



MANUAL HYDRAULIC REMOTE CONTROL OPERATOR FOR VALVE





“With Strict Quality Control,
HIVAL Raise
Customer’s Satisfaction.”



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○ Introduction

With many years of experience with wide range of products used in the Valve Hydraulic Control(Operation) field, HIVAL has achieved successful reputation and technical improvement to take another step forward once again.

"HIVAL Co., Ltd.", are pleased to introduce our wide range products for Hydraulic Remote Control System. We are now able to provide our customers with the complete actuators solution.

Meeting with our customer's needs and requirements is our top priority.

Rest assured that our After Sales service is second to none.

We are 100% sure of our products quality.



○ Outline

Recently, new manufactured plant is composed in the condition with the machinery and tools.

It is required high technology.

Therefore control method is developed very much in the whole industry.

The operation method is with computer, so applied equipment is almost not required manpower.

The local valve among the machinery and tools connected with piping system is operated by manpower in the past. But it is changed to electric or hydraulic, pneumatic.

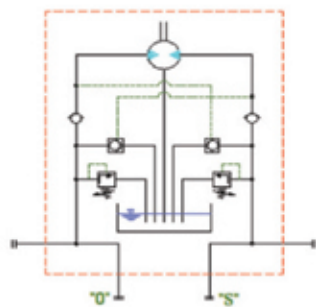
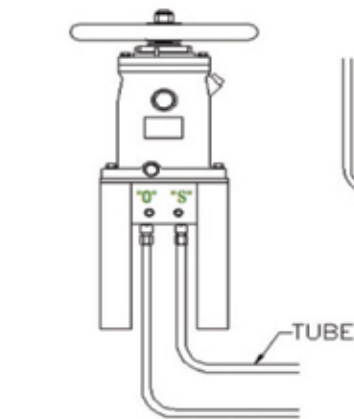
This Manual Hydraulic Remote Control System is for the local valve which is so far from the deck and the installed place is difficult to operate by man.

We recommend our manual hydraulic remote control operator for your system.

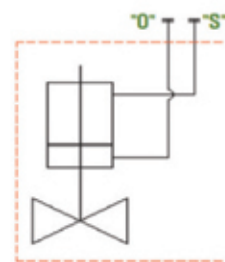
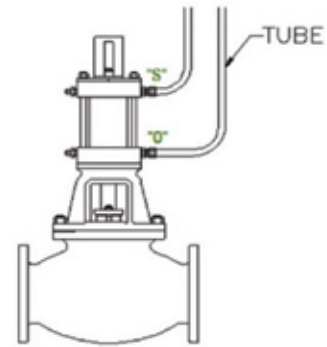
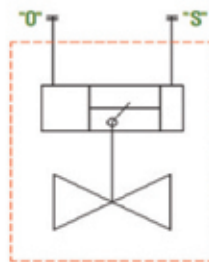
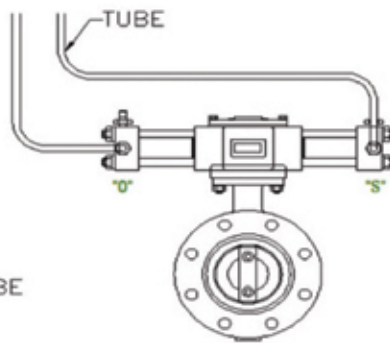
Construction

Hydraulic transmitter is manual pump and the hydraulic actuator is combined with valve.
For operation, two tubes are connected between transmitter and actuator.
One tube is for open the valve and the other is for close.

MANUAL HYD. TRANSMITTER



MANUAL HYD. ACTUATOR



1. Manual hydraulic transmitter

This, hydraulic pressure generating system, is established usually at the best place for the worker to operate it.

2. Valve

Butterfly valve, Globe valve, Angle valve, Gate valve & other special valves are embodied into a valve with several type of actuator.

3. Hydraulic actuator

The actuator generates and activating force on valve body from the generated hydraulic power.

The optimum selecting from several actuators is made to meet the requirements of process and valve body.

Actuator is divided into Hyd. Rotary Act. (HAA-D, HAG-D, HAV-D series) and Hyd. Linear Act. (HAC-D series)

4. Accessories

Necessary accessories are such as Pilot check valve, By-pass valve, Connector, Self seal coupling and Emergency local manual handle and supplied.

Pilot check valve, Bypass valve and Emergency local manual handle are available as options.

Hydraulic Transmitter (HTM-C)

The hydraulic oil is being pumped by rotating the hand-wheel of transmitter, clockwise is for close the valve and counter clockwise is for open.

