

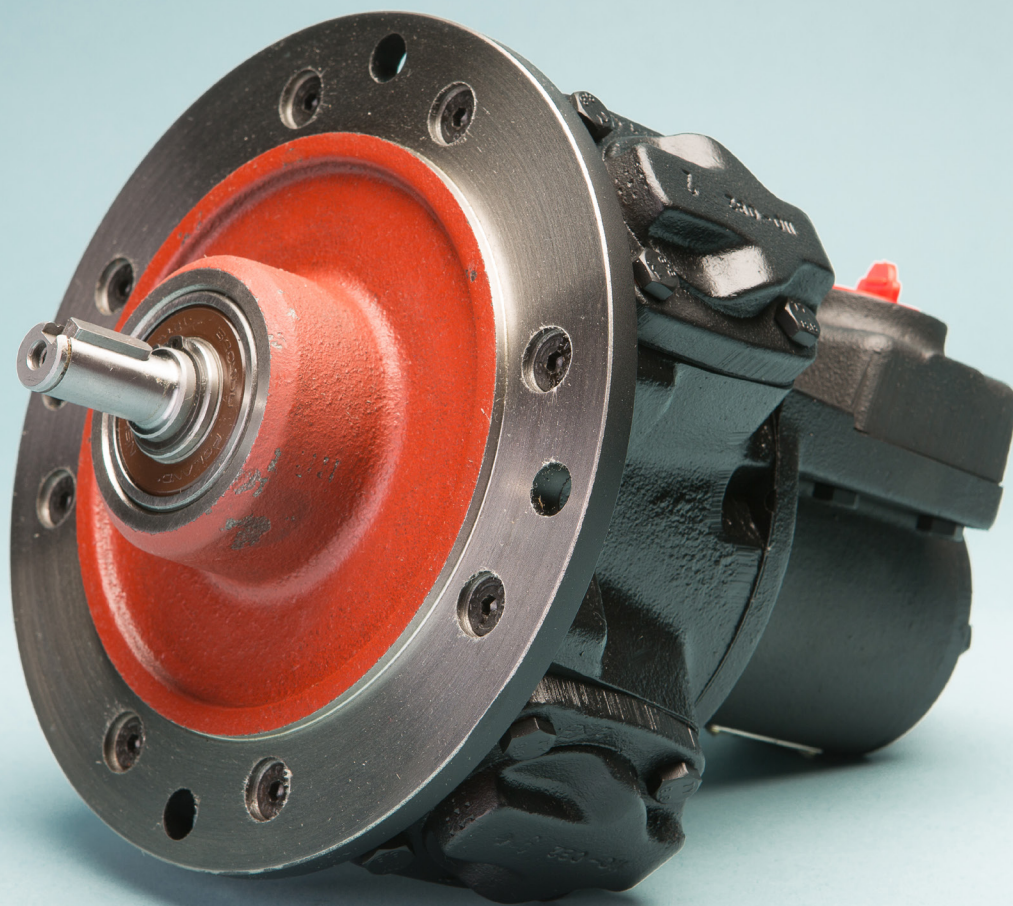


**GLOBE** AIRMOTORS B.V.

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Brochure

## **GLOBE Piston Air Motor**



**LRQA**  
CERTIFIED  
ISO 9001

**[globe-airmotors.com](http://globe-airmotors.com)**

# About GLOBE Airmotors

GLOBE Airmotors is part of the GLOBE Group. The GLOBE Group was founded in 1986 and specializes in the developing, producing, advising and sales of air motors, gas boosters, high pressure test equipment and systems.

The focus of GLOBE Airmotors is mainly on the sales of the air motors. We offer a very wide program of different types of air motors. With a team of experts with lots of experience, we are able to help with all kinds of questions about air motors and everything related to high pressure. A big benefit is that we have our own production department. Because of this, we do not just exactly know what we sell, we can also provide customization for all our products.

GLOBE Airmotors has a high standard when it comes to the quality of our products. Pneumatic drives are often applied in explosive atmospheres. That is why it is possible to order most of our air motors, including the gearboxes and brakes, with ATEX certification. We are also ISO 9001: 2015 certified to guarantee our work processes and quality.



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# The GLOBE Piston Air Motors

The Globe RM air motors are a series of compact heavy duty radial piston air motors offering an exceptional range of control valve and output options. The motors are designed to develop greater power than other motors of equivalent size. GLOBE piston air motors are being used in the most heavy and extreme conditions that require lots of power. Typical applications are winches, pump drives, offshore and mines. These motors are available with pneumatic brakes and proportional control valves for very accurate speed control.

