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1) GENERAL FEATURES

KSB manufacture a manual override for a wide range of part turn pneumatic actuators.

The actuators with manual override are available on:

- “ACTAIR NGV” Double Acting version
- “DYNACTAIR NGV” Spring Return version

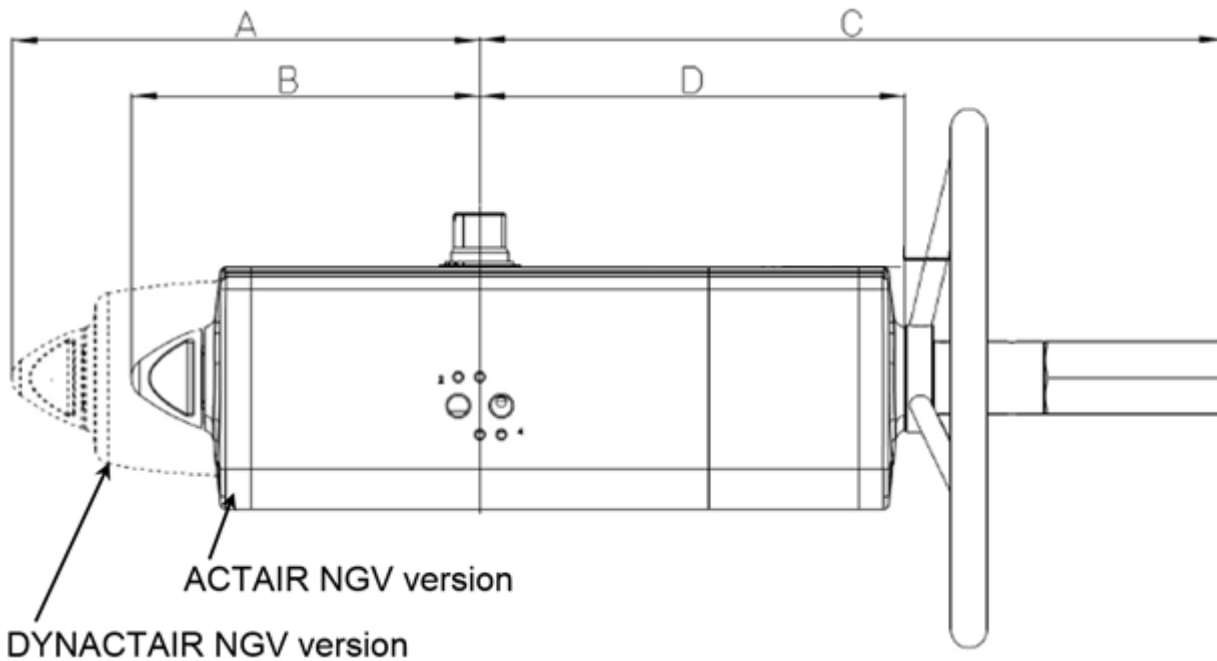
On basis “ACTAIR NG / DYNACTAIR NG” actuators in accordance to instruction manual n° 8513_81 and 8513_82

- The principle of the manual override application is to provide the possibility to open and close the valve connected to the actuator when this operation cannot be do with remote control.
- KSB manual override actuators is itself equipped with a hand wheel for manual operations and it does not need any added decluchable gearbox. This solution guarantees a compact size and more light system on the valve.
- When the actuator is manual operated it can be locked in Open / Closed position.
- Actuator version for low temperature applications allow to operate until temperature of -50°C, thanks to proper kind of lubrication and material for the gaskets.
- The maintenance should be execute by KSB trained personnel only.

This instruction manual contains important information regarding the KSB manual operation actuator, installation, maintenance and storage.

Please read carefully before installation and keep it in a safe place for further reference.