**Transmitter
(Standard)**



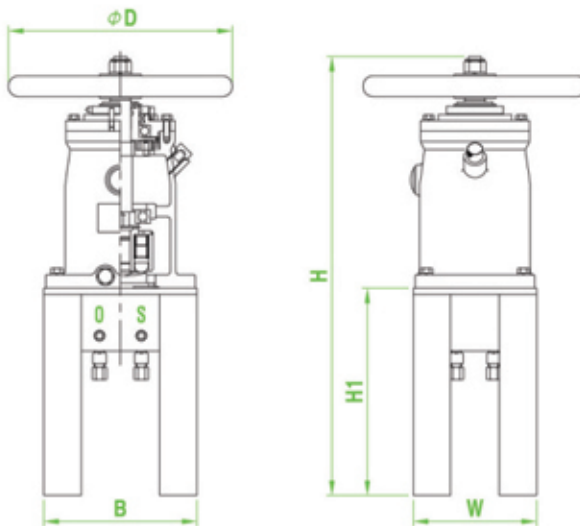
**Multi Transmitter
(Flow Meter)**



**Multi Transmitter
(Electric Type)**



Dimension Table



Specifications

1. Max. Working pressure : 135kg/cm²
2. Operating fluid : Hydraulic Oil
3. Temp. range : -20°C ~ 80°C
4. Setting Pressure(Standard) :
OPEN : 90kg/cm²
CLOSE : 80kg/cm²

MODEL	D	H	H1	B	W	WEIGHT(Kg)	DISCHARGE(cc/rev)
HTM-CA	280	710	400	205	165	31	12
HTM-CB	315	710	400	205	165	33	25
HTM-CC	400	710	400	205	165	42	48
HTM-CD	500	710	400	205	165	48	68

[Note]

1. The model selection of transmitter is decided as per applied actuator's model and size.

Hydraulic Rotary Actuator

Is designed to carry out rotational movements of all.

The actuator combines valve. Due to the special assembly technique numerous models can be made up.

Features

1. The product has special adjusting screw equipment at two directions (0° and 90°).
This character removes the problem of matching valve at the time of open and close.
2. Overhaul and assembly is easy.
Under the condition that valve is installed, overhauling and assembly is easily done.
So, effort and time of maintenance is saved.
3. The structural design is possible for watertight.
Even though valve and actuator are installed inside the tank, watertight is surely maintained.
4. Special bearing is used the driving part.
Since, the special bearing is used at the driving part of actuator, it makes possible correct guidance and minute motion, and as it is not contact between metal and metal, the coefficient of friction.
5. Emergency handle is attached (Option)
As emergency handle is attached to the top position of actuator, it is used In case of emergency.
6. The types of Hydraulic Actuator are Slotting piston, Scotch York and Rack & Pinion Gear, each data of Actuator is specified on each table.

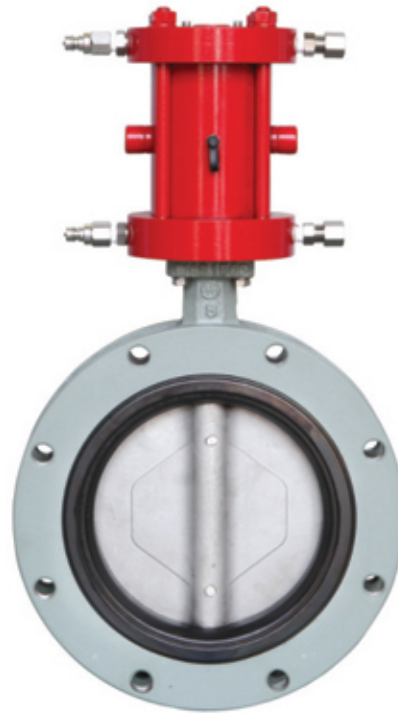
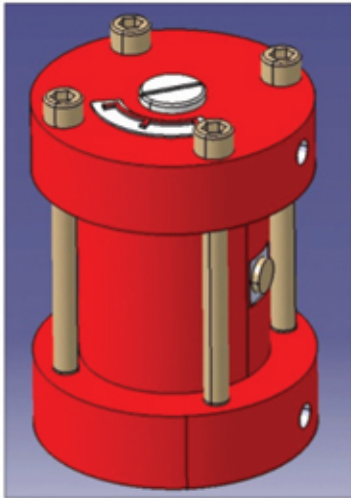
Specifications

