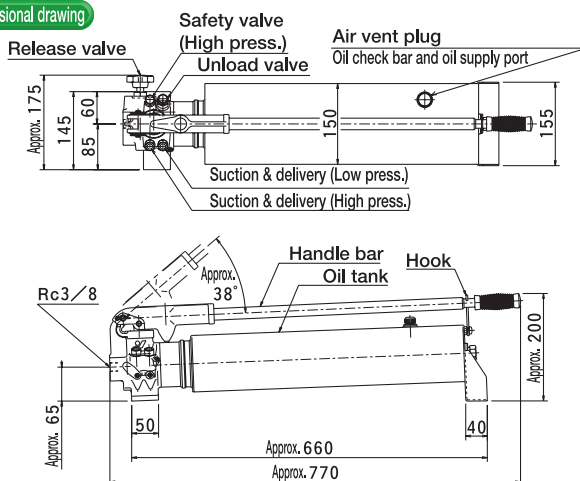
- Low high two stage large output pump applicable for big size jacks due to large usable oil.

### Dimensional drawing

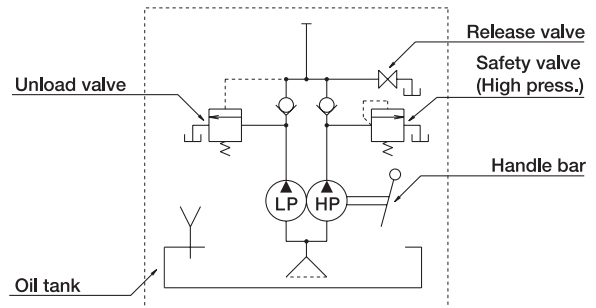


TWA-6

### Dimensional drawing



### Hydraulic circuit



### 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	3	2	24		19.5
TWA-8		8	72	2	9	90		57.0
TWA-8M		8	21		22			90

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

# TWAD type Hand Operated Pump for hydraulic (H) type

## Low pressure relief type

Model number **TWA D 0.9**

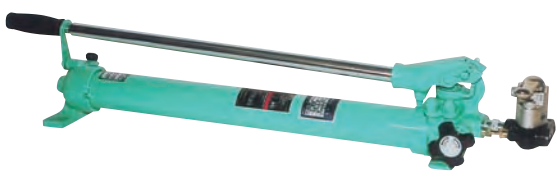
Hand operated pump

With manual control valve

Usable oil volume (ℓ)

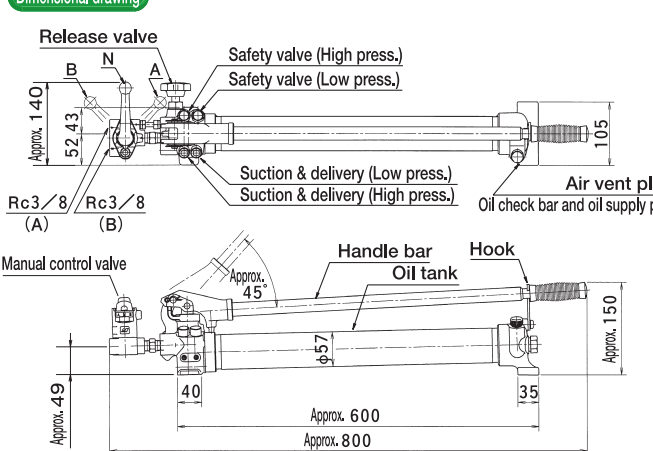
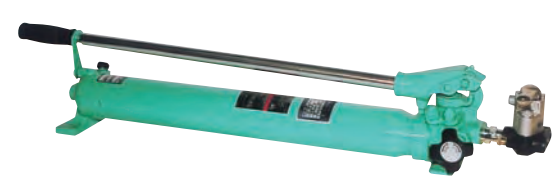
**Features**

- Pump body is made of special steel and having enough pressure resistant.
- High and low pressure, two stage oil output
- Use this pump with horizontal and contact us when using with other uses.



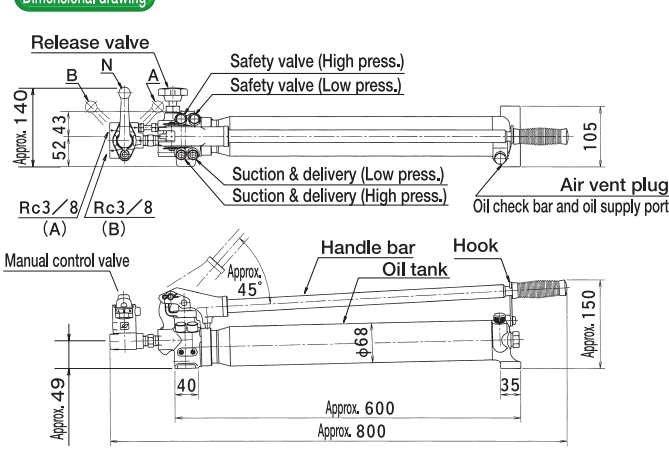
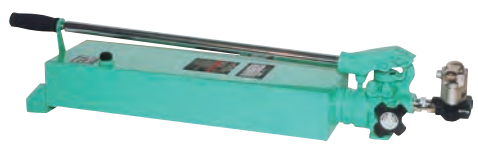
**TWAD-0.9**

**Dimensional drawing**

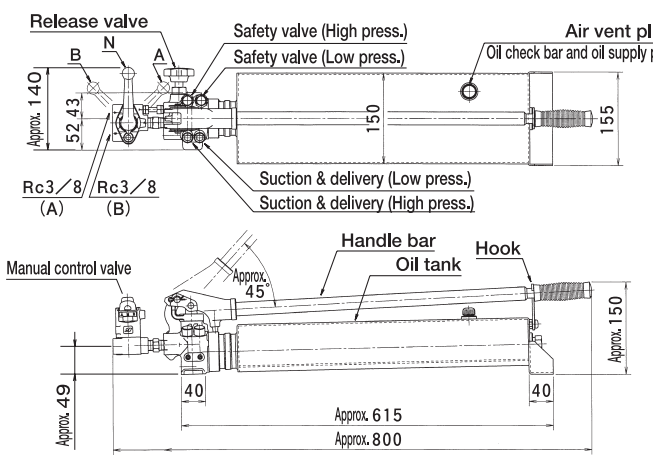
**TWAD-1.3**

**Dimensional drawing**

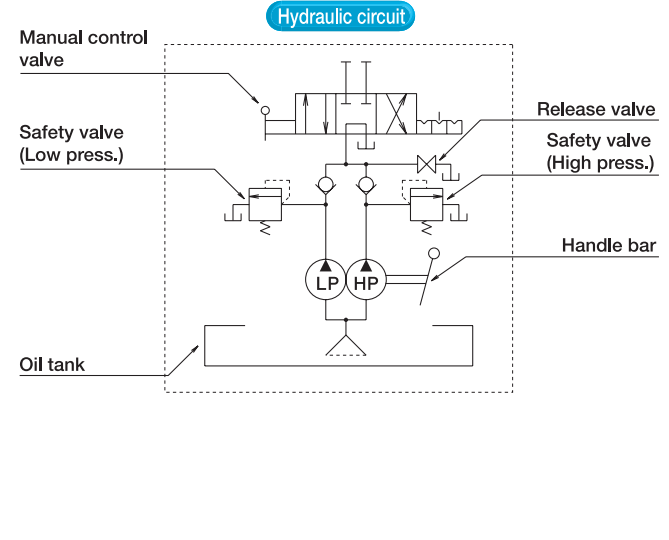



**TWAD-4**

**Dimensional drawing**



**Hydraulic circuit**



**Specifications**

Model	Items	Usable oil volume (ℓ)	Working pressure MPa		Oil delivery (ml/stroke)		Connection port	Weight approx. (kg)
			High	Low	High	Low		
TWAD-0.9		0.9	72	3	2	11	Rc3/8	9.0
TWAD-1.3		1.3						10.0
TWAD-4		4						14.2

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

**TiD-extra**  
Industrial Technologies d.o.o.



# TWAD type Hand Operated Pump for hydraulic (H) type

## Low pressure unload type

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

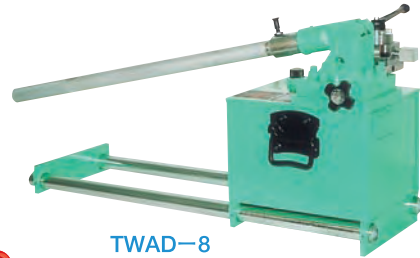
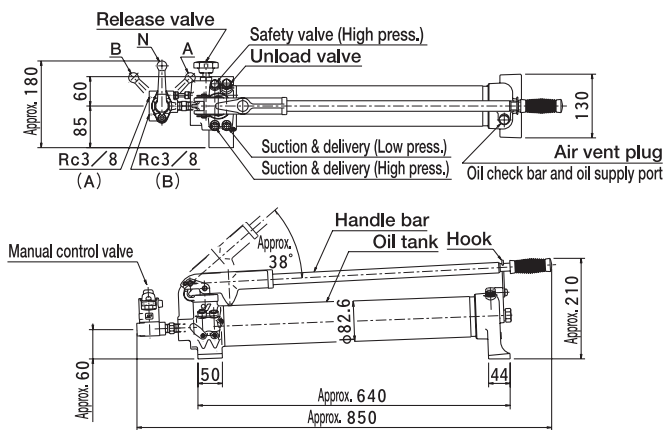
**Features**

- Pump body is made of special steel and having enough pressure resistant.
- High and low pressure, two stage oil output
- Use this pump with horizontal and contact us when using with other uses.



TWAD-2.3

**Dimensional drawing**

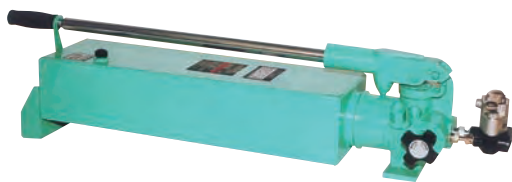
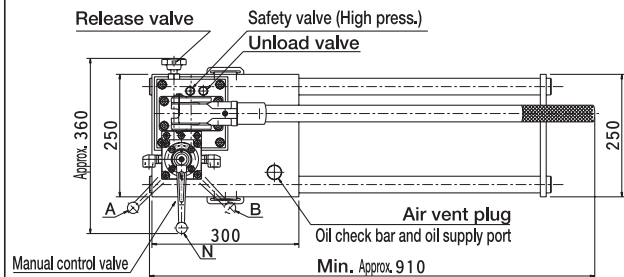


TWAD-8

**Features**

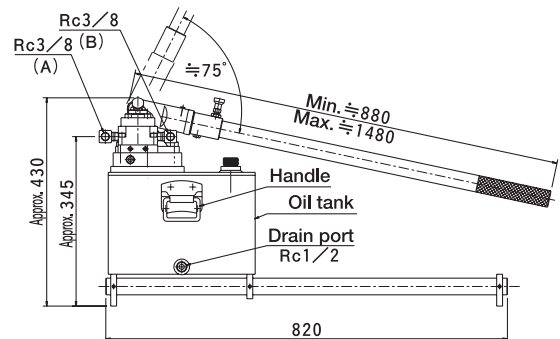
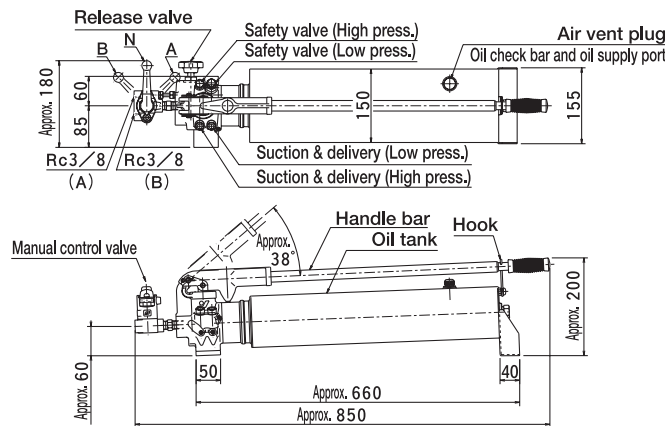
- Low high two stage large output pump applicable for big size jacks due to large usable oil

**Dimensional drawing**

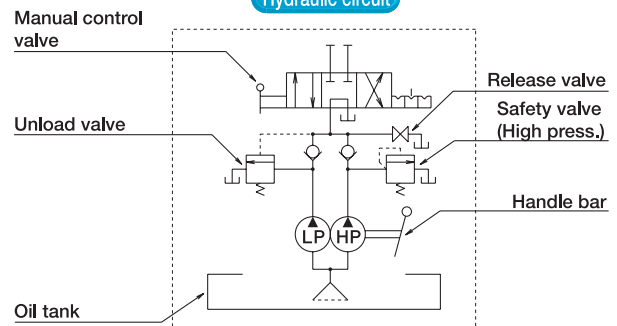


TWAD-6

**Dimensional drawing**



**Hydraulic circuit**



**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		2	24	Rc3/8	14.8
TWAD-6		6	72	3				20.5
TWAD-8		8	72		9	90		59
TWAD-8M		8	21	2	22			59

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

# LTWA type Lightweight Hand Operated Pump

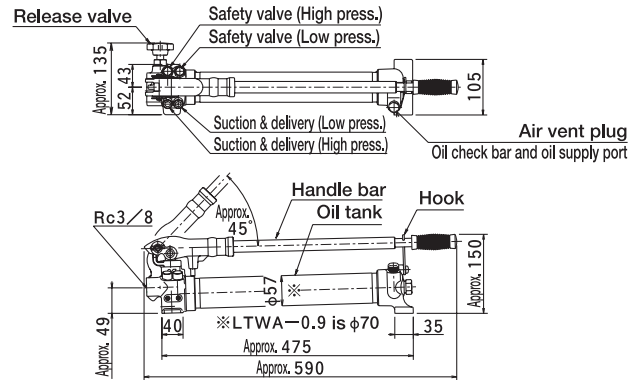
Model number **LTWA-0.7**  
 Lightweight hand operated pump  
 Usable oil volume (ℓ)

**Features**

- Aluminium materials are applied to oil tank, handle socket and stand where pressure is not effected.
- High quality for rust-resistant effect

**Dimensional drawing**

LTWA-0.7



**Specifications**

Model	Items	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

TiD-extra Industrial Technologies d.o.o.

# FPA type Foot Pump

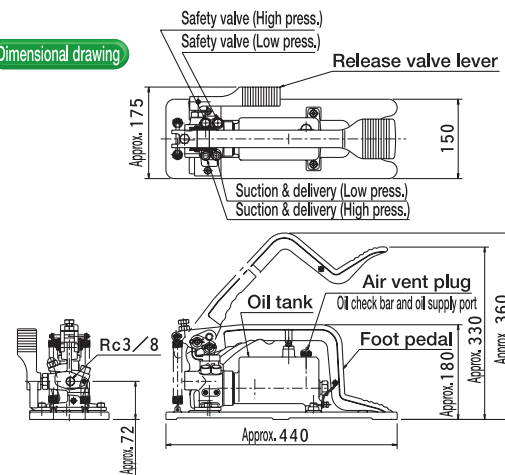
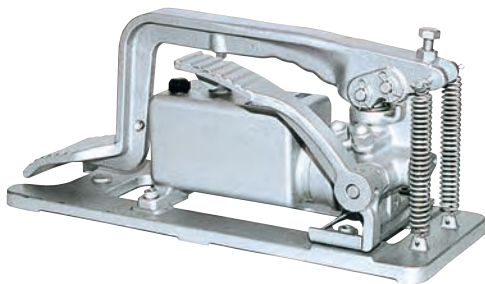
Model number **FPA-0.5**  
 Foot pump  
 Usable oil volume (ℓ)

**Features**

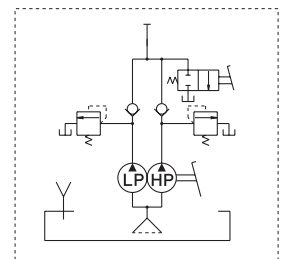
- Operated by foot
- Hands are free during operation.
- When jacking down use stop valve with check.

**Dimensional drawing**

FPA-0.5



**Hydraulic circuit**



**Specifications**

Model	Items	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

# Parts List of Hand Operated Pump

TWA type • LTWA type • TWAD type Hand operated pump  
(Parts name of each pump are same.)

Model number

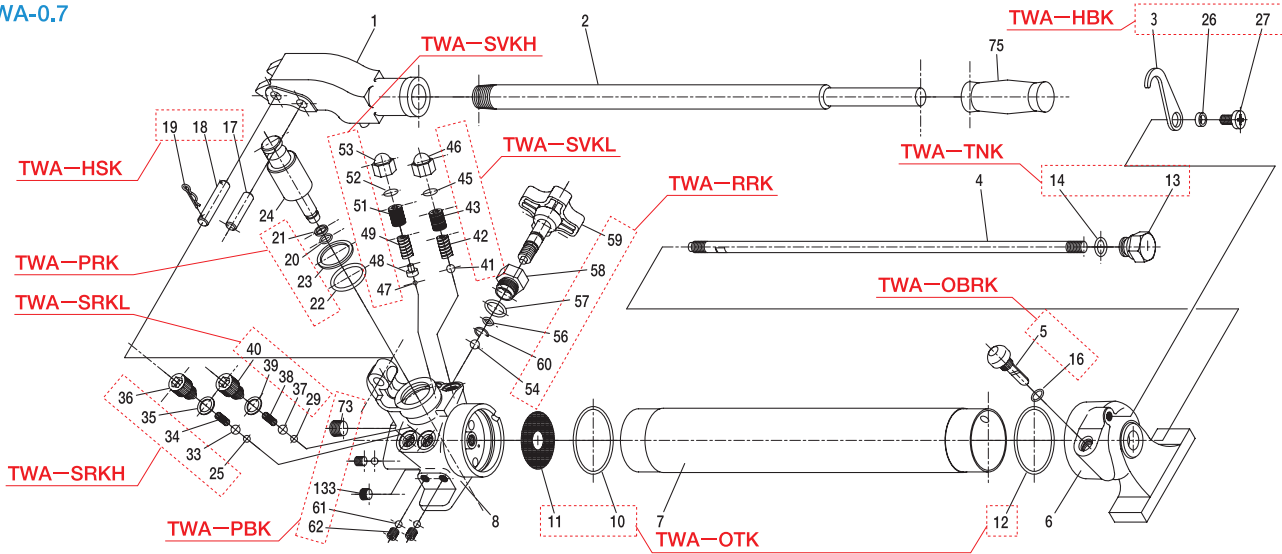
TWA-0.3 PRK

Pump type

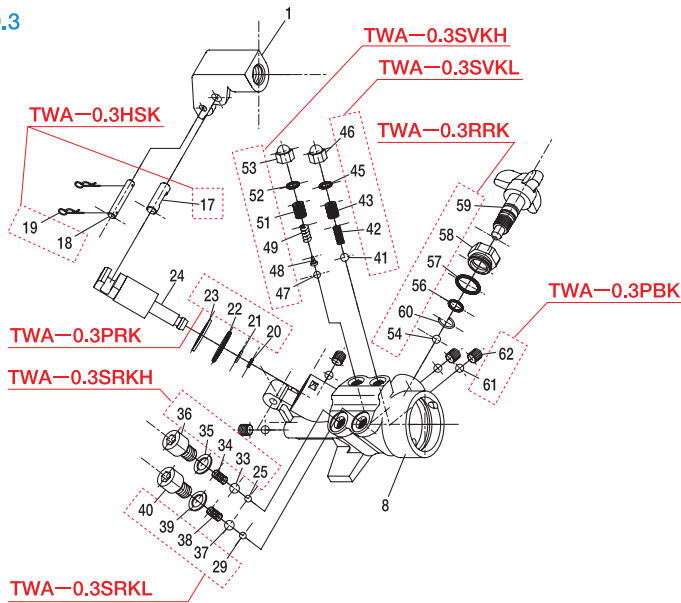
Parts generic name

**Parts chart**

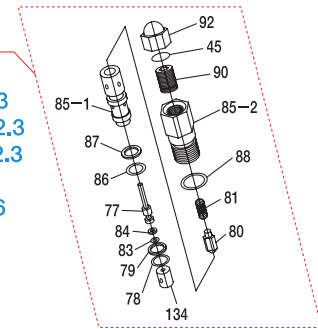
TWA-0.7



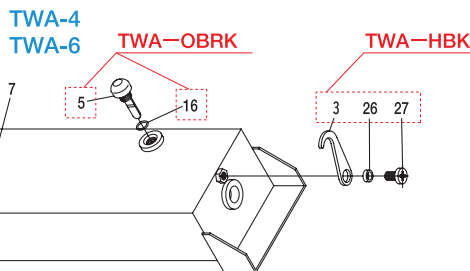
TWA-0.3



Unload valve  
(TWA-AVK)



TWA-2.3  
TWAD-2.3  
TWAZ-2.3  
TWA-6  
TWAD-6



**TWA type**

Parts	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 set.

Note) TWA-PBK: only TWA-0.3 No.61·62

# Parts List of Hand Operated Pump

TWA type • LTWA type • TWAD type Hand operated pump  
(Parts name of each pump are same.)

Note) O-rings for [ ] are hardness: 90°.  
Note) TWAD type is attached ODV-3 to TWA type.

No.	Parts name	Q'ty	TWA -0.3	TWA -0.7	TWA -0.9	TWA -1.3	TWA -2.3	TWA -4	TWA -6	LTWA -0.7	LTWA -0.9	No.	Parts name	Q'ty	TWA -0.3	TWA -0.7	TWA -0.9	TWA -1.3	TWA -2.3	TWA -4	TWA -6	LTWA -0.7	LTWA -0.9
1	Handle socket	1	○	○	○	○	○	○	○	○	○	42	Spring	1	○	○	○	○	—	○	—	○	○
2	Handle bar	1	○	○	○	○	○	○	○	○	○	43	Adjusting screw	1	○	○	○	○	—	○	—	○	○
3	Hook	1	○	○	○	○	○	○	○	○	○	45	O-ring	1	S9	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5
4	Tie rod	1	○	○	○	○	○	—	—	○	○	46	Cap	1	○	○	○	○	—	○	—	○	○
5	Oil check bar	1	○	○	○	○	○	○	○	○	○	47	Steel ball	1	φ5	φ3.5	φ3.5	φ3.5	φ3.5	φ3.5	φ3.5	φ3.5	φ3.5
6	Tank stand	1	○	○	○	○	○	—	—	○	○	48	Ball stay	1	○	○	○	○	○	○	○	○	○
7	Oil tank	1	○	○	○	○	○	○	○	○	○	49	Spring	1	○	○	○	○	○	○	○	○	○
8	Pump body	1	○	○	○	○	○	○	○	○	○	51	Adjusting screw	1	○	○	○	○	○	○	○	○	○
10	O-ring	1	G40	G55	G55	G55	G75	G55	G75	G55	G55	52	O-ring	1	S9	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5	S12.5
11	Net	1	○	○	○	○	○	○	○	○	○	53	Cap	1	○	○	○	○	○	○	○	○	○
12	O-ring	1	G40	G55	G55	G60	G80	—	—	G55	G55	54	Steel ball	1	φ6	φ8	φ8	φ8	φ8	φ8	φ8	φ8	φ8
13	Nut	1	○	○	○	○	○	—	—	○	○	56	O-ring	1	No.7	No.7	No.7	No.7	No.7	No.7	No.7	No.7	No.7
14	O-ring	1	P11	P12	P12	P12	P12	P12	P12	P12	P12	57	O-ring	1	P16	P16	P16	P16	P16	P16	P16	P16	P16
16	O-ring	1	P10	P10	P10	P10	P10	P10	P10	P10	P10	58	Gland nut	1	○	○	○	○	○	○	○	○	○
17	Plunger pin	1	○	○	○	○	○	○	○	○	○	59	Release valve grip	1	○	○	○	○	○	○	○	○	○
18	Handle pin	1	○	○	○	○	○	○	○	○	○	60	Stop ring	1	—	○	○	○	—	○	—	○	○
19	Snap pin	2	5	8	8	8	8	8	8	8	8	61	Steel ball	(3)	φ6	φ6	φ6	φ6	φ6	φ6	φ6	φ6	φ6
20	O-ring	1	P6	P9	P9	P9	P9	P9	P9	P9	P9	62	Hex. socket Head-less set screw	(3)	M8x8	M8x8	M8x8	M8x8	M8x8	M8x8	M8x8	M8x8	M8x8
21	Back-up ring	1	P6	P9	P9	P9	P9	P9	P9	P9	P9	73	Plug	1	—	○	○	○	—	○	—	○	○
22	O-ring	1	No.16	P28	P28	P28	P40	P28	P40	P28	P28	75	Rubber grip	1	○	○	○	○	○	○	○	○	○
23	Back-up ring	1	No.16	P28	P28	P28	P40	P28	P40	P28	P28	77	Poppet	1	—	—	—	—	○	—	○	—	—
24	Plunger	1	○	○	○	○	○	○	○	○	○	78	O-ring	1	—	—	—	—	P10	—	P10	—	—
25	Steel ball	1	φ5	φ6	φ6	φ6	φ6	φ6	φ6	φ6	φ6	79	Back-up ring	1	—	—	—	—	P10	—	P10	—	—
26	Spacer	1	○	○	○	○	○	○	○	○	○	80	Cone valve	1	—	—	—	—	○	—	○	—	—
27	Pan head screw	1	○	○	○	○	○	○	○	○	○	81	Spring	1	—	—	—	—	○	—	○	—	—
29	Steel ball	1	φ5	φ6	φ6	φ6	φ6	φ6	φ6	φ6	φ6	83	O-ring	1	—	—	—	—	P3	—	P3	—	—
33	Steel ball	1	φ7.2	φ8	φ8	φ8	φ8	φ8	φ8	φ8	φ8	84	Back-up ring	1	—	—	—	—	P3	—	P3	—	—
34	Spring	1	○	○	○	○	○	○	○	○	○	85	Valve body	1	—	—	—	—	○	—	○	—	—
35	Copper packing	1	○	○	○	○	○	○	○	○	○	86	O-ring	1	—	—	—	—	P10A	—	P10A	—	—
36	Delivery plug	1	○	○	○	○	○	○	○	○	○	87	Back-up ring	1	—	—	—	—	P10A	—	P10A	—	—
37	Steel ball	1	φ7.2	φ8	φ8	φ8	φ8	φ8	φ8	φ8	φ8	88	O-ring	1	—	—	—	—	P15	—	P15	—	—
38	Spring	1	○	○	○	○	○	○	○	○	○	90	Adjusting screw	1	—	—	—	—	○	—	○	—	—
39	Copper packing	1	○	○	○	○	○	○	○	○	○	92	Cap	1	—	—	—	—	○	—	○	—	—
40	Delivery plug	1	○	○	○	○	○	○	○	○	○	133	Plug	1	—	○	○	○	○	○	○	○	○
41	Steel ball	1	φ5.5	φ7.2	φ7.2	φ7.2	—	φ7.2	—	φ7.2	φ7.2	134	Spacer	1	—	—	—	—	○	—	○	—	—

# NEX-2 Compact type Hydraulic Motor Driven Pump

Model number **NEX** — **2** **M** **G** **1**

NEX-type pump  
Usable oil volume  
Standard  
M: Release valve for single acting  
E: Poppet valve for single acting  
D: Manual valve for double acting  
Option  
G: With pressure gauge  
S: With pressure switch  
GS: With pressure gauge and switch  
Voltage  
1: AC100~110V, 2: AC200~240V



NEX-2MGS (Release valve)

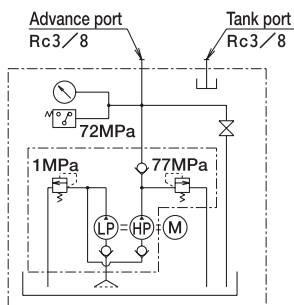


NEX-2EGS (Solenoid valve)

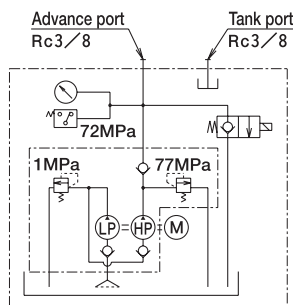
### Features

- Movable type hydraulic pump
- Automatic high and low pressure two-speed types
- Volts available 100V or 200V~240V

### Hydraulic circuit



### Hydraulic circuit



### Application

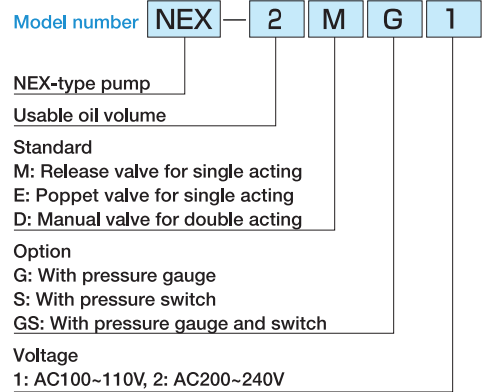
- Applicable for single and double acting tools, machinery and industrial equipment.
- Do intermittent operations due to commutator motor.  
Use GH type hydraulic pump for continuous operation.
- NEX-2M is recommendable for jacking up and down heavy loads.
- Pumps are only for indoor use.

