

Two-Position Swiveling Rotary – R

- Suitable for 90° and 180° rotation angles.
- Shock-absorbers.
- Integrated rotating distributor of compressed air.
- Air feeding possible directly from the mounting plate.
- Optional sensors on page 815.



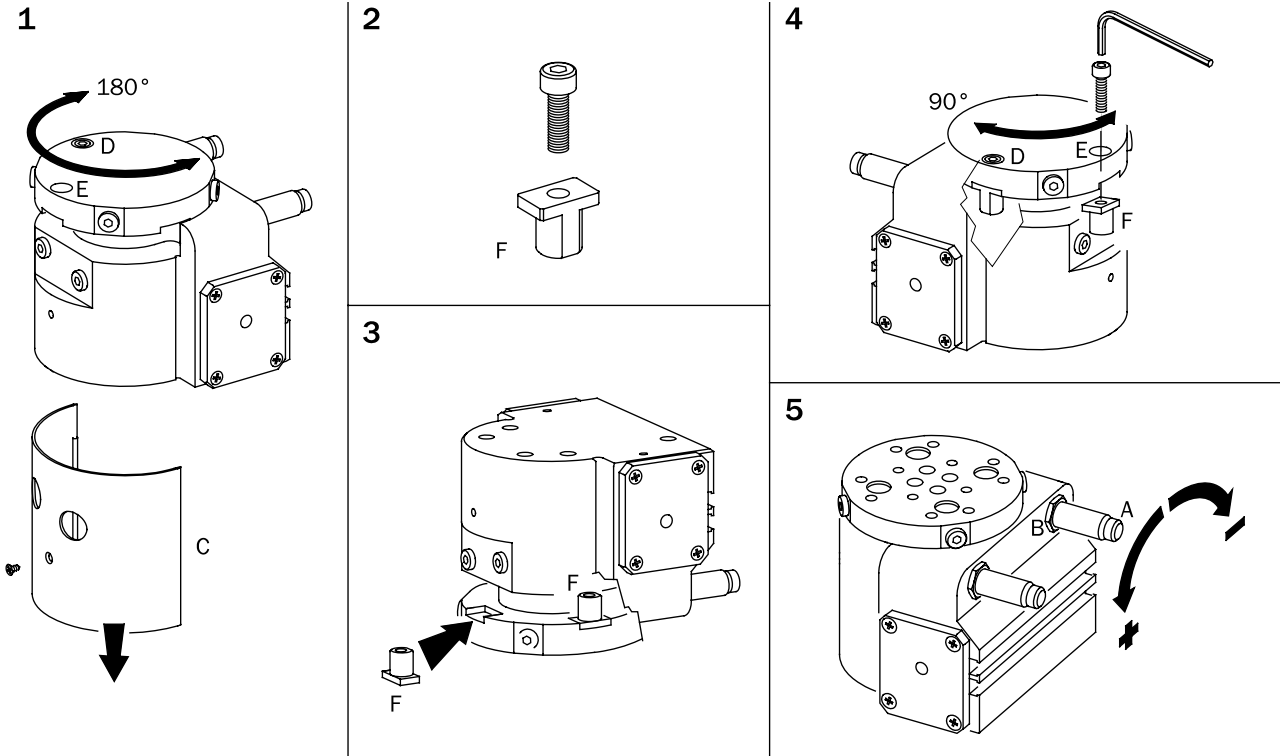
Part#	R20		R32		R63	
Quick#	6264		6265		6267	
Price	\$728.00		\$905.00		\$1,309.00	
Weight	400g		1100g		2800g	
Medium	Filtered lubricated / non lubricated compressed air					
Pressure range	30–116 psi					
Swiveling angle	90°	180°	90°	180°	90°	180°
Swiveling time without load	0.09s	0.017s	0.08s	0.15s	0.2s	0.3s
Theoretical torque at 87 psi	10 in-lbf		38 in-lbf		199 in-lbf	
180° angle adjustment	±8°		±8°		±8°	
Maximum repeatability tolerance	±0.02°		±0.02°		±0.02°	

Use Quick#s for easy online ordering.

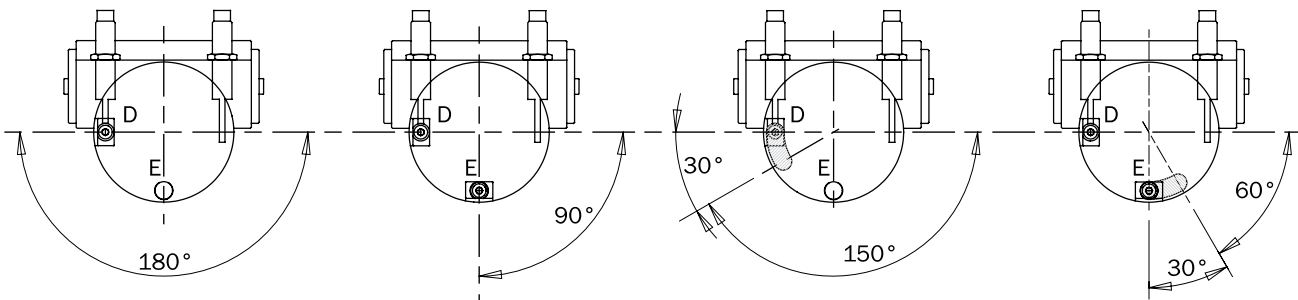
Two-Position Swiveling Rotary – R

Rotation angle

The units R20, R32 and R63 are supplied with one end-stroke block (F) in the seat (D). In this configuration they get a 180° rotation angle. However, a second block is supplied in the product packaging: mounting it in the seat (E), it reduces the stroke at 90°. It is necessary to remove the protection (C), before mounting the second block. Glue the screw of the second block by an anaerobic adhesive (medium resistance). At the end, the rotation angle can be further adjusted by changing the position of the shock-absorbers (A), after loosening the nuts (B). Each shock-absorber can change the end-stroke position of about ±4°.