1. Operating fluid : Hydraulic Oil
2. Max. Working pressure : 135kg/cm²
3. Temp range : -20℃ ~ 80℃
4. Actuator type : Double acting
5. Travel stop : ±5° control possible (Open and Close)
The torque of hyd. actuator can be supplied maximum 300,000 N.m

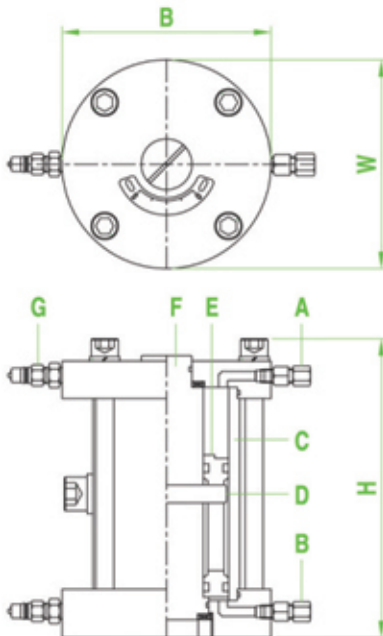
Note

1. The supply of emergency handle stick type is possible.
2. The manufacturing of actuator (single acting type) is possible.
3. Dimensions only valid for the standard versions in case of additional accessories, please ask for drawings.
4. "O" : open port
"S" : close port
5. Applicable valve : Butterfly valve, Ball valve, Plug valve, etc. (rotary operating valve).

• Slotting Piston Type (HAV-D)



Dimension Table



- A : Pressure Connection(Open position)
- B : Pressure Connection(Closed position)
- C : Cylinder
- D : Pin
- E : Slotting Piston
- F : Arm
- G : Self Seal Coupler

Features

1. Due to vertical structure, it is not affected by interference of surrounding structures during piping.
2. As it is not casted product, watertight function is perfect.
3. It is smaller and lighter product than other type of product.

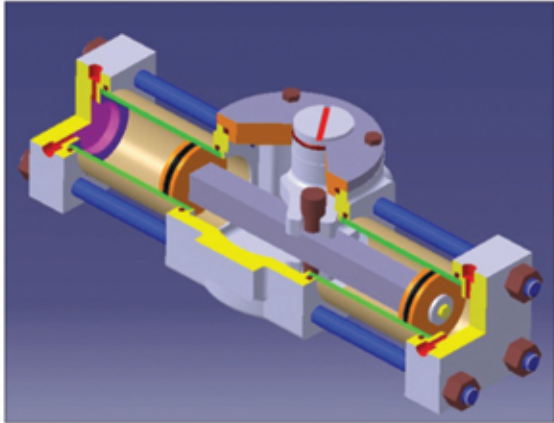
MODEL	B(mm)	W(mm)	H(mm)	WEIGHT(Kg)	OIL VOL.(cc)	TORQUE(N, m)
HAV-D06	110	110	165	6	56	164
HAV-D08	140	140	200	12	145	378
HAV-D11	185	185	265	28	371	1,000
HAV-D15	240	240	325	65	904	2,492
HAV-D18	290	290	390	105	1,678	4,440
HAV-D22	350	350	475	200	2,960	7,660

[Note]

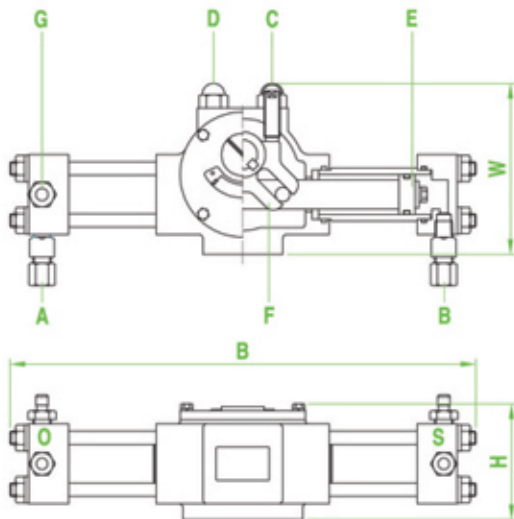
1. Torque of HYD, supply pressure : 120kg/cm²

2. Volume of Actuator for one cycle (open-close)

• Scotch Yoke Type (HAA-D)



Dimension Table



- A : Pressure Connection(Open position)
- B : Pressure Connection(Closed position)
- C : Adjusting Screw(Open end position)
- D : Adjusting Screw(Closed end position)
- E : Piston
- F : Arm
- G : Air vent plug

