

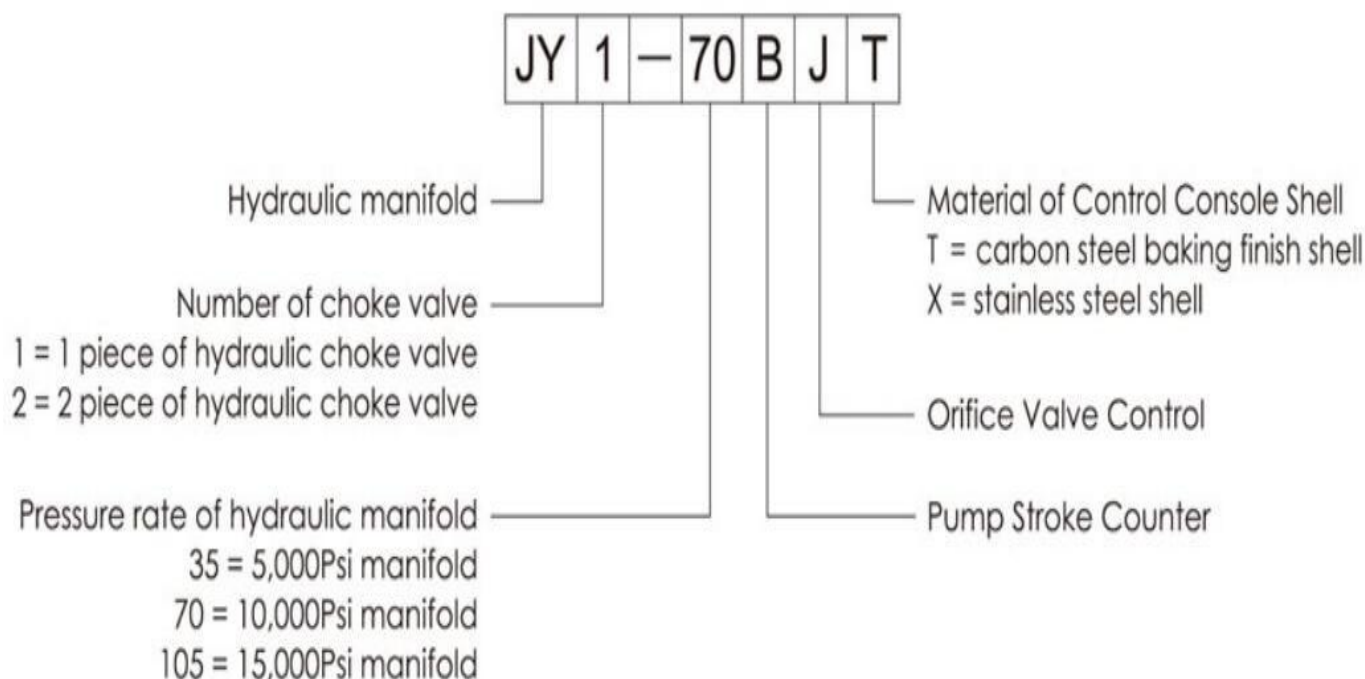
## REMOTE CONTROL PANEL / CHOKE MANIFOLD CONTROL CONSOLE

Choke manifold control console as a control assembly in hydraulic choke manifold, can remote control the open/close of hydraulic choke valve for a long distance and the control panel can indicate the standpipe pressure, casing pressure and the opening/closing condition of hydraulic choke valve well as the pulse number and frequency of the mud pump if pump stroke counter equipped, which can keep the pressure under well and is a necessary device to control kick and blowout and perform the pressure control technology in oil/gas well.

### Main technical parameters

1. Air source pressure: 0-0.6Mpa(Clean air source)
2. Ambient temperature: -40 ~ 70℃
3. Rating work pressure: 3 Mpa
4. Maximum output oil pressure: 4 Mpa
5. Fluid circuit connection: quick coupling M22 x 1.5
6. Gas circuit connection: quick coupling M16 x 1.5
7. Hydraulic oil specification:10# aeronautic hydraulic oil
8. Rating output oil pressure of orifice hydraulic chock manifold control unit: 6~8 Mpa
9. Size:
  - A) Choke manifold control unit:700x 470 x 1200
  - B) Dual-hydraulic choke manifold control unit:780x 490 x 1200

### Model Illustration







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## Test Pump with Chart Recorder



The air-powered test pump uses compressed air as power source and uses air-powered pumps as pressure supply. Air source pressure is proportional to output hydraulic pressure. Corresponding hydraulic pressure to be tested can be obtained by adjusting air source pressure. When air source pressure and hydraulic pressure are in a state of balance, the air-powered pump will discontinue to apply pressure and output hydraulic pressure equal to preset pressure will be reached and become steady so that the rate of pressure rise can be controlled by controlling air input. Therefore, the test pump is characterized by explosion-proof performance, adjustable output pressure, controllable rate of pressure rise, small size, light weight, easy operation, reliable properties and extensive purposes. It is specially suitable to the high pressure tests and ultra-high pressure tests for the pressure-containing equipments used in drilling and production projects in oilfields, such as blowout equipments, valves, pipelines, connectors, pressure vessels, and so on, and also it is designed for use as test facilities in scientific research departments and inspection departments.