Our air motors have a power range from 0,1 kW up to 23 kW. The air motors can be supplied in combination with a gearbox for higher torques and lower speeds. Custom built solutions are possible due to our own design and production department. All standard motors are available from stock.

## Advantages of a GLOBE Piston Air Motor

The GLOBE Piston Air Motors are instantly reversible, resistant to dirty and damp conditions and have a relatively inexpensive variable speed control. These air motors are most suitable for heavy duty applications and can be supplied direct coupled to various types of gearboxes (ATEX and Non-Atex). The GLOBE Piston Air motors have a rugged design with modular options for the mountings, brake, gearbox and control valve.



### Modular design

The piston motors can be expanded as desired with various accessories such as brakes, (control) valves and gearboxes.



### Suitable for every operating condition

Our piston motors are safe to use in environments with high temperatures or humidity. Available with ATEX Certification for extreme conditions in hazardous areas.



### Robust

The GLOBE piston motors are powerful and robust and therefore suitable for heavy duty application.

## Possible with ATEX Certification

The GLOBE piston air motors and pneumatic brakes are possible to order with ATEX certification according to the following (harmonized) standards:

EN-ISO80079-36:2016

EN-ISO80079-37:2016

The motors are marked with the following EX marking:

**CE UKCA Ex** II 2G Ex h IIC T5 Gb  
II 2D Ex h IIIC T100°C Db  
-20° ≤ Ta ≤ + 60°C

The pneumatic brakes are marked with the following EX marking:

**CE UKCA Ex** II 2G Ex h IIC T4 Gb X  
II 2D Ex h IIIC T135°C Db X  
-10° ≤ Ta ≤ + 60°C

In which:

II	Equipment group II for use above ground
2G	Category 2G for use in Zone 1 or 2
2D	Category 2D for use in Zone 21 or 22
Ex h	Protection by constructional safety "c" Gas
IIC	group IIC
IIIC	Dust group IIIC
T4	Temperature class T4
T5	Temperature class T5
T100°C	Maximum surface temperature 100°C
T135°C	Maximum surface temperature 135°C
Gb	Equipment protection level Gb
Db	Equipment protection level Db
Ta	Ambient temperature range

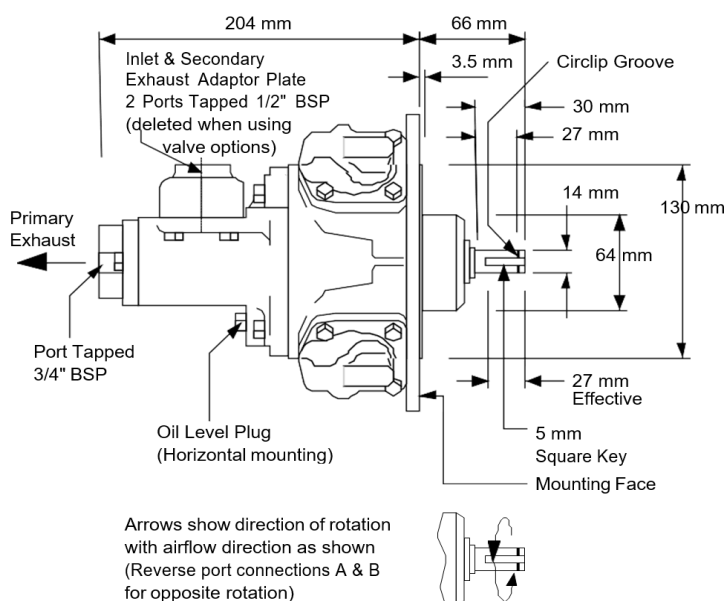
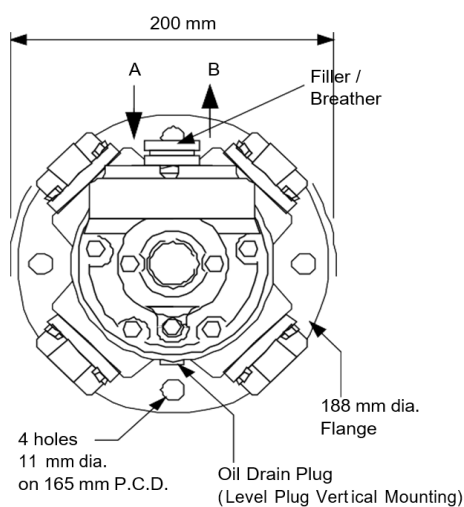
# RM 110 Piston Air Motor