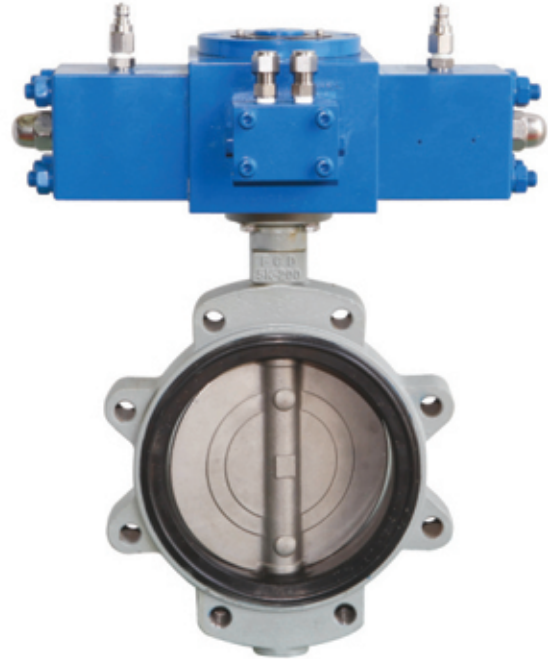
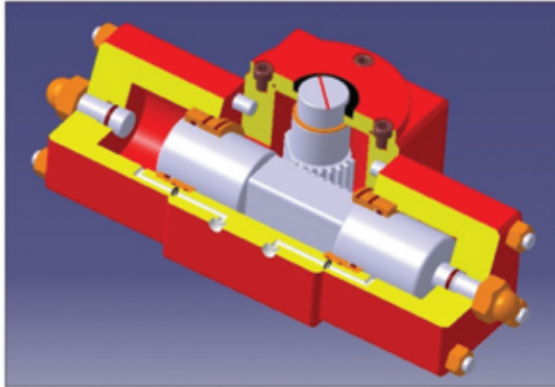
MODEL	B(mm)	W(mm)	H(mm)	WEIGHT(Kg)	OIL VOL.(cc)	TORQUE(N, m)
HAA-D03	350	130	91	8	71	140
HAA-D05	550	208	131	22	260	590
HAA-D06	575	225	155	34	500	1,240
HAA-D08	728	320	195	75	1,150	2,450
HAA-D10	924	430	208	130	1,650	4,970
HAA-D12	1,112	510	235	230	3,200	9,400
HAA-D14	1,408	584	314	350	4,500	15,380
HAA-D18	1,855	755	395	800	10,200	34,000
HAA-D20	2,470	820	468	1,440	15,700	52,300

[Note]

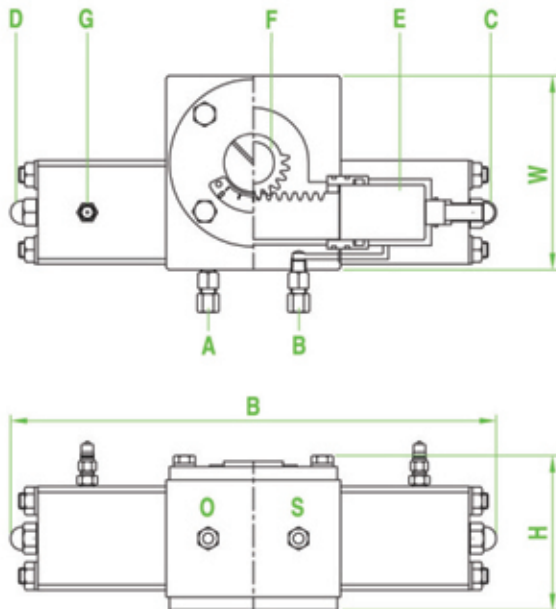
1. Torque of HYD, supply pressure : 80kg/cm²

2. Volume of Actuator for one cycle (open-close)

• Rack & Pinion Type (HAG-D)



➔ Dimension Table



- A : Pressure Connection(Open position)
- B : Pressure Connection(Closed position)
- C : Adjusting Screw(Open end position)
- D : Adjusting Screw(Closed end position)
- E : Piston
- F : Arm
- G : Air vent plug

MODEL	B(mm)	W(mm)	H(mm)	WEIGHT(Kg)	OIL VOL.(cc)	TORQUE(N, m)
HAG-D03	270	120	100	11	29	122
HAG-D05	420	175	135	32	92	392
HAG-D07	525	215	180	62	243	1,060
HAG-D10	660	280	220	130	666	2,825

[Note]