To get other angles, it is necessary to build end-stroke blocks (not supplied) with a proper shape.



See page 810 for dimensions.

Three-Position Swiveling Rotary – R

- Suitable for 90° and 180° rotation angles.
- Cushioned end-stroke in every position.
- Air feeding possible directly from the mounting plate.
- Optional sensors on page 815.



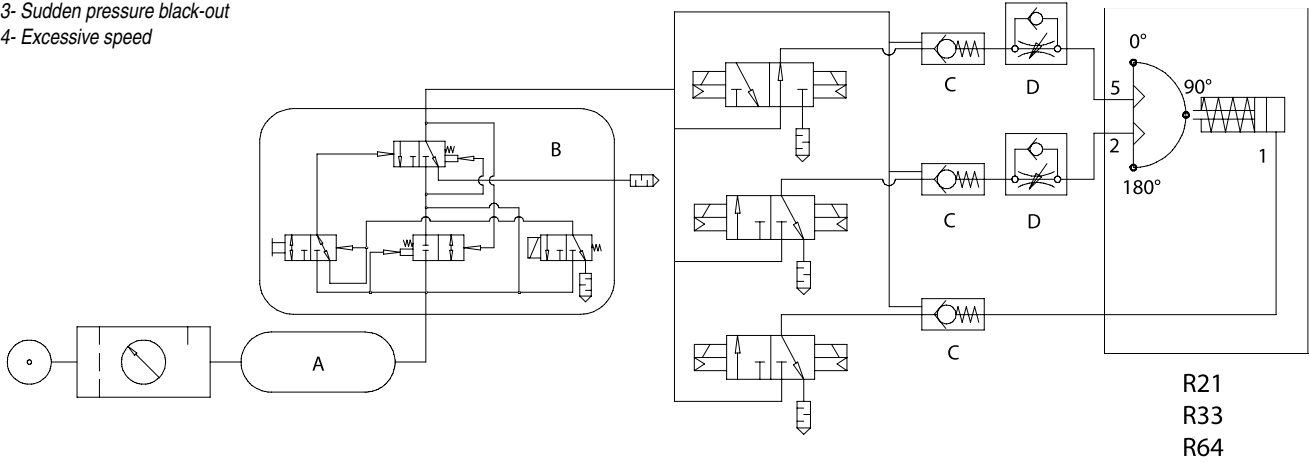
Part#	R21		R33		R64	
Quick#	6558		6266		6268	
Price	\$1,124.00		\$1,317.00		\$1,577.00	
Weight	500g		1200g		3200g	
Medium	Filtered lubricated / non lubricated compressed air					
Pressure range	44–116 psi					
Swiveling angle	90°	180°	90°	180°	90°	180°
Swiveling time without load	0.09s	0.017s	0.08s	0.15s	0.2s	0.3s
Theoretical torque at 87 psi	10 in-lbf		38 in-lbf		199 in-lbf	
180° angle adjustment	±8°		±8°		±8°	
Maximum repeatability tolerance	±0.02°		±0.02°		±0.02°	

Three-Position Swiveling Rotary – R

Pneumatic circuit

Possible problems on a compressed air circuit:

- 1- Pressure variation
- 2- Pressurizing with empty cylinder
- 3- Sudden pressure black-out
- 4- Excessive speed