### Specifications

Model	Items		Working pressure (MPa)		Oil delivery (ℓ/min)		Motor		Oil (ℓ)		Weight approx. (kg)	Valves
	High	Low	High	Low	High	Low	Voltage	Capa (kW)	Usable	Required		
NEX-2M	72	1	0.2	2	AC 100V or 200V Single	0.35	2	2.5	13.5	13.8	13.9	14.2
NEX-2M-G												
NEX-2M-S												
NEX-2M-GS												
NEX-2E	72	1	0.2	2	AC 100V or 200V Single	0.35	2	2.5	14	14.3	14.4	14.7
NEX-2E-G												
NEX-2E-S												
NEX-2E-GS												
NEX-2D	72	1	0.2	2	AC 100V or 200V Single	0.35	2	2.5	14	14.5	14.5	15
NEX-2D-G												
NEX-2D-S												
NEX-2D-GS												

Note) Working oil: ISO-L-HV-VG15

# NEX-2 Compact type Hydraulic Motor Driven Pump



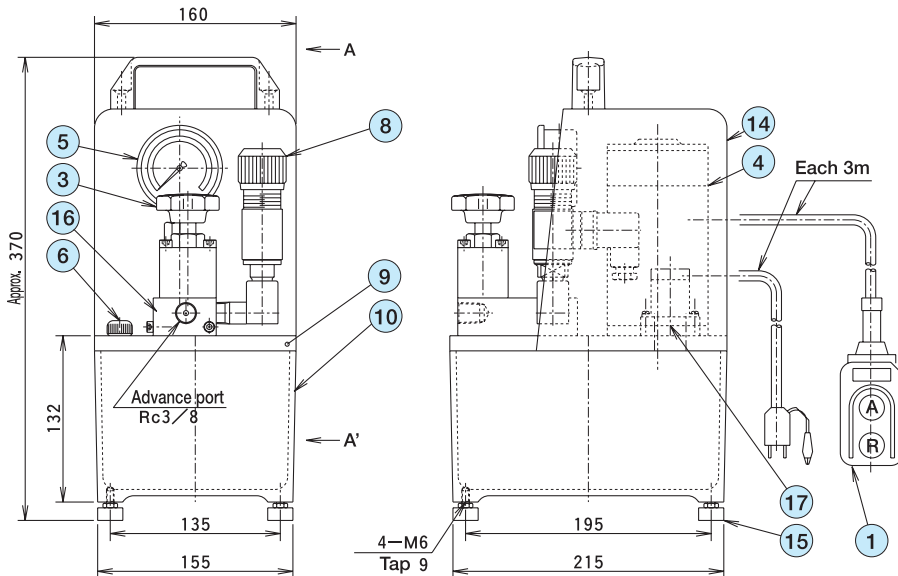
### Advance operation

Push operation switch on “A” and motor starts for advancing.  
When let go hand of operation switch, motor stops and jack stops as it was.

### Retract operation

- NEX-2M series  
When returning jack, loosen release valve.
- NEX-2E series  
When returning jack, push operation switch off “R” and when let go hand, motor stops.
- NEX-2D series  
Turn manual control valve “Retract” to return jack.

### Dimensional drawing



### Parts list

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

Viewed from (A—A')

### Application photos



Pipe Bender & NEX-2MGS

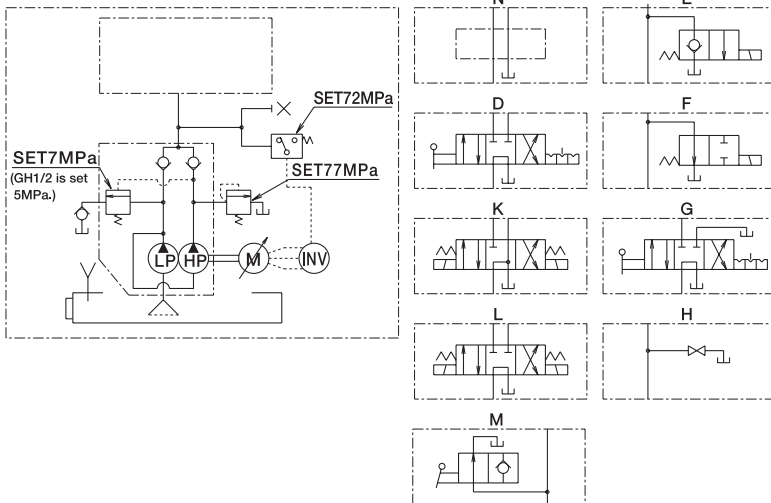
# Inverter Pump



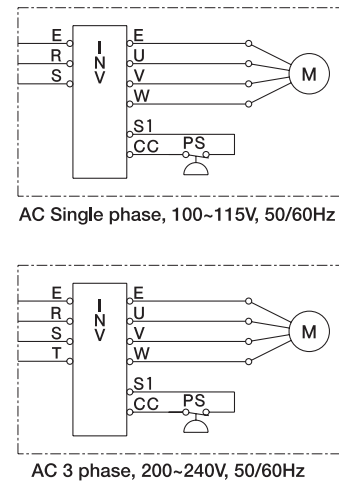
GH1/2-V2T-E

Model number	GH	1/2	V	1	S	F	54	D
G-type pump								
Horse power								
Inverter pump								
Voltage								
1: 100V (100~115)								
2: 200V (200~240)								
*4: 400V (380~500)								
Phase								
S: Single, T: 3 phases								
Noise filter								
Blank: Without it, F: With it								
All closed box								
Blank: Without it, 54: All closed box (IP54)								
Valve								
H: Manual control valve (single acting)								
D: Manual control valve (double acting)								
E: Solenoid valve (single acting)								
K: Solenoid valve (double acting)								
* Transformer is required in case of solenoid type (E, K.) with voltage 380 to 500.								

### Hydraulic circuit



### Electric circuit

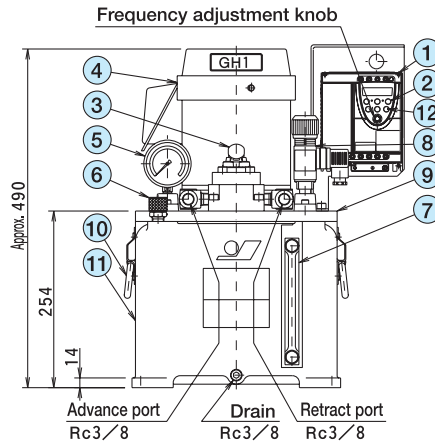
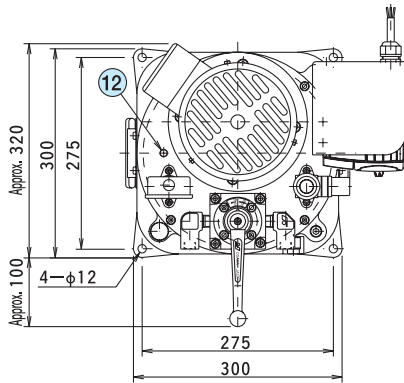


### Features

- Easy control of oil flow  
Adjustable to optional speed for necessary job  
Obtainable more stable speed than the flow control valve
- Speed control with cost effectiveness  
Low cost as compared with the traditional flow control valve  
No need of cooler (depending on circumstances) saving electricity cost
- High efficient with energy saving  
High efficiency of speed control with no surplus of heat generation  
Effective for global warming saving energy.
- Applicable for different power supplies  
Most suitable for single phase motor  
Electric power needed for starting motor is less than half than that of the conventional pump.
- Genuine products  
Recommendable most suitable inverter or motor according to pump characteristics  
As option, noise filter and total enclosed type pump are at your disposal.

# Inverter Pump

**Dimensional drawing**



**Parts list**

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Inverter	1	6	Air vent plug (Oil supply port)	1
2	Operation switch	1	7	Oil gauge	1
3	D type control valve	1	8	Pressure switch	1
4	Motor	1	9	Plate	1
5	Pressure gauge (Option)	1	10	Handle	2
			11	Oil tank	1
			12	Stop key	1

※ This drawing is for GH1-VIS-D.  
 Refer to G type hydraulic pump pages on dimensional details.  
 ※ Speed control is adjustable by turning frequency adjustment knob.

**Specifications**

Model	Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor		Oil (ℓ)		Weight approx. (kg)
		High	Low	High	Low	Voltage	Capa (kW)	Usable	Required	
GH1/2-V1S□□-□		72	5	0.03 ~0.35	0.24 ~2.4	Single ph. 100V	0.4	5	8	41
GH1/2-V2SF□□-□	Single ph. 200V									
GH1/2-V2T□□-□	3 ph. 200V									
GH1/2-V4TF□□-□	3 ph. 200V									
GH1-V1S□□-□		72	7	0.06 ~0.6	0.4 ~4.0	Single ph. 100V	0.75	10	14	52
GH1-V2SF□□-□	Single ph. 200V									
GH1-V2T□□-□	3 ph. 200V									
GH1-V4TF□□-□	3 ph. 400V									
GH2-V2SF□□-□		72	7	0.12 ~1.2	0.8 ~8	Single ph. 200V	1.5	18	27	110
GH2-V2T□□-□	3 ph. 200V									
GH2-V4TF□□-□	3 ph. 400V									
GH3-V2SF□□-□		72	7	0.18 ~1.8	1.2 ~12	Single ph. 200V	2.2	25	33	120
GH3-V2T□□-□	3 ph. 200V									
GH3-V4TF□□-□	3 ph. 400V									
GH5-V2TF□□-□		72	7	0.3 ~3.0	2 ~20	3 ph. 200V	3.7	40	55	220
GH5-V4TF□□-□	3 ph. 400V									

Recommendable: Voltage 2 (200V~240V) single phase motor, fast shipment available.

**Application photos**



[Use for breaking test as press machine.]  
 Features: Control fine adjustment of speed on load test



[Up and down of house]  
 Features: Synchronization control under different jack loads



# G-type Hydraulic Motor Driven Pump for single acting jack (S.G.A)

Model number **GH 1/2 S M**

G-type pump  
Horse power  
S: Single phase, No mark: 3 phase  
R: With damp valve & operation switch  
M: With shut off valve & pressure switch



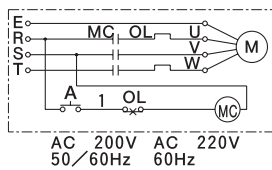
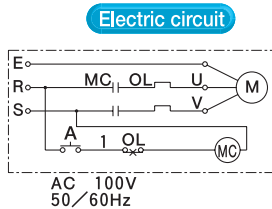
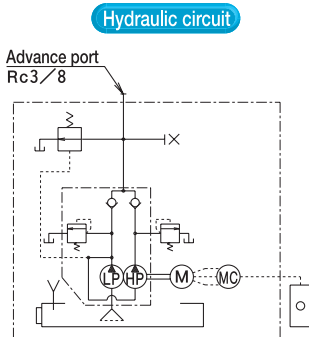
GH1/2-R (Damp valve)

**How to operate**

- Turn on operation switch to start motor and jack start pushing.
- When let go hand operation switch, motor stops and jack returns.
- Stop halfway and pressure holding do not work.

**Standard attachment**

This pump is equipped with operation switch HS-1A.



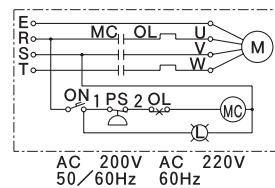
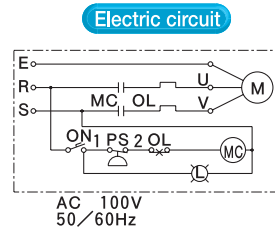
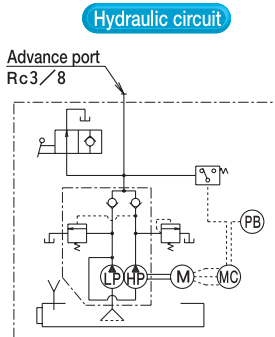
GH1/2-M (Hand operated valve)

**How to operate**

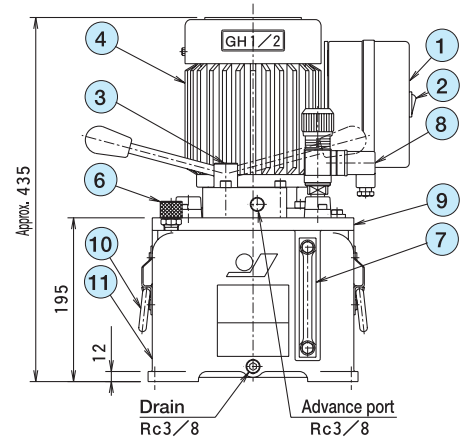
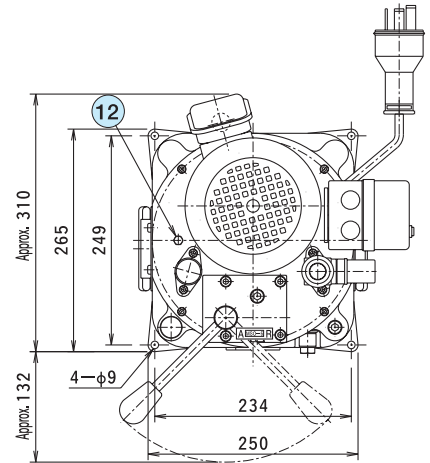
- Switch on and off is done by sea-saw switch.
- When shut off valve "CLOSE", jack advances and motor stops when pressure reached set pressure. Jack returns when shut off valve "OPEN".

**Standard attachment**

This pump is equipped with pressure switch KPS-800.



**Dimensional drawing**



GH1/2-R  Hand operational switch  
A: Advance

**Parts list**

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	6	Air vent plug (Oil supply port)	1
2	Sea-saw switch (Only M type)	1	7	Oil gauge	1
3	Valve R: Damp M: Shut off valve	1	8	Pressure switch	1
4	Motor	1	9	Plate	1
5	Pressure gauge (Option)	1	10	Handle	1
			11	Oil tank	1
			12	Safety valve	1

**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	Single ph.		3 ph.
GH1/2-R	72	1.5	5.0	0.35	2.0	0.4	E	4	1800	Single ph. 220V 3 ph. 380V	5	8	39	40	Rc3/8
GH1/2-M				0.29	2.4				1500						

Note.1) Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. Note.2) Voltage available on request

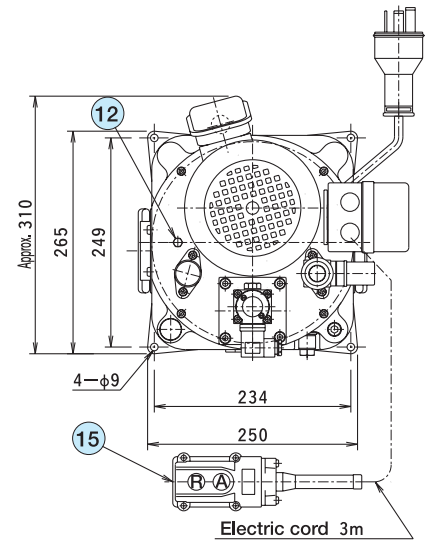
# G-type Hydraulic Motor Driven Pump for single acting jack (S.G.A)

Model number **GH 1/2 S E**

G-type pump  
Horse power  
S: Single phase, No mark: 3 phase  
E: Solenoid valve half way stop · pressure holding  
F: Solenoid valve no halfway stop · no pressure holding



Dimensional drawing



## GH1/2—E (Solenoid valve)

### How to operate

- Turn on operation switch to start motor and jack start pushing.
- When let go hand from operation switch, motor stops and pressure is kept holding as it is.
- Jack returns when turning off operation switch.

## GH1/2—F (Solenoid valve)

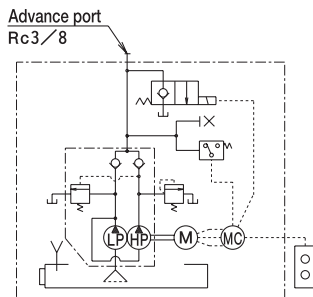
### How to operate

- Turn on operation switch to start motor and jack start pushing.
- When let go hand operation switch, motor stops and jack returns. Stop halfway and pressure holding do not work.

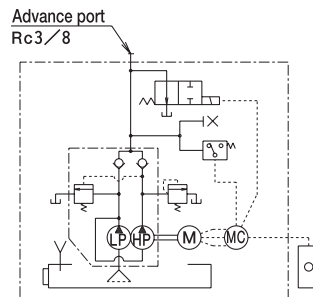
For jacking up and down, do not use GH1/2-E, GH1/2-F.

We recommend GH1/2-H for that application.

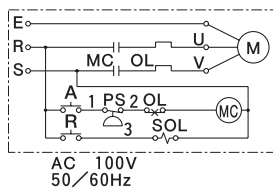
### Hydraulic circuit



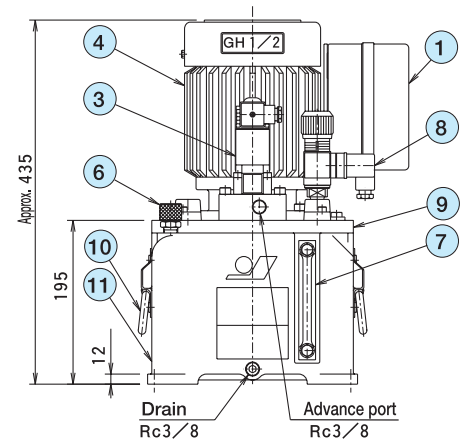
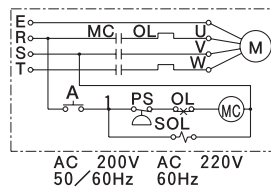
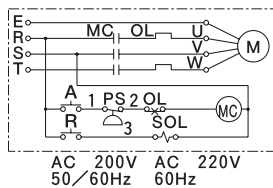
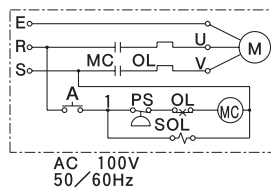
### Hydraulic circuit



### Electric circuit



### Electric circuit



### Hand operational switch

- GH1/2-E A: Advance  
R: Retract  
GH1/2-F A: Advance

### Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	7	Oil gauge	1
3	Poppet valve	1	8	Pressure switch	1
4	Motor	1	9	Plate	1
5	Pressure gauge (Option)	1	10	Handle	2
			11	Oil tank	1
6	Air vent plug (Oil supply port)	1	12	Safety valve	1
			15	Operation switch	1

### Specifications

Model	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	Single ph.		3 ph.
GH1/2※-E	72	5	0.35	2.4	0.4	E	4	1800	Single ph. 220V 3 ph. 380V	5	8	41	42	Rc3/8
GH1/2※-F			0.29	2.0				1500						

Note.1) Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. Note.2) Voltage available on request

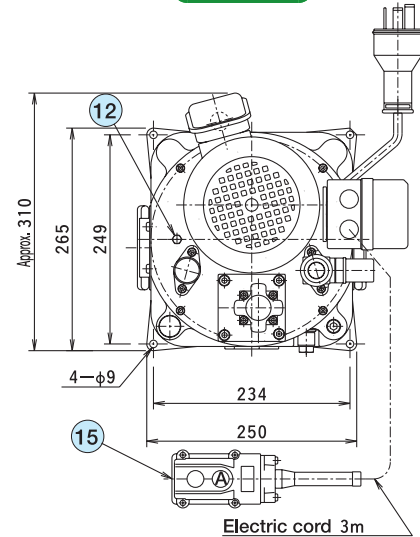
# G-type Hydraulic Motor Driven Pump for single acting jack (S.G.A)

Model number **GH 1/2 S H**

G-type pump  
Horse power  
S: Single phase, No mark: 3 phase  
H: Release valve  
G: Manual control valve



Dimensional drawing



## GH1/2-H

### How to operate

- Close release valve and turn on operation switch to start motor and jack start pushing.
- When let go hand operation switch, motor stops.
- Jack returns when release valve open.

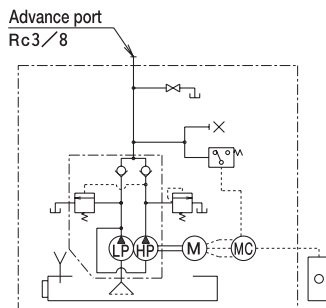
For jacking up and down, do not use GH1/2-G. We recommend GH1/2-H for that application.

## GH1/2-G

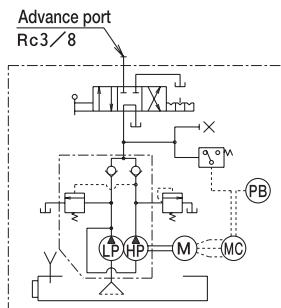
### How to operate

- Turn on sea-saw switch and motor starts.
- When turning manual control valve "ADVANCE", pump works.
- Pump stops working when turn it to "NEUTRAL".
- Jack returns when manual control valve to "RETRACT".

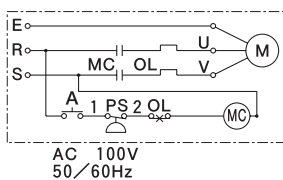
### Hydraulic circuit



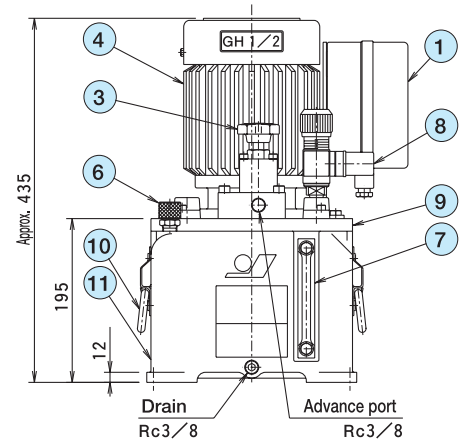
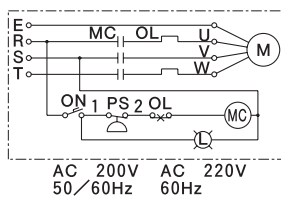
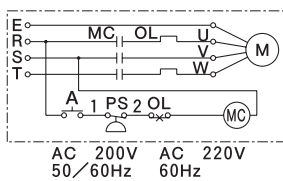
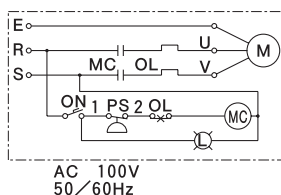
### Hydraulic circuit



### Electric circuit



### Electric circuit



GH1/2-H □ Hand operational switch  
A: Advance

### Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	6	Air vent plug (Oil supply port)	1
2	Sea-saw switch (Only G type)	1	7	Oil gauge	1
3	Valve H: Release G: manual	1	8	Pressure switch	1
4	Motor	1	9	Plate	1
5	Pressure gauge (Option)	1	10	Handle	2
			11	Oil tank	1
			12	Safety valve	1
			15	Operation switch	1

### 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	Single ph.		3 ph.
GH1/2※-H		72	5	0.35	2.4	0.4	E	4	1800	Single ph. 220V 3 ph. 380V	5	8	39	40	Rc3/8
GH1/2※-G				0.29	2.0				1500				40	41	

Note.1) Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. Note.2) Voltage available on request

# G-type Hydraulic Motor Driven Pump for double acting jack (H)



GH1/2-D

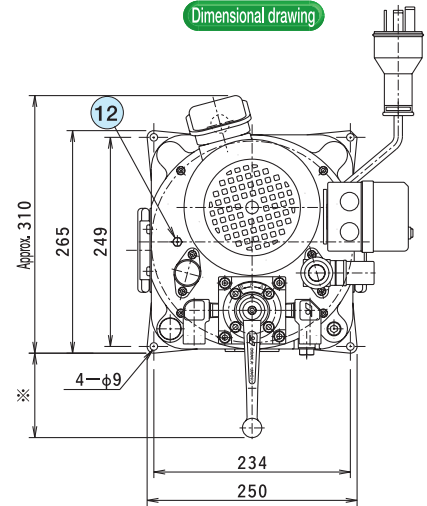


GH1/2-K

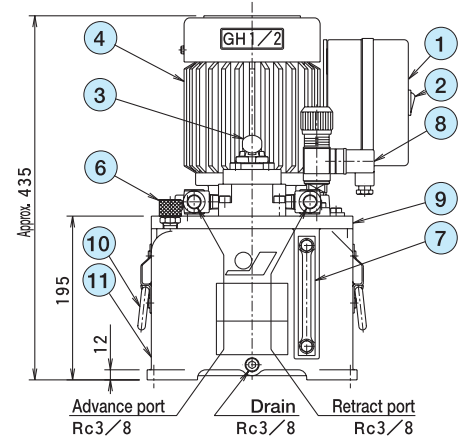
Model number **GH 1/2 S D**

G-type pump  
Horse power  
S: Single phase, No mark: 3 phase  
N: 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 (In case of high frequent use)  
L: With solenoid valve (OSLV), pressure switch (In case of long hour use)

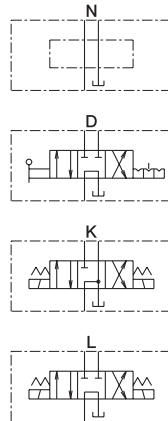
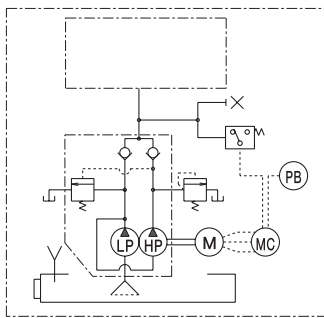
Dimensional drawing



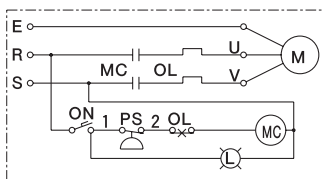
※ Dimensional N:0 K:15  
D:100 L:60



Hydraulic circuit

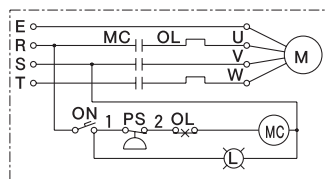


Electric circuit



AC 100V  
50/60Hz

Electric circuit



AC 200V AC 220V  
50/60Hz 60Hz

Option

- Pressure gauge PGO63×1000
- Stack valve
- Operation switch
- Foot switch, etc.