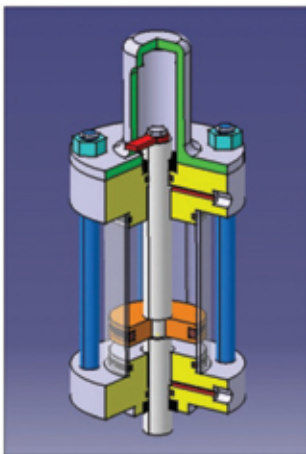
1. Torque of HYD, supply pressure : 80kg/cm²

2. Volume of Actuator for one cycle (open-close)

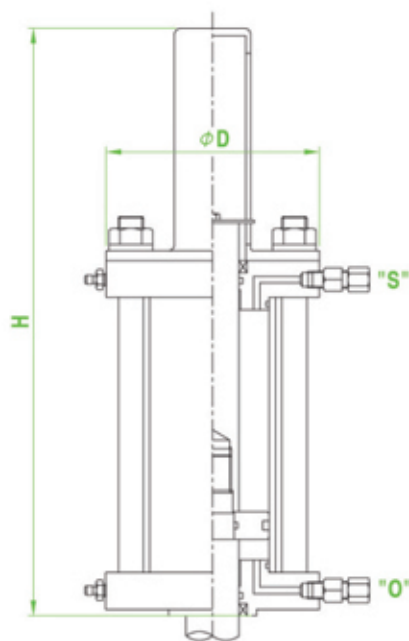
Hydraulic Linear Actuator (HAC-D)

Features

1. According to various valve strokes, adjust the length of cylinder, so make valve open or close is to be done perfectly possible.
2. Overhaul and assembly is easy.
Under the condition that valve is installed, overhauling and assembly is easily done, and effort and time for maintenance is saved.
3. Watertight structure design even though valve and actuator are installed inside the tank, watertight is maintained surely.
4. Emergency handle is attached (Option)
As emergency handle is attached to the top portion of actuator, it is used in case of emergency.
5. Applying possible valve : Glove valve, Angle valve, Gate valve, Surface valve, Storm valve, etc.



Dimension Table



Specifications

1. Operating fluid : Hydraulic Oil
2. Max. Working pressure : 135kg/cm²
3. Temp. range : -20℃ ~ 80℃
4. Actuator type : Double acting
The force of hyd, actuator can be supplied maximum 100 ton.

Note

1. The supply of emergency handle stick type is possible.
2. The manufacturing of actuator (single acting type) is possible.
3. Dimensions only valid for the standard versions in case of additional accessories, please ask for drawings.
4. "O" : open port
"S" : close port
5. st : Valve stroke(mm)

MODEL	D(mm)	H(mm)	WEIGHT(Kg)	OIL VOL.(cc)	FORCE(ton)
HAC-D04	98	172+2×st	10	0.9×st	0.8
HAC-D05	102	172+2×st	12	1.5×st	1.2
HAC-D06	116	172+2×st	14	2.3×st	1.8
HAC-D07	136	182+2×st	18	3.0×st	2.4
HAC-D09	170	182+2×st	24	5.0×st	4.0
HAC-D12	210	235+2×st	33	9.3×st	7.5
HAC-D15	240	235+2×st	48	15.7×st	12.5

[Note]

1. Force of HYD. supply pressure : 80kg/cm²

2. Volume of Actuator for one cycle (open-close)

HYD. Portable Hand Pump

www.hival.co.kr

Portable hydraulic supply equipment that is used to drive hydraulic actuators or equipment. Composed of single or double acting to fit hydraulic supply type of connecting product and it can be used by adding various accessories (relief valve, bypass valve, pressure gauge, etc.)

STANDARD TYPE



Specifications

1. Model : HHP-S-2B, 3B
2. Max. Pressure : 700kg/cm²
3. Operating fluid : Hydraulic Oil
4. Operating type : Single / Double Acting
5. Volume per Stroke : 31cc
6. Oil Tank Capacity : 2300cc , 3000cc
7. Dimension (W × L × H) : 660 × 150 × 160
8. Weight : 13kg

CART TYPE



Specifications

1. Model : HHP-C-45B
2. Max. Pressure : 280kg/cm²
3. Operating fluid : Hydraulic Oil
4. Operating type : Single / Double Acting
5. Volume per Stroke : 45cc
6. Oil Tank Capacity : 5000cc
7. Dimension (W × L × H) : 330 × 330 × 650
8. Weight : 25kg

Electro Hydraulic Actuator

By grafting Electro-Hydraulic valve controller that hydraulic power unit, manual handle, control switch, controller and communication module are built in hydraulic Actuator, it is able to easy operate and control directly or indirectly.

