

主要用途

本手动操作机构与气动执行器配套联合使用，是组成自动化控制系统主要部件，主要用于角行程90°开启和关闭的蝶阀、球阀、柱塞阀等实现手动驱动，也可用于其它自动控制机械产品需要手动驱动场合。

Main application

The manual operating mechanism, when used in conjunction with the pneumatic actuator, is a key component of the automation control system. Its primary purpose is to facilitate the opening and closing of butterfly valves, ball valves, piston valves, and other similar valves with a 90° angular stroke. This mechanism enables manual operation, but it can also be utilized in instances where manual drive is required for other automatic control systems and mechanical products.

产品特点

1. 体积小，重量轻，设计合理，式样新颖。
2. 产品系列化，输出转矩参数与气动执行器、各种阀门匹配、组合方便。
3. 系列连接符合ISO5211连接标准，上部凸出为方榫，下部为方孔；大扭矩机构320:1和450:1连接内孔有多个键槽，以便用户根据需要选择本产品同阀体的相应位置。
4. 提起限位销，旋转偏心装置180°或90°限位销自动限位，实现气动；反之，实现手动。
5. 产品出厂时，装有专用润滑脂，与阀门及气动执行器装配后，整体密封，可防尘防水，防护等级为IP65。

Product Features

1. Compact size, lightweight, well-designed, and modern style.
2. The product series offers a variety of output torque parameters and pneumatic actuators that can be easily matched with various valves.
3. The series connection conforms to the ISO5211 standard with a square tenon on the upper part and a square hole on the lower part. The high torque mechanism with connection ratios of 320:1 and 450:1 comes with several key slots to allow users to select the corresponding position of the product suitable for the valve body as per their requirement.
4. The limit pin can be raised to rotate the eccentric device 180° or 90° automatically, making the operation pneumatic or manual.
5. The product comes with a special lubricating grease when shipped from the factory, and after assembly with the valve and pneumatic actuator, it is sealed together, providing dustproof, waterproof, and IP65 level of protection.



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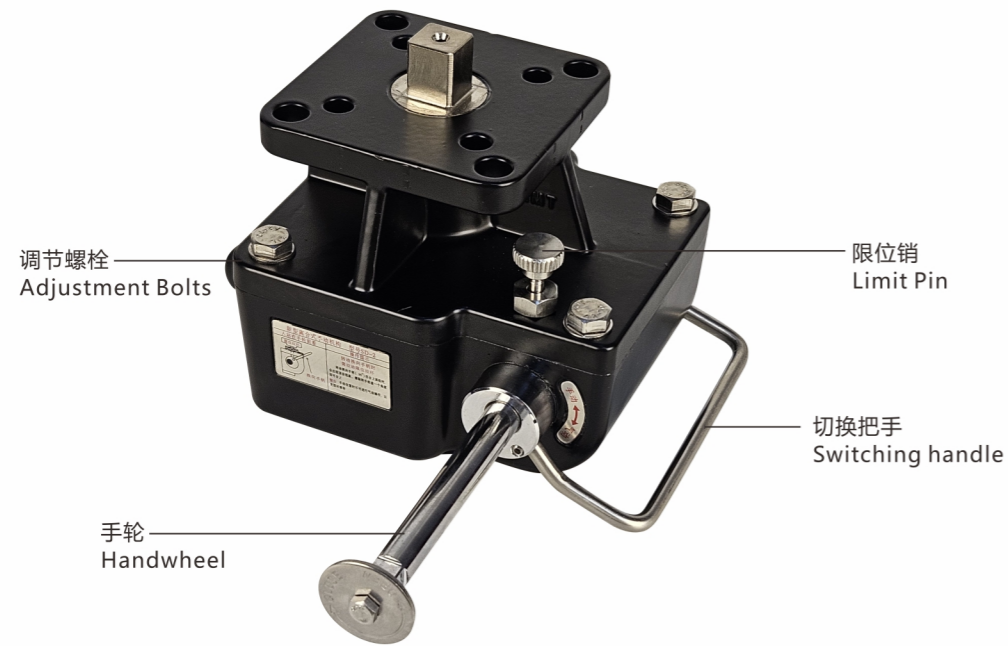
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操作说明

Operating Instructions



提起限位销
Lift limit pin



左旋至手动
Left to Manual



右旋至自动
Turn right to automatic

手动操作：提起限位销转动切换把手，左旋向上方向至手动限位位置，确认已经到位，这时涡轮蜗杆咬合，转动手轮可以开启和关闭阀门。

Manual Operation: Lift the limit pin and turn the switching handle, rotating it upward on the left side to the manual limit position to ensure it's properly in place. Then, the turbine worm gear engages, allowing you to open and close the valve by turning the handwheel.