**1,2 kW / 2.4 H.P.**

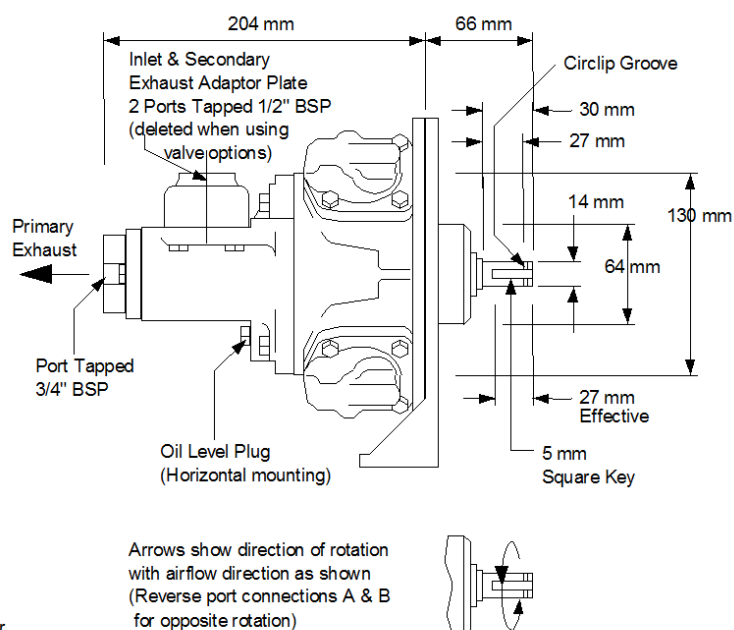
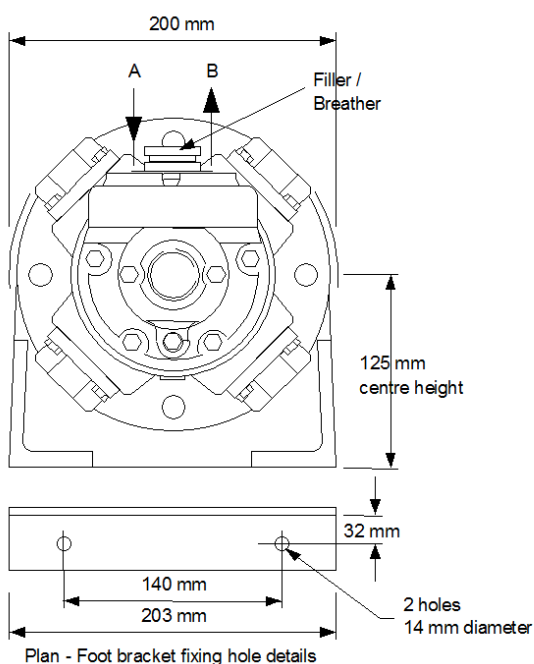
## Why buy the GLOBE RM110 Piston Air Motor

Our RM110 Piston Air Motors have a power range of 1,2 kW (2.4 HP) with 8Nm (5.9 lbs ft.) torque at max. power. Our piston air motors are designed to develop greater power than other motors of equivalent size. These piston motors can be completed as desired with various accessories such as brakes, (control) valves and gear-boxes.