It can be applied Globe valve, Angle valve, Gate valve, Surface valve and Storm valve.

Features

1. Operation torque is high, it can be attached on valve directly without reduction gear.
2. Power usage is low, it is an eco-friendly product that can save energy resources.
3. Depending on the purpose of use such as On/Off control, Proportional control (modulation) and Intelligent type (modulation & speed control), it can be selected 5 types according to operation type and input/output signal.
4. It can be installed by unify or separate for a manipulator and actuator.
5. Using only manipulator, easy operation setting change and password setting are possible, so that it is possible of safe use by limiting arbitrary use.

Specifications

Electro Power Pack

1. Control : On/Off & Modulating (4~20mA)
2. Power : 50/60Hz, 1Ph, 110V/220V
3. Protection Class : IP68 , Exd IIC T5
4. Temp. Range : -20°C ~ 80°C
5. Cable Entry : NPT 1"×2EA , NPT3/4"×1EA

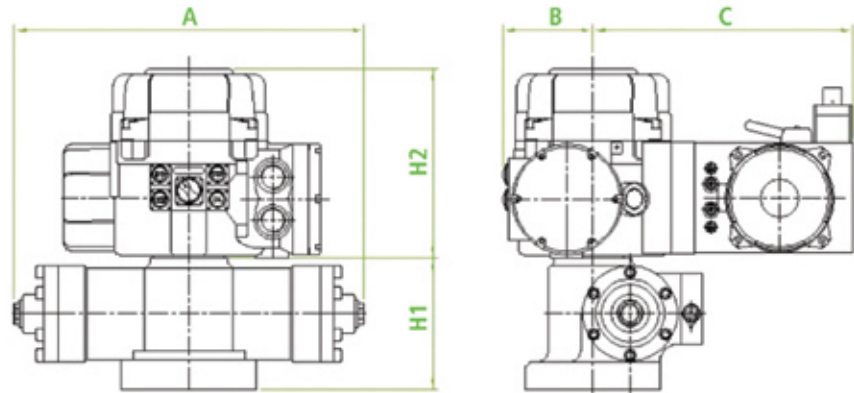
Hyd. Actuator

1. Type : Rotary Actuator & Linear Actuator
2. Actuator Type : Double Acting
3. Max. Working Press. : 135kg/cm²
4. Temp. Range : -20°C ~ 80°C
5. Operating Fluid : Hyd. Oil (ISO VG46)



Dimension Table

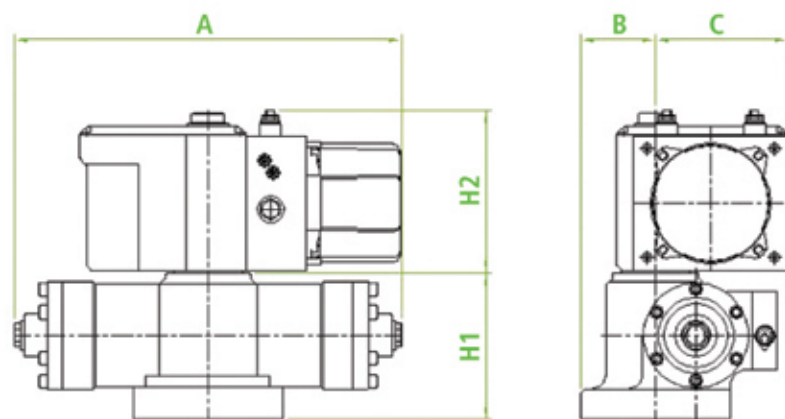
Type : Modulate / Exd IIC T5



MODEL	A(mm)	B(mm)	C(mm)	H1(mm)	H2(mm)	OIL VOL.(cc)	TORQUE(N, m)
HAG-D03-AVT-Ex	267	117	337	160	245	423	162
HAG-D05-AVT-Ex	300	117	337	177	245	462	440
HAG-D06-AVT-Ex	356	117	337	194	245	515	823
HAG-D08-AVT-Ex	454	117	337	231	245	620	1,583
HAG-D10-AVT-Ex	598	117	337	256	245	900	3,261
HAG-D12-AVT-Ex	761	117	337	281	245	1,296	6,383

[Note] 1. Torque of Hyd. supply pressure : 120kg/cm²

Type : On / Off



MODEL	A(mm)	B(mm)	C(mm)	H1(mm)	H2(mm)	OIL VOL.(cc)	TORQUE(N, m)
HAG-D03-AVT	267	52.5	155	110	191	423	162
HAG-D05-AVT	300	62.5	155	127	191	462	440
HAG-D06-AVT	356	75	155	144	191	515	823
HAG-D08-AVT	454	87.5	155	181	191	620	1,583
HAG-D10-AVT	598	105	155	206	191	900	3,261
HAG-D12-AVT	761	150	155	231	191	1,296	6,383

[Note] 1. Torque of Hyd. supply pressure : 120kg/cm²

Valve Remote Control System (V.R.C)

VRC System is designed for position indication and electro-hydraulic remote control of hydraulically actuated valves.

