
Multi-turn Hydraulic Actuator

(SCREW DOWN)



I. Outline

In accordance with SOLAS. The valve operation mechanism of Fore Peak Ballast Tank inner side installed SCREW DOWN VALVE(Globe or Gate Valve) is changed from previous piston type and /or rack & pinion linear type to screw down type. The multi-turn hydraulic actuator is our company's independent research and development of such functional products.

The screw down (multi-turn) hydraulic actuator can be installed directly on the gate valve, globe valve and so on ; By using spiral bevel gears and thrust ball bearing. So it can run smoothly and have high output torque, low noise and high efficiency. It can avoid from waterproof & oil leakage as sealing glands are used at all the through part. And the protection grade can be IP65(special manufacturing can be IP68).

This products can become screw down electro-hydraulic actuators which the screw down electro-hydraulic actuators have the advantages of small volume, fast running speed and more stable operation than the electric actuators.



II. Characteristics of the motor

- The output shaft with the deep groove ball bearing, can bear certain axial force and radial force;
- With the axial oil distribution structure, it is of smaller size and less weight;
- With two inner check valves, no drain connection;
- With cycloid group with the roller, it has a small friction and high mechanical efficiency.

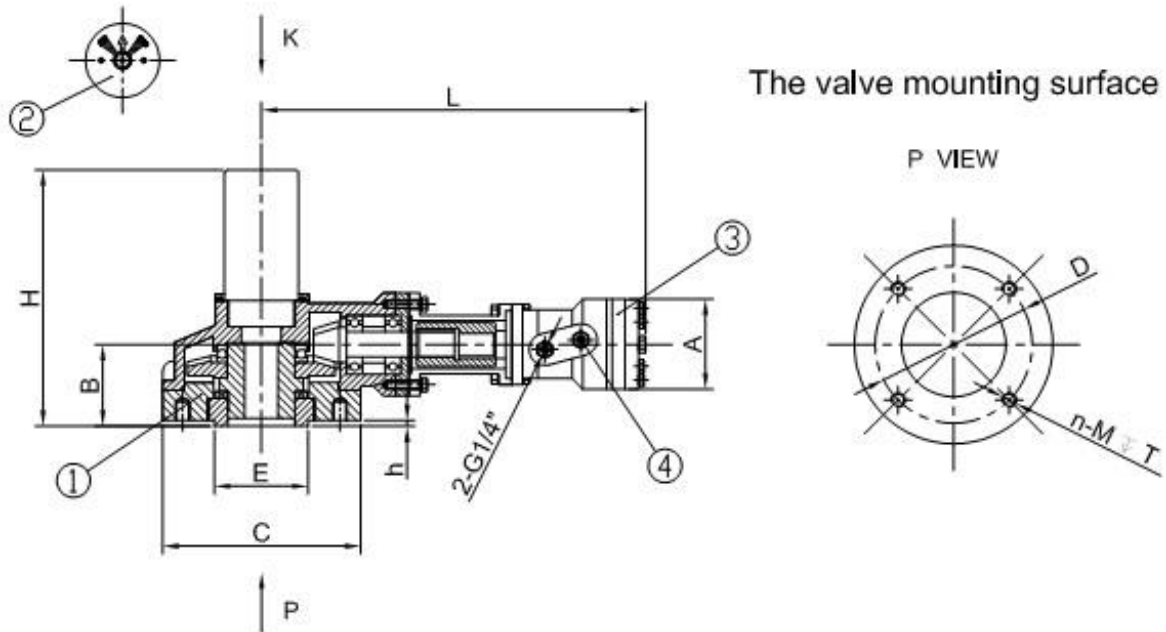
III. Specifications

Operating Fluid	ISO VG22-32
Working Pressure	7~18Mpa
Test Pressure	20Mpa
Safety relief Valve Pressure	18Mpa
Temperature Range	-20°C ~ 80°C
Indication	On/Off on Drive Unit
Closing Direction	Clockwise
Emergency Operation	Manual Hydraulic Deck Stand, Portable Hand Pump
Actuator Type	Double acting, Multi-turn type
Applying Valve	Gate valve, Globe valve ect.