Compressed air feeding

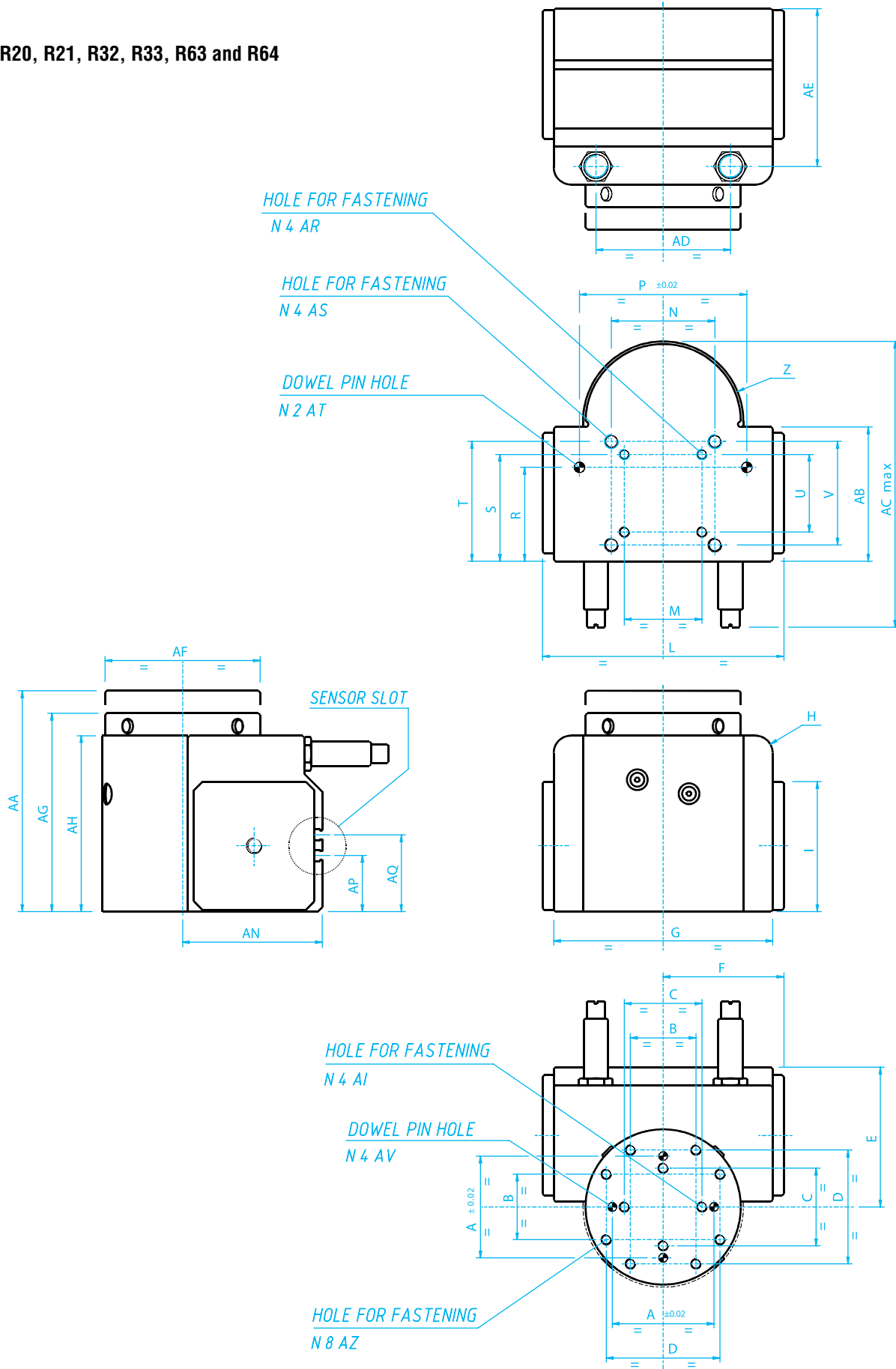
The compressed air feeding can be accomplished on the lateral air ports with fittings and tubes (not supplied), or directly on the bottom air ports, through the mounting plate. As all the air ports are plugged, it is necessary to remove only the plugs where the compressed air is needed. The air ports identified with the same number are communicating.