自动操作：提起限位销转动切换把手，右旋向上下向至自动限位位置，确认已经到位，这时涡轮蜗杆脱离，转动手轮属于空转。

Automatic Operation: Lift the limit pin and turn the switching handle, rotating it downward to the automatic limit position to confirm it's properly in place. Afterwards, the turbine worm gear disengages, and turning the handwheel results in idle operation.

注意：在切换把手上下转动时可能出现卡住现象，这是涡轮蜗杆咬合缘故，只要轻摇手轮就消除这种卡住现象。

Note: When rotating the switching handle up and down, there may be instances of sticking, caused by the turbine worm gear engagement. Simply lightly shake the handwheel to eliminate this sticking phenomenon.

技术参数 Technical parameter

型号 Model	速比 Speed ratio	输入扭矩 Input torque	输出扭矩 Output torque	手轮直径 Handwheel Diameter	重量 (kg) Weight
SD1	39:1	50	180	Ø180	3
SD2	38:1	60	320	Ø200	4.5
SD3	36:1	90	680	Ø280	7
SD4	50:1	110	1200	Ø320	13.7
SD5	54:1	140	2100	Ø400	22
SD6	58:1	200	3000	Ø500	32

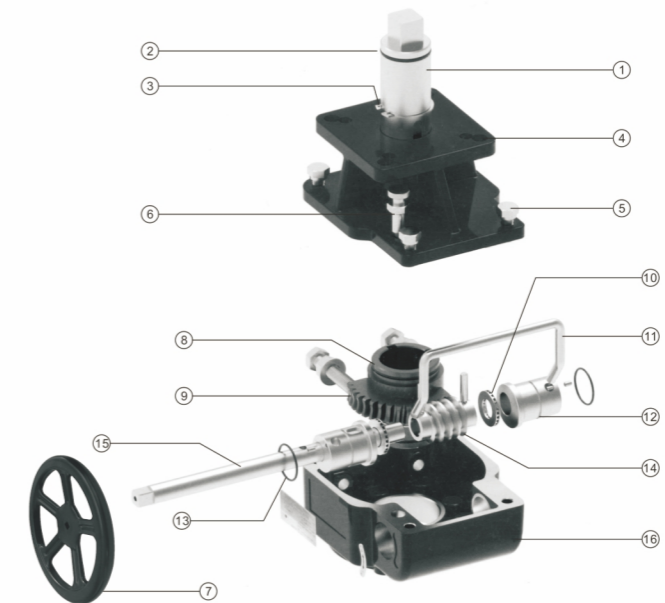
SD系列手动操作机构

SD Series manual operator mechanism

SD系列气动阀门手操机构技术参数

SD Series pneumatic valve manual mechanism technical parameter

型号 Model	AT双作用 (DA) AT double acting	AT单作用 (SR) AT single acting	执行器连接法兰 Actuator connection flange	阀门连接法兰 valve connection flange	速比 Speed ratio	手轮直径 Handwheel Diameter	输出扭矩 Output torque
SD1	DA52-75	SR52-75	F05/F07	F05/F07	39:1	Φ180	180
SD2	DA83-92	SR83-92	F07/F10	F07/F10	38:1	Φ200	320
SD3	DA105-140	SR105-125	F10/F12	F07/F10/F12	36:1	Φ280	680
SD4	DA160-190	SR140-160	F10/F12/F14	F10/F12orF14	50:1	Φ320	1200
SD5	DA210	SR190-210	F14/F16	F10/F14orF12/F16	54:1	Φ400	2100
SD6	DA240-270	SR240	F16	F16	58:1	Φ500	3000