2) DATASHEET

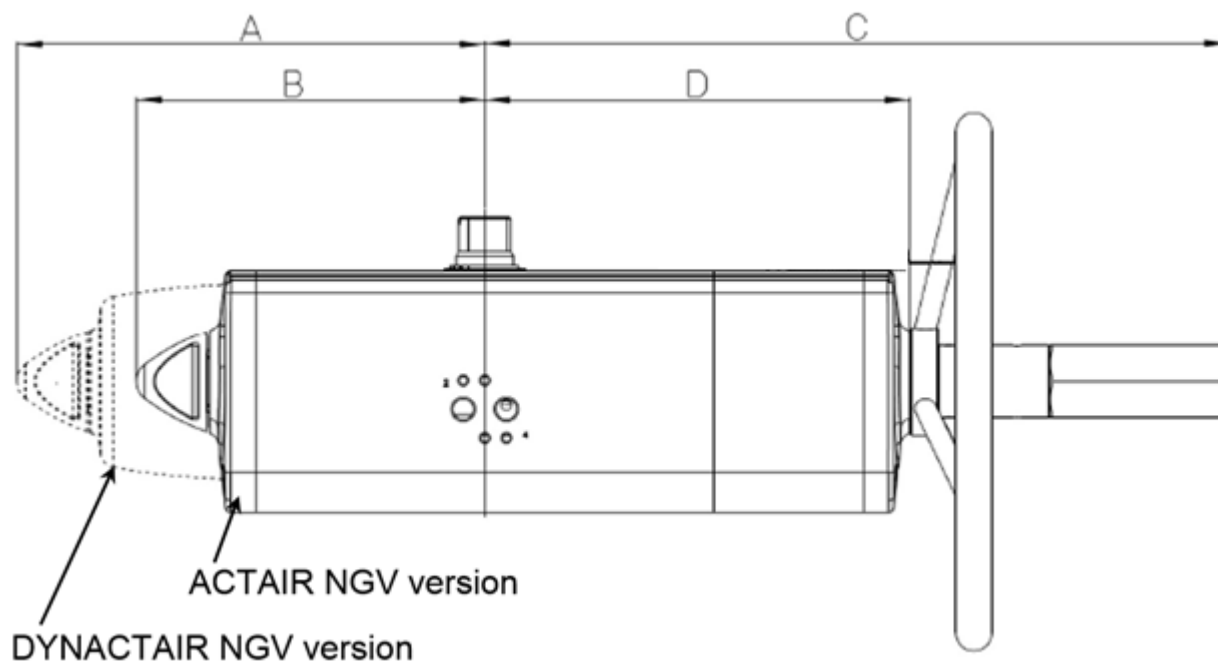


All the dimensions are in mm

DOUBLE ACTING	Nominal Toque (N.m)	ISO 5211 Flange	Drive * Interface	B mm	C mm	D mm	Hand wheel Ø mm	Weight Kg
ACTAIR NGV 5	60	F05/07	H14	99	263.3	137.6	180	2.8
ACTAIR NGV 10	106	F05/07	H14	118.5	279.7	154.8	180	4
ACTAIR NGV 15	180	F07/10	H19	144.9	338.7	183.5	220	6
ACTAIR NGV 20	240	F07/10	H19	156.8	354.3	199.1	220	8
ACTAIR NGV 30	360	F07/10	H22	169.6	398.4	220.8	300	10.2
ACTAIR NGV 40	480	F10/12	L30	193.8	414.2	236.4	300	13.2
ACTAIR NGV 60	720	F10/12	L30	216.6	504.5	282.3	350	17.8
ACTAIR NGV 80	960	F14-F10/12	L36	239.7	518.8	297.1	350	23.8
ACTAIR NGV 120	1440	F14-F12	L36	283.5	637.1	365.6	400	33.6
ACTAIR NGV 160	1920	F12/F16-F14	L50	300.4	653.7	382.9	400	43
ACTAIR NGV 340	3840	F16	L50	353.3	890.2	537.5	575	75