*Fittings Available
on page 1043*



Swiveling Rotary – R

R20, R21, R32, R33, R63 and R64

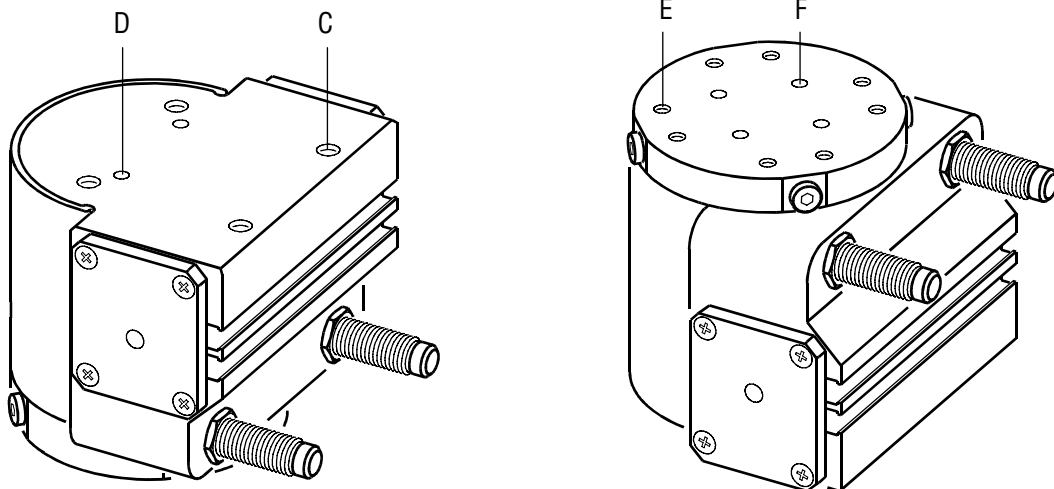


Swiveling Rotary – R

Part#	R20	R21	R32	R33	R63	R64
Quick#	6264	6558	6265	6266	6267	6268
A	30.4	30.4	30.4	30.4	59	59
B	21	21	27	27	38	-
C	-	-	-	-	45	45
D	37	37	48	48	66	66
E	32	32	47	47	81	81
F	35	35	49	49	70	70
G	64.5	64.5	90	90	127	127
H	R5	R5	R8	R8	R10	R10
I	36	36	44.5	44.5	75.4	75.4
L	70	70	98	98	140	140
M	-	-	-	-	45	45
N	34	34	45	45	60	60
P	30.4	30.4	30.4	30.4	97	97
R	32	32	47	47	54.5	54.5
S	-	-	-	-	62	62
T	40.5	40.5	52.5	52.5	69.5	69.5
U	-	-	-	-	45	45
V	34	34	45	45	60	60
Z	R 26	R 26	R 36	R 36	R 46.5	R 46.5
AA	-	71	-	92	-	134
AB	30.4	30.4	45	45	77.9	77.9
AC	58	58	105	105	165.7	165.7
AD	42	42	60	60	78	78
AE	43	43	59	59	91.5	91.5
AF	ø50	ø50	ø70	ø70	ø90	ø90
AG	59	-	78	-	115	-
AH	51	51	67.5	67.5	102	102
AI	-	-	-	-	M6 x 12mm	M6 x 12mm
AN	32	32	47	47	81	81
AP	14	14	20.5	20.5	40	40
AQ	23	23	29.5	29.5	-	-
AR	-	-	-	-	M6 x 10mm	M6 x 10mm
AS	M4 x 8mm	M4 x 8mm	M6 x 10mm	M6 x 10mm	M8 x 14mm	M8 x 14mm
AT	ø3 H8 x 6mm	ø3 H8 x 6mm	ø3 H8 x 6mm	ø3 H8 x 6mm	ø6 H8x8	ø6 H8x8
AV	ø3 H8 x 6mm	ø3 H8 x 6mm	ø3 H8 x 6mm	ø3 H8 x 6mm	ø5 H8 x 8mm	ø5 H8 x 8mm
AZ	M3 x 6mm	M3 x 6mm	M4 x 10mm	M4 x 10mm	M6 x 12mm	M6 x 12mm

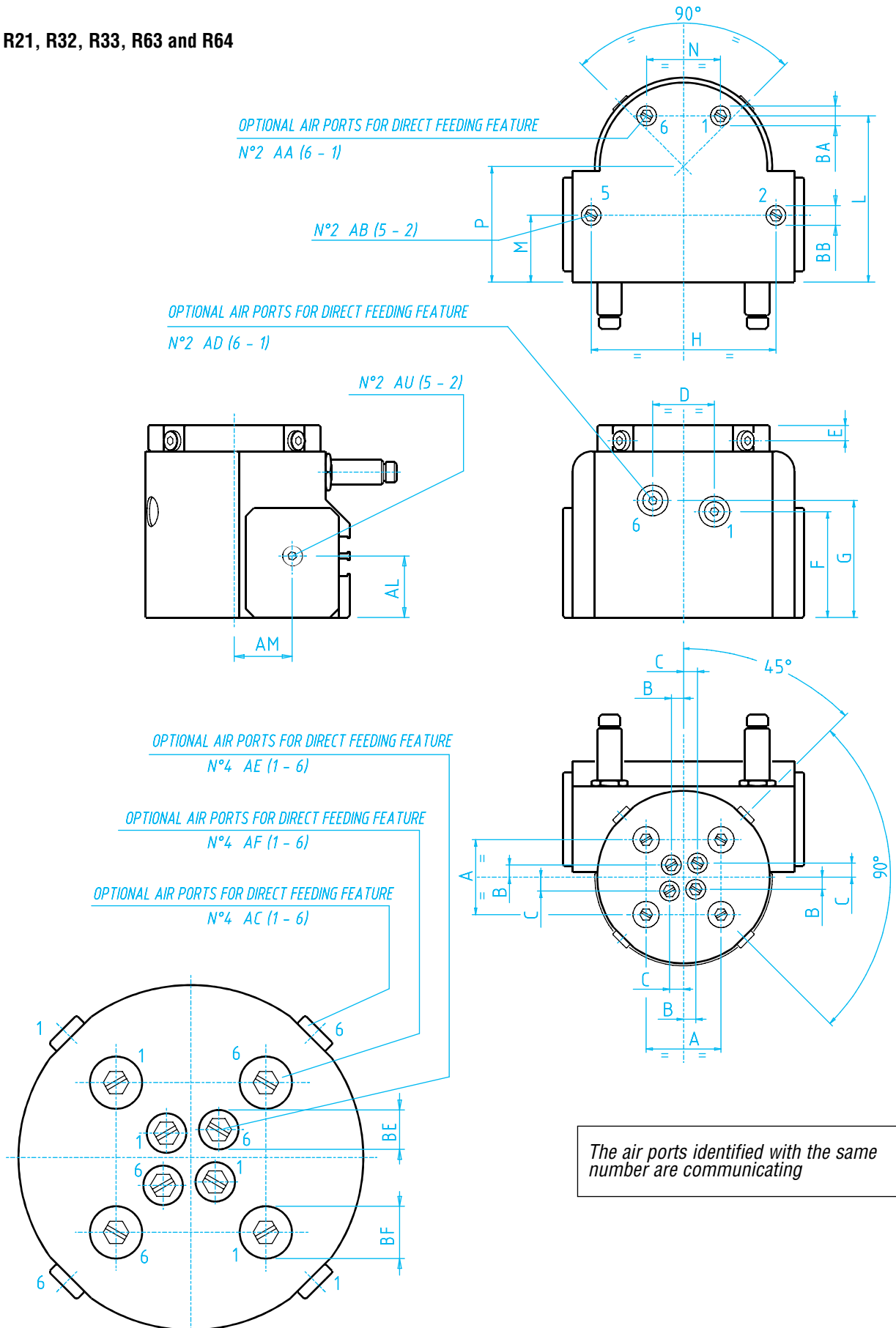
Fastening

The swiveling actuator must be fastened by four screws in the threaded holes (C) and centered by two dowel pins in the holes (D).
 The rotating load must be fastened on the disc using at least four threaded holes (E) and at least two dowel pin holes (F).