## Dimensions RM110



## Dimensions RM110 + Foot Bracket



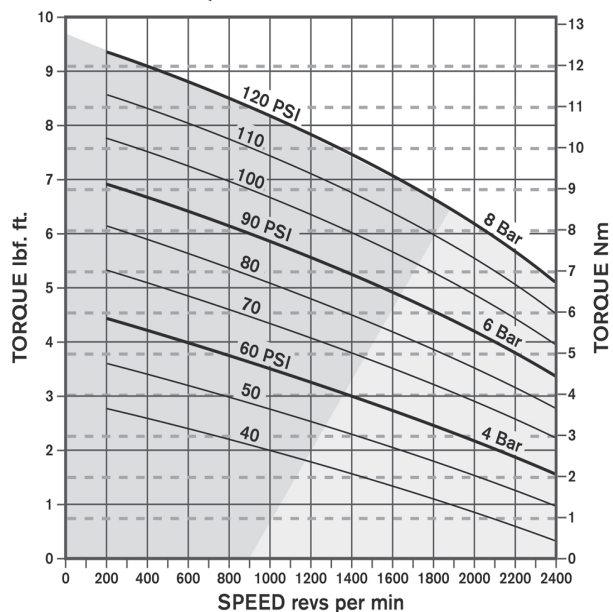


## Gearbox ratio: None

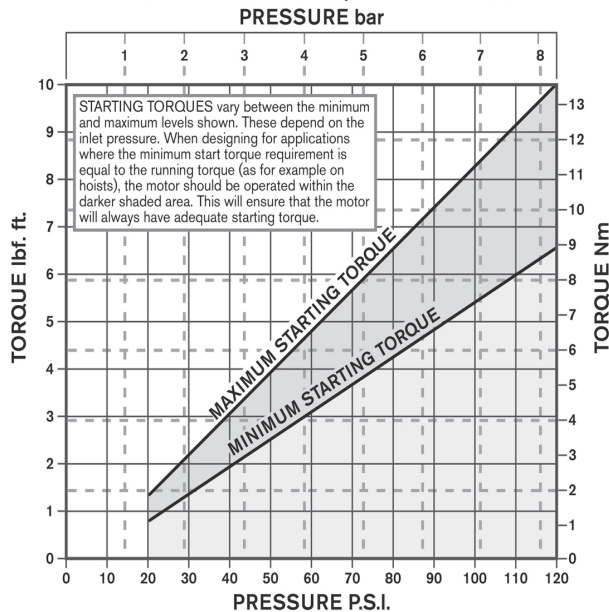
## Maximum speed: 2400 RPM No Control Valve fitted

**Reading Graphs** - Scales have been adjusted to enable bar and psi to be read from a common curve. Therefore only read psi with the left hand axis and bar with the right hand axis.

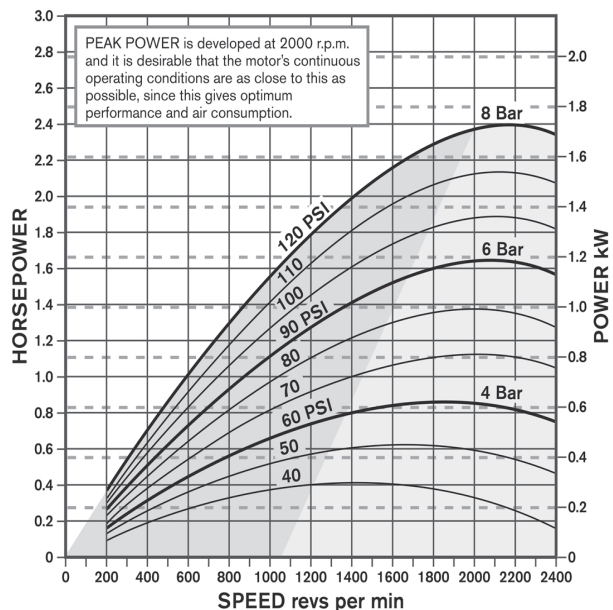
**GRAPH 1 TORQUE - SPEED**



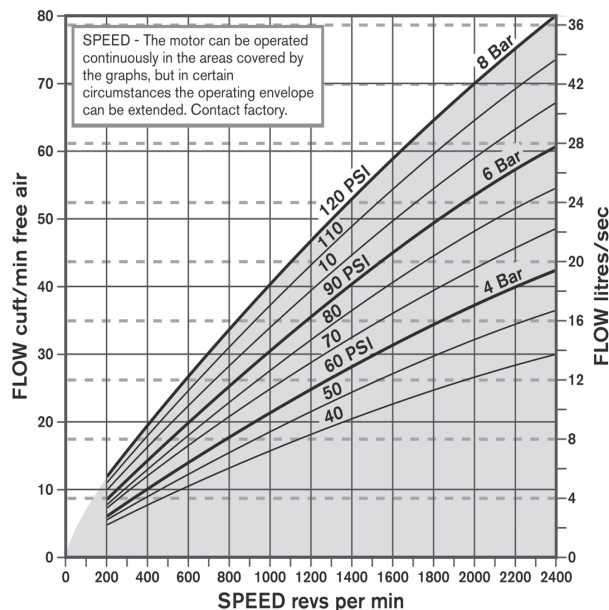
**GRAPH 2 STARTING TORQUE - PRESSURE**



**GRAPH 3 POWER - SPEED**



**GRAPH 4 CONSUMPTION - SPEED**



### LUBRICATING OIL CAPACITIES

Horizontal 75ml

Vertical 150ml

Use a good quality hydraulic oil with a viscosity of around 100cSt (460SSU) at 40°C (104°F)

### AIRLINE FILTRATION AND LUBRICATION

Use 64 micron filtration or better. Choose a lubricator suitable for the flow required. Prior to initial start-up, inject oil into the inlet port.