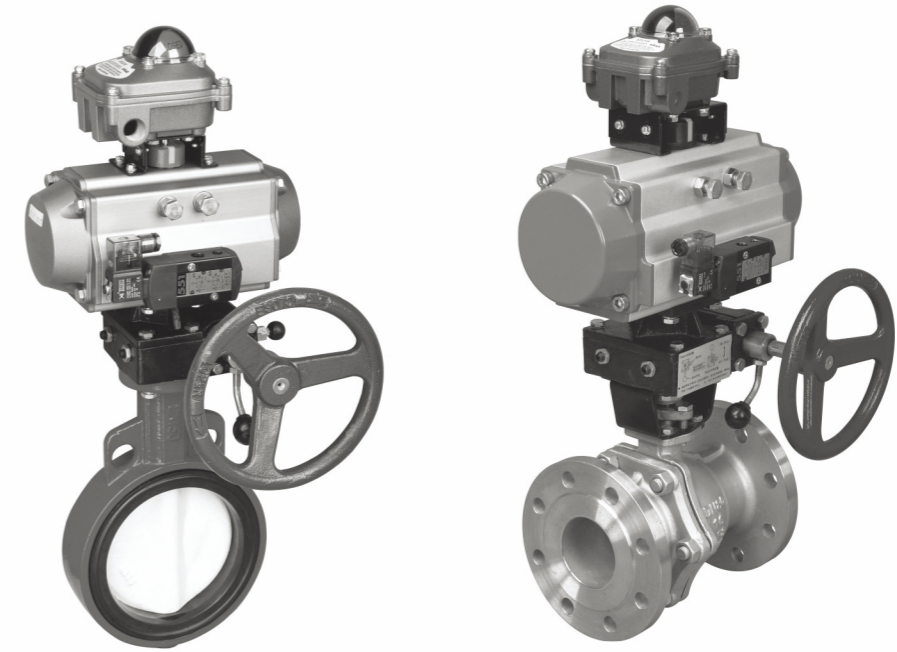
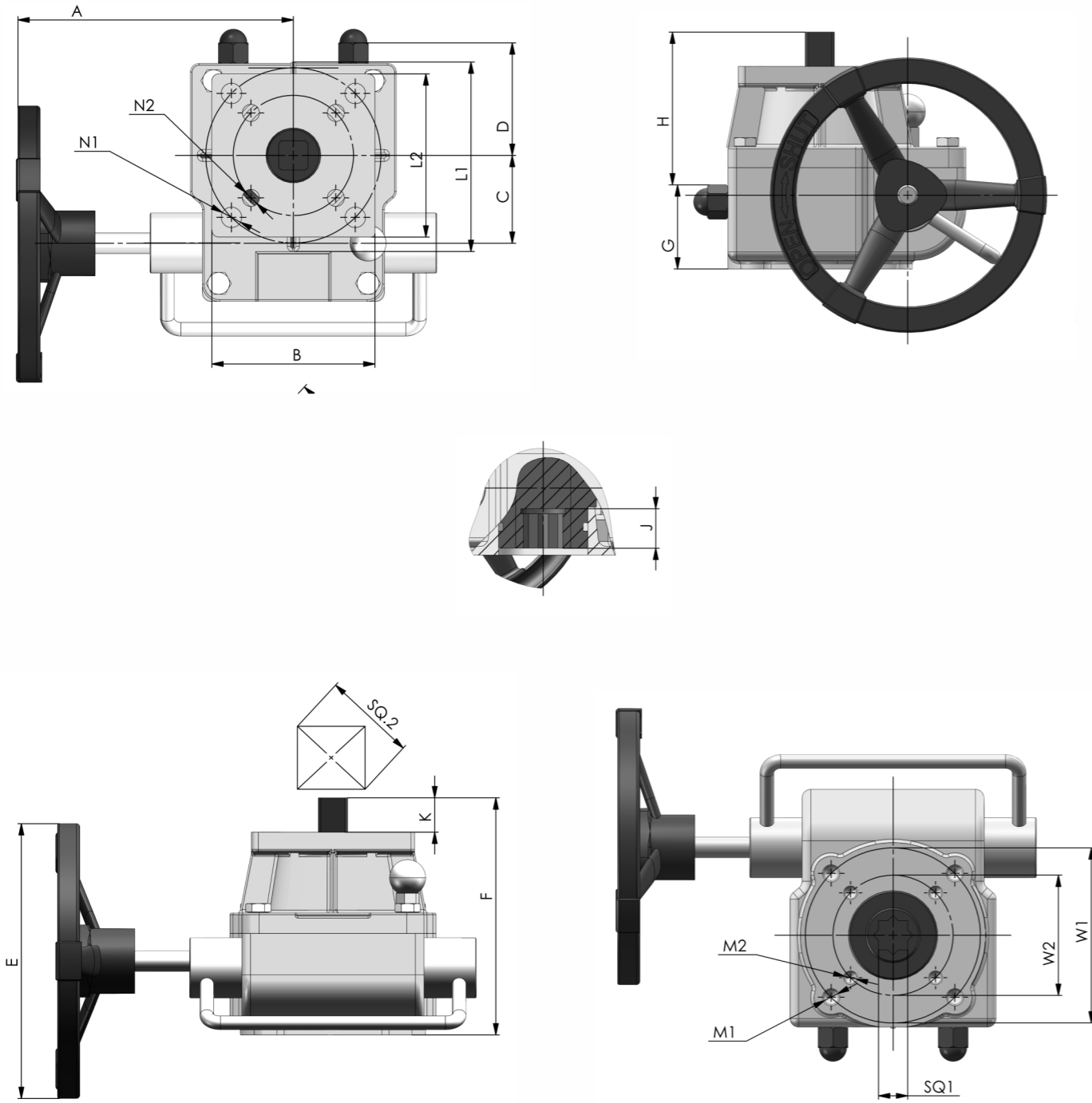