Parts list

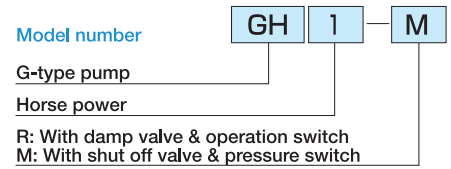
No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	6	Air vent plug (Oil supply port)	1
2	Sea-saw switch	1	7	Oil gauge	1
3	Valve N: Port block D: Manual control K: Solenoid valve (KSV) L: Solenoid valve (OSLV)	1	8	Pressure switch	1
4	Motor	1	9	Plate	1
5	Pressure gauge (Option)	1	10	Handle	2
			11	Oil tank	1
			12	Safety valve	1

Specifications

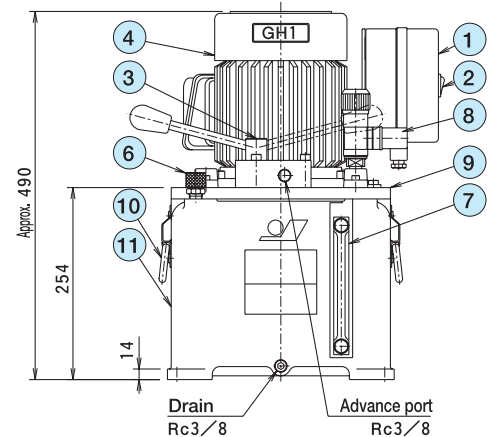
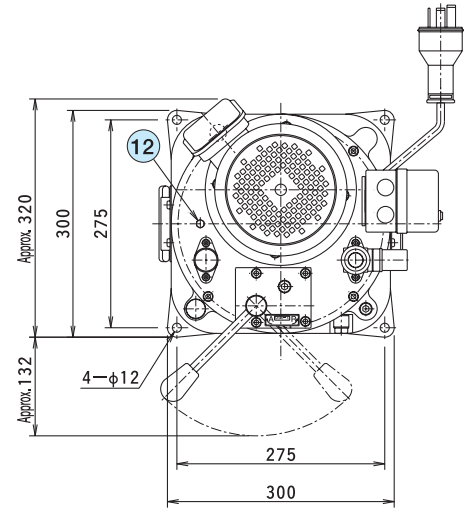
Model	Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)				Oil (ℓ)		Weight approx. (kg)		Connection port	
		High	Low	High	Low	Capa (kW)	Insu	Pole	Rpm	Voltage	Usable	Required	Single ph.		3 ph.
GH1/2※-N		72	5	0.35	2.4	0.4	E	4	1800	Single ph. 220V 3 ph. 380V	5	8	39	40	Rc3/8
GH1/2※-D	40												41		
GH1/2※-K	42												43		
GH1/2※-L	53												54		

Note.1) Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. Note.2) Voltage available on request

# G-type Hydraulic Motor Driven Pump for single acting jack (S.G.A)



Dimensional drawing



GH1-R □ Hand operational switch  
A: Advance

## GH1-R

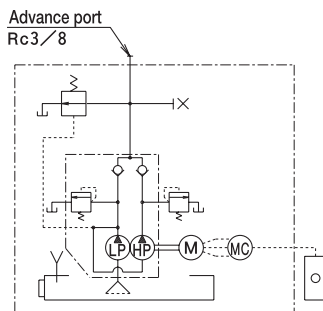
### How to operate

- Turn on operation switch to start motor and jack start pushing.
- When let go hand operation switch, motor stops and jack returns.
- Stop halfway and pressure holding do not work.

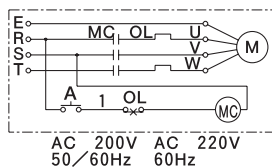
### Standard attachment

This pump is equipped with operation switch HS-1A.

### Hydraulic circuit



### Electric circuit



## GH1-M

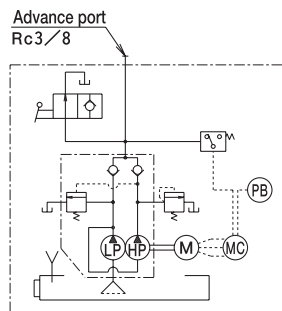
### How to operate

- Switch on and off is done by sea-saw switch.
- When shut off valve "CLOSE", jack advances and motor stops when pressure reached set pressure. Jack returns when shut off valve "OPEN".

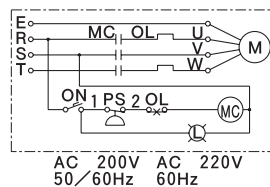
### Standard attachment

This pump is equipped with pressure switch KPS-800.

### Hydraulic circuit



### Electric circuit



### Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	6	Air vent plug (Oil supply port)	1
2	Sea-saw switch (Only M type)	1	7	Oil gauge	1
3	Valve R: Damp M: Shut off valve	1	8	Pressure switch	1
4	Motor	1	9	Plate	1
5	Pressure gauge (Option)	1	10	Handle	1
			11	Oil tank	1
			12	Safety valve	1

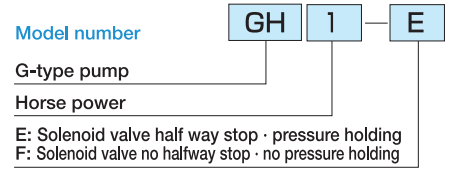
### Specifications

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
GH1-R		72	1.5	0.6	4.0	0.75	E	4	1800	3 ph. 380V	10	14	51	Rc3/8
GH1-M			7.0	0.5	3.3				1500				51	

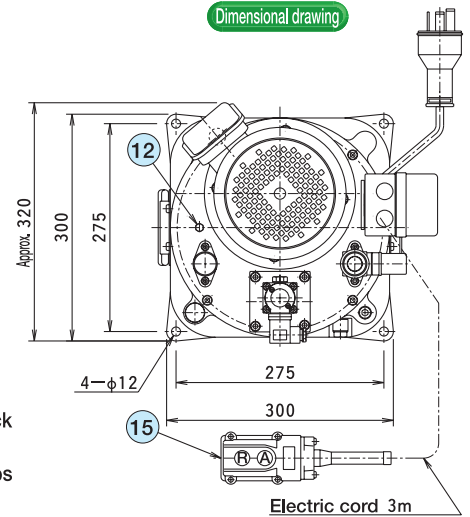
Note.1) Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. Note.2) Voltage available on request

# G-type Hydraulic Motor Driven Pump

## for single acting jack (S.G.A)



Dimensional drawing



### GH1—E (Solenoid valve)

#### How to operate

- Turn on operation switch to start motor and jack start pushing.
- When let go hand from operation switch, motor stops and pressure is kept holding as it is.
- Jack returns when turning off operation switch.

### GH1—F (Solenoid valve)

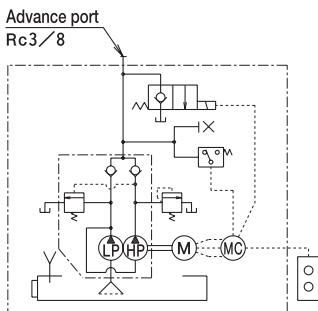
#### How to operate

- Turn on operation switch to start motor and jack start pushing.
- When let go hand operation switch, motor stops and jack returns.
- Stop halfway and pressure holding do not work.

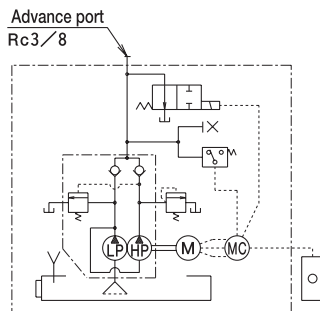
For jacking up and down, do not use GH1-E, GH1-F.

We recommend GH1-H for that application.

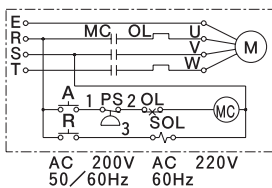
#### Hydraulic circuit



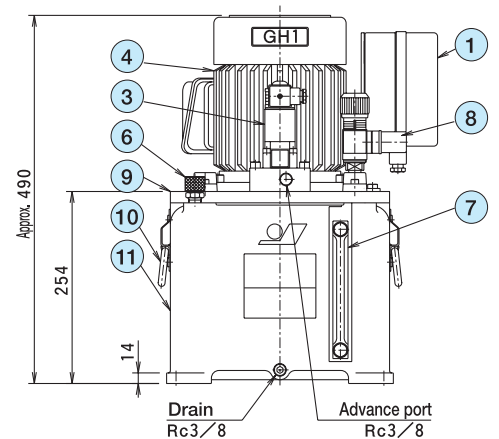
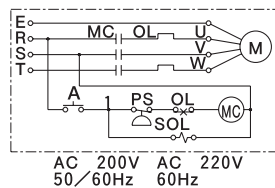
#### Hydraulic circuit



#### Electric circuit



#### Electric circuit



Hand operational switch  
 GH1-E A: Advance R: Retract  
 GH1-F A: Advance

#### Parts list

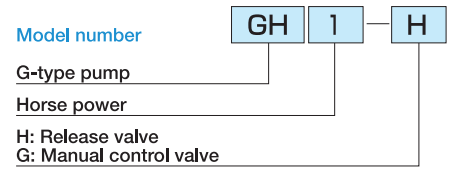
No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	7	Oil gauge	1
3	Poppet valve	1	8	Pressure switch	1
4	Motor	1	9	Plate	1
5	Pressure gauge (Option)	1	10	Handle	2
			11	Oil tank	1
6	Air vent plug (Oil supply port)	1	12	Safety valve	1
			15	Operation switch	1

#### Specifications

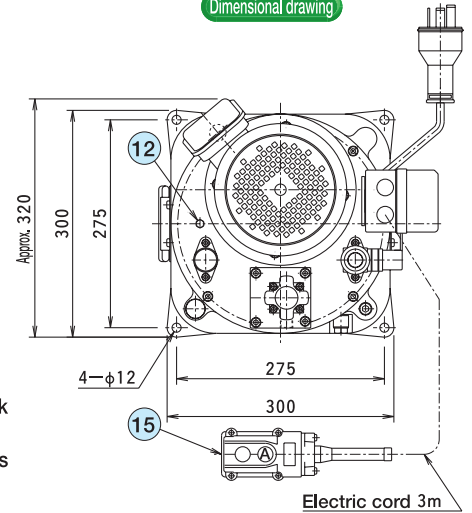
Model	Items	Working pressure (MPa)		Oil delivery (ℓ/min)		Motor (60/50Hz)				Oil (ℓ)		Weight approx. (kg)	Connection port	
		High	Low	High	Low	Capa (kW)	Insu	Pole	Rpm	Voltage	Usable			Required
GH1—E		72	7	0.6	4	0.75	E	4	1800	3 ph. 380V	10	14	51	Rc3/8
GH1—F				0.5	3.3				1500				52	

Note.1) Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. Note.2) Voltage available on request

# G-type Hydraulic Motor Driven Pump for single acting jack (S.G.A)



Dimensional drawing



## GH1-H

### How to operate

- Close release valve and turn on operation switch to start motor and jack start pushing.
- When let go hand operation switch, motor stops.
- Jack returns when release valve open.

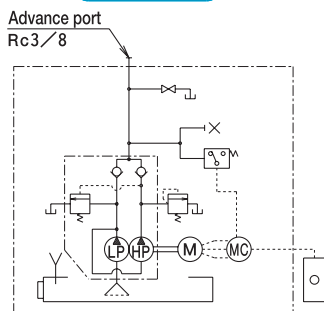
## GH1-G

### How to operate

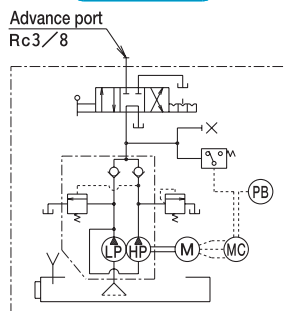
- Turn on operation switch to start motor and jack start pushing.
- When let go hand operation switch, motor stops and jack returns.
- Stop halfway and pressure holding do not work.

For jacking up and down, do not use GH1-G. We recommend GH1-H for that application.

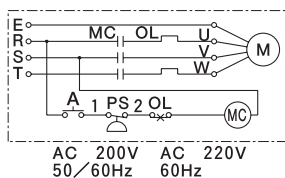
### Hydraulic circuit



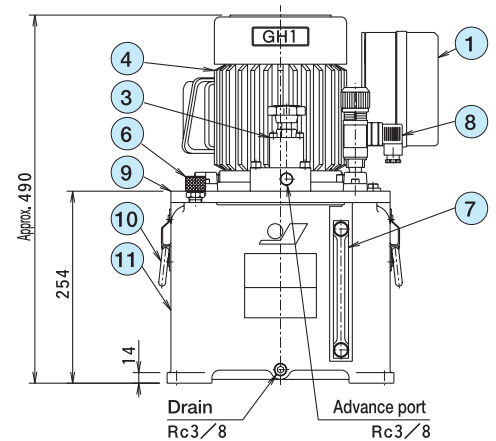
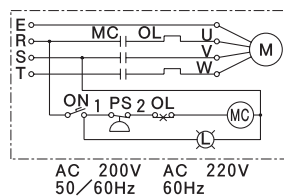
### Hydraulic circuit



### Electric circuit



### Electric circuit



GH1-H □ Hand operational switch  
A: Advance

### Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	6	Air vent plug (Oil supply port)	1
2	Sea-saw switch (Only G type)	1	7	Oil gauge	1
3	Valve H: Release valve G: Manual control valve	1	8	Pressure switch	1
4	Motor	1	9	Plate	1
5	Pressure gauge (Option)	1	10	Handle	2
			11	Oil tank	1
			12	Safety valve	1

### 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
GH1-H		72	7	0.6	4	0.75	E	4	1800	3 ph. 380V	10	14	51	Rc3/8
GH1-G				0.5	3.3				1500				52	

Note.1) Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. Note.2) Voltage available on request

# G-type Hydraulic Motor Driven Pump for double acting jack (H)

Model number **GH 1 D**

G-type pump  
Horse power

N: 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  
(In case of high frequent use)  
L: With solenoid valve (OSLV), pressure switch  
(In case of long hour use)

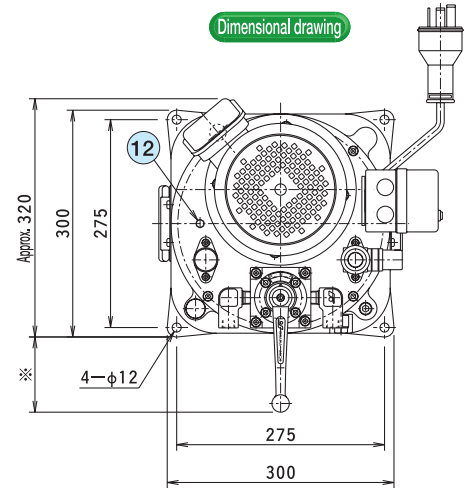


GH1-D



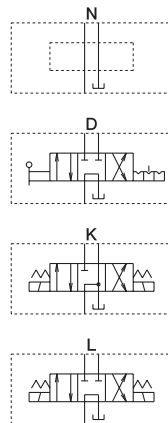
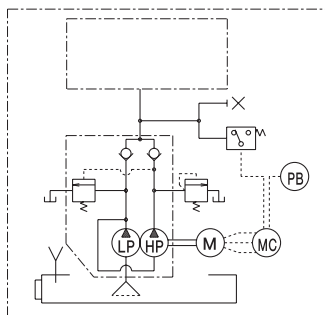
GH1-K

Dimensional drawing

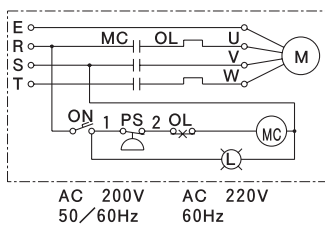


※ Dimensional N:0 K:15  
D:100 L:80

Hydraulic circuit

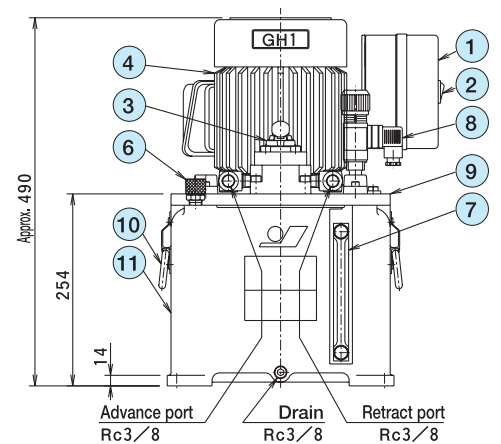


Electric circuit



Option

- Pressure gauge PGO63X1000
- Stack valve
- Operation switch
- Foot switch, etc.



Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	6	Air vent plug (Oil supply port)	1
2	Sea-saw switch	1	7	Oil gauge	1
3	Valve N: Port block D: Manual control K: Solenoid valve (KSV) L: Solenoid valve (OSLV)	1	8	Pressure switch	1
			9	Plate	1
			10	Handle	2
4	Motor	1	11	Oil tank	1
5	Pressure gauge (Option)	1	12	Safety valve	1

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			
GH1-N	72	7	0.6 0.5	4 3.3	0.75	E	4	1800 1500	3 ph. 380V	10	14	51	Rc3/8	
GH1-D												52		
GH1-K												55		
GH1-L												65		

Note.1) Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. Note.2) Voltage available on request



# G-type Hydraulic Motor Driven Pump

## for single acting jack (S.G.A) and double acting jack (H)

- GH2 pumps are equipped with pressure gauge (PGO100 × 1000).
- Hydraulic motor driven pump of which capacities more than 1.5kW are on request.

Model number

GH 2 DS

G-type pump

Horse power

SS: With port block & pressure switch  
(In case of separate control valve)

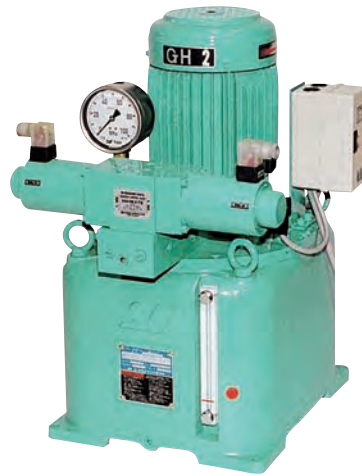
DS: With manual control valve & pressure switch

KS: With solenoid valve (KSV) & pressure switch  
(In case of high frequent use)

LS: With solenoid valve (OSLV), pressure switch  
(In case of long hour use)

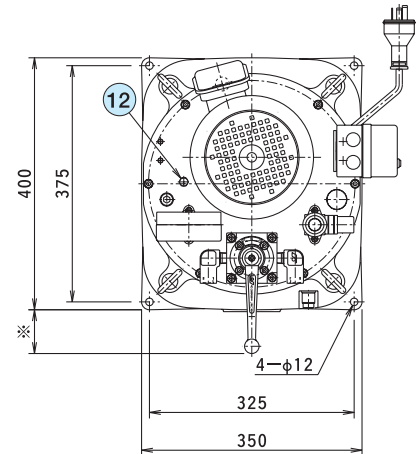


GH2-DS

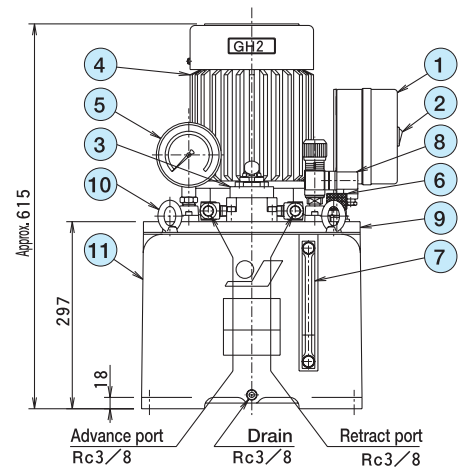


GH2-KS

Dimensional drawing

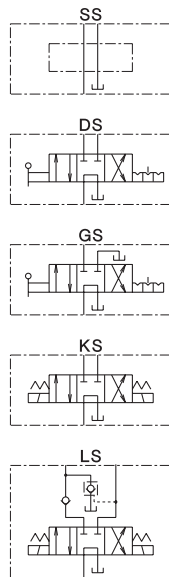
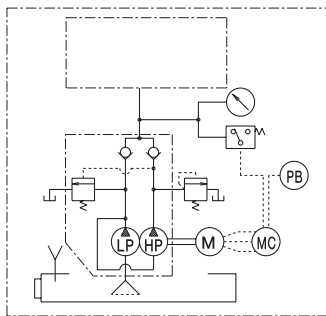


※Dimensional SS:0 KS:10  
DS:80 LS:10  
GS:80

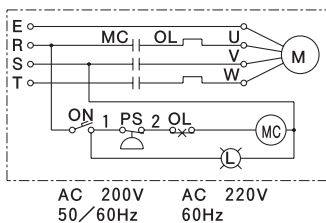


Advance port Rc3/8      Drain Rc3/8      Retract port Rc3/8

Hydraulic circuit



Electric circuit



Option

- Stack valve
- Operation switch
- Foot switch, etc.

Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	6	Air vent plug (Oil supply port)	1
2	Sea-saw switch	1	7	Oil gauge	1
3	Valve SS: Port block DS: Manual control GS: Manual control KS: Solenoid valve (KSV) LS: Solenoid valve (OSLV)	1	8	Pressure switch	1
			9	Plate	1
			10	Eye bolt	4
			11	Oil tank	1
			12	Safety valve	1
4	Motor	1			
5	Pressure gauge	1			

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			
GH2-SS	72	7	1.2	1.0	1.5	E	4	1800 1500	3 ph. 380V	18	27	110	Rc3/8	
GH2-DS												110		
GH2-GS												110		
GH2-KS												115		
GH2-LS												120		

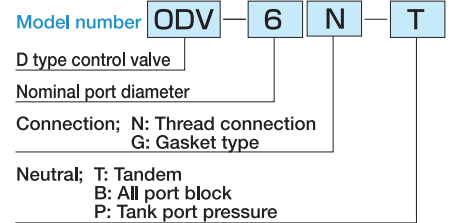
Note.1) Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side.      Note.2) Voltage available on request

# O.J. High Pressure Valve

## Manual control valve

### Features

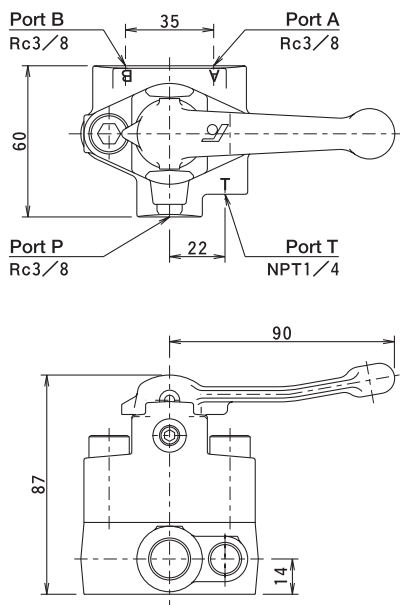
- These directional valves control the oil flow by manual operation.
- Also the valves control moving direction such as jacks' start or stop etc.
- Due to rotary disc mechanism, high oil tight is superior to pressure holding.