## Choke & Kill Manifold

### 1. Application

Choke manifold is necessary device to control the well kick successfully and execute the pressure control technology on oil/gas well in the course of drilling, as it is, the device is adopted to execute new drilling-well' s technique of balance pressure, which can prevent the pollution oil-layer, improve the speed of drilling and control blowout effectively. One end of the device connects with the side flange of BOP spool. When BOP closes, it can control the finite pressure from casing by adjusting the choke valve 's opening, so balanced drilling can work under minimum pressure-difference.

### 2. Assembly & structure

Choke manifold consists of choke valve, gate valve, pipeline, fittings, flanges, spools and pressure gauge, etc.

### 3. Working Principle

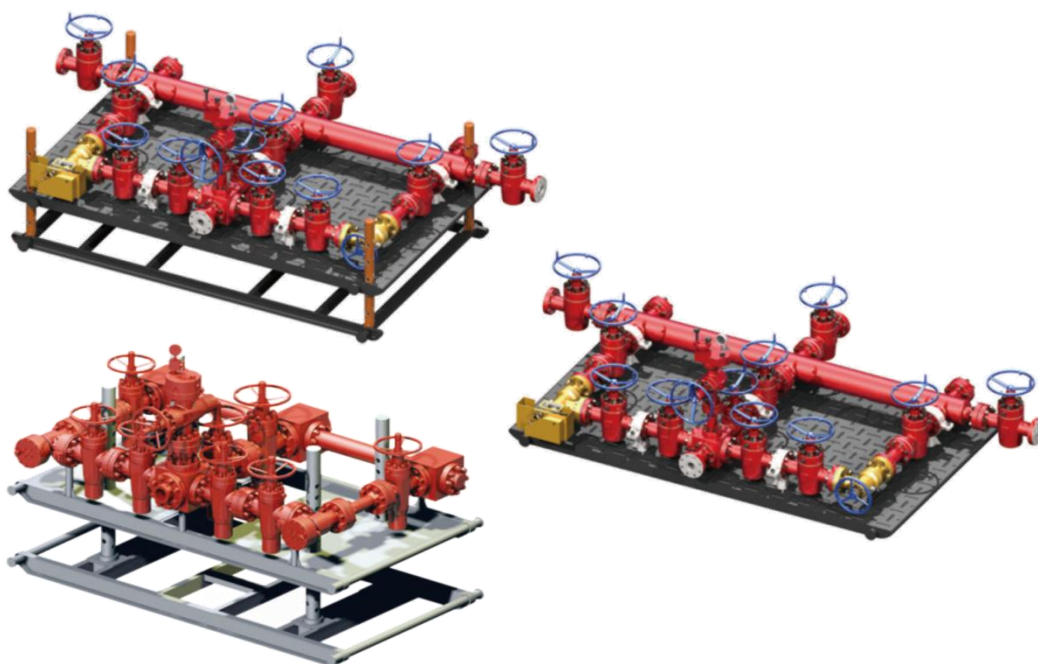
When the pressure rising in well, fluid in well can be released in utilization of the choke valve opening / closing in choke manifold to control casing pressure, which can directly blow out through gate valve when the casing pressure is quite high.

### 4. Specifications

Pressure level is divided into six levels, ie. 2000 Psi, 3000 Psi, 5000 Psi, 10000 Psi, 15000 Psi, 20000 Psi; it can be designed according to requirement of client.