The principle of the VRC System is that pressurized oil, generated by the power pack, is used to open or close the valve by means of the solenoid controlled actuator.



Electric Control Console

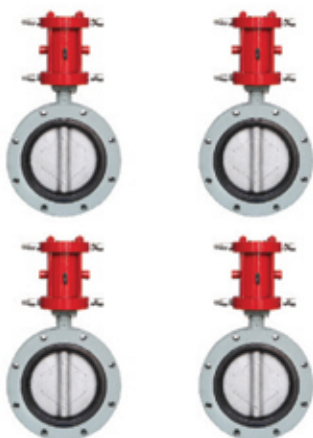
Electric Control Console for centralized control of all valves included in the system.

The Control Consoles are often designed and manufactured to include other Cargo Handling and Monitoring system.



Hydraulic Power Unit

Complete with oil reservoir, hydraulic pumps and accumulator unit, feeds the system with high pressure oil. All components are selected to ensure high reliability and low noise.



Valve & Actuators

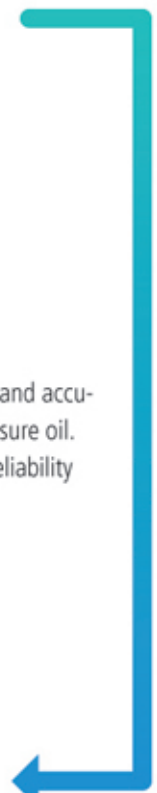
For operation of valves.

The new design simplifies maintenance and installation which also gives the customer a cost effective product.



Solenoid Valve Cabinet

Containing solenoid operated directional valves for distribution of high-pressure oil to the actuators. Valve position can be measured indirectly and transferred to the control station.



Photos of Product

www.hival.co.kr

Hydraulic Transmitter (HTM-C)



Hydraulic Rotary Actuator (HAV-D, HAA-D, HAG-D)



Hydraulic Linear Actuator (HAC-D)





HIVAL HIVAL CO., LTD.

162, Yongdeok-Ro, Hallim-Myeon, Gimhae-Si, Gyeongnam, Korea

Tel +82 55 345 3810 Fax +82 55 345 3820

E-mail hival@hival.co.kr

Homepage <http://www.hival.co.kr>



RETRACTABLE TEST STUMP HANDLER TELESCOPIC BOOM

/////
OFFSHORE PART



Retractable Test Stump Handler

Before submerge BOP into the deepwater from drillship equipment, BOP will be checked on by Test Stump to verify operation's (Locking & Sealing) defect of BOP. During this period, Retractable Test Stump Handler is used as equipment for handling & supporting Test Stump smoothly.

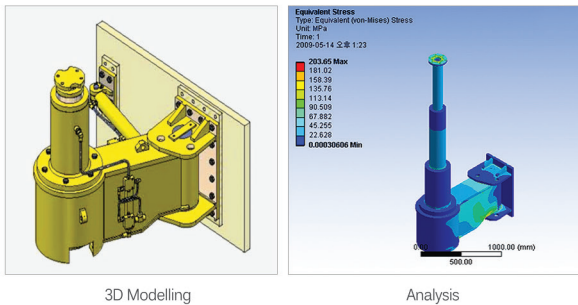
Each Fixed, Skid and Swing type Retractable Test Stump Handler would be selected according by installation environment and purpose of user.