ODV-3N-T



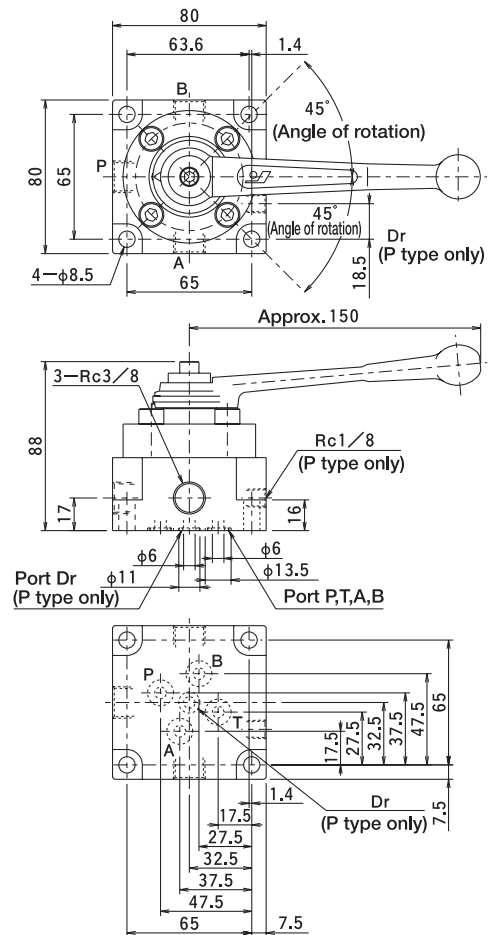
### Dimensional drawing



ODV-6G



### Dimensional drawing



- Note) 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. On hydraulic circuit, when same ports consist on more than 2 ports, blind another unused plug.  
 3. Symbol P type has drainage in itself, connect directly to tank.  
 Allowable back pressure of tank line for only P type is 72MPa.

### Specifications

Model	Items	Max. working pressure (MPa)	Rating flow (ℓ/min)	Max. oil flow (ℓ/min)	Allowable back pressure (MPa)	Weight approx. (kg)	Hydraulic symbol	Connection
ODV-3N-T		72	2	3	5	1	Neutral:  T  B  P	N: Thread connection G: gasket type
ODV-6G- $\begin{pmatrix} T \\ B \end{pmatrix}$			8	16	2	2.6		

# O.J. High Pressure Valve

## Manual control valve

Model number **ODV-6N-T**


D type control valve  
 Nominal port diameter  
 Connection; N: Thread connection  
 G: Gasket type

Neutral; T: Tandem  
 B: All port block  
 P: Tank port pressure

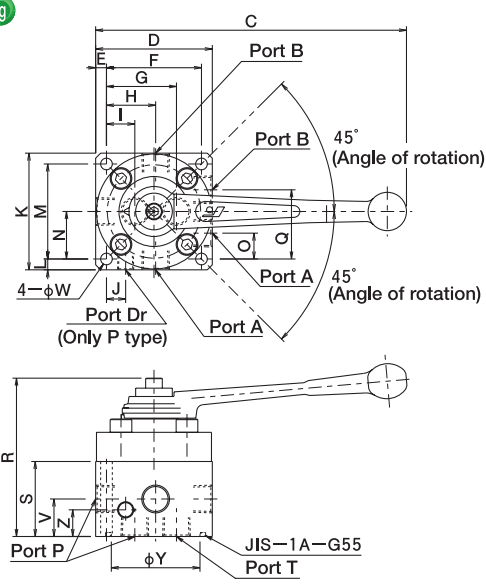
### Features

- These directional valves control the oil flow by manual operation.
- Also the valves control moving direction such as jacks' start or stop etc.
- Due to rotary disc mechanism, high oil tight is superior to pressure holding.


**ODV-6N**



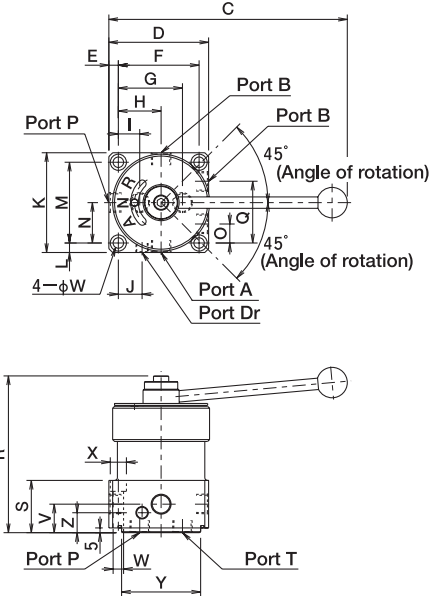
Dimensional drawing



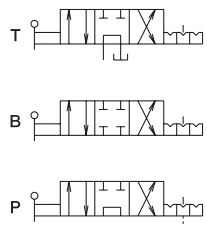
**ODV-12A**



Dimensional drawing



### Specifications

Model	Items	Max. working pressure (MPa)	Rating flow (ℓ/min)	Max. oil flow (ℓ/min)	Allowable back pressure (MPa)	Weight approx. (kg)	Hydraulic symbol	Connection
ODV-6N	(T, P)	72	8	16	2	2.4	Neutral: 	N: Thread connection (New type)
ODV-9N	(T, P)		20	40		5.5		A: Thread connection (All type for indoor use)
ODV-12	(A, B, T, P)		40	60		8		Usable items ODV-12,16,19
ODV-16	(A, B, T, P)		80	120		11		B: Thread connection (All type for indoor use)
ODV-19A	(T, P)	60	120	180	23	Usable items ODV-12,16		

### Dimension chart

Model	Items	Dimension (mm)																							
		C	D	E	F	G	H	I	J	K	L	M	N	O	Q	R	S	U	V	W	X	Y	Z	A.B.P.T	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	—
ODV-19A		412.5	145	12.5	120	98	65	—	—	155	12.5	130	65	32	98	223/230	65	52	35	14	19	118.2	—	Rc1	—

# O.J. High Pressure Valve

## High pressure electric solenoid valve

**Application**

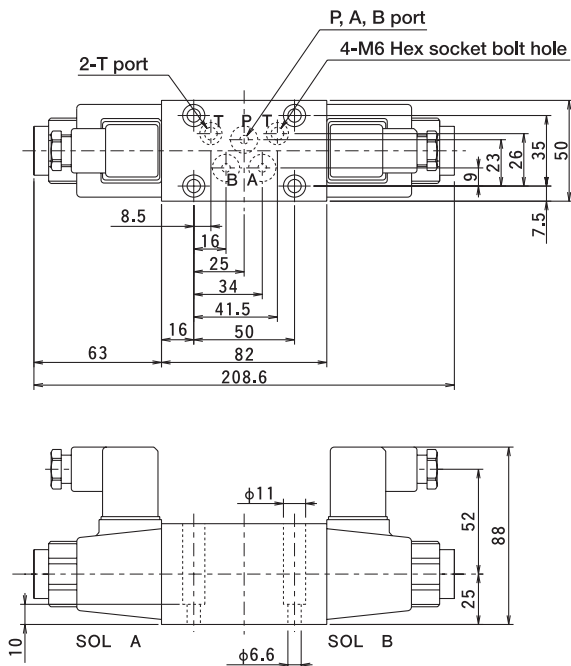
- This valve operates solenoid by electric signal, and change oil flow direction.
- Also the valves control moving direction such as jacks' start or stop etc.

Model number	KSV	3	G	6	F	2
Model of solenoid						
Number of position						
To be connected with;						
G: Gasket type						
T: Thread connection to sub plate						
Nominal port diameter						
Type of spool						
Rated voltage	1...AC100V	D01...DC12V				
	2...AC200V	D02...DC24V				

KSV3G-6 (Gasket type)



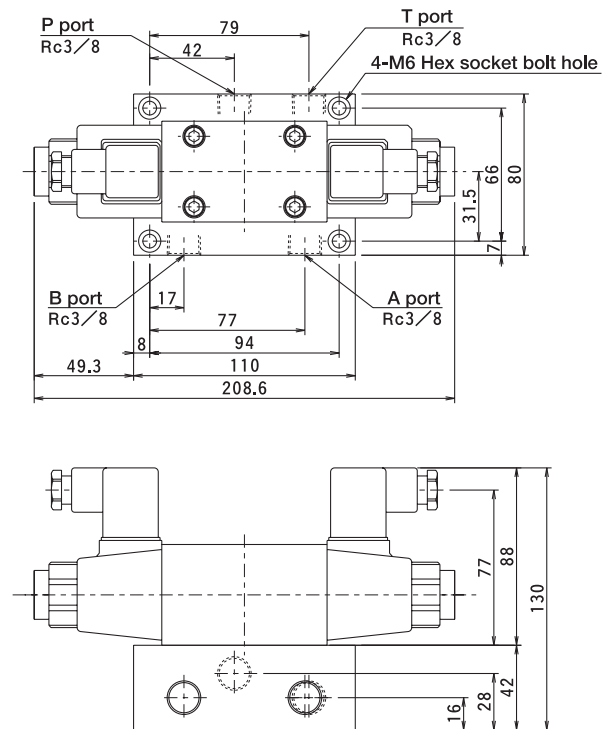
**Dimensional drawing**



KSV3T-6 (Thread connection type)



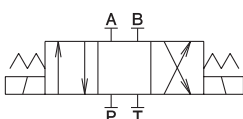
**Dimensional drawing**



**Specifications**

Model	Items	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) (1/2)	72	7	8	10	60	2.6	
KSV3T-6 (B, H, E, P, F) (1/2)			10	12			5.5
KSV3G-6S (B, H, E, P, F) (1/2)			12	30			4.5
KSV3G-9T (1/2)			20	20			11

Spools at neutral position



Model	B	E	F	H	P
Symbol of spool					

# O.J. Standard Accessory

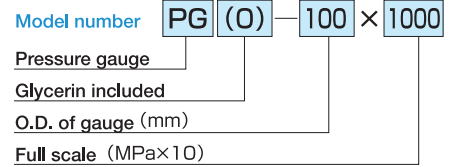
## Pressure gauge

- ① PGO type is glycerin-filled and little difference against vibration & pulsation so that reading indication is easy.
- ② In case of special scale (kN, Pa, P.S.I) or high precision (1 class, 0.6 class), please specify when ordering.

### Features

- Pressure gauges are defined as MPa indication.
- In case kN scale to gauge adapter is calibrated, cylinder bore and cylinder effective area must be specified. Only this cylinder can be used to the pressure gauge.

• Contact us when ordering the gauge if load scale is required.



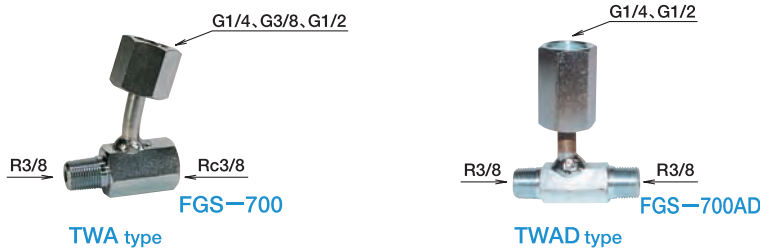
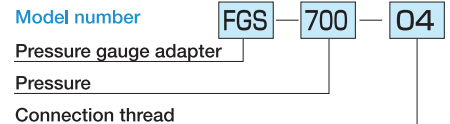
### Specifications

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

## Gauge adapter

### Application

Use gauge adapter when setting pressure gauge on the way of circuit.

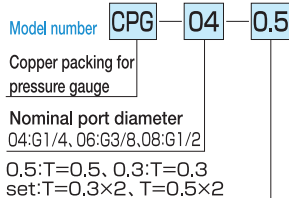
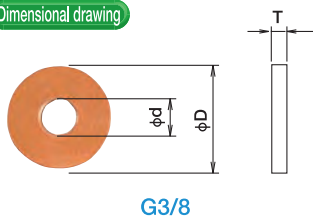


### Specifications

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

## Copper packing for attached pressure gauge

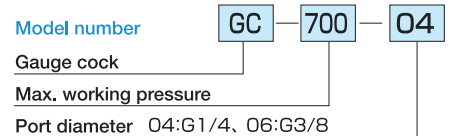
### Dimensional drawing



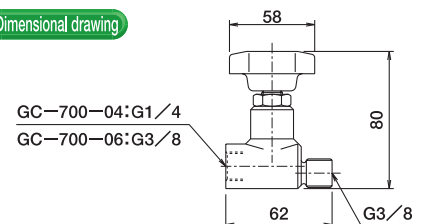
### Specifications

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 cock



### Dimensional drawing



### Specifications

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

# O.J. Standard Accessory

## Pressure switch

Model number

KPS-800

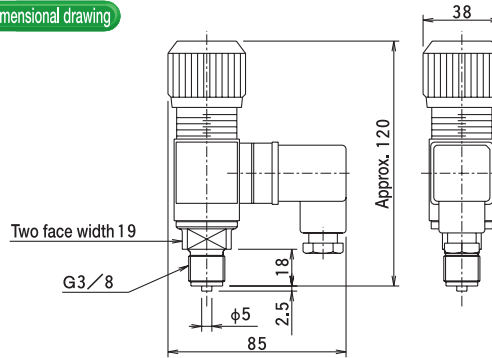
Pressure switch

Range of set pressure



KPS-800

Dimensional drawing



### Specifications

Model	Items	Set pressure range (MPa)	Differential (MPa)	Repeatability (MPa)	Contact	Contact capacity, Resistance load (A)		Weight approx. (kg)	Hydraulic symbol
						AC125V	AC250V		
KPS-210		3~21	1~3	±0.5	1a, 1b	10.1	10.1	0.4	
KPS-800		10~80	2~3	±1	1a, 1b	10.1	10.1	0.4	
KPS-800W		10~80	4~6	±1	1a, 1b	10.1	10.1	0.4	

Note) 1. KPS-800W is used for wide range of differential.  
2. Dimensions are the same each items.

## Operational switch

Model number

HS-1A

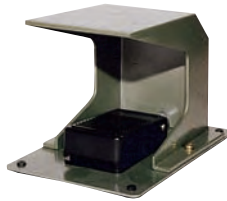
Operational switch

FS: Foot switch

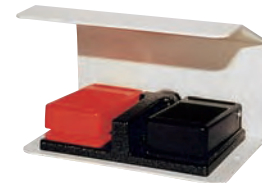
Contact



Operational switch by hand  
(for G type pump operation)  
HS-1A  
HS-2A



Foot switch, FS-1A  
(contact 1a, 1b)  
(Foot switch turns on electricity during stepping)



Foot switch, FS-2A  
(contact 2A, 2b)  
(for advance or retract shift switch)

## Magnetic switch box

Model number

MCS-05S

Magnetic switch box  
MCS: With push button  
MCN: Without push button

Motor horse

S: Single phase 100V  
No mark: 3 phase 200V



Model	Items	Pump	Thermal relay Center related volume (A)
MCS-05S		GH1/2S	9.0
MCN-05S			
MCS-05		GH1/2	2.5
MCN-05			
MCS-1		GH1	3.6
MCN-1			
MCS-2		GH2	6.6
MCN-2			
MCS-3		GH3	9.3
MCN-3			
MCS-5		GH5	15.0
MCN-5			

## Electric plug socket (EPS)

Model number

EPS

For electric plug  
EPS: Single phase  
EPT: 3 phase



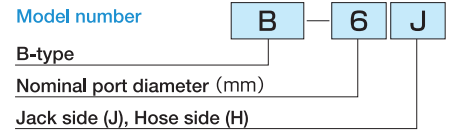
EPS  
125V, 15A (for GH1/2S)  
With Code 3m



EPT  
250V, 20A (for GH1/2~5)

# O.J. Standard Accessory

## B-type Couplers

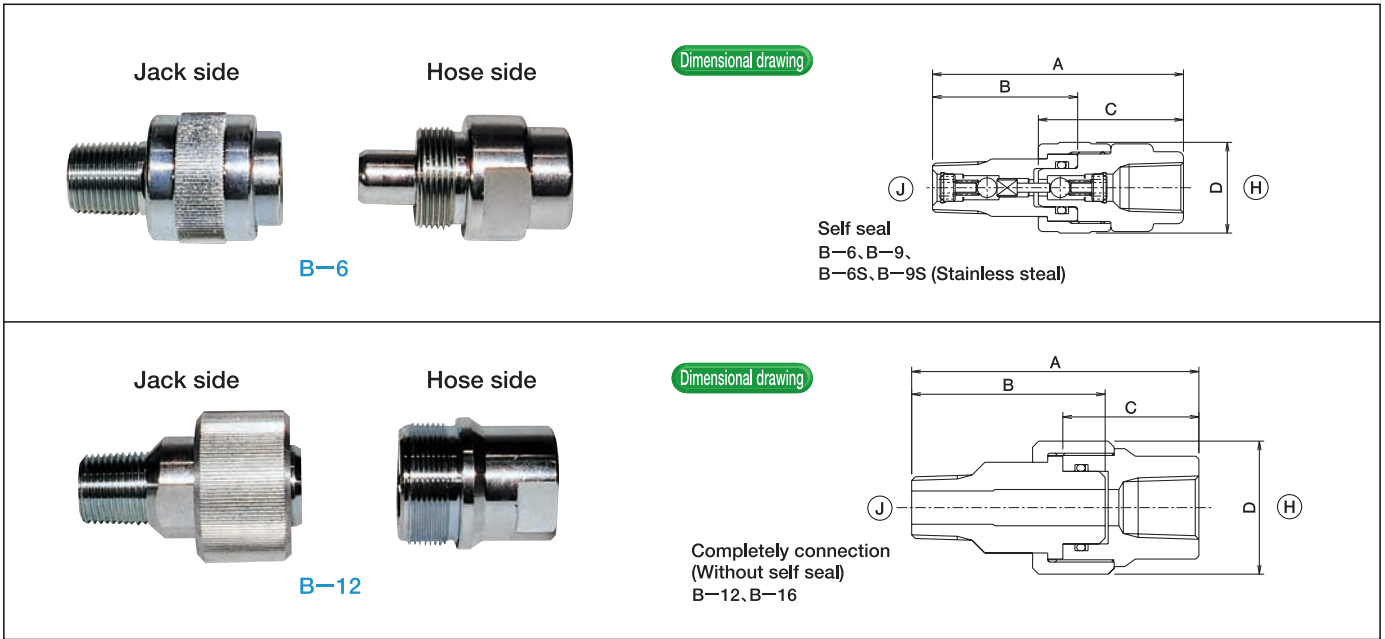


### Features

- B-type couplers are hand self-sealing types.
- Don't use tools when detachment.

### How to operate

- Connection ... Push male coupler for hose side into female coupler for jack side. And tighten union nut until its end.
- Detachment ... After releasing union nut by hand completely, detach male couplings and female couplings.



### Specifications

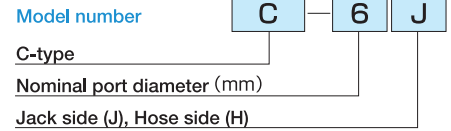
Model	Items	Max. working pressure (MPa)	Jack side (J)		Hose side (H)		Remarks
			Model	Connection thread	Model	Connection thread	
B-6	J JG	72	B-6J	R3/8 male thread	B-6H	Rc3/8 female thread	T, JN, LJA type
			B-6JG	NPT3/8 male thread	B-6H	Rc3/8 female thread	E, EC, EL, EF type
B-6S		72	B-6SJ	R3/8 male thread	B-6SH	Rc3/8 female thread	Use of stainless, proof rust
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	Use of stainless, proof rust
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.

Model	Items	Dimension (mm)				Opposite side for tilting		O-ring, B-ring	Weight approx. (kg)	
		A	B	C	D	Jack side	Hose side		Jack side	Hose side
B-6	J	83	59	48	30	15	24	No.10 NBR PTFE	0.12	0.12
	JG									
B-6 (S)		83	59	48	30	15	24	No.10 NBR PTFE	0.12	0.12
B-9, B-9(S)		86	64	46	37	21	26	P16 NBR PTFE	0.34	0.22
B-12		95	67	45	44	27	27	P24 NBR PTFE	0.46	0.34
B-16		88	71.2	36	45	26	38	P22 NBR (HS90°) PTFE	0.55	0.52

# O.J. Standard Accessory

## C-type Coupling (Quick coupler with lock)



Max. working pressure is 72MPa.  
As detachment is one-touch way, available for a various application easily.

### Features

- Detachment is one-touch way.
- When detaching, no oil leakage.
- In order to equipped with lock system, prevent from detachment in use.

<p>Jack side</p> <p>C-6</p>	<p>Hose side</p>	<p>Dimensional drawing</p> <p>C-6J :R3/8 C-6JG:NPT3/8</p> <p>Two face width 24</p> <p>Approx. 80</p> <p>31</p> <p>63</p> <p>Rc3/8</p> <p>Two face width 24</p> <p>φ32</p> <p>Sleeve</p>
<p>Jack side</p> <p>C-9</p>	<p>Hose side</p>	<p>Dimensional drawing</p> <p>C-9J :R1/2 C-9JG:NPT3/8</p> <p>Two face width 24</p> <p>Approx. 85</p> <p>31</p> <p>63</p> <p>Rc3/8</p> <p>Two face width 24</p> <p>φ32</p>
<p>Jack side</p> <p>C-12</p>	<p>Hose side</p>	<p>Dimensional drawing</p> <p>C-12J :R1/2 C-12JG:NPT3/8</p> <p>Two face width 32</p> <p>Approx. 105</p> <p>35</p> <p>75</p> <p>Rc1/2</p> <p>Two face width 30</p> <p>φ42</p>

### Specifications

Model	Items	Max. working pressure (MPa)	Jack side (J)		Hose side (H)		Jack applicable	Pump applicable
			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 operate
  - (1) Pulling sleeve of coupler for hose and push it into coupler of jack side.
  - (2) After pushing sleeve returns when let go hand to connect both couplings.
  - (3) Operate lock of coupler by lock system.

- How to detach
  - (1) Release lock.
  - (2) Detach couplers with pulling sleeves.

Note) • Do not apply pressure to each coupler alone.

  - When detaching couplers, be sure to operate after removing hydraulic pressure.



# O.J. Standard Accessory

## High pressure rubber hose

Use fluid: General mineral oil  
 Reinforcing layer: RH6 ... 2 wire blade, RH-9 ... 4 wire spiral, RH-9 ... 4 wire spiral, RH12 ... 4 wire spiral + 1 wire blade  
 These hoses are very strong and superior durability.

Model number **RH6** **2** **\*** **\*** **\*** **\*** **K**

RH: Rubber hose  
 NH: Nylon hose

Length of hose (L) mm

Couplings B, C single ended coupling  
 Couplings BB, CC both end couplings

Protection cap with chain (K)

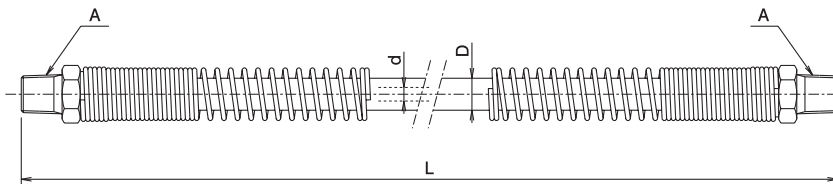
**Features**

This metal fitting is attached with clamping bolt for R (male thread) in both sides.



High pressure rubber hose RH

**Dimensional drawing**



• The weight of both end fittings is included the weight of both end springs.

**Specifications**

Model	Items	Max. working pressure (MPa)	Max. oil flow (l/min)	Connecting thread	Dimension (mm)			Weight approx. (kg)		
					Min. bend radius	Inside diameter $\phi$ d	Outside diameter $\phi$ D	A	Hose (kg/m)	Metal fitting
RH6		72	8	B-6H	90	6.3	16.7	R3/8	0.45	0.6
RH9			20	B-9H	140	9.5	20.6	R3/8	0.65	0.7
RH12		100	40	*B-12H	180	12.7	27.8	R1/2	1.36	0.8

Length of hose

Model of hose	Standard dimensions (m)	Special order feasible range (m)
Rubber hose	RH6~12 L 1 2 3 4 5 10	0.3~20

TiD-extra  
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## High pressure nylon hose

Use fluid: General mineral oil, phosphate acid ester system oil

**Features**

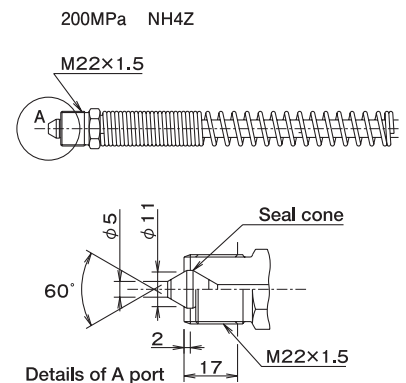
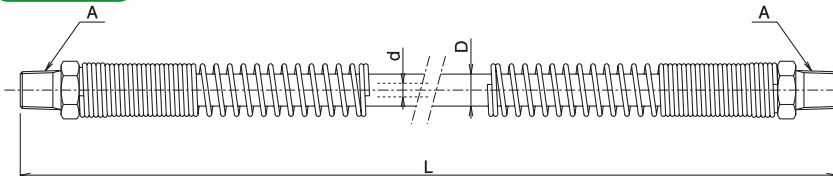
This metal fitting is attached with clamping bolt for R (male thread) in both sides.

• C-type couplings are available for only R3/8 or R1/2 on A end male threads.



High pressure nylon hose NH

**Dimensional drawing**



**Specifications**

Model	Items	Max. working pressure (MPa)	Max. oil flow (l/min)	Connecting thread	Dimension (mm)			Weight approx. (kg)		
					Min. bend radius	Inside diameter $\phi$ d	Outside diameter $\phi$ D	A	Hose (kg/m)	Metal fitting
NH5		100	8	*B-6H	60	6.3	13.0	R3/8	0.31	0.5
NH8			20	B-9H	85	8.2	14.1	R3/8	0.32	0.6
NH11		72	40	B-12H	140	12.8	20.4	R1/2	0.54	1.2
NH15			80	B-16H	225	16.3	25	R3/4	1.05	1.6

Length of hose

Model of hose	Standard dimensions (m)	Special order feasible range (m)
Nylon hose	NH5~15 L 1 2 3 4 5 10	0.3~20

# O.J. Standard Accessory

## Manifold

### Features

- Designed to operate multi-unit jacks or hydraulic tools acting individually or same time with only one pump. Available for both single acting (DS) and double acting manifold (DW).

