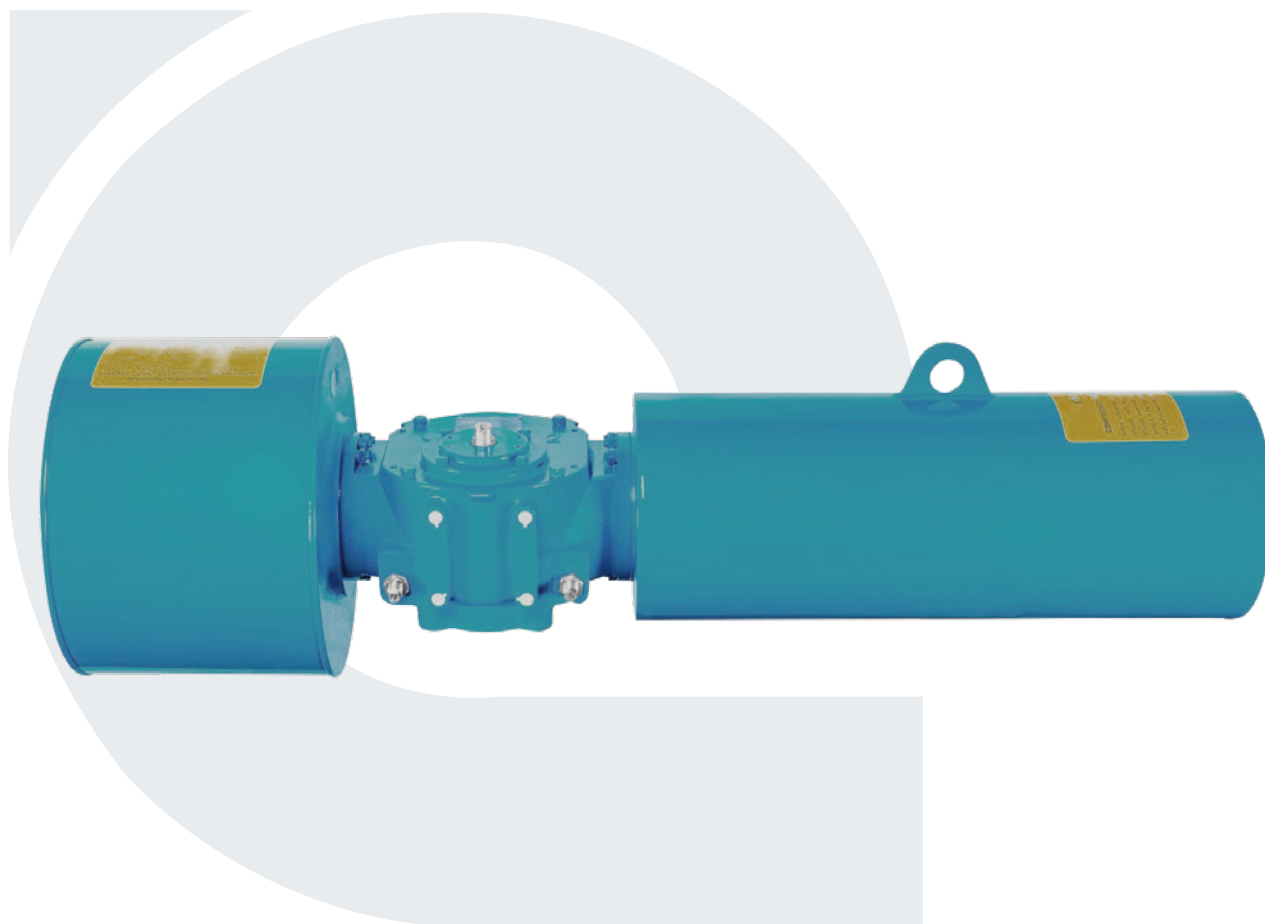


Pneumatic actuators

Fig.545 : Scotch yoke



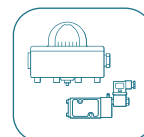
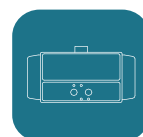
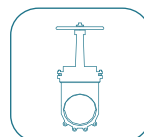
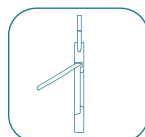
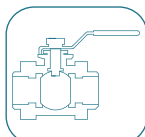
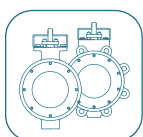
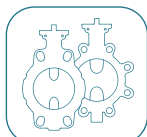
Introduction

This instruction manual contains important information regarding the installation, operation, maintenance and storage for Coreline Fig.544 scotch yoke pneumatic actuators. For errors resulting from improper installation, the manufacturer or Distributer can not be held responsible. Please read these instructions carefully and save them for future reference. Other information can be found in our latest product catalogue from our website - www.coreline.dk .