* drive designation according to ISO 5211

H = Flat head drive - L = parallel square drive

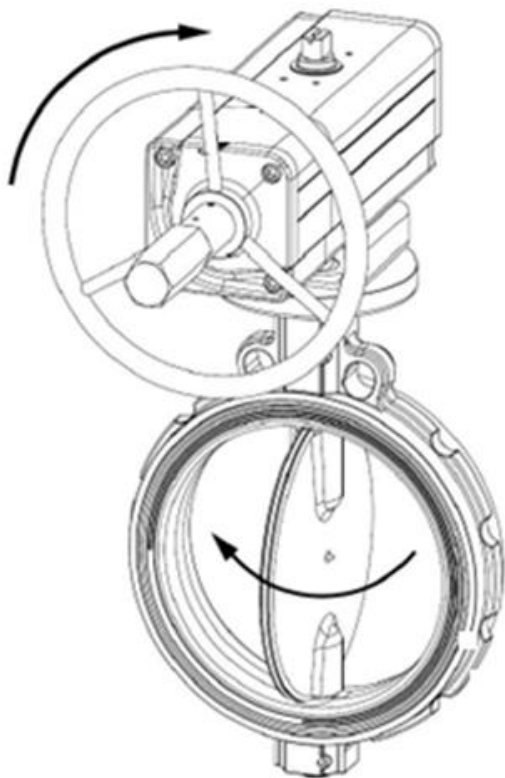


SINGLE ACTING	Nominal Toque (N.m)	ISO 5211 Flange	Drive * Interface	A mm	C mm	D mm	Hand wheel Ø mm	Weight Kg
DYNACTAIR NGV 2	30	F05/07	H14	129.4	263.3	137.6	180	3.2
DYNACTAIR NGV 4	53	F05/07	H14	152.1	279.7	154.8	180	4.5
DYNACTAIR NGV 6	90	F07/10	H19	196.8	338.7	183.5	220	6.8
DYNACTAIR NGV 8	120	F07/10	H19	204.8	354.3	199.1	220	9
DYNACTAIR NGV 12	180	F07/10	H22	237	398.4	220.8	300	11.7
DYNACTAIR NGV 16	240	F10/12-F14	L30	260.2	414.2	236.4	300	15.2
DYNACTAIR NGV 25	360	F10/12-F14	L30	306.6	504.5	282.3	350	19.5
DYNACTAIR NGV 35	480	F14-F10/12	L36	324.1	518.8	297.1	350	28.1
DYNACTAIR NGV 50	720	F14-F12	L36	399	637.1	365.6	400	38.8
DYNACTAIR NGV 80	960	F12/F16-F14	L50	414	653.7	382.9	400	50.6
DYNACTAIR NGV160	19200	F16	L50	509	890.2	537.5	575	90.5

* drive designation according to ISO 5211

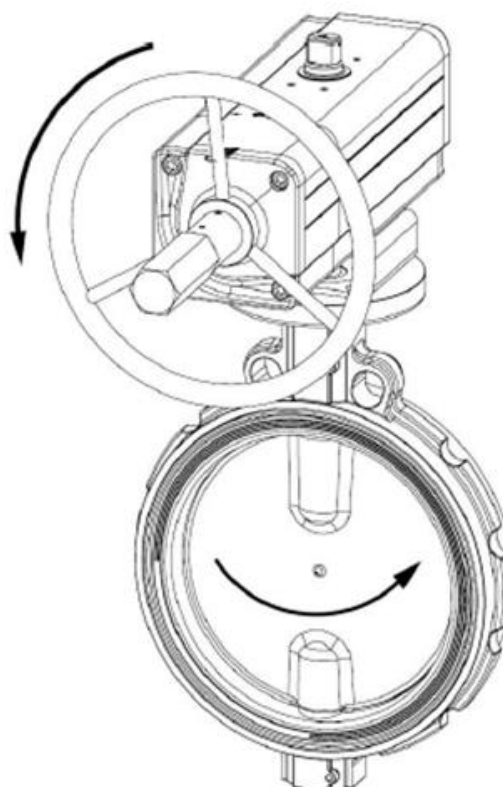
H = Flat head drive - L = parallel square drive