**Model number** DS 6 2 V1

**Manifold**  
(DS: Single, DW: Double)

**Nominal port diameter**  
φ6, φ9, φ12

**Number of jack connected**

V0: Without stop valve, V1: With OSV-6A,  
V2: With OSV-6B, V3: With OSV-6G,  
V4: With OSV-9A, V5: With OSV-12A

**Dimensional drawing**

DS

(unit: mm)

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

(unit: mm)

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

**Dimensional drawing**

DW

(unit: mm)

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

(unit: mm)

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

# Shop Press

Model number **KPA-10-S15**

KPA: Table type  
 KPB: Frame type


Capacity (ton)

Spring return (S), Hydraulic return (H)

Stroke (cm)

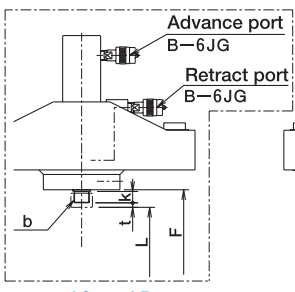
**Features**

Available for wide varieties of such works as pressing-in, correcting, straightening and caulking



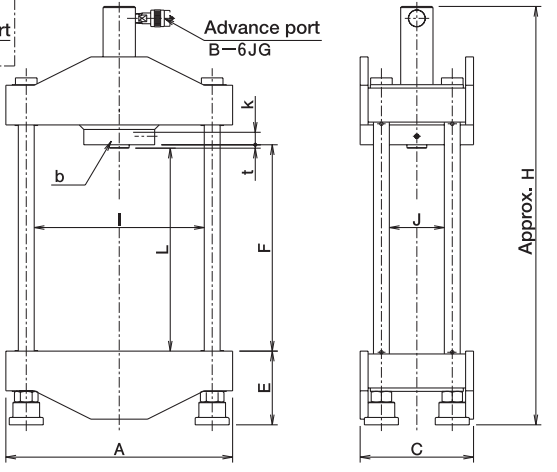
**KPB**

**Dimensional drawing**



**KPB-10-H15**

**Warning**  
 Don't operate pump unit if parts of body of operator are put in between jack and plate.




**KPB-10-S15**

Model	Jack applicable	
	Spring return type	Hydraulic return type
KPB-10	E10S10, E10S15 E10S20, E10S25 E10S30	E10H8, E10H15 E10H25
KPB-20	E23S16, E23S21 E23S25, E23S30	E20H15 E20H25
KPB-30	E30S12.5, E30S20	E30H20, E30H35

**Specifications**

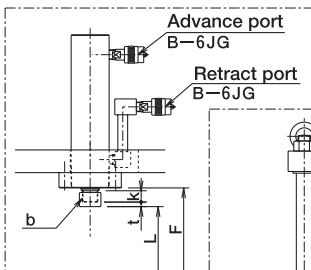
Model	Items	Capacity kN(tf)	A	C	E	F	H	I	J	L		b		k		t		Weight approx. (kg)	
										S type	H type	S type	H type	S type	H type	S type	H type	S type	H type
KPB-10	100(10)	400	200	130	364	740	300	97	358	338	M27×2	22	20	6	8	47	50		
KPB-20	200(20)	475	270	186	430	900	350	134	422	397	M40×2	M36×2	25	23	8	10	110	110	
KPB-30	300(30)	535	300	219	496	1070	400	138	486	486	M36×2	25	28	10	10	135	140		

**TiD-extra**  
Industrial Technologies d.o.o.



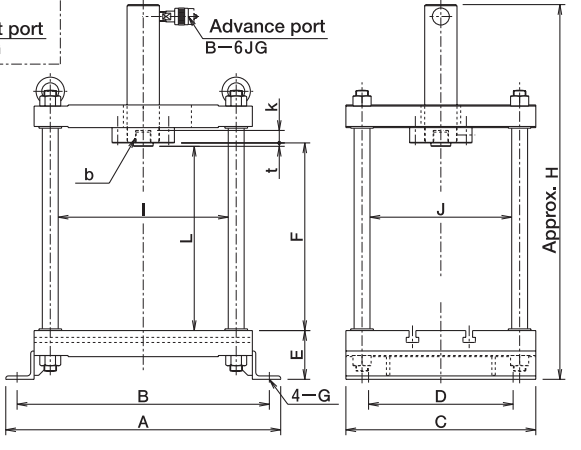
**KPA**

**Dimensional drawing**



**KPA-10-H15**

**Warning**  
 Don't operate pump unit if parts of body of operator are put in between jack and plate.



**KPA-10-S15**

Model	Jack applicable	
	Spring return type	Hydraulic return type
KPA-10	E10S10, E10S15 E10S20, E10S25 E10S30	E10H8, E10H15 E10H25
KPA-20	E23S16, E23S21 E23S25, E23S30	E20H15 E20H25
KPA-30	E30S12.5, E30S20	E30H20, E30H35

**Specifications**

Model	Items	Capacity kN(tf)	A	B	C	D	E	F	H	I	J	L		b		k		t		Weight approx. (kg)
												S type	H type	S type	H type	S type	H type	S type	H type	
KPA-10	100(10)	485	445	335	255	86	331	680	300	250	325	298	M27×2	22	20	6	8	110		
KPA-20	200(20)	555	515	380	300	95	383	750	350	275	375	345	M40×2	M36×2	25	23	8	10	190	
KPA-30	300(30)	625	585	425	345	105	405	745	400	300	395	395	M36×2	25	28	10	10	290		

# Gear Puller

Model number	GP	2	30	S15
Gear puller				
Number of claws				
Max. opened diameter (mm)				
Stroke of jack (cm)				
S15:15				
S21:21				

### Application

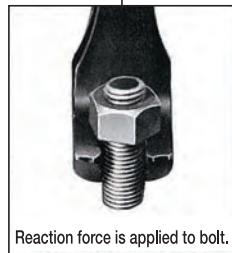
Use in pulling work such as pulley, gear, couplings, etc.  
Available both for 2 and 3 jaw design

### Features

- There are jaws at both sides of grip arms. In one side, designed for inserting jaws into work directly. In other side, designed for pulling up work by means of bolts.
- Available for inserting attachment at rod-end of jacks
- Saddle is for screw-in type.



GP-2-30-S15

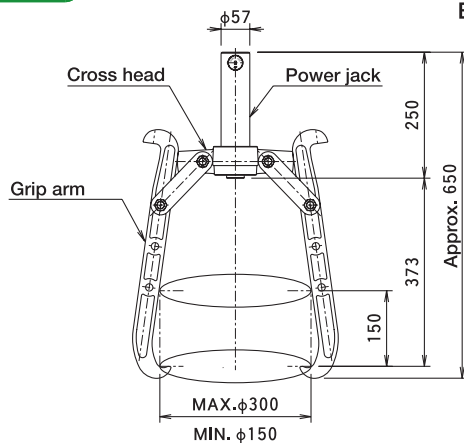


Reaction force is applied to bolt.



GP-3-40-S16

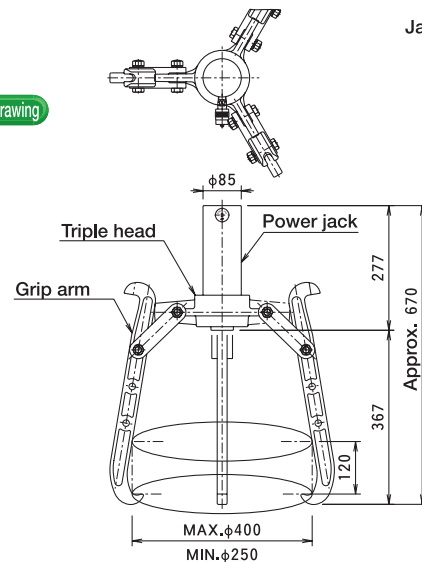
### Dimensional drawing



### Jacks applicable

- E10S10
- E10S15
- E10S20
- E10S25
- E10S30

### Dimensional drawing



### Jacks applicable

- E23S10
- E23S16
- E23S21
- E23S25
- E23S30

### Specifications

Items	Model Unit	GP-2-30-※	GP-3-40-※
Pulling capacity	kN (tf)	100 (10)	200 (20)
Nos. of jaw	-	2	3
Stroke of jack	mm	100 (E10S10), 150 (E10S15), 200 (E10S20), 250 (E10S25), 300 (E10S30)	100 (E23S10), 160 (E23S16), 210 (E23S21), 250 (E23S25), 300 (E23S30)
Max. spreading Dia. of grip-arm	mm	300	400
Min. spreading Dia. of grip-arm	mm	150	250
Thickness of pulley at max. spreading	mm	120	100
Thread on rod end (female screw)		M27×2	M40×2
Weight approx.	kg	16	28
Pumps applicable		TWA-0.7 or NEX-2 or GH-1/2	TWA-0.7~1.3 or NEX-2 or GH-1/2

Note) Arrange some support not to fall works and puller after removing pulley.

# Pipe Bender

Model number

PB 60

Pipe bender

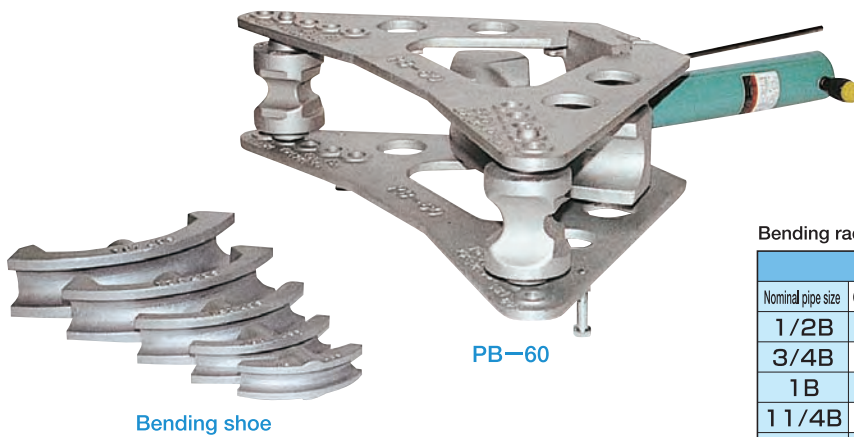
Max. working diameter

## Application

Available for bending work for gas pipe from 1/2B to 2B

## Features

- Available for taking the pipe in and out easily as upper frame is movable backward
- Fine bending with cold work
- Bending with little deformation
- As light weight & durable structure, frames & bending shoes are made by special aluminum.
- As attached frame with gauge bar (scale indicator), easy bending angle is obtained by adjusting stroke of jack.
- Direction to position for pin and angle of designated bending shoes, pivot shoes are marked on cast according to steel piping size.



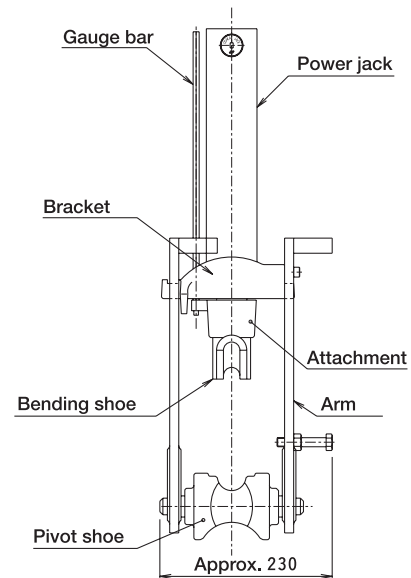
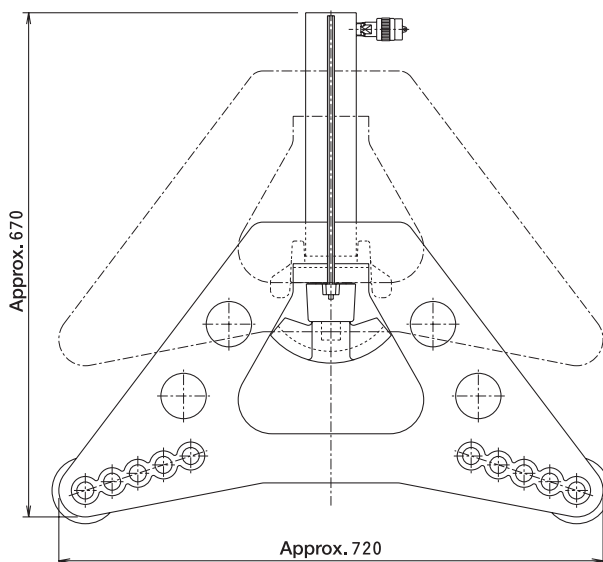
Bending shoe

PB-60

Bending radius limit chart

Gas piping				
Nominal pipe size	Outer dia.(mm)	Thickness (mm)	Bending angle	Bending radius
1/2B	21.7	2.8	90°	89.5
3/4B	27.2	2.8	90°	100.5
1B	34.0	3.2	90°	129.0
1 1/4B	42.7	3.5	90°	162.5
1 1/2B	48.6	3.5	90°	185.7
2B	60.5	3.8	90°	211.8

## Dimensional drawing



## Specifications

Model	Items	Max. dia. of pipe	Jack	Pumps applicable	Attachment bending shoes	Weight approx. (kg)
PB-60		φ60.5	E15S25	TWA-0.7 or NEX-2 or GH1/2	φ21.7、φ27.2 φ34、φ42.7 φ48.6、φ60.5 for each 1 pc.	26

# TRA type Hydraulic Torque Wrench

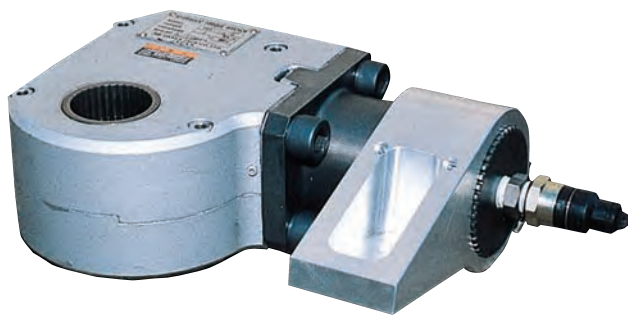
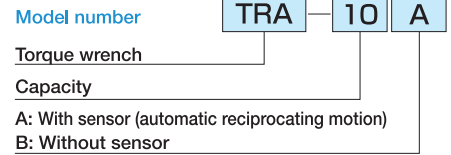
## Torque wrench

### Application

Available for tightening and loosening bolt less than M20

### Features

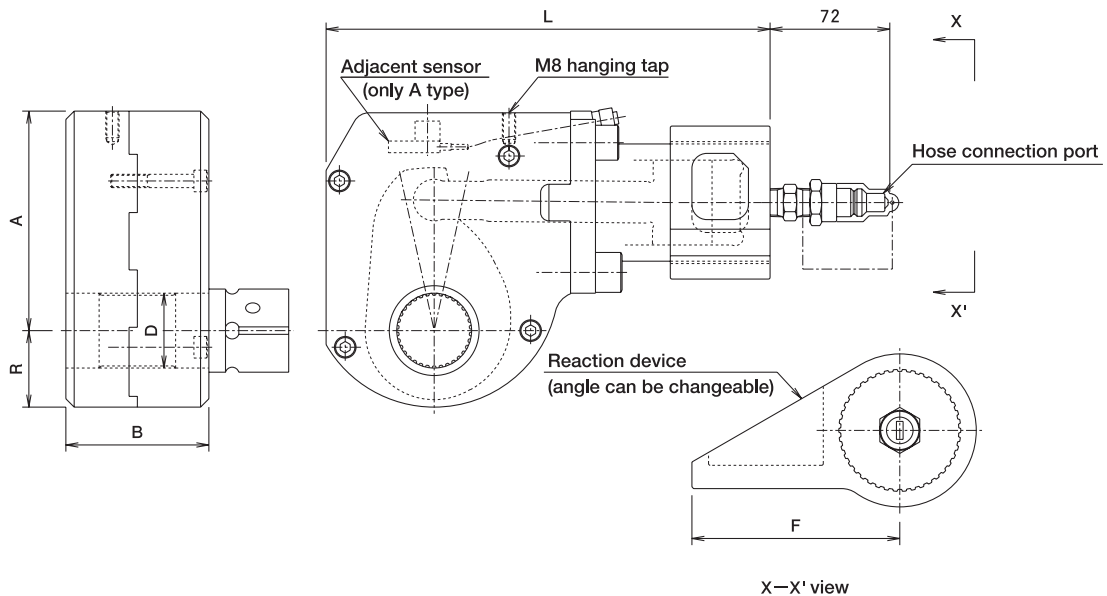
- Light weight and easy to operate with broad range of use
- Strong spring is built in torque wrench with connection of one piece of hose for fast return.
- Due to Ratchet teeth, strong and exact turning is secured.
- Reaction fitting becomes structure of spline mechanism which facilitates to set attachments.
- Remote control by pendant switch/pendant switch enables easy maneuvering at the job site.
- Automatic reciprocating operation (Model; TRA and GH/KTA combination) is available.  
... Automatic operation up to set valve of torque is possible during pushing switch on.
- With digital torque indication & set pressure indicator, recorders
- Also available hand pumps
- Available commercial sockets



TRA-10B

- Choose torque wrench 20 to 30% higher than torque actually required.
- Hydraulic hose is required 1 piece per 1 pump.
- This hydraulic pumps can be connected with pumps in use or other pumps.

### Dimensional drawing



Note) Reaction device is equipped with body as standard item.

### Specifications

Model	Items	Sensor	Torque (kN·m)	Supply pressure (MPa)	Weight approx. (kg)	A	B	D	L	R	F	Reaction device	Usable shaft for hex bolt & nut	Usable shaft for hex socket bolt
TRA-05A		○	5	72	8	110	70	φ36 spline	232	42	100	R57	S51·S53	C05-19·C05-22·C05-24 C05-27·C05-32
TRA-05B		×												
TRA-10A		○	10	72	10.5	131	86	φ45 spline	267	46	125	R70	S101	C10-27·C10-32 C10-36
TRA-10B		×												

# TRA type Attachment for Hydraulic Torque Wrench

## Socket (for tightening hex. nut)

Model number

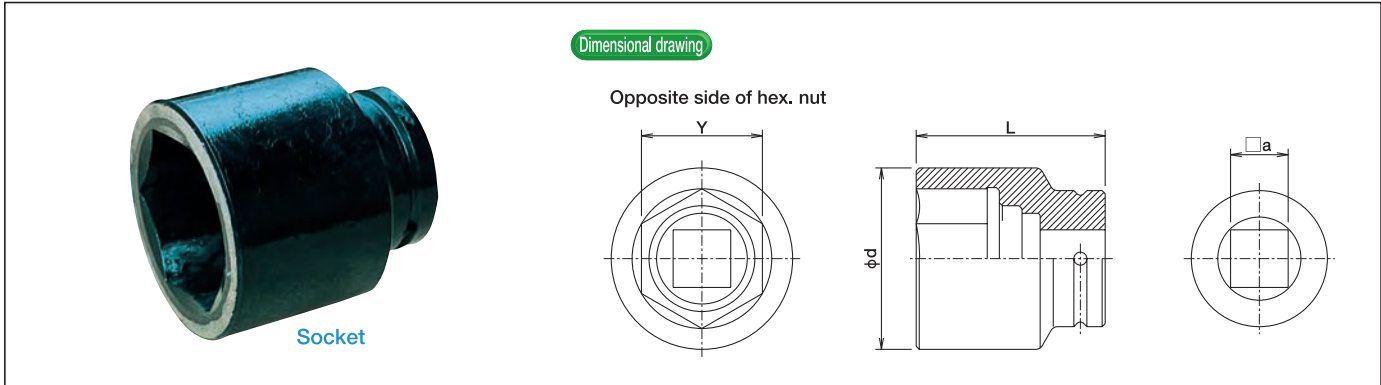
S 1 30

Socket

S1: □a 25.4

S2: □a 38.1

Opposite side of hex. nut



### Specifications

Socket model	S1-						S2-										
	30	32	36	41	46	50	41	46	50	55	60	65	70	75	80	85	
Dia. of bolt	M20	M22	M24	M27	M30	M33	M27	M30	M33	M36	M39	M42	M45	M48	M52	M56	
Applicable shaft	S51						S53 S101										
Opposite side of hex. nut (Y) mm	30	32	36	41	46	50	41	46	50	55	60	65	70	75	80	85	
Dimensions	a	25.4						38.1									
	d	49	52	56	63	69	73	68	74	79	86	92	97	103	108	120	127
	L	62	62	62	68	72	75	80	80	84	90	90	95	100	105	125	130
Allowable torque (N·m)	1320	1650	1780	1780	1780	1780	3750	5030	5670	7060	8450	8990	10000	10000	10000	10000	

# Hydraulic Pump for torque wrench

Model number

GH1 K T A

Hydraulic pump

Solenoid valve (KSV type)

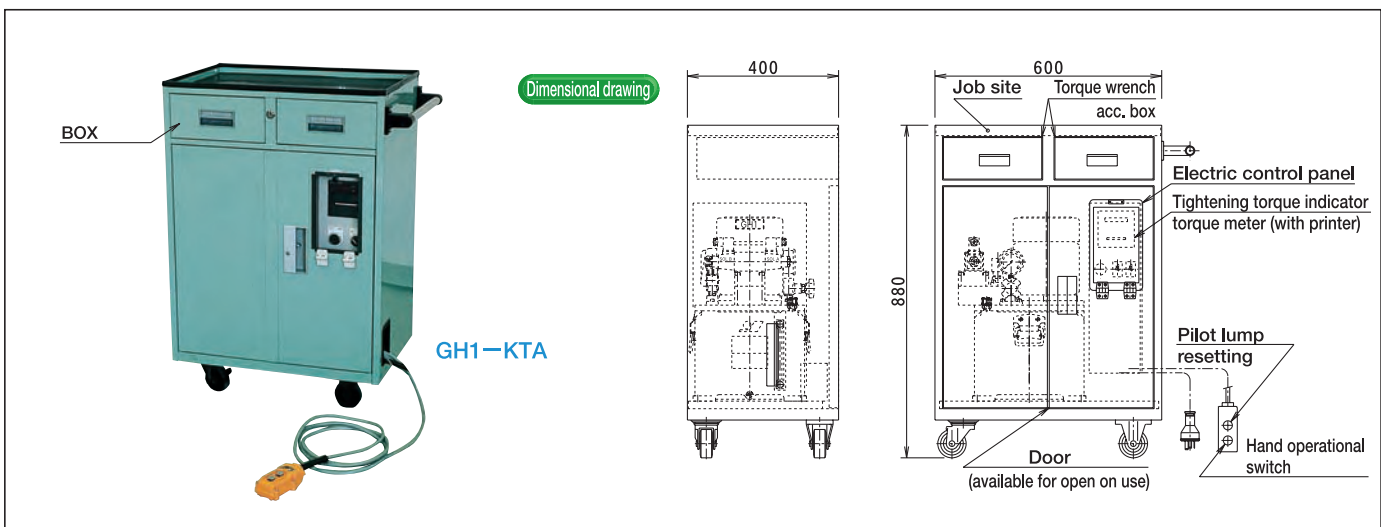
Torque wrench

A: With sensor (automatic reciprocating motion)

B: Without sensor

### Features

- To pack torque wrench body, react fitting etc. into box of pump unit is convenient to move. (only KTA type)
- Also available upper space of pump unit as work bench (only KTA type)
- Easy to pendant switch operation at job site



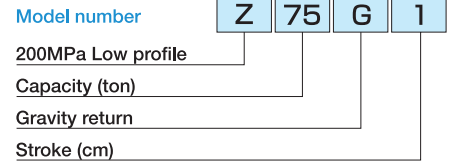
### Specifications

Model	Items		Oil delivery (ml/min)		Working pressure MPa		Oil (ℓ)		Weight approx. (kg)	Motor (60/50Hz)				Torque Wrench applicable
	High	Low	High	Low	Usable	Required	Capa (kW)	Insu		Pole	Rpm	Voltage		
GH1/2-KTA	0.35	2.4	72	7	5	8	80	0.4	E	4	1800 /1500	3 ph. 380V	TRA-05A·10A	
GH1/2-KTB	/0.29	/2.0											45	
GH1-KTA	0.6	4.0	72	7	10	14	90	0.75	E	4	1800 /1500	3 ph. 380V	TRA-05A·10A	
GH1-KTB	/0.5	/3.3											60	

Note) Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side.

# Z type 200MPa Low Profile Jack

## G (Gravity return) type



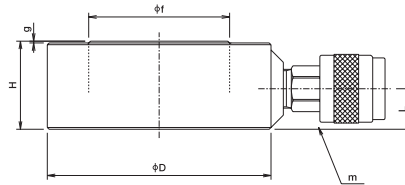
### Features

- 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.

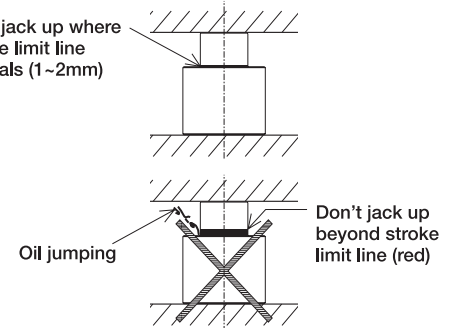


Z100G1

### Dimensional drawing



Stop jack up where stroke limit line appears (1~2mm)



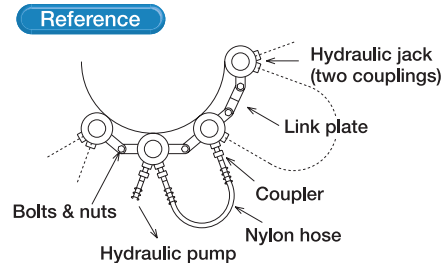
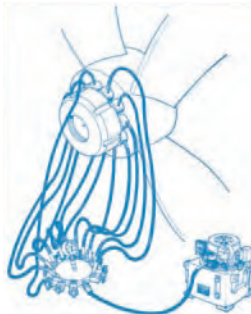
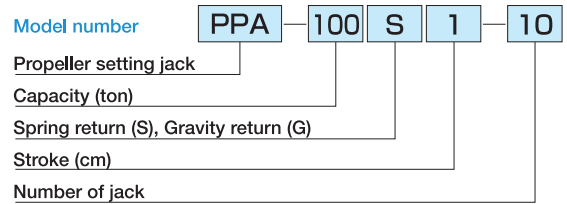
### Specifications

Items	Model Unit	Z75G1	Z100G1	Z150G1	Z200G1
Capacity	kN(tf)	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 <sup>2</sup>	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 Jack

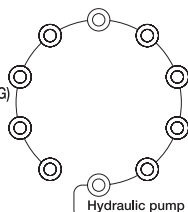
- This equipment is applied for both press-in and extraction of propeller to and from shaft. Following sketch is shown to press in propeller shaft which hydraulic jacks are set. According to propeller size or its setting way, arrangement of jacks can be changed. Also piping arrangement can be made as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

※ Contact us for specific in detail.