Lubricator drop rate 3-4 drops/minute continuous operation

Lubricator drop rate 6-8 drops/minute intermittent operation

### GENERAL DATA

**MASS** (motor only) 13 kgs (28.7 lbs)

**MOMENT OF INERTIA** of rotating parts 0.01 gm<sup>2</sup> (motor only)

**MAX OVERHUNG FORCE** on motor shaft 445 N (100 lbf)

**TEMPERATURE RANGE** -20°C to +60°C (-4°F to +140°F) / -10°C to +60°C (-14°F to +140°F) with brake

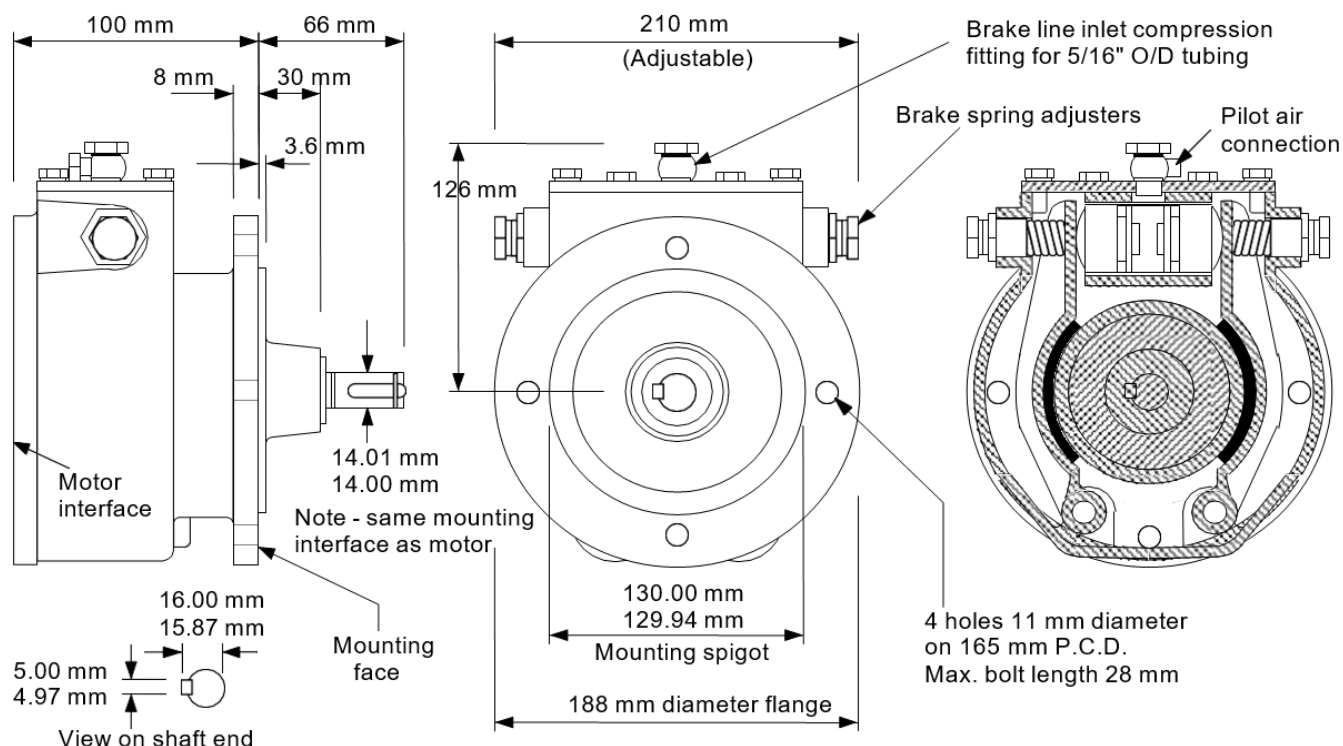
RM110

## Options RM110 | Brake

### Why you need a brake for your RM110 Piston Air Motor

The combination of motor with brake is widely used for winches, cranes and positioning devices. The brake module bolts directly onto the motor mounting face and has exactly the same interface as the motor.