Specification

Project	Drillship
Project Name	PDC / Pride / Seadrill / QGOG / Ocean Rig / Cobalt / Sonangol / Transocean
Item	Retractable Test Stump Handler
Class	ABS / DNV
S.W.L	3 Ton / 20 Ton / 25 Ton / 30 Ton / 35 Ton
Material	DH36
Area Classification	Zone 2
Design Temp.	-20°C to +45°C
Max. Working Pressure	207 bar
Weight	1700kg(Fixed) / 1200kg(SKID) / 1200kg(Swing)
Size	1200×1200×2900(Fixed) / 2900×700×1500(SKID) / 1300×540×1260(Swing)

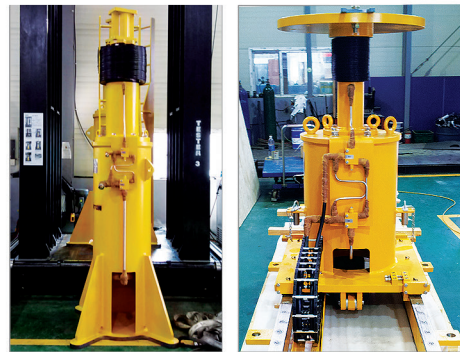
Design Verification



3D Modelling

Analysis

Type of Stump Handler



Fixed Type

Skid Type

Load Test

ABS - Lifting Appliances (SWL+5t) / DNV - DNV-OS-E101 (SWL+5t)



25ton Load Test

40ton Load Test



Swing Type

Telescopic Boom

The Telescopic Boom (Arm) is designed improvement to make easy pulling of Mux cables which are connected to Riser System.

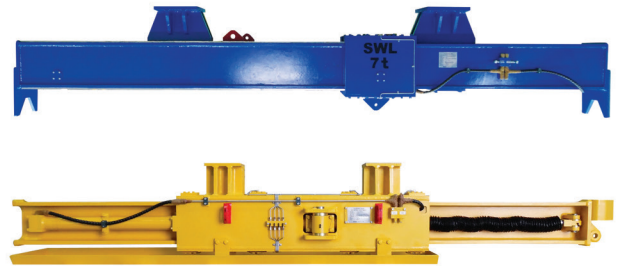
During running of Riser, Telescopic Boom (Arm) will be extended to make a steep cable angle for operator to pull with less force.

When clamping of cable is completed, then telescopic boom will be retracted for avoid interference with tension ring wire.

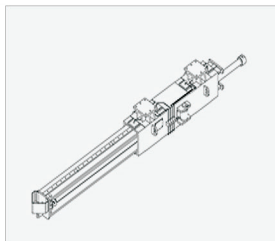
All function is hydraulic operated and controlled from local control panel.

Specification

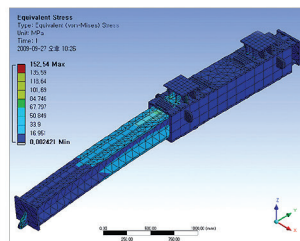
Project	Drillship
Project Name	PDC / Pride / Seadrill / QGOG / Ocean Rig / Stena
Item	Telescopic Boom (Arm)
Class	ABS / DNV
S.W.L	3 Ton / 5 Ton / 7 Ton
Material	DH36
Area Classification	Zone 2
Design Temp.	-20°C to +45°C
Max. Working Pressure	207 bar
Weight	1350kg(3 Ton) / 2500kg(5 Ton) / 2700kg(7 Ton)
Size	5000×650×650(3 Ton) / 5500×450×950(5 Ton) / 5500×450×950(7 Ton)



Design Verification

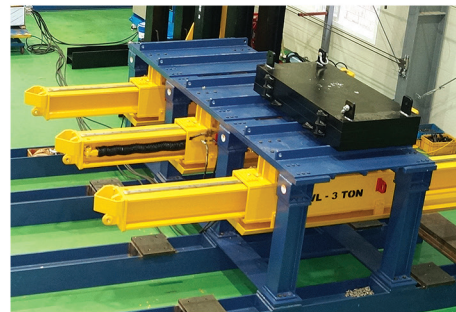


3D Modeling



Analysis

Type of Telescopic Boom



Boom Moving Type

Load Test

ABS - Lifting Appliances (SWL×1.25) / DNV - DNV-OS-E101 (SWL×1.25)



3.8ton Load Test



10.5ton Load Test



Housing Moving Type



Best Product! HIVAL is Making!

We, HIVAL Co., Ltd., are specialized in producing Hydraulic Actuator and Special Valve that apply to the Shipbuilding and Plant based on years of experience and Know-how for a long time. In particular, a company that produces a variety of hydraulic equipments such as Telescopic Boom and Test Stump Handler, etc that applies to the offshore wishes for the future with our customers.

We are making our products with taking pride to be world best. And we will do our best to reach our customers.



HIVAL

www.hival.co.kr

Tel +82-55-345-3810 Fax +82-55-345-3820 Address 162, Yongdeok-Ro, Hanlim-Myeon, Gimhae-Si, Gyeongnam, Korea