### Piping

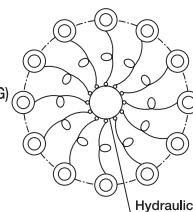
- Hydraulic jack
- Capacity ..... 1000kN
  - Q'ty ..... 10 units
  - Model ..... Gravity return (G)
  - Stroke ..... 10mm
  - Closed height ..... 50mm
  - Max. usable pressure ..... 200MPa



Hydraulic pump  
Type TWAZ-2.3

Piping  
Series piping

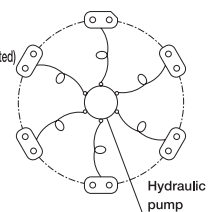
- Hydraulic jack
- Capacity ..... 2000kN
  - Q'ty ..... 12 units
  - Model ..... Gravity return (G)
  - Stroke ..... 10mm
  - Closed height ..... 60mm
  - Max. usable pressure ..... 200MPa



Hydraulic pump  
Type VZ2-GS

Piping  
Parallel piping with manifolds

- Hydraulic jack
- Capacity ..... 2000kN (1000T2 jacks connected)
  - Q'ty ..... 5 units
  - Model ..... Spring return (S)
  - Stroke ..... 20mm
  - Closed height ..... 130mm
  - Max. usable pressure ..... 70MPa



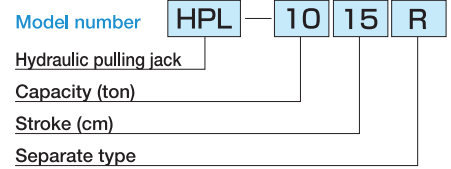
Hydraulic pump  
Type GH1-DS

Piping  
Parallel piping with manifolds

Parallel piping of twin-type jacks with manifolds



# Hydraulic Pulling Jack



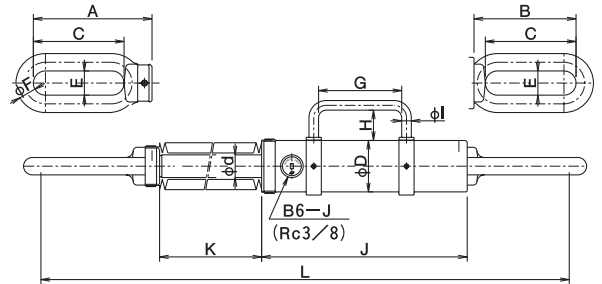
**Features**

- As attached clevis (hook) to both sides of jack, handling is easy.
- Hydraulic pulling jacks are used to pull hull blocks.



HPL-1015R

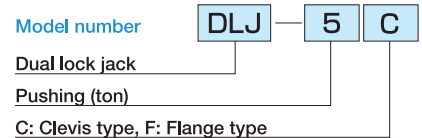
**Dimensional drawing**



**Specifications**

Model	Items	Capacity kN (tf)	Stroke (mm)	Max. length (L) (mm)	Pumps applicable	Weight approx. (kg)	Dimensions										
							A	B	C	D	d	E	F	G	H	I	J
HPL-1015R	100 (10)	150	749	TWA-0.7	10	157	135	120	68	30	32	23	110	approx. 40	φ12.7	272	MAX 185 MIN 35
HPL-2015R	200 (20)	150	795	TWA-0.7	24	170	140	120	105	50	35	30	110	approx. 40	φ12.7	300	MAX 185 MIN 35
HPL-3015R	300 (30)	150	875	TWA-0.7	31	195	195	150	121	60	56	32	110	approx. 40	φ12.7	300	MAX 185 MIN 35

# Dual Lock Jack (Production on order)



**Application**

After pulling up or pushing out the structure, this jack can fix mechanically the structure at the required position.

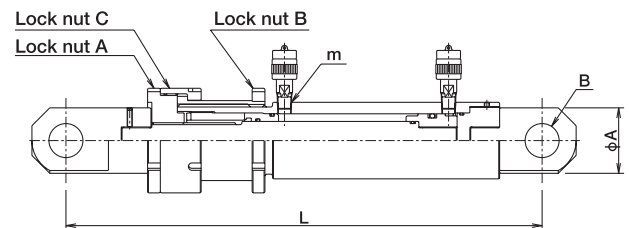
**Features**

- Retaining the piston rod is available mechanically at the optional stroke position.
- There's no effect at an adjusted position as there is no oil leakage.



DLJ-10C

**Dimensional drawing**



**Specifications**

Model	Items	Capacity kN (tf)	Pulling force kN (tf)	Stroke (mm)	Working pressure (MPa)	Required oil (mℓ)	Weight approx. (kg)	Dimensions		Port thread m
								L	A	
DLJ-5C	50 (5)	25 (2.5)	150	40	190	9.5	445	φ45	2-φ20	Rc3/8
DLJ-5F								φ126	—	
DLJ-10C	100 (10)	50 (5)	150	51	300	17	510	φ60	2-φ30	
DLJ-10F								φ150	—	
DLJ-15C	150 (15)	75 (7.5)	150	48	470	25	560	φ77	2-φ40	

# Derailment Restoration Jack

## Features

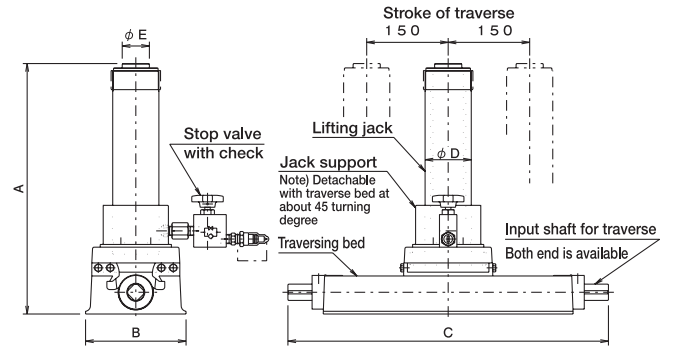
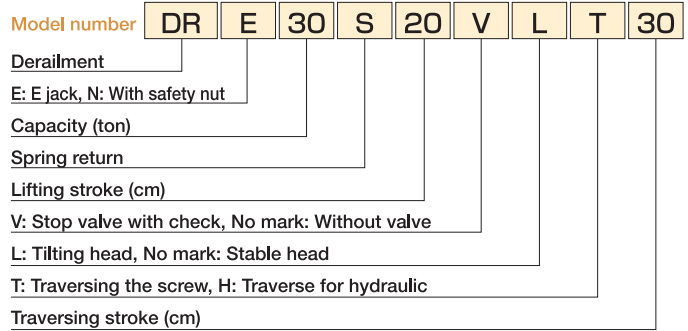
- The jacks are used when happening derailment for vehicles and trains.
- The jacks advance jack-up, traversing and restoring vehicles quickly as well as exactly.

## Hydraulic jack with operational traverse (DRE type)

- Components • Jack-up and down • Traversing bed  
 • Hydraulic pump for lifting  
 (Electric: NEX-2MGS, Manual: TWA-0.9 or TWA-1.3)



Dimensional drawing

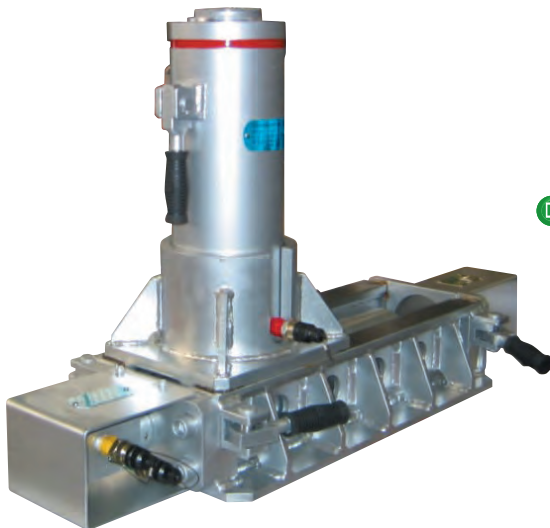


## Specifications

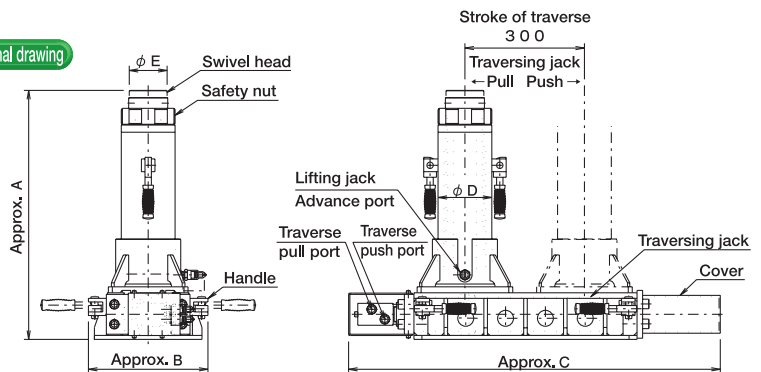
Model	Items	Jack capacity kN(tf)	Lifting stroke (mm)	Traversing stroke (mm)	Dimensions					Weight approx. (kg)	Lifting jack	Traversing bed
					Closed height A	Width B	Length C	O.D. of cylinder D	Head diameter E			
DRE23S21		230(23)	210	300	461	185	590	85	50	45	E23S21	TB-2530
DRE30S20		300(30)	200	300	465	200	625	102	50	60	E30S20	TB-3530
DRE50S16		500(50)	160	300	440	210	653	125	70	80	E50S16	TB-5030

## Hydraulic jack with hydraulic traverse (DRN type)

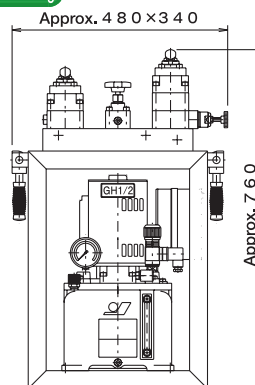
- Components • Jack-up and down • Hydraulic traverse bed  
 • Hydraulic pump for lifting & traverse



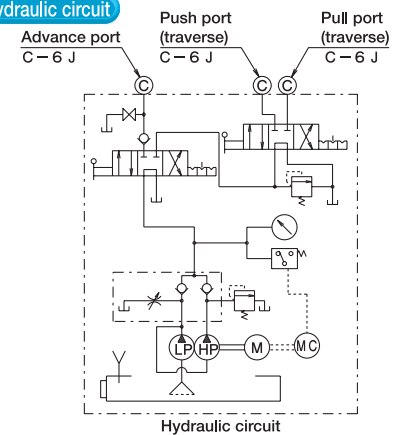
Dimensional drawing



Dimensional drawing



Hydraulic circuit



## Specifications

Model	Items	Jack capacity kN(tf)	Lifting stroke (mm)	Traversing stroke (mm)	Tilting degree of head	Dimensions					Weight approx. (kg)
						Closed height A	Width B	Length C	O.D. of cylinder D	Head diameter E	
DRN35S20		350(35)	200	300	3°	580	approx. 300	approx. 950	135	95	113
DRN50S20		500(50)	200	300	3°	600	approx. 350	approx. 950	136	110	150

Model	Items	Max. working pressure (MPa)	Oil delivery (ℓ/min)	Motor		Oil volume		Weight approx. (kg)
				Voltage (V)	Capacity (kW)	Usable oil (ℓ)	Required oil (ℓ)	
GH1/2S-DRH		40	0.35/0.29	Single phase 100V	0.4	5	8	68

# Lifting Jack

Model number

LG 7

Lifting jack (LG type, LTG type)

Capacity (ton)

Lifting Jack is used for lift of body in repairing or maintenance of railcar.  
Lot of experience for sale to various customers

### Features

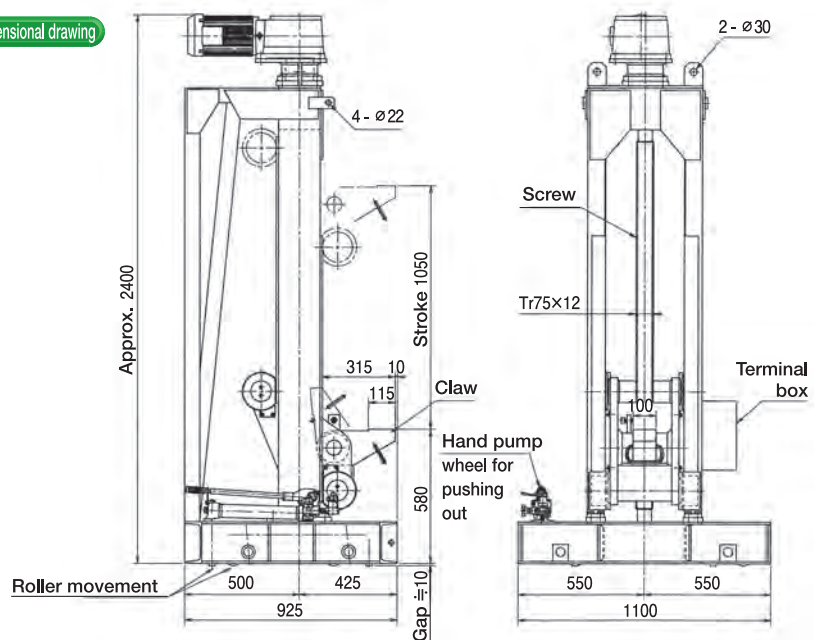
- Using one set consisting of four lifting jacks for lifting car body
- By systematic combination, many vehicles to lift at the same time, please consult with us.
- According to the weight of car body choose models available.

LG type

LTG type



Dimensional drawing



### Specifications

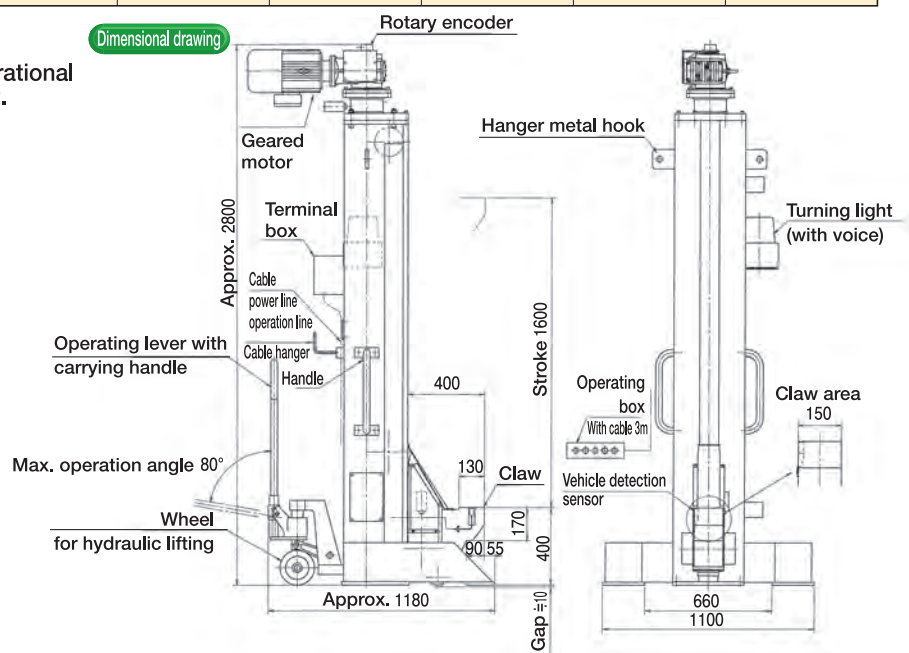
Model	Items	Capacity kN(tf)	Max. height A (mm)	Claw min. height B (mm)	Stroke C (mm)	Lifting speed approx. (mm/min)	Motor (kW)	Base dimension DXE (mm)	Weight approx. (kg)
LG-7		70(7)	2200	750	1000	300	2.2	900x900	900
LG-10		100(10)	2800	450	1350	360	3.7	1165x1000	1300
LG-15		150(15)	3150	600	1700	300	5.5	1300x1150	1600
LG-20		200(20)	3900	900	2100	300	5.5	1500x1600	2500

LTG type

The LTG type is designed to good operational performance for movement & compact.



Dimensional drawing

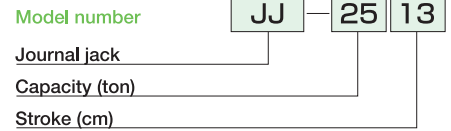


### Specifications

Model	Items	Capacity kN(tf)	Max. height A (mm)	Claw min. height B (mm)	Stroke C (mm)	Lifting speed approx. (mm/min)	Motor (kW)	Base dimension DXE (mm)	Weight approx. (kg)
LTG-15		150(15)	3200	500	2000	300	5.5	1275x1270	1600
LTG-20		200(20)	3250	700	1950	215	5.5	1300x1270	1800

※ Different specs other than the above are on request.

# Journal Jack



Journal Jacks are available as screw jacks having outstanding feature of overall stability and durability.



### Features

- Journal jacks with forging gear apply a great forces and good engagement.
- Ratchet handle is designed for engagement both wheel and plunger, which are called "Wedge principle". Journal Jacks have also Good durability & stability.

### Application

- For jack-up, jack-down (lifting up and down for heavy load)
- For positioning adjusting and support heavy load, and structures
- For bridge works      • For shipbuilding works or repair
- For construction or building works      • For support of heavy load

### Journal Jack with traversing bed

All kinds of Journal Jacks except for JJ-100 ton are designed for inserting for traversing bed . That means Journal Jacks can use together with traversing bed. Length of traverse is available for 300mm & 450mm. Usable traversing bed (option) in each model are as below spec list. When placing order, contact to us. See page 68 on use of traversing beds.

- \* Traversing bed is required when lateral travel of loaded jack is needed.
- \* Usable grease: Daphne Eponex Grease EP No.1 or equivalent

### Journal Jack with traversing bed



### 1000kN Journal Jack

This jack is worm gear jack type.

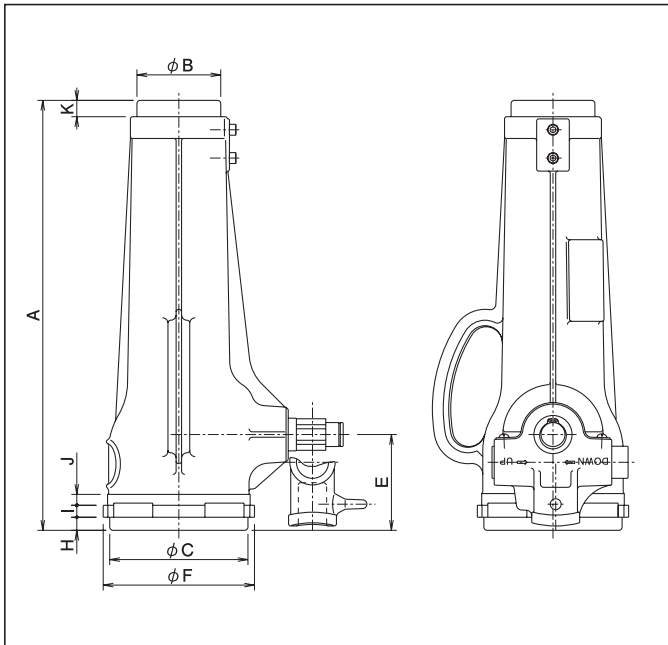


### Specifications

Model		Low lift					Medium lift					High lift		
		Unit	JJ-1513	JJ-2513	JJ-3513	JJ-5013	JJ-10011	JJ-1015	JJ-2525	JJ-3020	JJ-3525	JJ-5025	JJ-2533	JJ-3535
Capacity	kN(tf)	150(15)	250(25)	350(35)	500(50)	1000(100)	100(10)	250(25)	300(30)	350(35)	500(50)	250(25)	350(35)	500(50)
Stroke	mm	125	125	130	130	105	150	250	200	250	250	330	350	350
Closed height (A)	mm	255	255	280	290	310	280	395	350	410	445	485	535	555
Head diameter (φB)	mm	63	77	87	105	127	65	77	95	87	105	77	87	105
Basic diameter (φC)	mm	113	127	147	166	235	108	127	148	147	166	127	147	166
Weight approx.	kg	12	16	24	31	75	12	21	26	32	42	25	37	47
Operating torque	N·m	420	700	1000	1400	1000	250	700	850	1000	1400	700	1000	1400
Handle bar		φ25×600L	φ25×700L	φ32×700L	φ32×800L	φ32×1500L	φ25×600L	φ25×700L	φ25×700L	φ32×700L	φ32×800L	φ25×700L	φ32×700L	φ32×800L
Traversing bed (option)	Items	TB-1530	TB-2530 TB-2545	TB-3530 TB-3545	TB-5030 TB-5045	—	TB-1030	TB-2530 TB-2545	TB-3530 TB-3545	TB-3530 TB-3545	TB-5030 TB-5045	TB-2530 TB-2545	TB-3530 TB-3545	TB-5030 TB-5045
	Length of traverse	mm	300	300 450	300 450	300 450	—	300	300 450	300 450	300 450	300 450	300 450	300 450

# Journal Jack

Dimensional drawing

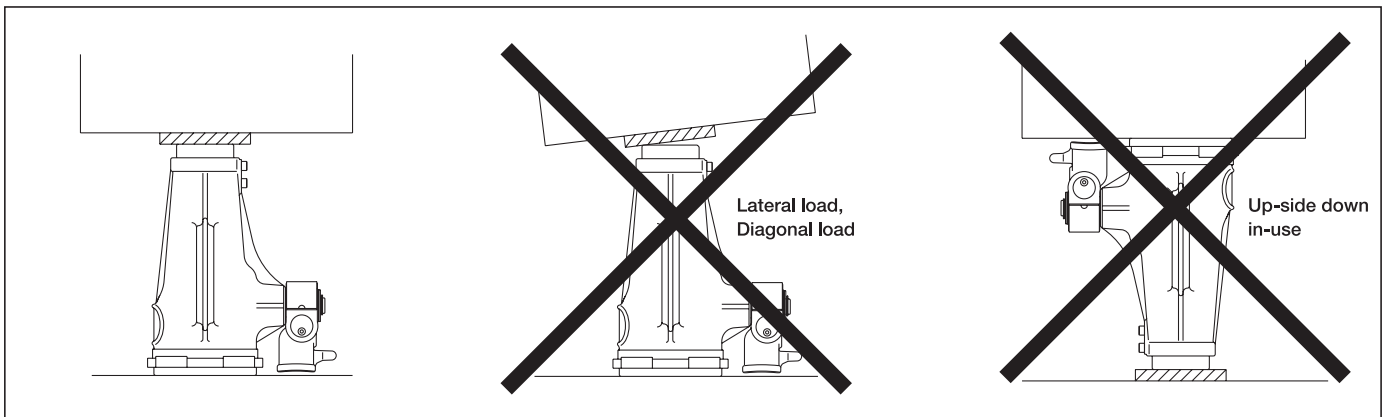


Dimension chart

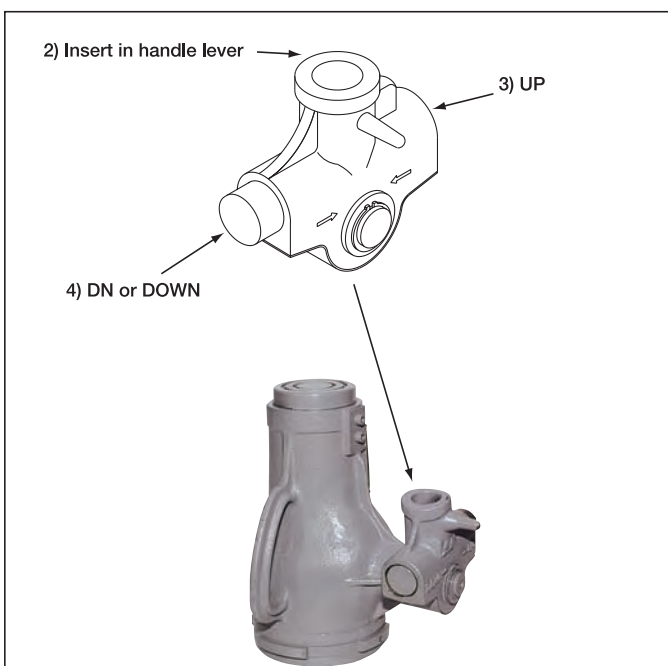
(Unit: mm)

Model		E	F	H	I	J	K
Low lift	JJ-1513	77	127	9	10	10	15
	JJ-2513	88	139	12	11	10	15
	JJ-3513	103	161	12	12	15	18
	JJ-5013	106.5	183	14	15	16	18
Medium lift	JJ-1015	75.7	120	8	11	10	15
	JJ-2525	88	139	12	11	10	15
	JJ-3020	99	161	12	12	10	15
	JJ-3525	103	161	12	12	15	18
High lift	JJ-5025	106.5	183	14	15	16	18
	JJ-2533	88	139	12	11	10	15
	JJ-3535	103	161	12	12	15	18
JJ-5035	106.5	183	14	15	16	18	

How to use



\* Do not use in up-side down or pulling force.

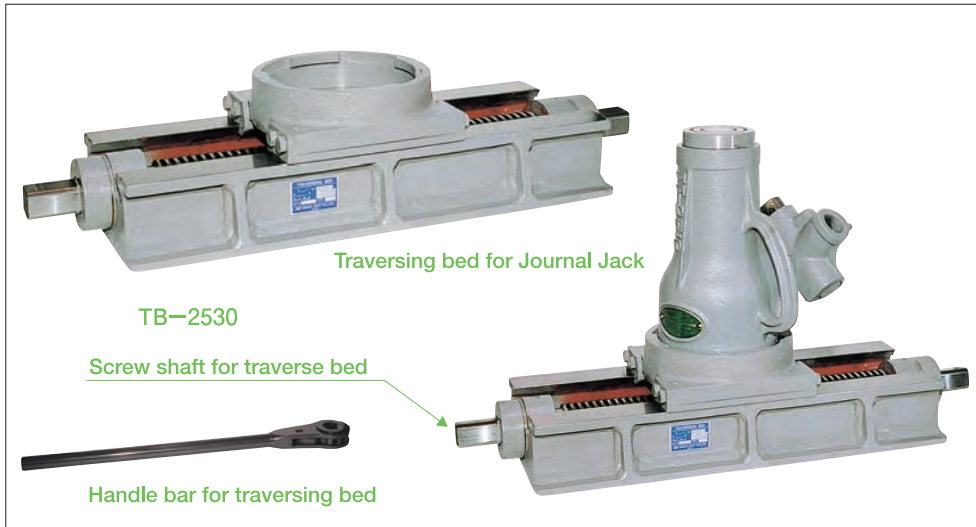
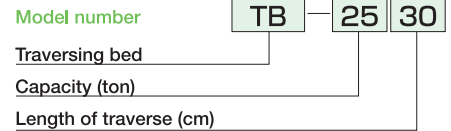


How to operate

- 1) Apply loads vertically and overall in the center of gravity of load.
- 2) Make sure to insert the handle lever into the bottom of ratchet handle. Incomplete insertion of handle lever leads to slipping off during operation.
- 3) Before using the jack for lifting, push the liner of the ratchet handle to "UP" position and operate the handle lever up and down.
- 4) Before using the jack for lowering, push the liner of the ratchet handle to "DOWN" or "DN" position and operate (carefully) the handle lever up and down.
- 5) Take care always to stabilize load when jacking up and down.