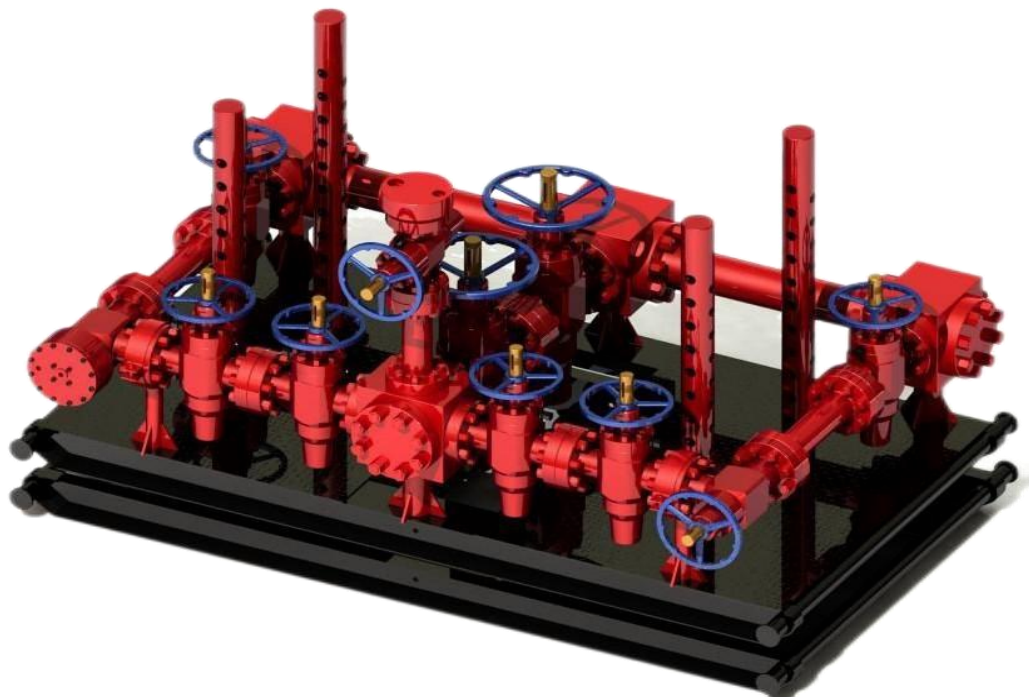
Choke manifold is according to the requirements of API Spec 16C

- Working Pressure: 2,000PSI ~ 20,000PSI
- Nominal Bore Size: 2 1/16" ~ 4 1/16"
- Complete with hydraulic control console for remote control.
- The manifold is matched with barrel choke valve that is required to be orifice choke valve in case of stop function being required.



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## Lifting un-balanced hydraulic choke manifold



### Main Parameters:

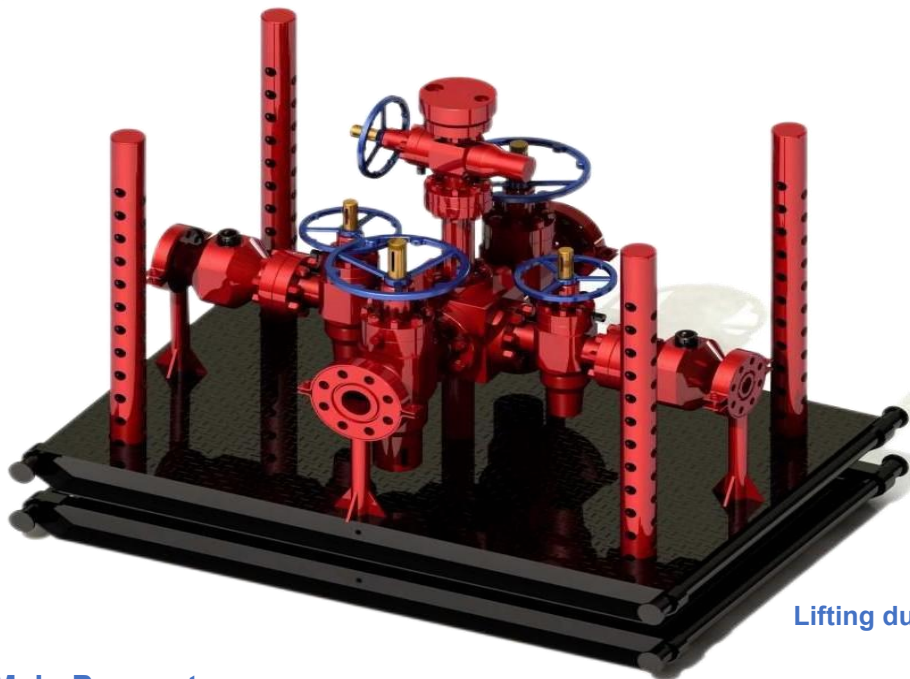
SN	Type	MPa(Psi)	Main Bore mm(in)		Side bore mm(in)		Remarks
1	(Y)JG14	14MPa (2000Psi)	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	Can be design and supply according to the customer requirement.
2	(Y)JG21	21MPa (3000Psi)	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	
3	(Y)JG35	35MPa (5000Psi)	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	
4	(Y)JG70	70MPa (10000Psi)	103(4-1/16") 65(2-9/16")	78(3-1/16") 52(2-1/16")	103(4-1/16") 65(2-9/16")	78(3-1/16") 52(2-1/16")	
5	(Y)JG105	105MPa (15000Psi)	103(4-1/16") 65(2-9/16")	78(3-1/16") 52(2-1/16")	103(4-1/16") 65(2-9/16")	78(3-1/16") 52(2-1/16")	



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**Kill manifold** is a necessary part in well-control assembly, its function includes as follows:

- ◆ to pump drilling fluid into well barrel to control the pressure in oil/gas well.
- ◆ to inject the fresh water into wellhead so as to avoid fire and burn as blowout;
- ◆ to inject extinguishant into well barrel as blowout and on fire.