主要零部件材料 Main components and materials

序号 NO.	名称 Name	材料 Material	序号 NO.	名称 Name	材料 Material
1	传动主轴 Drive spindle	合金钢 Alloy steel	9	蜗轮 Worm gear	球墨铸铁 Spheroidal graphite cast iron
2	密封圈 Seal ring	丁腈橡胶 Nitrile rubber	10	平面轴承 Plane bearing	轴承钢 Bearing steel
3	卡簧 Reed spring	不锈钢(304) Stainless steel(304)	11	手柄 Handle	不锈钢(304) Stainless steel(304)
4	上盖 Upper cover	铝合金 Aluminium alloy	12	偏心套 Eccentric sleeve	合金钢 Alloy steel
5	紧固件 Afastening	不锈钢(304) Stainless steel(304)	13	密封圈 Seal ring	丁腈橡胶 Nitrile rubber
6	定位销 Positioning pin	合金钢 Alloy steel	14	蜗杆 Worm	合金钢 Alloy steel
7	手轮 Hand wheel	碳钢喷塑 Carbon steel polyster coating	15	传动杆 Transmission rod	合金钢 Alloy steel
8	密封圈 Seal ring	丁腈橡胶 Nitrile rubber	16	箱体 Box	铝合金 Aluminium alloy

外形及连接尺寸图

Outline and connection dimension diagram



外形及连接尺寸表 Appearance and Connection Dimensions Table

型号 Model	SD-1	SD-2	SD-3	SD-4	SD-5	SD-6
A	150	180	200	260	310	395
B	70	93	113	129	163.5	165
C	44.7	54	65.5	82.5	109	135
D	60	70	80	105	115	120
E	Ø180	Ø200	Ø280	Ø320	Ø400	Ø500
F	120	132	153	195	215	236
G	33	39	40	57	54	62
H	87	93	113	138	161	174
J	19	21	27	32	43	54
K	15	19	22	28	38	46
M1	M8×4	M10×4	M12×4	M16×4	M20×4	M20×4
M2	M6×4	M8×4	M10×4	M12×4	M16×4	M16×4
W1	70	102	125	140	165	165
W2	50	70	102	125	140	140
SQ.1	14	17	22	27	36	46
N1	Ø10×4	Ø12×4	Ø14×4	Ø18×4	Ø22×4	Ø22×4
N2	Ø8×4	Ø10×4	Ø12×4	Ø14×4	Ø18×4	---
L1	70	102	125	140	165	165
L2	50	70	102	125	140	---
SQ.2	14	17	22	27	36	46