# Journal Jack

## Traversing bed



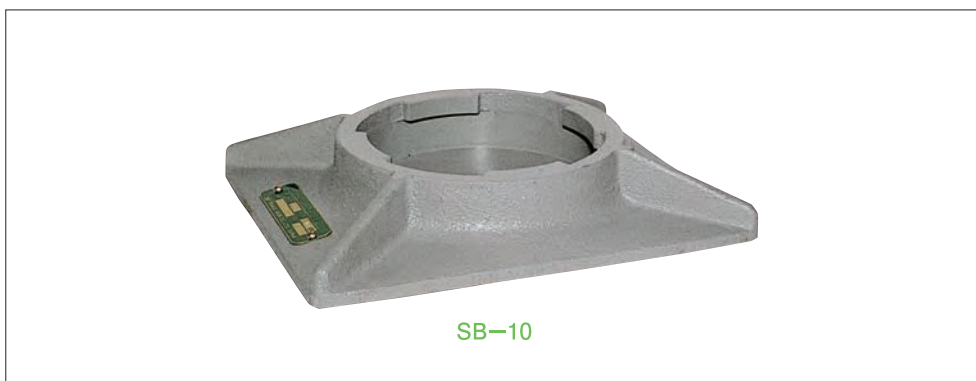
### Features

Traversing bed is used when jack travel laterally. Without applying load directly, journal jack is constructed to set on traversing bed. Be sure to take care to operate falling of load during travelling. However, Journal Jack (JJ-10011), Aluminum Jack (AJ) and Journal Jack with toe (NJ) can not be used.

### Specifications

Items	Model Unit	TB-1030	TB-1530	TB-2530	TB-2545	TB-3530	TB-3545	TB-5030	TB-5045
Capacity	kN(tf)	100(10)	150(15)	250(25)	250(25)	350(35)	350(35)	500(50)	500(50)
Height up to bottom surface of jack	mm	85	85	90	90	97	97	108	128
Length of traverse	mm	300	300	300	450	300	450	300	450
Weight approx.	kg	20	20	25	31	33	38	43	66
Handle bar		φ 24×535L	φ 24×535L	φ 30×600L	φ 30×600L	φ 30×600L	φ 30×600L	φ 30×600L	φ 30×600L

## Safety base



### Features

In case of unstable area or weak setting base of jacks, safety base is used to stabilize jacks furthermore. Journal Jacks are made with a structure for setting to the safety base. Be sure to use safety nut, when base area for jack is set in weak position. However, Journal Jack (JJ-10011), Aluminum Jack (AJ) and Journal Jack with toe (NJ) can not be used.

### Specifications

Items	Model Unit	SB-10	SB-15	SB-25	SB-30	SB-35	SB-50
Capacity	kN(tf)	100(10)	150(15)	250(25)	300(30)	350(35)	500(50)
Base dia.	Length	mm	220	240	300	300	400
	Width	mm	180	190	200	220	300
	Thickness	mm	10	12	15	18	19
Weight approx.	kg	2.0	5.0	7.5	9.5	9.5	20.0

# Aluminum Jack

Model number	AJ	10	08
Aluminum jack			
Capacity (ton)			
Stroke (cm)			

Light weight Aluminum Jack due to aluminum body

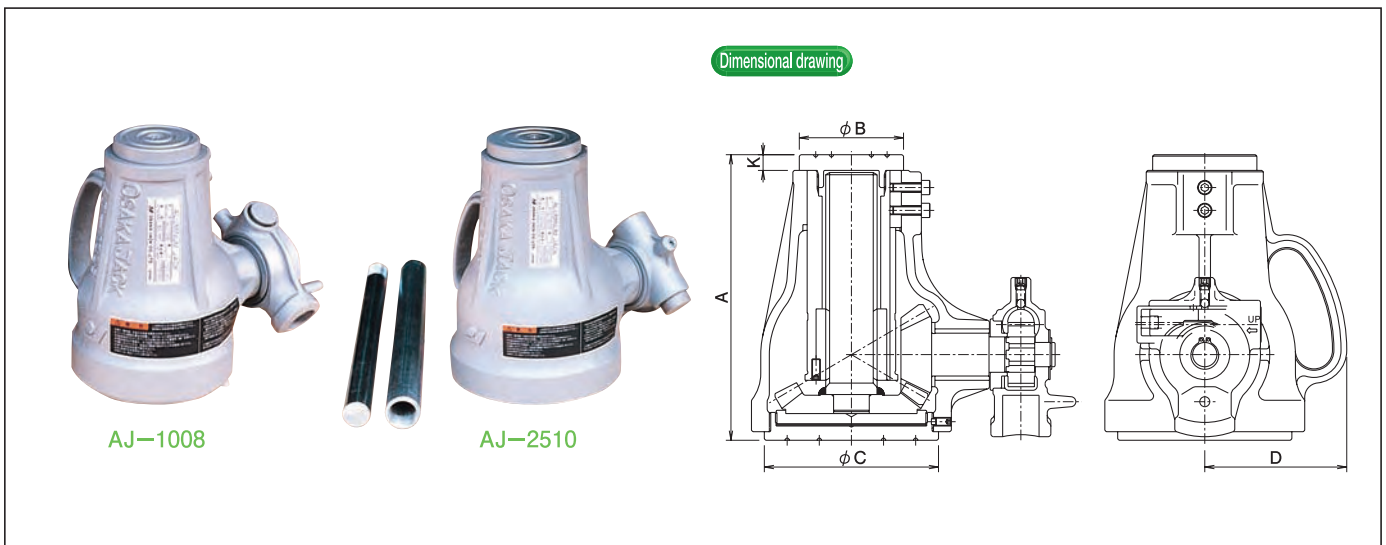
When using Aluminum jacks, treat aluminum jacks with care and avoid rough handling.

**Features**

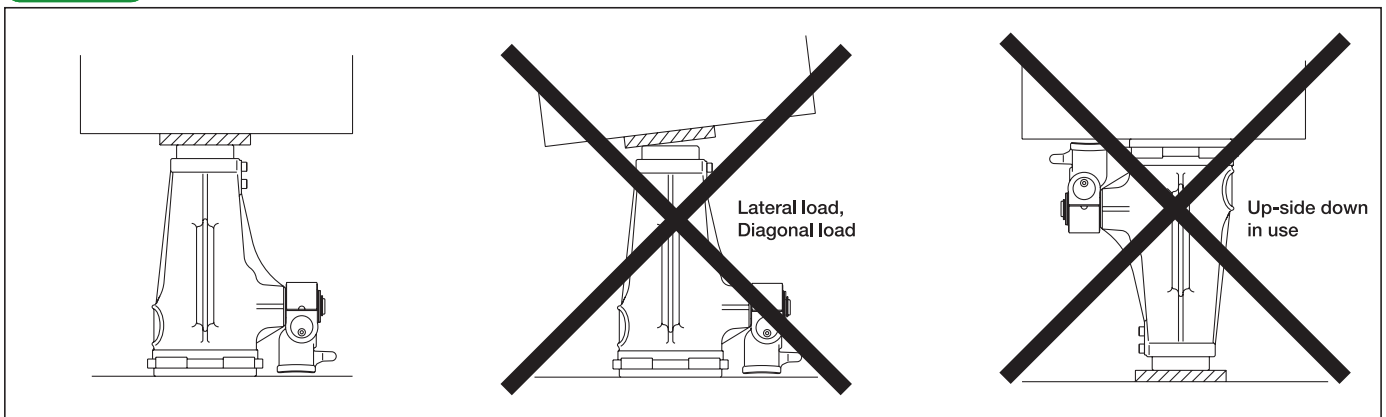
- Aluminum jacks enjoy pad bearings instead of normal bearings.
- Light weight, lower height
- Two handle bar can use as one handle bar.

**Application**

- Centering machinery works
- Movement for precision machinery
- Works for construction, higher place job.
- Minor movement for heavy machinery



**How to use**



\* Do not use in up-side down or pulling force.

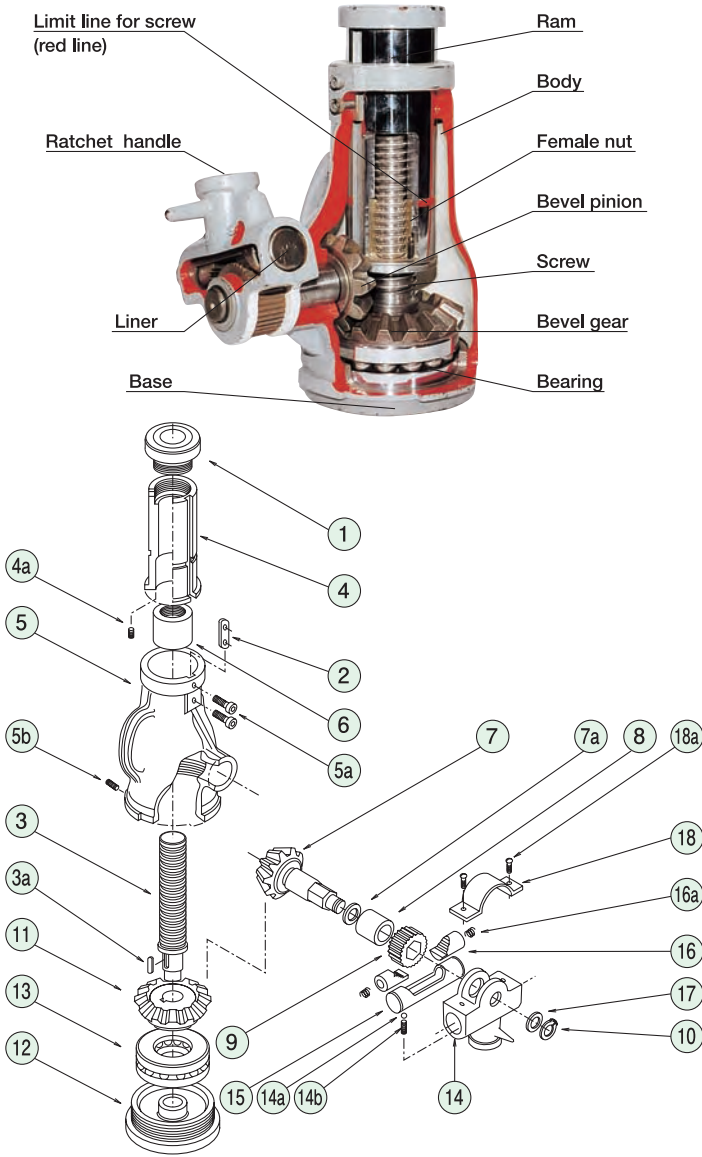
**Specifications**

Items	Model Unit	AJ-1008	AJ-1510	AJ-2510
Capacity	kN(tf)	100(10)	150(15)	250(25)
Stroke	mm	80	100	100
Operational torque	N·m	250	420	700
Closed height	mm	175	200	200
Head diameter ( $\phi B$ ) (cap)	mm	58	58	73
Base diameter ( $\phi C$ )	mm	102	102	122
D	mm	88	89	100
K	mm	10	10	11
Weight approx.	kg	6.1	6.8	9.5
Attached handle bar		$\phi 27.2 \times 575L$	$\phi 27.2 \times 575L$	$\phi 30 \times 675L$

Note) • Usable grease: Daphne Eponex Grease EP No.1 or equivalent  
 • Jacks cannot attach to safety bed or traversing bed.

# JJ/AJ Parts List

## OJ Journal Jack JJ type (100~500kN)

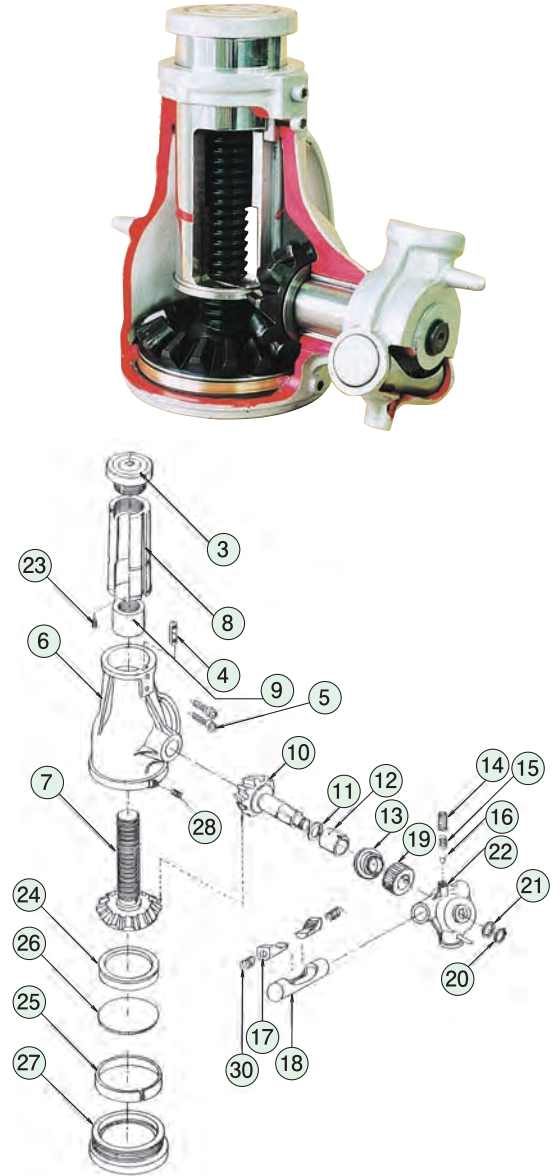


### Parts List

No.	Parts Name	Q'ty	Remarks	No.	Parts Name	Q'ty	Remarks
1	Head	1		11	Bevel gear	1	
2	Key	1	Ram	12	Base	1	
3	Screw	1		13	Bearing	1	
3a	Key *	1	Screw	14	Ratchet case	1	
4	Ram	1		14a	Steel ball	1	
4a	Knock	2	Female nut	14b	Spring	1	
5	Body	1		15	Liner	1	
5a	Key bolt	2		16	Plunger	2	
5b	Knock	1	Base	16a	Spring	2	
6	Female nut	1		17	Washer	1	
7	Bevel pinion	1		18	Cover	1	
7a	Pinion washer	1		18a	Machine screw	2	
8	Pinion bush	1					
9	Ratchet wheel	1					
10	Snap ring	1	JIS				

※ Key (3a) 2 pcs. only for 500kN jack.

## Aluminum Jack AJ type



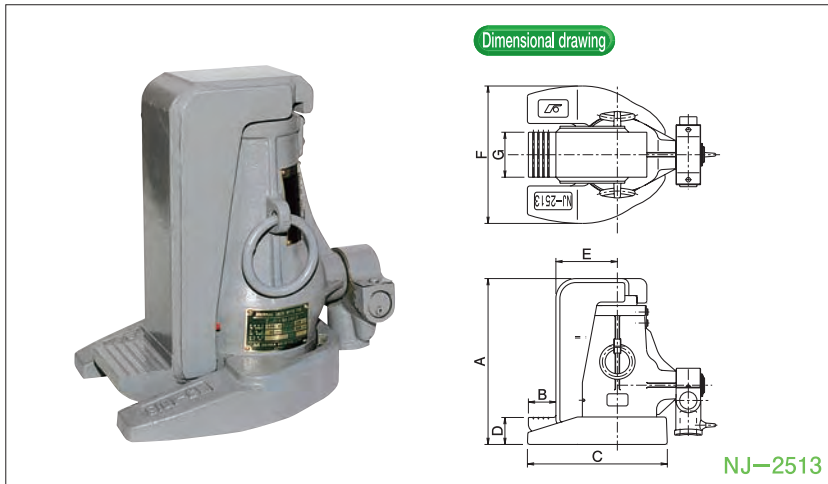
### Parts List

No.	Parts Name	Q'ty	No.	Parts Name	Q'ty
3	Head	1	17	Plunger	2
4	Key	1	18	Liner	1
5	Hex. bolt	2	19	Wheel	1
6	Body	1	20	Stopper	1
7	Screw with gear	1	21	Washer	1
8	Ram	1	22	Ratchet case	1
9	Female nut	1	23	Hex. screw	2
10	Pinion gear	1	24	Spacer	1
11	Clear washer	1	25	Bush	1
12	Pinion bush	1	26	Pad	1
13	Cap	1	27	Base	1
14	Hex. set screw	1	28	Hex. set screw for base knock	1
15	Spring	1	30	Spring	2
16	Steel ball	1			



# Journal Jack with Toe

Model number	NJ	25	13
Journal Jack with toe			
Toe capacity (ton)			
Stroke (cm)			



### Features

Journal Jack with toe is used by inserting toe at lower place. Jack detached toe can be used as the same as Journal Jack.

### Application

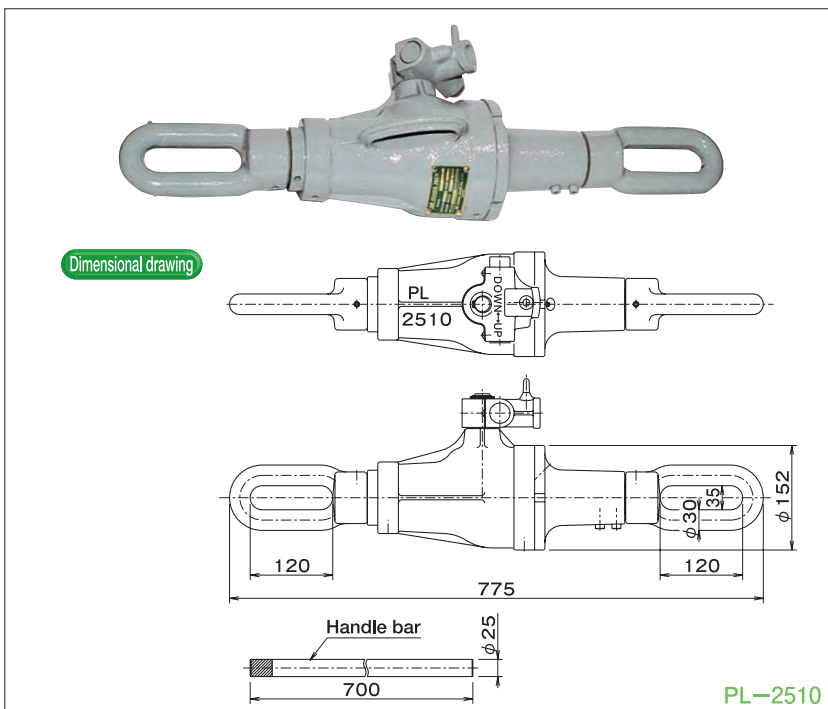
- Setting for machinery
- Minor adjustment of heavy structure
- Positioning of machine tool

### Specifications

Items	Model		NJ-0615	NJ-1013	NJ-1513	NJ-2513
	Unit					
Toe capacity	kN(tf)		60(6)	100(10)	150(15)	250(25)
Stroke	mm		150	125	125	130
Operational torque	N·m		210	400	600	960
Closed height (A)	mm		310	290	297	332
Height up to toe (B)	mm		45	50	50	55
	(C) mm		208	227	242	280
Height up to toe (D)	mm		30	40	45	55
	(E) mm		85	93	101	123
(F) mm			195	210	230	275
Width of toe (G)	mm		70	75	80	90
Weight approx.	kg		23	29	38	60
Attached handle bar			φ 25×600L	φ 25×600L	φ 25×600L	φ 32×700L

# Mechanical Pulling Jack

Model number	PL	25	10
Pulling jack			
Pulling force (ton)			
Stroke (cm)			



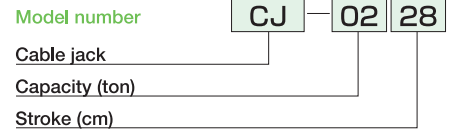
### Application

Pulling heavy loads in shipyard

### Specifications

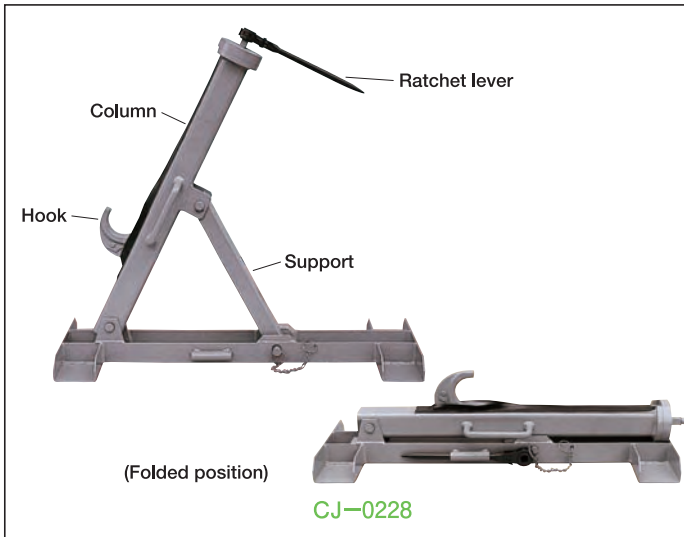
Items	Model	
	Unit	PL-2510
Pulling force	kN(tf)	250(25)
Test load	kN(tf)	300(30)
Stroke	mm	100
Weight	kg	32
Attached handle bar		φ 25×700L

# Cable Jack



Exclusively used for reeling in and out electric cable from cable drums

Two pieces of jacks can be used as one pair.



### Features

For 2 ton

- Cable jacks are of folding type for easy carrying.
- Easy for setting jacks at narrow side

For 6 ton

- Two types of jacks of drum diameter from 1100 to 2600 are available.

For 8 ton, 10 ton

- Using AJ-1510 at driving force position makes jack's operation easy.
- Available for longer width and larger drum diameter
- Main parts such as jacks are able to detach easily.

Cable jack & applicable dia. of drum

Model	Applicable dia. of drum
CJ-0228	φ 550~ φ 1,050
CJ-0620	φ 1,100~ φ 1,750
CJ-0645	φ 1,800~ φ 2,600
CJ-0808	φ 1,800~ φ 2,600
CJ-1010	φ 2,200~ φ 3,400

### Specifications

Items	Model Unit	CJ-0228	CJ-0620	CJ-0645	CJ-0808	CJ-1010
		Capacity	kN(tf)	20(2)	60(6)	60(6)
Stroke	mm	280	200	450	80	100
Overall height	mm	635	—	—	—	—
Closed height	mm	—	530	850	900	1100
Height up to hook	mm	252	—	—	—	—
Base dimension L×W	mm	680×250	525×300	700×400	900×500	900×500
Weight approx.	kg	14	27	39	75	96
Adjustable extension	mm	—	200	200	400	550

Option: For 2 ton (small) dia. 45 x 1,200mm, (large) dia. 55 x 1,200mm  
 For 6 ton dia. 63 x 1,800mm

# Hydraulic Ship Jack

Model number

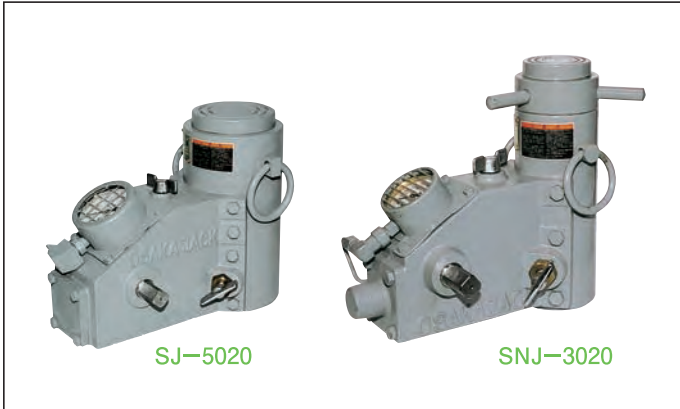
SJ 20 20

Hydraulic ship jack  
(\* SNJ-with safety nut)

Capacity (ton)

Stroke (cm)

## Steel jack for construction works



### Features

- There is no need of hoses as jack and pump are incorporated.
- Strong and stable structure
- All of SJ and SNJ types are equipped with pressure gages.
- Ram is lowered by outer force.

### Application

- Lifting heavy objects such as shipbuilding and bridge girder
- Sustaining heavy objects

### Check before use:

- Don't use beyond limit line (red line) of jack.
- Stopper is not built in these jacks.
- Horizontally or upside down use is not available.