### Dimensions RM110 Brake



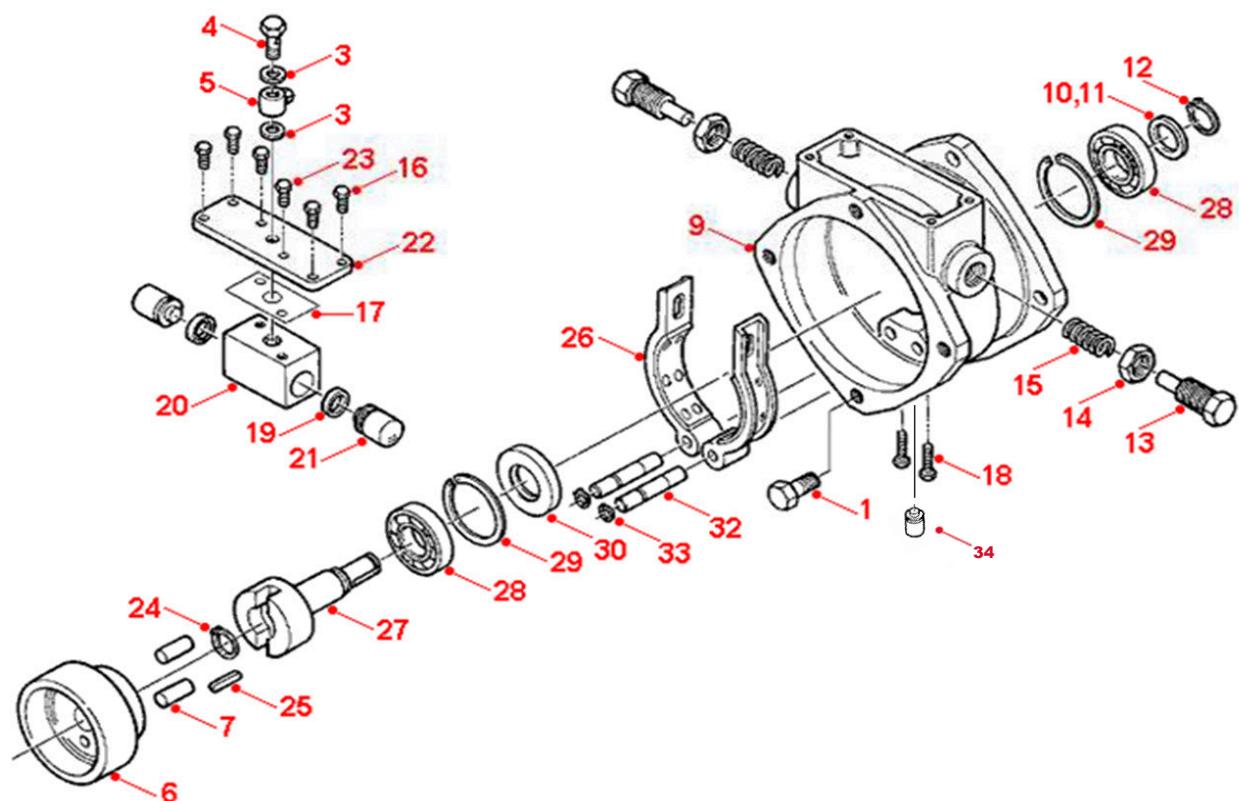
### With or without ATEX Certification

For ATEX it is important that there is no possibility for the brake to drag while the motor is running. This will cause friction which will heat up the brake. The GLOBE Brakes for the Piston RM Air Motor series are available with or without ATEX Certification for safe operations in hazardous environments. When used in an ATEX application, the brake torque is pre-set by GLOBE to a maximum torque which belongs to the desired operating pressure of the motor. The end-user has to inform GLOBE prior to the delivery about the (max.) operating pressure of the motor. At this pressure the brake will be fully released. This is done by adjusting the GLOBE APPV3214 valve which is integrated in the pneumatic control system. Whenever this system's pressure drops to a lower amount than 20% below the set release pressure, the valve closes and the brake will be blocked. This system prevents dragging of the brake shoes while operating by (unnoticed) pressure drops or incorrect handling.

Any unauthorized adjustment will make ATEX invalid. Changing or adjusting the pneumatic system, including the valves, which controls the brake will also make ATEX invalid.