3) FUNCTIONAL DESCRIPTION



To CLOSE the valve

Turn the hand wheel in clockwise direction



To OPEN the valve

Turn the hand wheel in counter clockwise direction

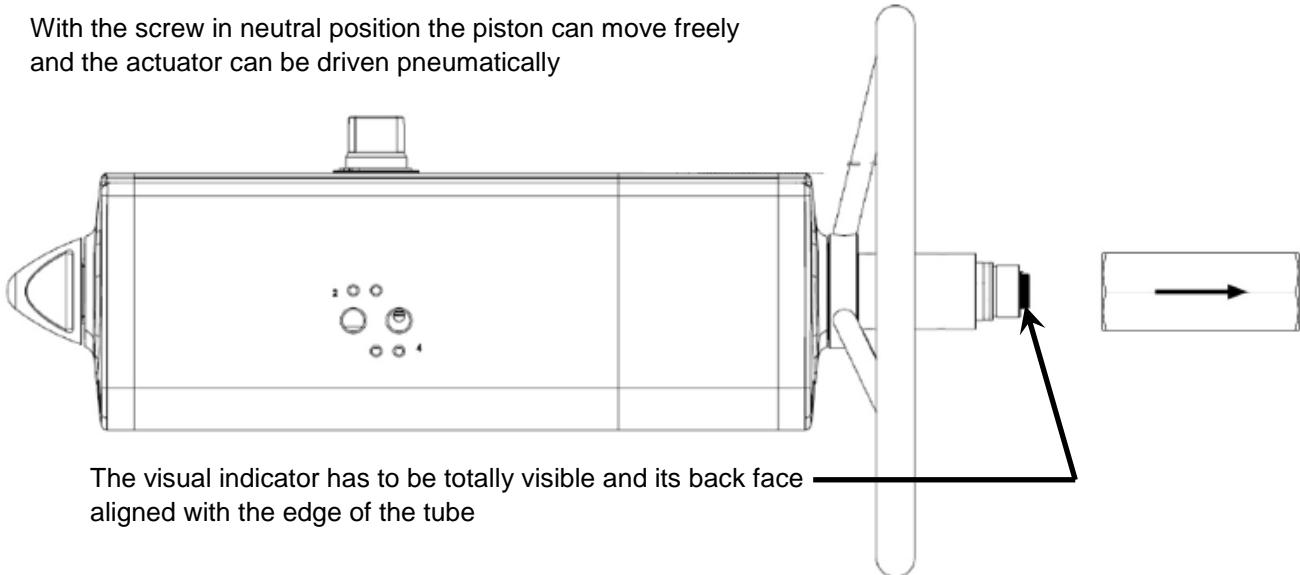
DOUBLE ACTING	SINGLE ACTING	N° of Turns to Close / Open starting from neutral position	Rim pull forces (N) To obtain the nominal torque
ACTAIR NGV 5	DYNACTAIR NGV 2	11	10
ACTAIR NGV 10	DYNACTAIR NGV 4	13	13.9
ACTAIR NGV 15	DYNACTAIR NGV 6	16	22.2
ACTAIR NGV 20	DYNACTAIR NGV 8	18	27.3
ACTAIR NGV 30	DYNACTAIR NGV 12	15	33.7
ACTAIR NGV 40	DYNACTAIR NGV 16	16	41.7
ACTAIR NGV 60	DYNACTAIR NGV 25	19	54.4
ACTAIR NGV 80	DYNACTAIR NGV 35	20	64.3
ACTAIR NGV 120	DYNACTAIR NGV 50	25	68.5
ACTAIR NGV 160	DYNACTAIR NGV 80	26	81.3
ACTAIR NGV 340	DYNACTAIR NGV 160	30	243.5



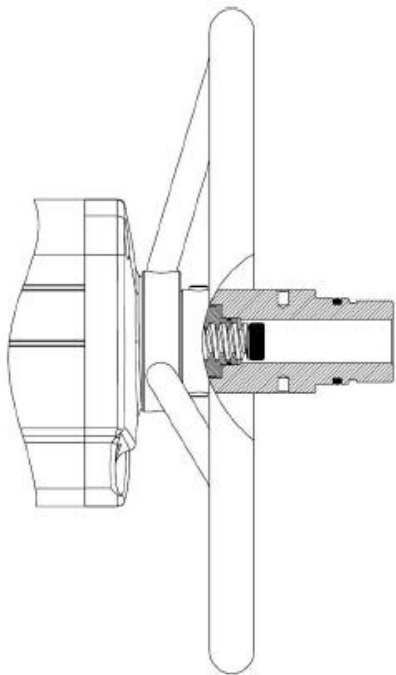
NB: When the actuator has been operate manually, return to the neutral position prior to starting normal operation (with air pressure).