IV. Mounting Connection And Specification Of The Screw Down Hydraulic Actuators

1. Screw Down Hydraulic Actuators without handwheel

1) Mounting Connection And Dimension



1. Gear box
2. Valve position indication
3. Hydraulic motor
4. Hydraulic fluid port with filter

Model	L	H	A	B	C	D	E	h	T	n-M
F5-DA50 / RK03	412	280	φ105	87	φ150	φ125	φ85	3	18	4-M12
F5-DA80 / RK03	417	280	φ105	87	φ150	φ125	φ85	3	18	4-M12
F5-DA100 / RK05	438	320	φ105	100	φ175	φ140	φ100	4	24	4-M16
F5-DA125 / RK05	442	320	φ105	100	φ175	φ140	φ100	4	24	4-M16
F5-DA160 / RK05	448	320	φ105	100	φ175	φ140	φ100	4	24	4-M16
F5-DA160 / RK1	458	360	φ105	117	φ210	φ165	φ130	4	30	4-M20
F5-DA160 / 2CK2	480	400	φ105	118	φ250	φ205	φ140	5	24	8-M16
F5-DA125 / MY-V2-SD	578	450	φ105	90	φ250	φ205	φ140	5	24	8-M16
F5-DA160 / MY-V2-SD	584	450	φ105	90	φ250	φ205	φ140	5	24	8-M16
F5-DA160 / MY-V3-SD	610	500	φ105	100	φ300	φ254	φ200	5	24	8-M16

2) Specification Of The Screw Down Hydraulic Actuators

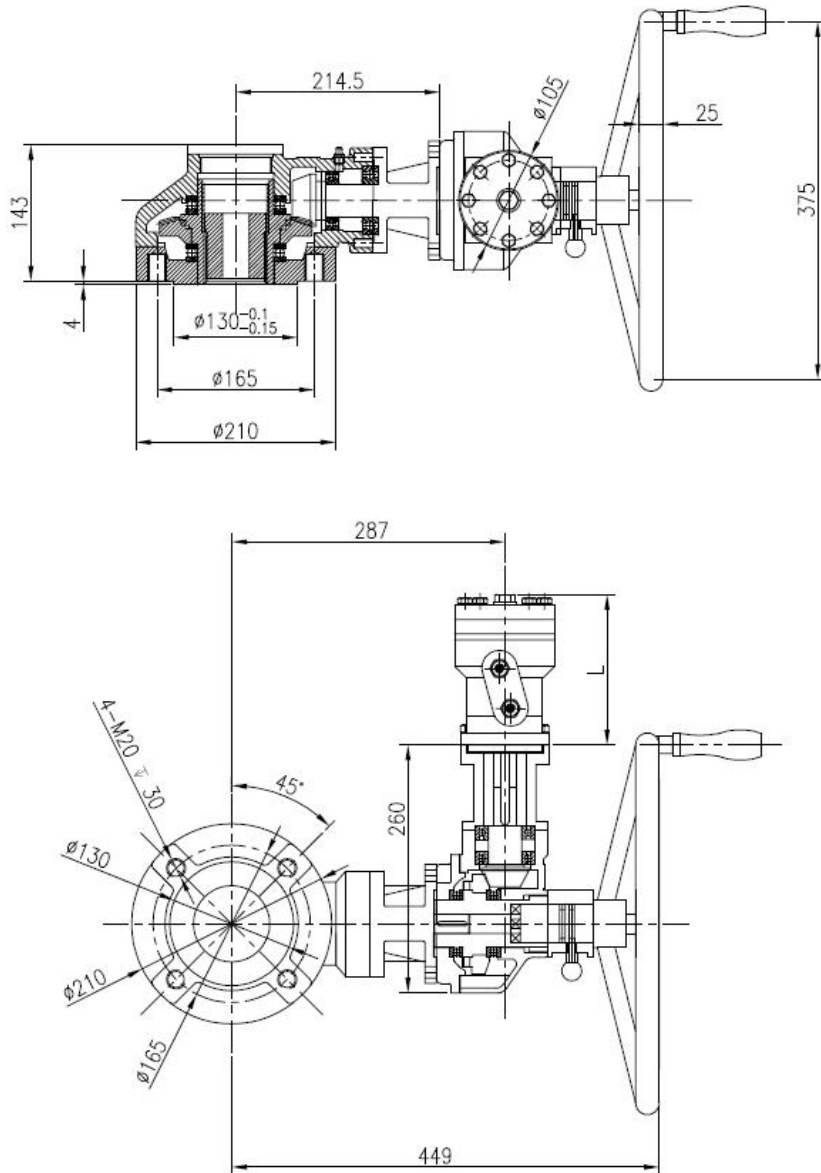
Model	Rated Discharge (cm ³ /r)	Torque(N.m) Cont. /int.	Max Size Of Valve Stem	Max Working Pressure (MPa)	Max Flow (L/min)	Speed Range (cont.) (r/min)	Weight (kg)
F5-DA50/RK03	51.7	Cont.: 218NM (14Mpa) int.: 276NM (18Mpa)	Φ42	≅ 20	≅ 40	10-775	28
F5-DA80/RK03	80.5	Cont.: 356NM (14Mpa) int.: 442NM (18Mpa)	Φ42	≅ 20	≅ 60	10-775	28.5
F5-DA100/RK05	100.5	Cont.: 524NM (14Mpa) int.: 637NM (18Mpa)	Φ52	≅ 20	≅ 60	10-600	35
F5-DA125/RK05	126.3	Cont.: 640NM (14Mpa) int.: 800NM (18Mpa)	Φ52	≅ 20	≅ 60	9-475	35.5
F5-DA160/RK05	160.8	Cont.: 837NM (14Mpa) int.: 1021NM (18Mpa)	Φ52	≅ 20	≅ 60	7-375	36.5
F5-DA160/RK1	160.8	Cont.: 1005NM (14Mpa) int.: 1225NM (18Mpa)	Φ60	≅ 20	≅ 60	7-375	40
F5-DA160/2CK2	160.8	Cont.: 1172NM (14Mpa) int.: 1429NM (18Mpa)	Φ70	≅ 20	≅ 60	7-375	45
F5-DA125/MY-V2-SD	126.3	Cont.: 1734NM (14Mpa) int.: 2166NM (18Mpa)	Φ52	≅ 20	≅ 60	9-475	63
F5-DA160/MY-V2-SD	160.8	Cont.: 2269NM (14Mpa) int.: 2767NM (18Mpa)	Φ52	≅ 20	≅ 60	7-375	65
F5-DA160/MY-V3-SD	160.8	Cont.: 3367NM (14Mpa) int.: 4105NM (18Mpa)	Φ60	≅ 20	≅ 60	7-375	85