## Spare Parts List Parking Brake



Item	Part No.	Description	Qty
01	802-052	Set Screw M10 x 20	4
03	808-090	Bonded Seal 1/4" BSP Dowty	2
04	816-004	Banjo Bolt Only 1/8 BSP	1
05	816-005	Banjo Bolt C/W/ Nut&Rin 5/16	1
06	112-001	Brake Wheel	1
07	806-001	Dowel Dia 10 x 30 Lg	2
09	112-008	Brake Housing	1
10	100-049	Shim - Output	5
11	100-035	RM100 Output Shaft Spacer	1
12	804-006	Circlip 19mm External	1
13	102-009	Brake Spring Adjuster	2
14	102-024	1/2" BSP Hex Nut	2
15	814-002	Spring 223612	2
16	802-016	Hex Head Screw M6 x 16	4
17	112-030	Piston Block Gasket	1
18	802-020	Hex Head Screw M6 x 20	2
19	808-072	U Packing U110	2
20	112-014	Piston Block	1
21	102-011	Brake Piston	2
22	112-013	Block Support Plate	1
23	802-012	Hex Head Screw M6 x 12	2
24	804-003	Circlip 14mm External	1
25	811-022	Key K123 5Sq	1
26	112-901	Brake Shoe Assembly	2
27	112-005	Output Shaft	1
28	807-007	Ball Bearing	2
29	804-051	Circlip 47mm Internal	2
30	808-043	Oilseal 20x47x10/R4	1
32	112-003	Brake Shoe Pivot	2
33	804-121	Circlip 3/8" External Ander	2
34	7008G18	Breather plug 1/8 BSPP (ATEX Only)	1

RM110

## Options RM110 | Gearbox

### Why you need a gearbox for your RM110 Piston Air Motor

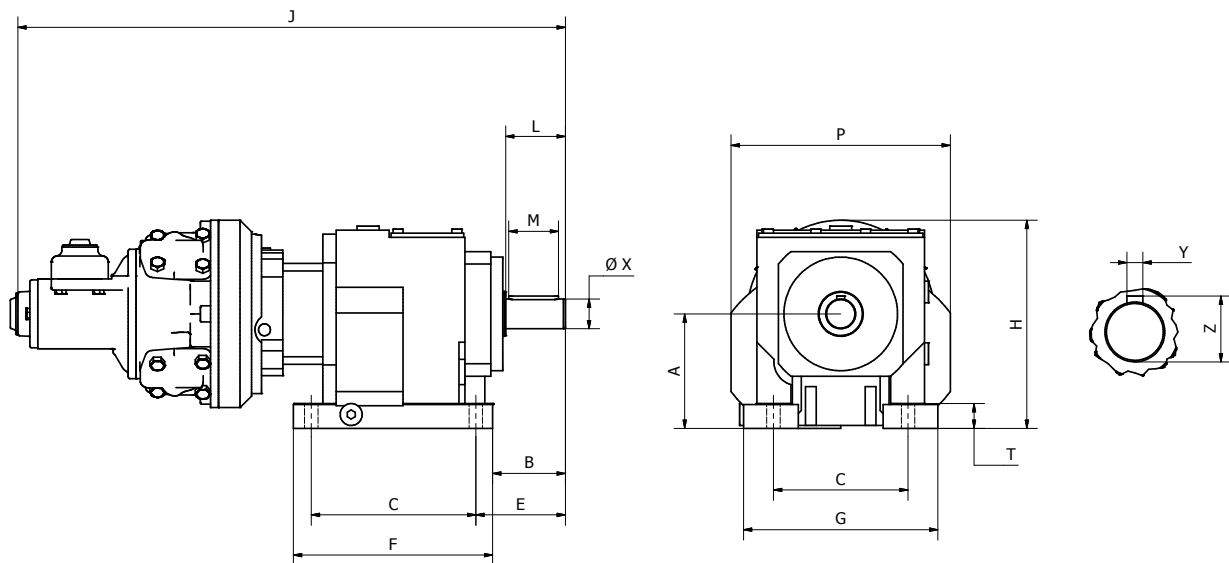
We can supply all our piston motors in combination with many different gearboxes. If you are looking for more torque for a certain application, we can assist you by selecting the right kind of gearbox. Order your RM110 Piston Air Motor in combination with a gearbox for higher torques and lower speeds.