NEUTRAL POSITION

With the screw in neutral position the piston can move freely and the actuator can be driven pneumatically

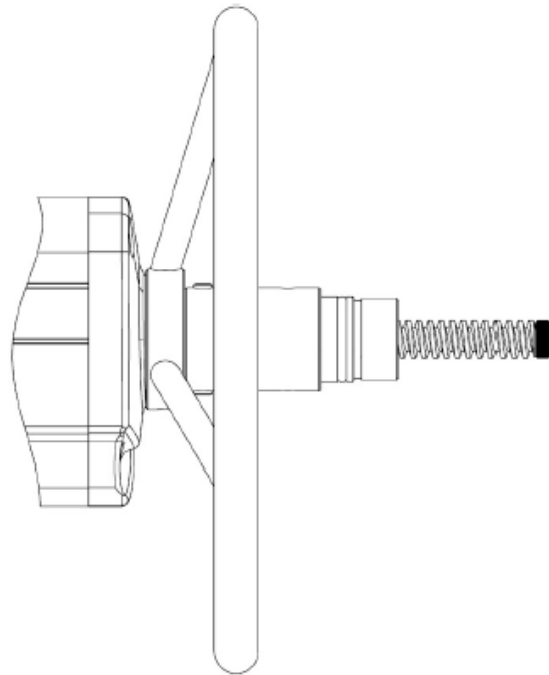


The visual indicator has to be totally visible and its back face aligned with the edge of the tube



ACTAIR: The hand wheel turned counter clockwise pushes the screw and piston inwards. The valve Opens.

DYNACTAIR: The hand wheel turned clockwise pushes the screw and piston inwards. The valve Closes.

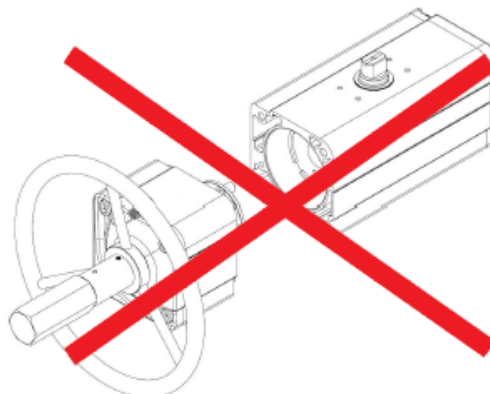
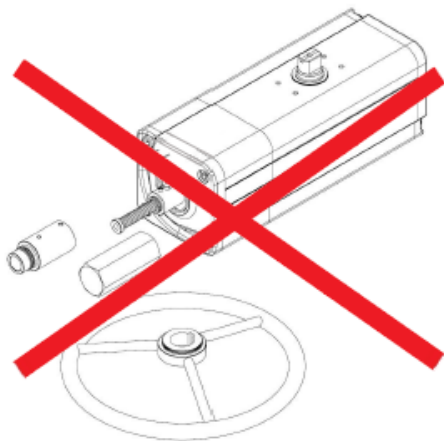


ACTAIR: When the hand wheel turned clockwise, the screw and piston drawn outwards. The valve Closes.

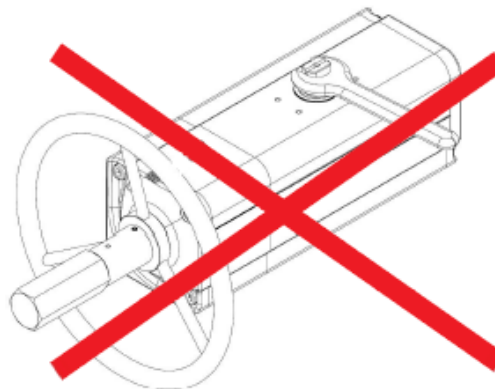
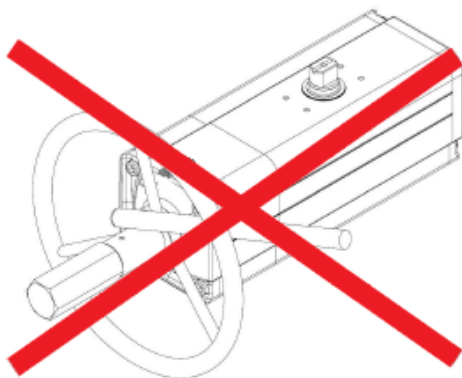
DYNACTAIR: When the hand wheel turned counter clockwise, the screw and piston drawn outwards. The valve Opens