Notes: Intermittent operation the permissible values may occur for max.10% of every minute



2. Screw Down Hydraulic Actuators with handwheel

1) Mounting Connection And Dimension



Model (with handwheel)	F5-DA50/RK1-HW	F5-DA80/RK1-HW	F5-DA100/RK1-HW	F5-DA125/RK1-HW	F5-DA160/RK1-HW
L	142	147	150.5	155	161

2) Specification Of The Screw Down Hydraulic Actuators

Model (with handwheel)	Rated Discharge (cm ³ /r)	Torque:NM/working pressure Cont. / int.	Max Size Of Valve Stem	Max Working Pressure (MPa)	Max Flow (L/min)	Speed Range (cont.) (r/min)	Weight (kg)
F5-DA50/RK1-HW	51.7	Cont.: 501NM (14Mpa) int.: 635NM (18Mpa)	Φ60	≅ 20	≅ 40	10-775	57
F5-DA80/RK1-HW	80.5	Cont.: 818NM (14Mpa) int.: 1017NM (18Mpa)	Φ60	≅ 20	≅ 60	10-775	57.5
F5-DA100/RK1-HW	100.5	Cont.: 1045NM (14Mpa) int.: 1270NM (18Mpa)	Φ60	≅ 20	≅ 60	10-600	58
F5-DA125/RK1-HW	126.3	Cont.: 1276NM (14Mpa) int.: 1593NM (18Mpa)	Φ60	≅ 20	≅ 60	9-475	58.5
F5-DA160/RK1-HW	160.8	Cont.: 1668NM (14Mpa) int.: 2035NM (18Mpa)	Φ60	≅ 20	≅ 60	7-375	59

Notes: Intermittent operation the permissible values may occur for max.10% of every minute



V. Screw down hydraulic actuator driving unit and control panel

1. Hydraulic Power Unite

Hydraulic power unit of choose electro-hydraulic power unit and the manual remote control power unit, they give the hydraulic actuator for driving a hydraulic pressured oil.