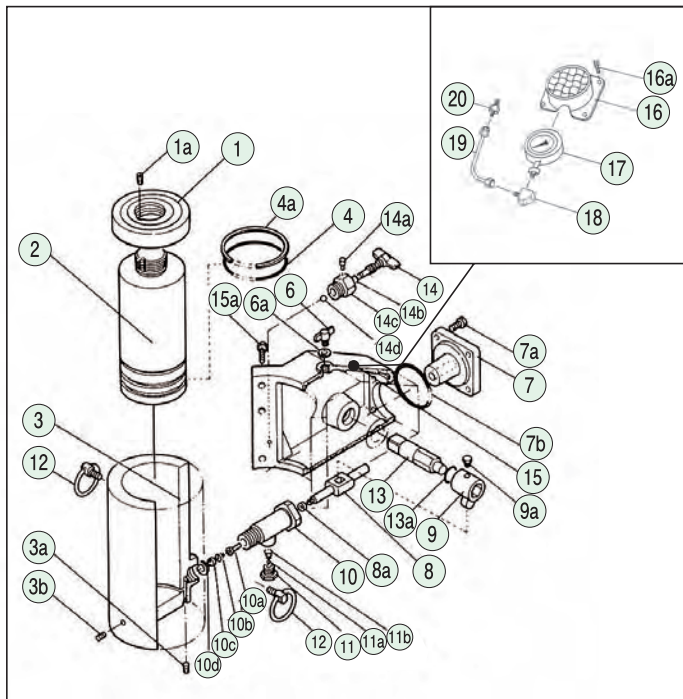
### Crank shaft

More than 2000kN (200tf), Hydraulic ship jack

Oil tank: Crank shaft for right side ... high pressure plunger  
Crank shaft for left side ... low pressure plunger

### Scale of pressure gauge (kN, MPa)

SJ, SNJ	— 2020	— CT3/8-φ75
	3020	— BS1/2-φ100
	5020	— "
SJ, SNJ	— 10020	— BS1/2-φ100
	15020	— "
	20020	— "
	30020	— "



### Parts List

No.	Parts Name	Q'ty	Remarks	No.	Parts Name	Q'ty	Remarks
1	Head	1		11	Valve ground	1	
1a	Hex. Set screw	1	Head	11a	Steel ball	1	Suction
2	Ram	1		11b	Spring	1	
3	Cylinder	1		12	Carry ring	2	
3a	Hex. Set screw	2		13	Crank shaft	1	
3b	Steel ball	2		13a	O-ring	1	Special size
4	O-ring	2	Ram	14	Release valve	1	
4a	Back up ring	2	Ram	14a	Stopper nut	1	JIS
6	Air vent plug	1	Oil supply	14b	O-ring	1	JIS
6a	O-ring	1		14c	Release gland nut	1	
7	Tank cover	1		14d	Steel ball	1	5/16"
7a	Hex. Bolt	4		15	Oil tank	1	
7b	O-ring	1	Cover	15a	Hex. Bolt	8	
8	Pump plunger	1		16	Gauge cover	1	
8a	Packing seal	1	U type	16a	Hex. Bolt	4	
9	Crank cam	1		17	Pressure gauge	1	
9a	Hex. bolt	1		18	Elbow	1	
10	Pump cylinder	1		19	Piping	1	
10a	Cone valve	1	Delivery	20	Stud	1	
10b	Spring	1	Cone				
10c	Spring seat	1					
10d	Copper packing	1					

### Specifications

Model	SJ (without safety nut)		SJ-2020	SJ-3020	SJ-5020	SJ-10020	SJ-15020	SJ-20020	SJ-30020	
	SNJ (with safety nut)		SNJ-2020	SNJ-3020	SNJ-5020	SNJ-10020	SNJ-15020	SNJ-20020	SNJ-30020	
Items	Unit									
Capacity	kN(tf)		200(20)	300(30)	500(50)	1000(100)	1500(150)	2000(200)	3000(300)	
Stroke	mm		200	200	200	200	200	200	200	
Closed height	SJ type	mm	300	330	345	400	410	435	465	
	SNJ type	mm	345	375	405	470	490	520	550	
Diameter of head	mm		95	117	145	195	240	275	335	
Outer diameter of cylinder	mm		117	137	175	225	275	316	380	
Weight approx.	SJ type	kg	40	57	86	153	250	315	480	
	SNJ type	kg	43	61	95	173	265	366	555	
Attached handle bar			φ25×600ℓ				1 pc.	ℓ = 800		1 pc.

Note) Use machine oil ISO-VG-10 (white spindle oil).

# WJ type Worm Gear Jack

Model number	WJ	01	※	※	U	※	※	※
WJ type worm gear jack								
Pushing force (ton)								
Direction to thread shaft								

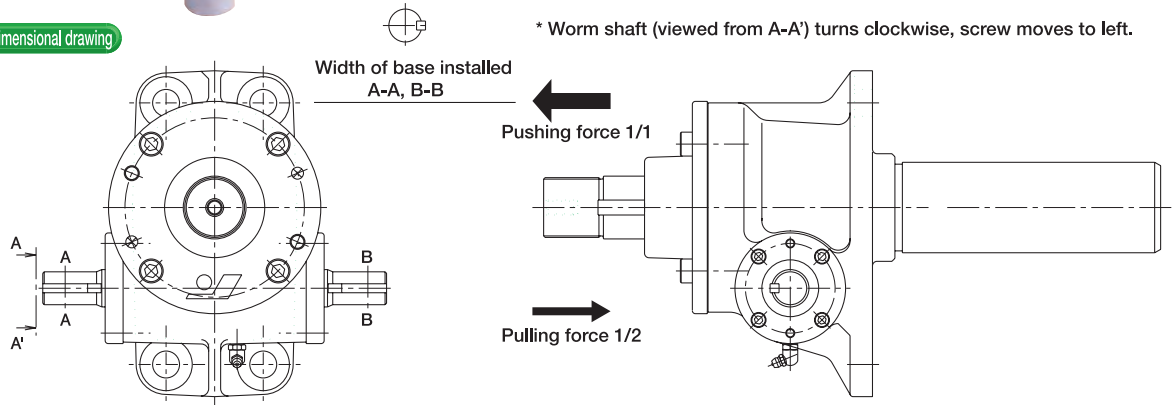


WJ-U

**Features**

- This WJ is mainly used for pushing up load.
- Pulling force is 1/2 of pushing force.
- Screw with key to prevent turning
- Load is received by screw.

**Dimensional drawing**



**Specifications**

Items	Model Unit	WJ01U		WJ02U		WJ05U		WJ10U		WJ15U		WJ20U		WJ25U		WJ35U		WJ50U		WJ75U		WJ100U		
		L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	
Gear ratio of worm gear		15:1	15:3	18:1	18:3	18:1	18:3	24:1	24:3	24:1	24:3	24:1	24:3	24:1	24:3	26:1	26:3	29:1	29:3	29:1	29:3	29:1	29:3	
Rated pushing force	kN(tf)	10 (1)	20 (2)	50 (5)	100 (10)	150 (15)	200 (20)	250 (25)	350 (35)	500 (50)	750 (75)	1000 (100)												
Endurance pushing force	kN(tf)	15 (1.5)	30 (3)	75 (7.5)	150 (15)	225 (22.5)	300 (30)	375 (37.5)	525 (52.5)	750 (75)	1125 (112.5)	1500 (150)												
Rated pulling force	kN(tf)	10 (1)	20 (2)	25 (2.5)	50 (5)	75 (7.5)	100 (10)	125 (12.5)	175 (17.5)	250 (25)	375 (37.5)	500 (50)												
No-load torque	approx. N·m	0.3	0.6	1.5	3	5	7	10	15	20	35	55												
Starting torque	approx. N·m	3	7	10	20	25	50	50	100	80	170	120	240	160	340	230	480	350	750	670	1350	1050	2100	
Screw travel per 1 turn of worm	mm	1/3	1	1/3	1	1/3	1	5/12	5/4	1/2	3/2	1/2	3/2	7/4	7/4	7/13	21/13	16/29	48/29	18/29	54/29	22/29	66/29	
Stroke	mm	※ Consult with us about stroke.																						
Efficiency	%	18	25	13	20	12	18	15	21	16	22	15	21	16	22	14	20	13	19	12	18	13	19	
O.D. of screw	mm	25	34	42	55	65	70	75	90	110	130	150												
Screw lead	mm	5	6	6	10	12	12	14	14	16	18	22												
Overhang load	kN	0.3	0.35	0.7	1.1	1.2	1.3	1.5	2.0	2.2	3.5	5.0												
Max. r.p.m. rated load	rpm	Single	1500	750	540	450	400	375	310	300	240	160	120											
		Triple	900	600	450	350	300	270	250	225	170	115	100											
Max. r.p.m. allowance	rpm	Single	1800	1500	1500	1200	1000	1000	800	750	700	650	500											
		Triple	1500	1200	1200	1000	860	860	750	700	650	600	500											
Weight (in case of stroke 350mm)	approx. (kg)	6	13	25	40	60	75	110	160	215	450	690												
Temp. range in use		-5°C ~ +80°C (ambient temp. less than 50°C) ※ Consult with us in case of use beyond this range.																						

Note) • Bolts installed worm gear jacks are required to use 8.8 or more of hardness.  
 • Standard worm gears are not equipped with end plate of screws and stopper.

# WJ type Worm Gear Jack

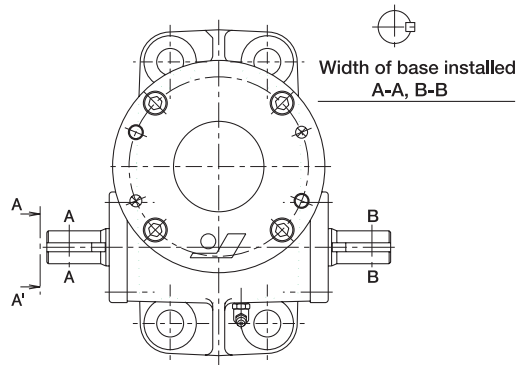
Model number	WJ	01	※	※	D	※	※	※
WJ type worm gear jack								
Pushing force (ton)								
Direction to thread shaft								



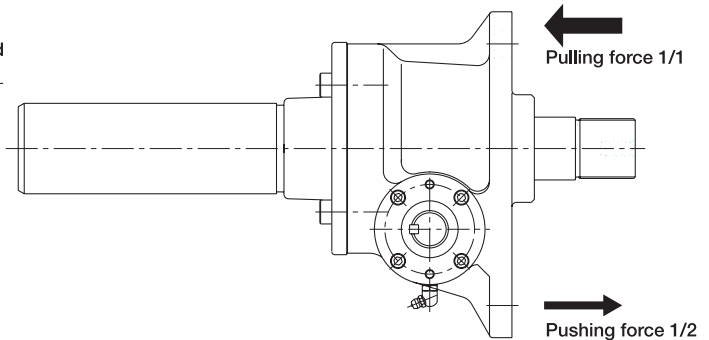
### Features

- This WJ is mainly used for pulling up load.
- Pushing force is 1/2 of pulling force.
- Screw with key to prevent turning
- Load is received by screw.

Dimensional drawing



\* Worm shaft (viewed from A-A') turns counter-clockwise, screw moves to right.



### Specifications

Items	Model Unit	WJ01D		WJ02D		WJ05D		WJ10D		WJ15D		WJ20D		WJ25D		WJ35D		WJ50D		WJ75D		WJ100D		
		L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	L	H	
Gear ratio of worm gear		15:1	15:3	18:1	18:3	18:1	18:3	24:1	24:3	24:1	24:3	24:1	24:3	24:1	24:3	26:1	26:3	29:1	29:3	29:1	29:3	29:1	29:3	
Rated pushing force	kN(tf)	10 (1)	20 (2)	50 (5)	100 (10)	150 (15)	200 (20)	250 (25)	350 (35)	500 (50)	750 (75)	1000 (100)												
Endurance pushing force	kN(tf)	15 (1.5)	30 (3)	75 (7.5)	150 (15)	225 (22.5)	300 (30)	375 (37.5)	525 (52.5)	750 (75)	1125 (112.5)	1500 (150)												
Rated pulling force	kN(tf)	10 (1)	20 (2)	25 (2.5)	50 (5)	75 (7.5)	100 (10)	125 (12.5)	175 (17.5)	250 (25)	375 (37.5)	500 (50)												
No-load torque	approx. N·m	0.3	0.6	1.5	3	5	7	10	15	20	35	55												
Starting torque	approx. N·m	3	7	10	20	25	50	50	100	80	170	120	240	160	340	230	480	350	750	670	1350	1050	2100	
Screw travel per 1 turn of worm	mm	$\frac{1}{3}$	1	$\frac{1}{3}$	1	$\frac{1}{3}$	1	$\frac{5}{12}$	$\frac{5}{4}$	$\frac{1}{2}$	$\frac{3}{2}$	$\frac{1}{2}$	$\frac{3}{2}$	$\frac{7}{12}$	$\frac{7}{4}$	$\frac{7}{13}$	$\frac{21}{13}$	16	48	18	54	22	$\frac{66}{29}$	
Stroke	mm	※ Consult with us about stroke.																						
Efficiency	%	18	25	13	20	12	18	15	21	16	22	15	21	16	22	14	20	13	19	12	18	13	19	
O.D. of screw	mm	25	34	42	55	65	70	75	90	110	130	150												
Screw lead	mm	5	6	6	10	12	12	14	14	16	18	22												
Overhang load	kN	0.3	0.35	0.7	1.1	1.2	1.3	1.5	2.0	2.2	3.5	5.0												
Max. r.p.m. rated load	rpm	Single	1500	750	540	450	400	375	310	300	240	160	120											
		Triple	900	600	450	350	300	270	250	225	170	115	100											
Max. r.p.m. allowance	rpm	Single	1800	1500	1500	1200	1000	1000	800	750	700	650	500											
		Triple	1500	1200	1200	1000	860	860	750	700	650	600	500											
Weight (in case of stroke 350mm)	approx. (kg)	6	13	25	40	60	75	110	160	215	450	690												
Temp. range in use		-5°C ~ +80°C (ambient temp. less than 50°C) ※ Consult with us in case of use beyond this range.																						

Note) • Bolts installed worm gear jacks are required to use 8.8 or more of hardness.  
 • Standard worm gears are not equipped with end plate of screws and stopper.

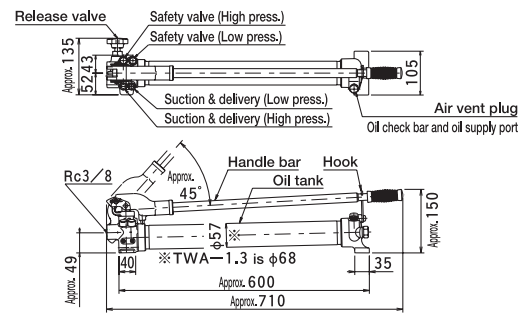
## TWAX type Hand Operated Pump for 100MPa

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



TWAX-1.3

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		
TWAX-0.9	0.9	100	3	2	11	Rc3/8	7.9
TWAX-1.3	1.3						9

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

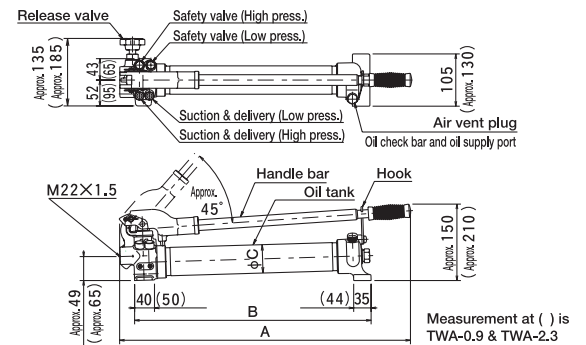
## TWAZ type Hand Operated Pump for 200MPa

Model number **TWA Z 0.7**  
 Hand operated pump  
 Pressure: 200MPa  
 Usable oil volume (ℓ)



TWAZ-0.7

Dimensional drawing



### Specifications

Model	Items Usable oil volume (ℓ)	Working pressure MPa		Oil delivery (ml/stroke)		Connection port	Dimension (mm)			Weight approx. (kg)
		High	Low	High	Low		A	B	C	
TWAZ-0.7	0.7	200	3	0.6	11	M22×1.5	590	475	57	7.0
TWAZ-1.3	1.3			1.0			710	600	68	9.0
TWAZ-2.3	2.3			1.6			900	675	82.6	14.8

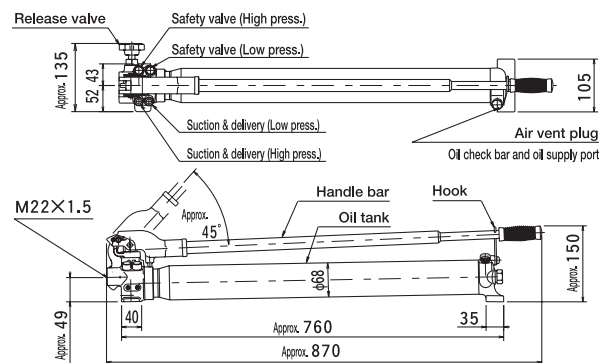
## TWAU type Hand Operated Pump for 300MPa

Model number **TWA U 1.8**  
 Hand operated pump  
 Pressure: 300MPa  
 Usable oil volume (ℓ)



TWAU-1.8

Dimensional drawing



### Specifications

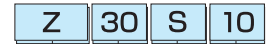
Model	Items Usable oil volume (ℓ)	Working pressure MPa		Oil delivery (ml/stroke)		Connection port	Weight approx. (kg)
		High	Low	High	Low		
TWAU-1.8	1.8	300	3	1	11	M22×1.5	13

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

# Z type Power Jack 200MPa

## S (Spring return) type

Model number



Z type

Capacity (ton)

Spring return (S)

Stroke (cm)

**Features**

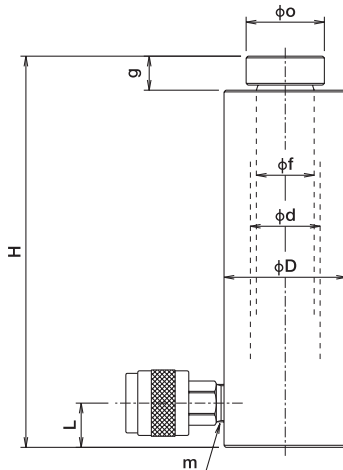
- Piston rod is plated with hard chrome.
- Light-weight, compact type used special steel to each parts
- Applied to super liquid high pressure such as high pressure precision forming press, nuclear plant, ship yard, industrial, diamond processing.

• Allowable lateral load is 50% of lifting capacity.



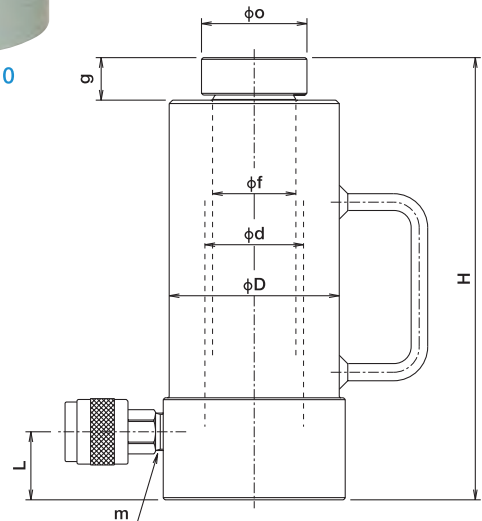
Z25S10

**Dimensional drawing**



Z50S10

**Dimensional drawing**



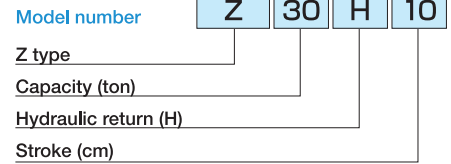
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**Specifications**

Items	Model Unit	Model										
		Z25S5	Z25S10	Z30S5	Z50S5	Z50S10	Z50S20	Z75S5	Z100S5	Z100S10	Z100S20	Z150S5
Capacity	kN (tf)	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 <sup>2</sup>	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
	Motor driven pump	VZ2 or VZ5										
Included coupler		BZ-4J										

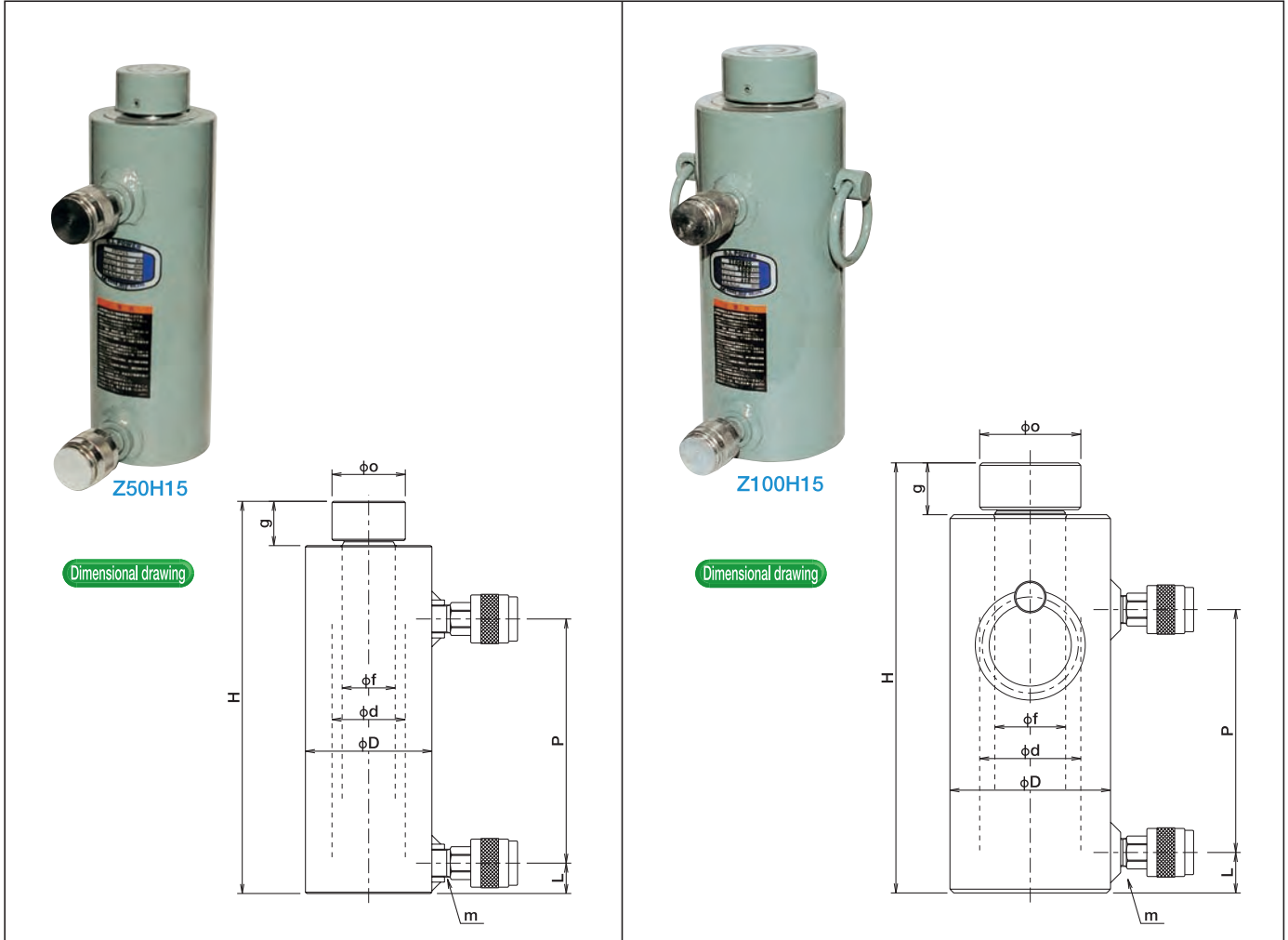
# Z type Power Jack 200MPa

## H (Hydraulic return) type



**Features**

- Piston rod is plated with hard chrome.
- Light-weight, compact type used special steel to each parts
- Applied to super liquid high pressure such as high pressure precision forming press, nuclear plant, ship yard, industrial, diamond processing.
- Allowable lateral load is 50% of lifting capacity.
- When hydraulic pump returns, it operates by hydraulic pressure.



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**Specifications**

Items	Model Unit	Model																			
		Z30H10	Z50H15	Z75H15	Z100H10		Z100H15		Z150H10		Z150H15		Z200H5	Z200H10		Z200H15	Z200H20	Z250H20	Z300H20	Z500H20	
Capacity	kN (tf)	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	200	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	cm <sup>2</sup>	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									
Length of 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		—	—	—						
	Motor driven pump	VZ2 or VZ5																			
Included coupler		BZ-4J																			

Note) TWAD-0.7P installs manual control valve in TWAZ-0.7.



# VZ-type Hydraulic Motor Driven Pump for 200MPa jack

Model number

VZ 2 DS

VZ-type pump

Horse power

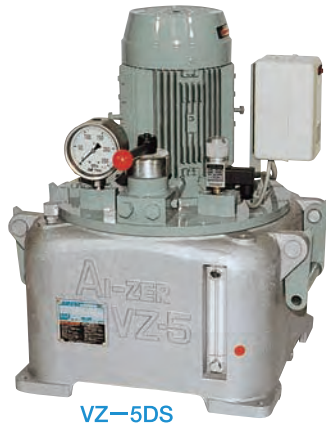
SS: With port block & pressure switch  
(In case of separate control valve)

DS: With manual control valve & pressure switch  
(Used for double acting jack)

KS: With solenoid valve (KSV) & pressure switch  
(Used for single acting jack)

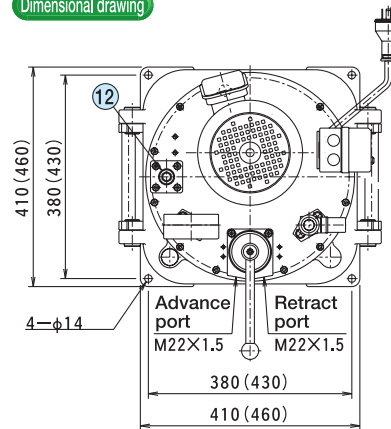
## Features

- New material or industrial diamond manufacturing
- Ultra high pressure liquid forming
- Detachment of bearing, bush, propeller
- Various test system in need of extreme pressure

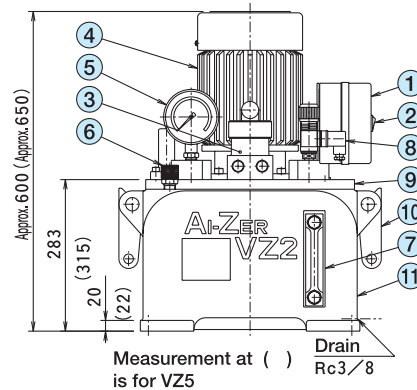
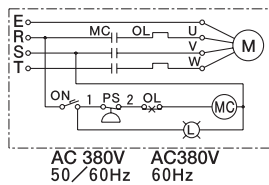
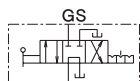
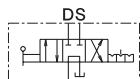
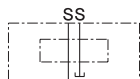
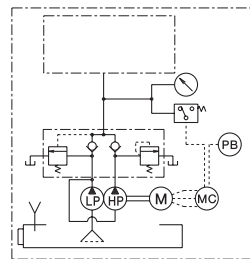


VZ-5DS

## Dimensional drawing



## Hydraulic circuit



## Parts list

No.	Parts name	Q'ty	No.	Parts name	Q'ty
1	Magnet switch	1	6	Air vent plug (Oil supply port)	1
2	Sea-saw switch	1	7	Oil gauge	1
3	D type control valve	1	8	Pressure switch	1
4	Motor	1	9	Plate	1
5	Pressure gauge (Option)	1	10	Handle	2
			11	Oil tank	1

## 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		
VZ2-※	200	21	0.35/0.29	3/2.5	1.5	E	4	1800	3 ph. 380V	20	30	110	M22×1.5
VZ5-※		28	0.9/0.75	5/4.1	3.7			1500		30	45	180	

Note 1) Figures of delivery and r.p.m. of motor showing at 50Hz in right side, at 60Hz in left side. Note 2) Voltage available on request  
Working oil: ISO-L-HM-VG32

# MEMO

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A series of horizontal dotted lines for writing.

# TiD-extra

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