Swiveling Rotary – R

R20, R21, R32, R33, R63 and R64



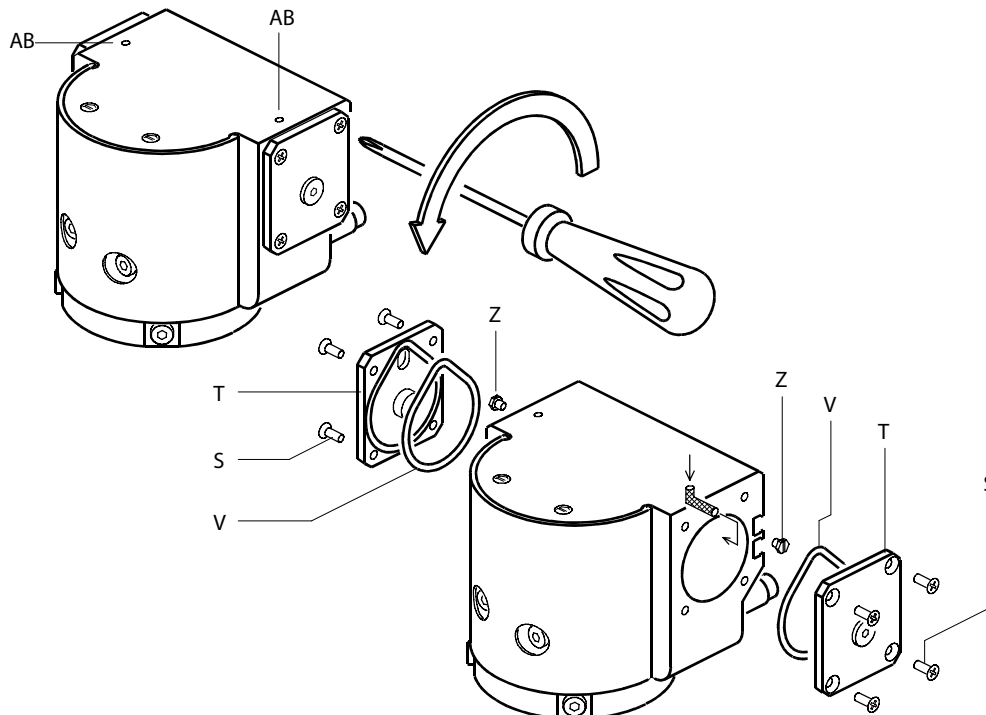
The air ports identified with the same number are communicating

Swiveling Rotary – R

Part#	R20	R21	R32	R33	R63	R64
Quick#	6264	6558	6265	6266	6267	6268
A	24	-	30.4	-	48	-
B	2.7	-	4.9	-	6.2	-
C	3.4	-	5.7	-	7.25	-
D	13	13	25	25	30	30
E	4.5	-	6.25	-	7.5	-
F	32	32	43	43	68.35	68.35
G	37.7	-	47.5	-	76.45	-
H	52	52	75	75	109	109
L	46	46	67.5	67.5	103.5	103.5
M	17	17	27.1	27.1	39.5	39.5
N	13	13	30	30	30	30
P	32	32	47	47	81	81
AA	M3	M3	M3	M3	M5	M5
AB	M3	M3	ø2	ø2	M3	M3
AC	M3	-	M5	-	M5	-
AD	M3	-	M5	-	M5	-
AE	M3	-	M3	-	M3	-
AF	M3	-	M3	-	M3	-
AL	18.5	18.5	25	25	38.15	38.15
AM	15	15	23.5	23.5	41.5	41.5
AU	M5	M5	M5	M5	G 1/8	G 1/8
BA	ø6	ø6	ø6	ø6	ø9	ø9
BB	ø6	ø6	-	-	ø6	ø6
BE	ø5.5	-	ø6	-	ø6	-
BF	ø9.4 x 1.3mm	-	ø9.4 x 1.3mm	-	ø9.4 x 1.3mm	-

Warning

The direct feeding of the rotary units R32 and R33 from the bottom air ports (AB) is possible only by removing the plugs (Z) placed behind the covers (T). When reassembling the covers pay attention to the correct position of the gaskets (V), before placing the screws (S).