Requirements for the maintenance staff

The staff assigned to assembly, operating and maintenance tasks, should be qualified to carry out such jobs and in any circumstance, ensure personal safety.

www.coreline.dk



1. General Information

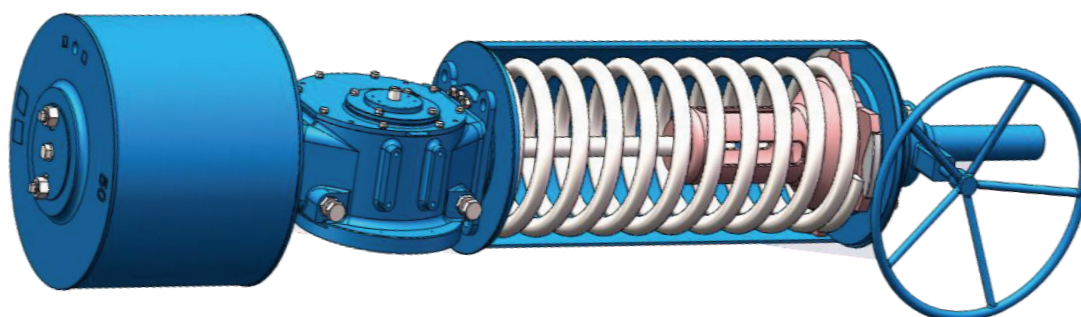
The Fig.545 Scotch Yoke Pneumatic Actuator is designed to operate 90-degree rotation valves and offers high torque output with minimal maintenance. This actuator employs a modular design that allows for easy configuration, servicing, and upgrading.

Operating Media: Dry or lubricated air, non-corrosive gases

Temperature Range: -40°C to +80°C (higher temperatures available upon request)

Air Supply Pressure: 3 to 6 bar

Construction: Ductile iron body with high-strength alloy steel components



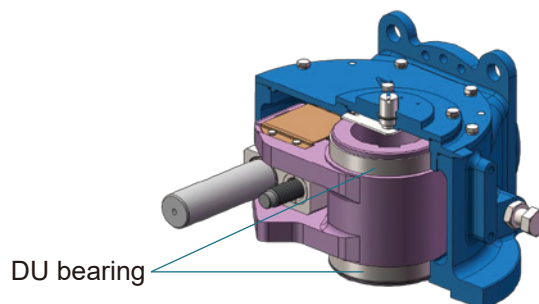
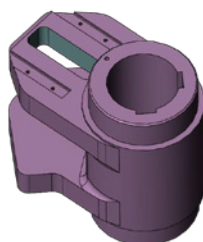
2. Yoke design

The yoke is made of integral casting, and the inner surface of the groove is with quenching treatment to reach above HRC50;