Lifting dual-wing kill manifold

### Main Parameters:

SN	Type	MPa(Psi)	Main bore mm(in)		Side bore mm(in)		Remarks
1	YG14	14MPa (2000Psi)	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	Can be design and supply according to the customer requirement.
2	YG21	21MPa (3000Psi)	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	
3	YG35	35MPa (5000Psi)	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	103(4-1/16") 65(2-9/16")	80(3-1/8") 52(2-1/16")	
4	YG70	70MPa (10000Psi)	103(4-1/16") 65(2-9/16")	78(3-1/16") 52(2-1/16")	103(4-1/16") 65(2-9/16")	78(3-1/16") 52(2-1/16")	
5	YG105	105MPa (15000Psi)	103(4-1/16") 65(2-9/16")	78(3-1/16") 52(2-1/16")	103(4-1/16") 65(2-9/16")	78(3-1/16") 52(2-1/16")	

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## Mud Manifold:

- ◆ Mud manifold is used to collect drilling mud drained out of two mud pumps and carry it into the mud tank.
- ◆ Connecting type: weco union, thread, butt weld and flanged



### Main Parameters:

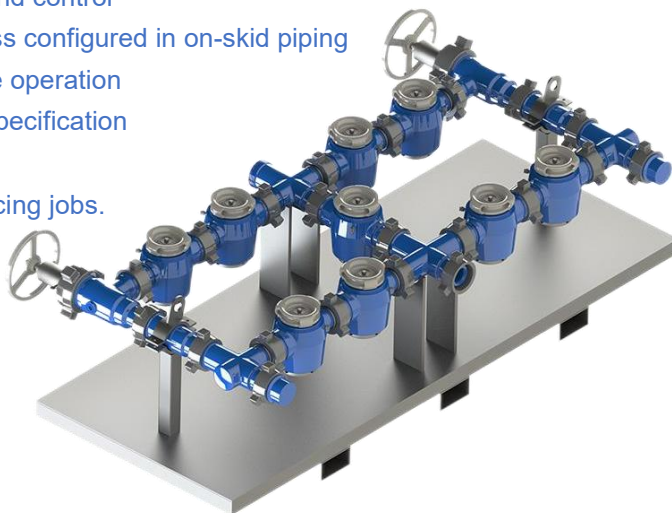
Working pressure	Nominal Bore	Performance Reference	Working Temperature	Suitable Medium
2000, 3000, 5000, 10000 psi	2"~5" (50~100mm)	PR1	LU (-46°C~+121°C)	Oil、 mud、 water etc

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## PLUG VALVE MANIFOLDS

Our 1502 plug valve manifolds are used to control downstream pressure and volume during flowback and well testing, main size:1", 2", 3", 4".

- Plug valves rated for working pressures up to 15,000 psi for standard service
- NACE-compliant plug valves rated for working pressures up to 10,000 psi
- Design to maximize pressure isolation and control
- Skid-mounted design with manual bypass configured in on-skid piping
- Quarter-turn manual actuation for simple operation
- Standard Service, Customized to your specification
- MTRs available, fully traceable
- Good for use in high pressure well servicing jobs.
- Integral Frac Flowback Manifolds
- Integral Choke Manifolds





## Plug Debris Catcher Manifold

The plug debris catcher manifold has the capability of continuous debris removal without shutting down flow back of drilling operations. Capable of capturing frac sand and formation solids, as well as for work-over use to capture drill out solids, such as cement retainer, bridge plug, and cement solids.

Debris & formation solid removal is upstream of expensive and sensitive safety and production measurement equipment. This tool is capable of time identification and measurement of unwanted solids as well as, with manifold use, flow control of the well.

1. Removal and cleanup on horizontal-multilateral completions and work-overs; drill-outs of completion tools (i.e. bridge plugs, selective frac packer systems, etc.).
2. Liquid or solid waste spillage contained in catcher-lifting skid, which is environmentally compliant.
3. Flow design captures debris inside engineered screen (screen flow rate and particle size can be selected via screen size variation to remove all sizes of solids) which allows easy solid break out.
4. Eliminates a drilling blind operation by providing a safe sampling location during continuous operation versus rig tank or test unit.
5. Liquid or solid waste spillage contained in catcher-lifting skid.