Three-Position Swiveling Rotary – R

Rotating distributor

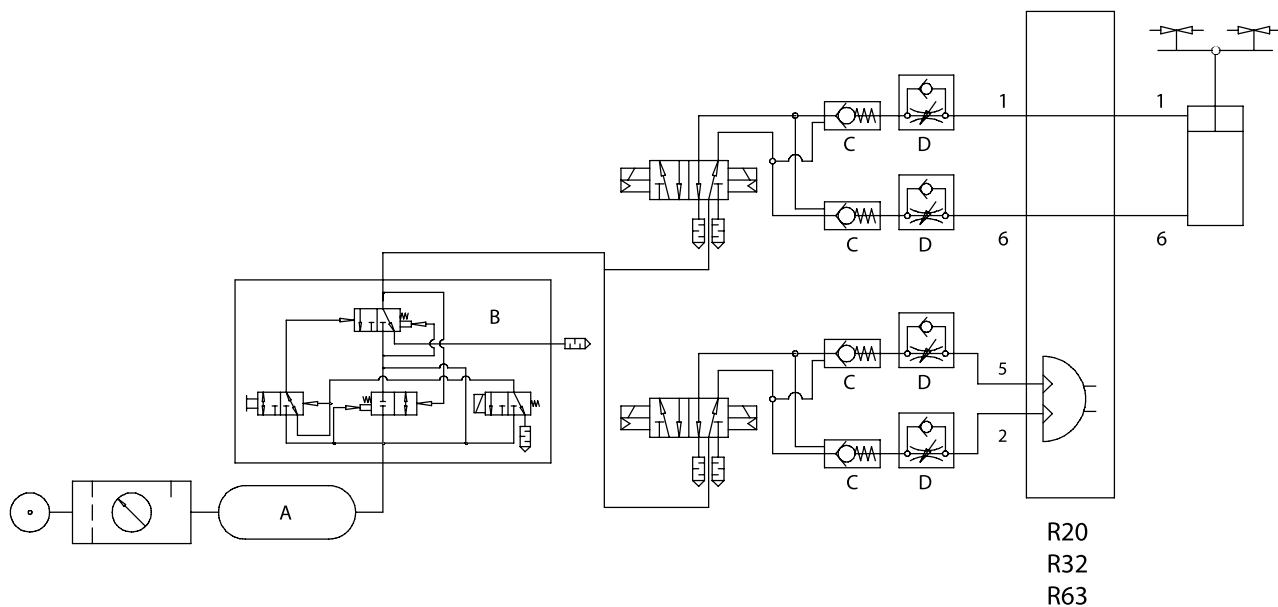
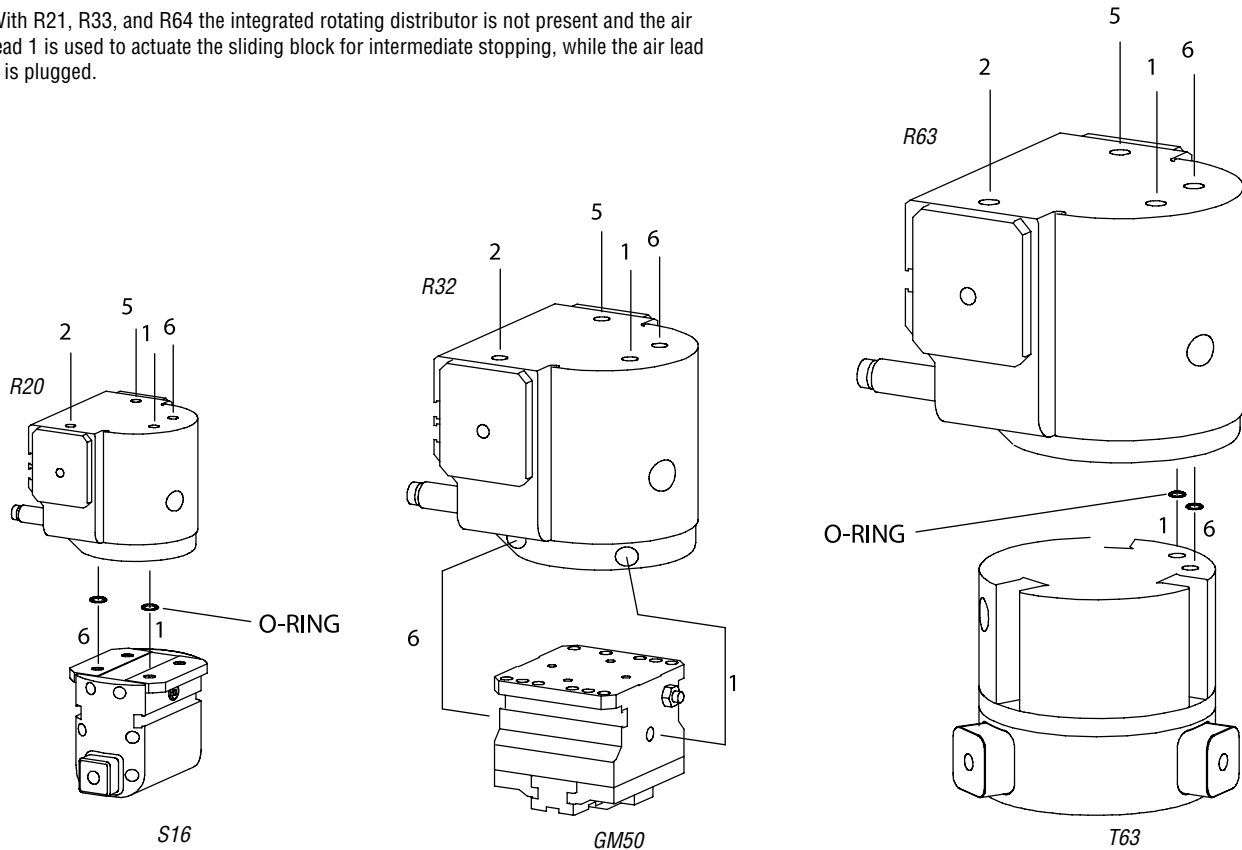
With the R20, R32 and R63 the integrated rotating distributor of compressed air, with two leads (1 and 6), feeds compressed air to the pneumatic devices on the disc without the use of hoses.

S16 and T30 can be fitted directly on R20 the grippers.

T40, GM-0025/6/7 and GM-0050/1/2 on R32 grippers.

S32 and T63 on R63 grippers.

With R21, R33, and R64 the integrated rotating distributor is not present and the air lead 1 is used to actuate the sliding block for intermediate stopping, while the air lead 6 is plugged.