4) DANGERS

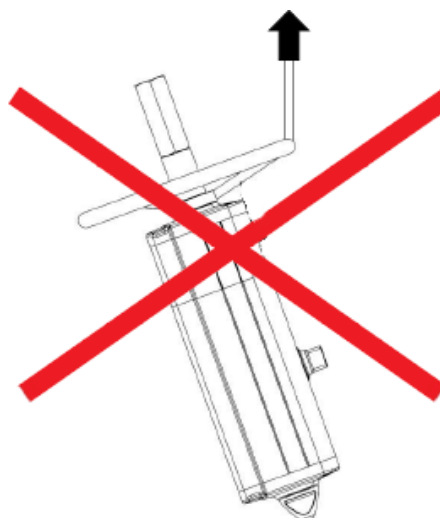
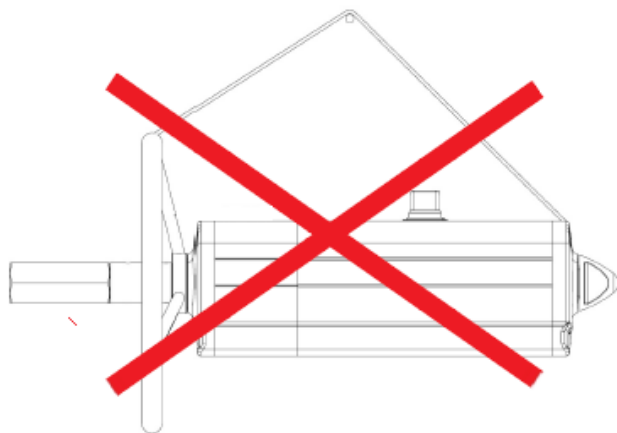
- a) Do not disassemble, compressed spring inside.



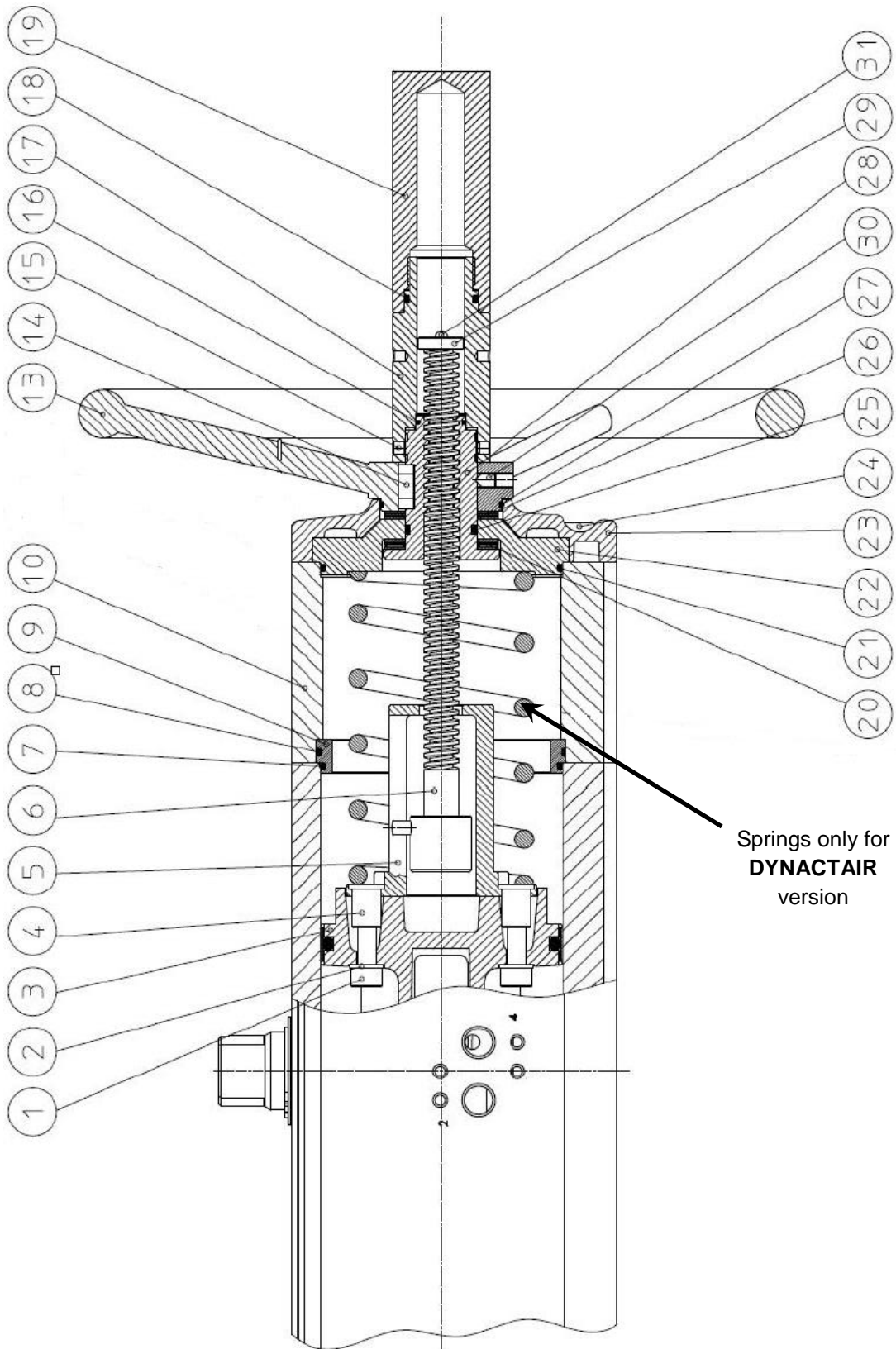
- b) Do not use levers or bars.