2. Emergency Operating Set (Option)

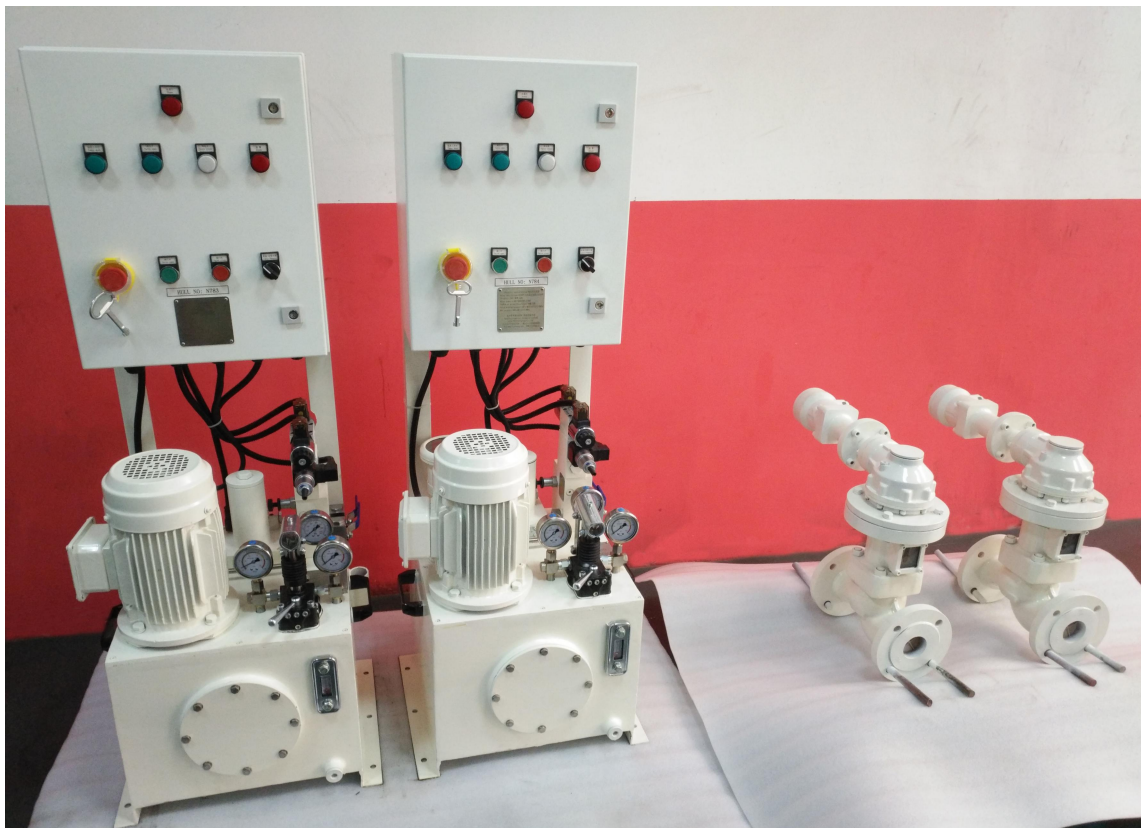
Screw down hydraulic actuator can choose assembly emergency hand pump interface, under the state of emergency can realize local manual operation.

3. Control Panel

-Control Panel controls the valve's open or close.

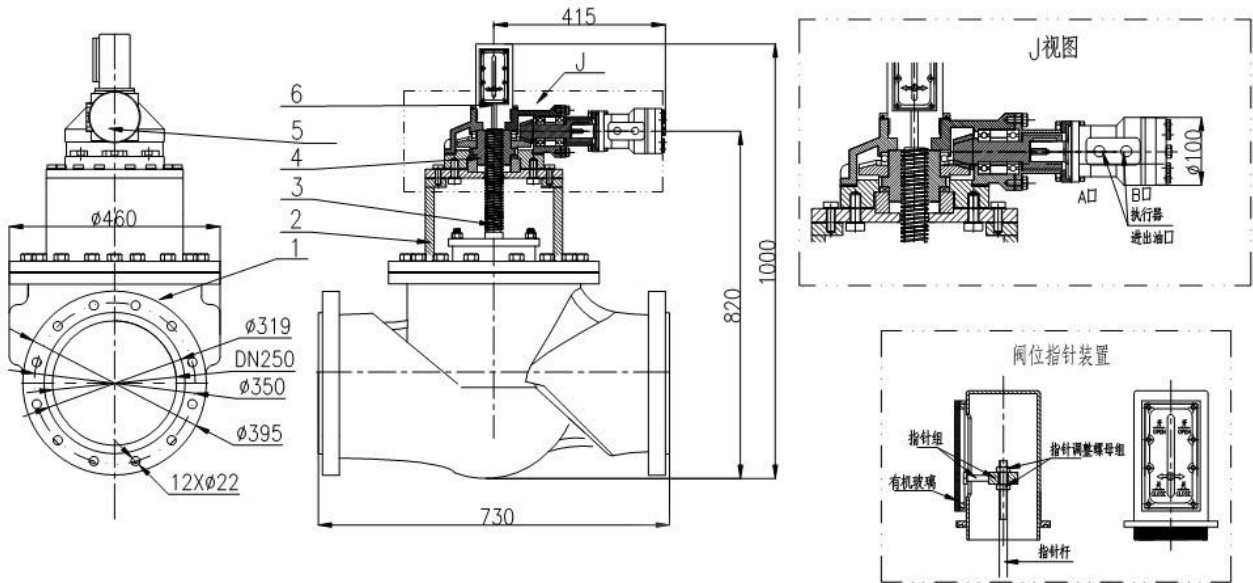
-Control Panel has built in indicating lamps showing valve position(Open/Close).

-Additional mechanical valve positioning indicator can be monitored with 0~100% full indication.



VI. Screw down hydraulic actuator used for:

1. DN250/PN10 Screw down hydraulic globe valve



3. DN300/PN10 Screw down hydraulic gate valve