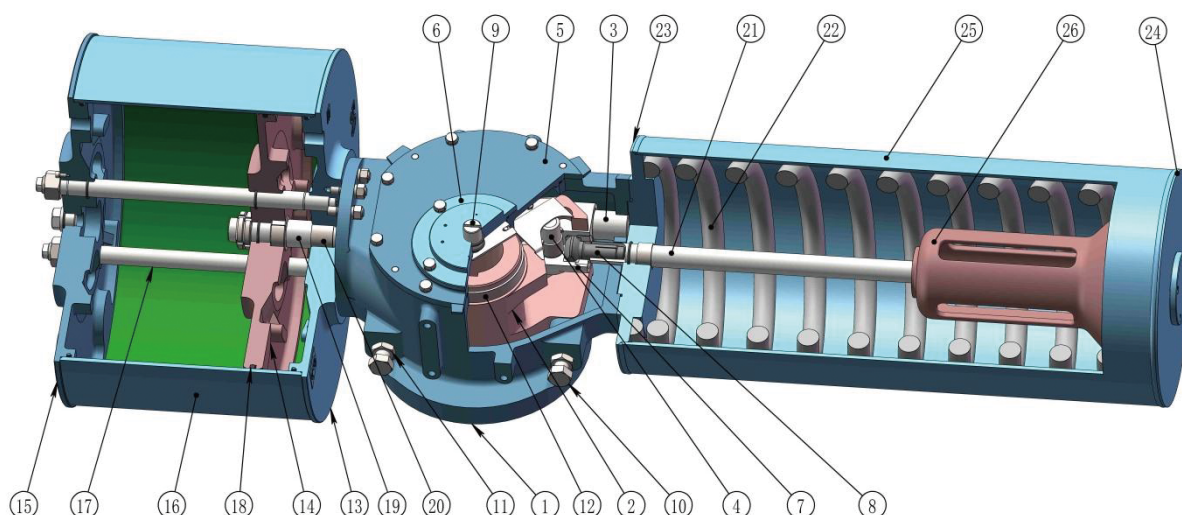
The inner hole of the yoke output shaft is connected by a key, and the two key grooves of the left and right symmetry can be flexibly selected to be installed;

The yoke and the body cover are connected by self-lubricating DU bearings, which can reduce the friction during the rotation and ensure smooth movement.

Yoke: _____
with hardening treatment



3. Material part list



No.	Part name	Material
1	Body	Ductile iron
2	Yoke	Ductile iron
3	Guide bar	Alloy steel
4	Pin	Alloy steel
5	Body cover	Ductile iron
6	Cover	Carbon steel
7	Guide block	Ductile iron
8	Connector	Alloy steel
9	Drive shaft	Stainless steel
10	Adjust bolt	Stainless steel
11	Nut	Stainless steel
12	Yoke bearing	DU bearing
13	Inylinder cover	Ductile iron
14	Piston	Ductile iron
15	Cylinder cover	Ductile iron
16	Cylinder	Carbon steel
17	Cylinder tension rod	Alloy steel
18	Sealing ring	NBR
19	Piston rod	Alloy steel
20	Piston rod bearing	DU bearing
21	Tension rod	Alloy steel
22	Spring	Alloy steel
23	Spring cover	Carbon steel
24	Spring cover	Carbon steel
25	Spring cylinder	Carbon steel
26	Spring seat	Ductile iron

4. Handling & Storage

Store in a clean, dry, and vibration-free environment.
Avoid exposure to moisture and extreme temperatures.
Before installation, inspect for any transport damages.

5. Installation

Ensure compatibility with the valve interface (ISO 5211 standard).
Align the actuator with the valve shaft.
Securely bolt the actuator to the mounting flange.
Connect the air supply lines according to the specifications.
Adjust the travel stops if necessary (+5°/-5° range).
Perform a functional test before commissioning.

6. Operation

Double Acting: Air pressure is applied alternately to each side of the piston to rotate the actuator.
Spring Return: Air pressure drives the piston while springs return it to the fail-safe position upon depressurization.
Ensure that the air supply is clean and within the recommended pressure range for optimal operation.

7. Troubleshooting

Issue	Possible Cause	Solution
Actuator does not move	Insufficient air pressure	Increase air supply
Leaking air	Worn seals or loose fittings	Replace sealstighten connections
ncorrect rotation	Misaligned valve/actuator	Check alignment,reinstal
Excessive noise	nternal wear or debris	Inspect and clean internals

8. Torque rating

Model	Flange	Max torque [Nm]	Max torque [Nm]
		Double acting	Spring return
545-S1	F14	3600	1700
545-S2	F16	6400	3600
545-S3	F25	12000	6200
545-S4	F30	21000	12600
545-S5	F35	39800	28800
545-S6	F40	81000	56000
545-S7	F48	116700	83000

9. Cylinder volumn

Model	Cylinder effective volumn										
	200	250	300	350	400	500	600	700	800	900	1000
545-1	6.8	10.6	15.4	18.2							
545-2			15.4	18.2	21.3						
545-3				21.7	27.5	43					
545-4					33.7	53	76				
545-5						59	100	145			
545-6								180	234	296	
545-7									275	353	430

Coreline

The contents of this catalogue are confidential and proprietary to Coreline, we reserve the right to change the specifications without any notice.

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