- c) Do not use the hand wheel to lift the actuator.



5) PART DESCRIPTION



POS	DENOMINATION	QTE	MATERIALS	STANDARDS
1	Screw	2	Stainless steel	AISI 304 – DIN 1.4301
2	Bonded	2	Steel alloy + Nitrilic rubber	
3	Piston (Modified)	1	Aluminium alloy	EN AB 46100
4	Threaded bush *	2	Stainless steel	AISI 303 – DIN 1.4305
5	Special ring cap	1	Aluminium alloy	EN AW 6060 Anodized
6	Screw maneuver	1	Steel Alloy	
7	O-ring	1	NBR (FVMQ for low temperature)	
8	O-ring *	1	NBR (FVMQ for low temperature)	
9	Centring ring *	1	Aluminium alloy	EN AW 6060 Anodized
10	Cylinder spacer	1	Aluminium alloy	EN AW 6060 Anodized
13	Hand wheel	1	Steel alloy	Fe37A Painted
14	Key	1	Steel alloy	UNI 6604
15	Screw	2	Stainless steel	AISI 304 – DIN 1.4301
16	O-ring	1	NBR (FVMQ for low temperature)	
17	Protecting tube	1	Aluminium alloy	EN AW 6060 Anodized
18	O-ring	1	NBR (FVMQ for low temperature)	
19	Protecting removal tube	1	Aluminium alloy	EN AW 6060 Anodized
20	Roller bearing	1	Steel alloy	
21	O-ring	1	NBR (FVMQ for low temperature)	
22	Flange	1	Aluminium alloy	EN AW 6060 Nickel plated
23	Cap (Modified)	1	Aluminium alloy	EN AB 46100 Painted
24	Screw	4	Stainless steel	AISI 304 – DIN 1.4301
25	O-ring	1	NBR (FVMQ for low temperature)	
26	Roller bearing	1	Steel alloy	
27	O-ring	1	NBR (FVMQ for low temperature)	
28	Lead nut maneuver	1	Stainless alloy	
29	Indicator	1	Polypropylene	
30	Screw	1	Stainless steel	AISI 304 – DIN 1.4301
31	Rivet	1	Steel alloy	UNI 7346

*= Not for the all sizes

6) TROUBLESHOOTING GUIDE

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Difficult manual operations	Blocked valve	Repair or replace valve
	Presence of particles inside the actuator due to an incorrect filtration of the air	Verify the condition of the supply air and contact KSB
	The actuator is pressurized	Remove supply air

7) DISPOSAL



ACTAIR – NGV5 to NGV340
INSTRUCTION MANUAL
DYNACTAIR – NG2 to NGV160



This leaflet is not contractual
and may be amended without notice.

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