Three-Position Swiveling Rotary – R

Sensors

The operating position can be checked by sensors (optional), that detect the inner magnet. Close proximity to a large mass of ferromagnetic material or intense magnetic fields may cause sensing troubles.



					R-20	R-32	R-63	R-21	R-33	R64
Quick#	Part#	Signal	Connection	Price						
3-Wire, 'T' Slot Sensors										
6273	SC4N225G	PNP	2.5m lead	\$30.30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6455	SC3N203G	PNP	.3m lead & M8	\$34.62	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
792	SL4N225G	PNP	2.5m lead	\$27.19	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
793	SL4M225G	NPN	2.5m lead	\$27.19	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6274	SL3N203G	PNP	.3m lead & M8	\$31.16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6456	SL3M203G	NPN	.3m lead & M8	\$31.16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3-Wire, 'C' Slot Sensors										
1882	SS4N225G	PNP	2.5m lead	\$27.19	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)
1883	SS4M225G	NPN	2.5m lead	\$27.19	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)
6282	SS3N203G	PNP	.3m lead & M8	\$31.16	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)
1884	SS3M203G	NPN	.3m lead & M8	\$31.16	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)	<input checked="" type="checkbox"/> (*)
7440	K-SENS	*Must purchase separately	\$4.82		*Allows 'C' channel sensors to work in 'T' channel slots					



Three-Position Swiveling Rotary – R

Rotation angle

R21, R33 and R64 are swivelling units with three positions: 0°, 90° and 180°.

These movements are possible:

From 0° to 180°.

From 180° to 0°.

From 0° to 90°.

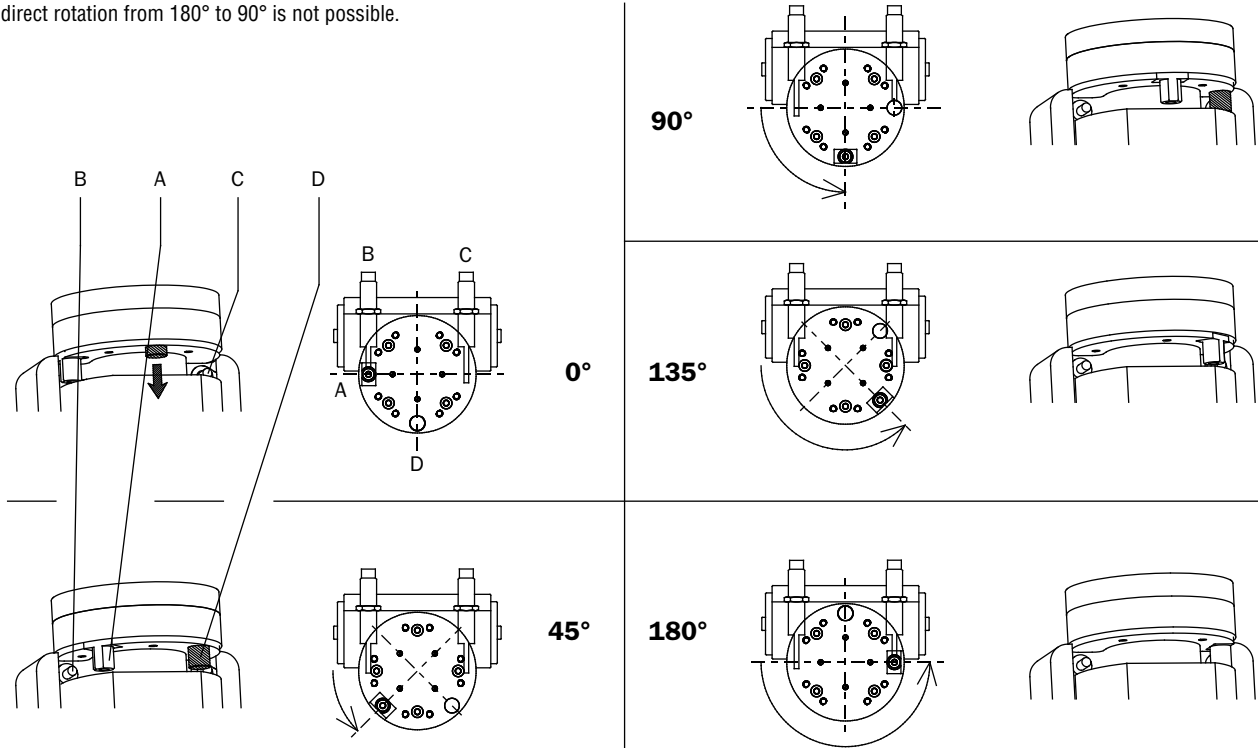
From 90° to 0°.

From 90° to 180°, before to retract the moving block (D), the pressure must be balanced on both sides of the piston.

The direct rotation from 180° to 90° is not possible.

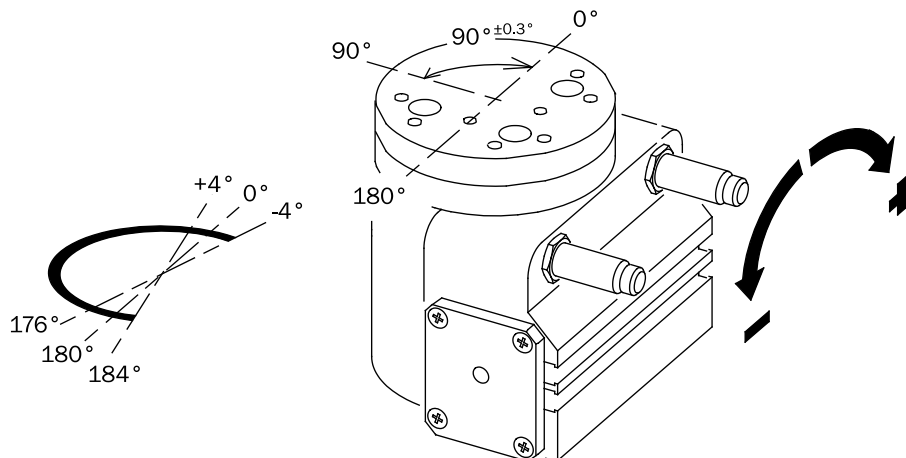
The fixed block (A) gives the end-stroke at 0° against the shock-absorber (B) and at 180° against the shock-absorber (C), the moving block (D) at 90° against the shock-absorber (C).

The moving block (D) can't be put out between 70° to 180°.



You can adjust of about $\pm 4^\circ$ on both sides the 180° angle, by the shock-absorbers.

It is not possible to adjust the 90° (tolerance $\pm 0.3^\circ$) angle.



Three-Position Swiveling Rotary – R

Safety loads

Check the table for maximum permitted loads. Excessive forces or torques can damage the unit, cause functioning troubles, endanger the safety of the operator.

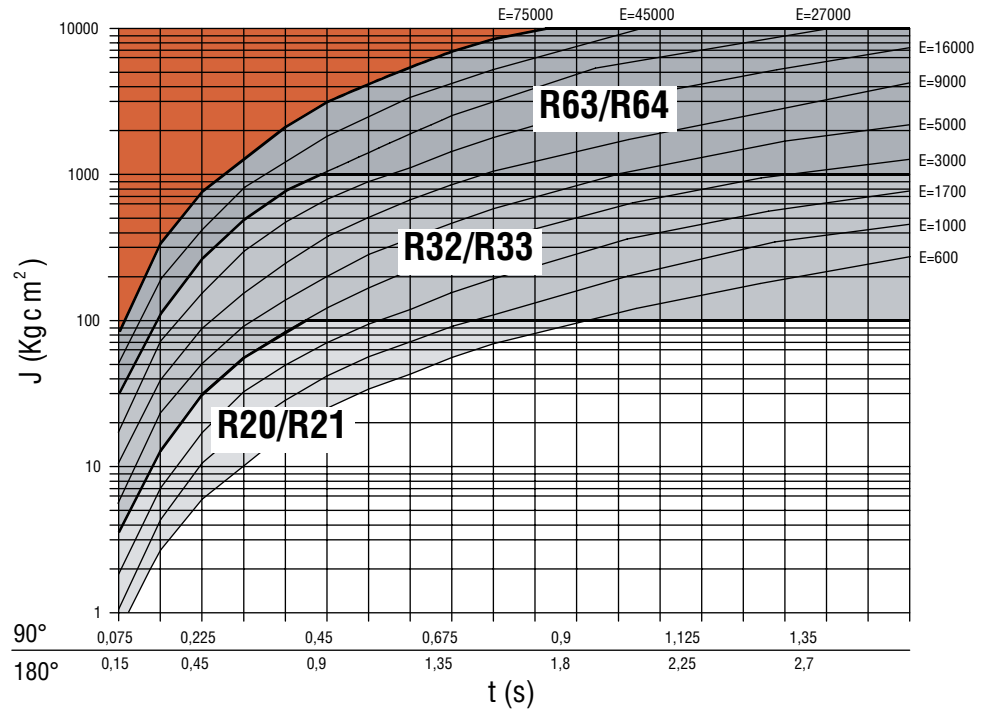
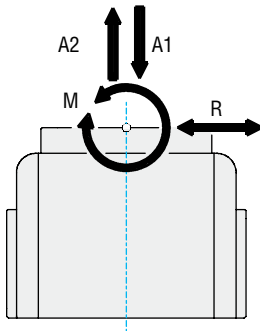
Reference:

- A1 and A2 (N): maximum axial loads, compressive and tractive.
- R (N): maximum radial load.
- M (Nm): maximum bending torque.
- J (kgcm²): moment of inertia of the rotating loads.
- t (s): swiveling time (for 90° and 180°).
- E (kgcm²/s²): kinetic energy dissipated by the shock absorber each shock.
- Eh (kgcm²/s²): kinetic energy dissipated by the shock absorber per hour.
- Nh: number of shocks per hour per shock absorber.

Reference:

- Force: N x 0.225=lbf
- Torque: Nm x 8.850=in-lbf
- Torque: Ncm x 0.089=in-lbf
- Pressure: bar x 14.5=psi
- See also: Call our Engineering Department for assistance

	R20/R21	R32/R33	R63/R64
A1	230N	650N	1100N
A2	140N	245N	800N
R	180N	810N	1500N
M	5Nm	12Nm	32Nm
E max	3000 kgcm ² /s ²	27000 kgcm ² /s ²	75000 kgcm ² /s ²
Eh	(E+3000) x Nh	(E+10 ⁴) x Nh	(E+10 ⁵) x Nh
Eh max	40 x 10 ⁶ kgcm ² /s ²	67.8 x 10 ⁶ kgcm ² /s ²	34 x 10 ⁷ kgcm ² /s ²



ENERGY PER SHOCK

90°: $E=4.935xJ/t^2$
 180°: $E=19.74xJ/t^2$

ENERGY PER HOUR