### Performance summary

Gearbox Ratio	Maximum Power Conditions					Approx. Min. Start torque		Max Cont.	Max overhung Force		Weight			
	kW	HP	RPM	Torque		Nm	lbf. Ft.	RPM	N	lbf.	Gearbox	Adapter	Gearbox kit	Motor & Gearbox
				Nm	lbf. Ft.									
4.77	1.2	1.6	440	23	17	28	20	498	1020	229	15.5	4.5	20	33
24.50	1.2	1.6	86	122	90	146	108	97	1990	447	15.5	4.5	20	33
50.00	1.2	1.6	42	250	185	300	221	48	4150	933	26	4.5	30.5	43.5
73.30	1.2	1.6	29	366	270	439	324	32	7690	1729	45	4.5	49.5	62.5
104.80	1.2	1.6	20	524	387	629	464	23	10820	2433	45	4.5	49.5	62.5
129.79	1.2	1.6	16	649	479	779	575	18	18925	4255	79	4.5	83.5	96.5
155.46	1.2	1.6	14	777	573	932	688	15	18925	4255	79	4.5	83.5	96.5
175.18	1.2	1.6	12	876	646	1051	776	14	18925	4255	79	4.5	83.5	96.5
213.64	1.2	1.6	10	1068	788	1282	946	11	18925	4255	79	4.5	83.5	96.5
256.86	1.2	1.6	8	1284	948	1541	1137	9	23515	5287	129	4.5	133.5	146.5

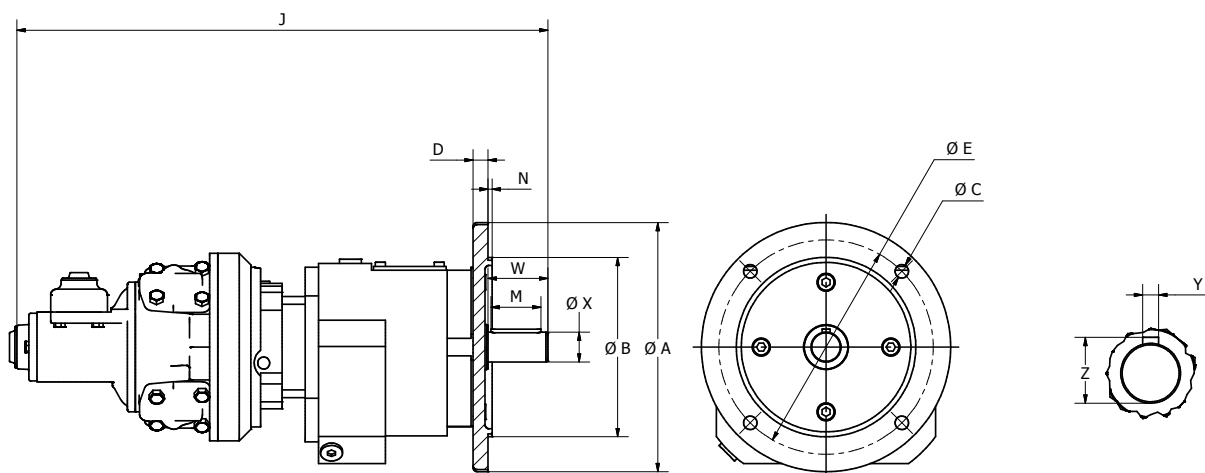


## Base mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	F	G	H	J	L	M	P	R	T	W	X	Y	Z	MASS
4.77 - 24.5:1	90+4.00	60	130	110	75	160	145	184+4	495	53	40	188	9.8	20	50	25.01	8.00	28	33 kg
	3.5"+0.2"	2.4"	5.1"	4.3"	3.0"	6.3"	5.7"	7.4"+0.2"	19.5"	2.1"	1.6"	7.4"	0.4"	0.8"	2.0"	.98"	0.3"	1.1"	72.5 lb
27- 56:1	115	75	165	135	90	200	195	209	532	63	50	220	13.5	25	60	30.01	8.00	33	42 kg
	4.5"	3.0"	6.5"	5.3"	3.5"	7.9"	7.7"	8.2"	20.9"	2.5"	2.0"	8.7"	0.5"	1.0"	2.4"	1.18"	0.3"	1.3"	92.5 lb
56 - 61:1	115	75	165	135	90	200	195	209	532	63	50	220	13.5	25	60	30.01	8.00	33	43.5 kg
	4.5"	3.0"	6.5"	5.3"	3.5"	7.9"	7.7"	8.2"	20.9"	2.5"	2.0"	8.7"	0.5"	1.0"	2.4"	1.18"	0.3"	1.3"	96 lb
60 - 88.59:1	140	95	205	170	115	245	235	290	601	84	70	263	17.5	30	80	40.01	12	43	62.5 kg
	5.5"	3.7"	8.1"	6.7"	4.5"	9.6"	9.3"	11.4"	23.7"	3.3"	2.8"	10.4"	0.7"	1.2"	3.1"	1.58"	0.5"	1.7"	137 lb

## Flange mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	J	K	M	N	W	X	Y	Z	MASS
4.77 - 24.5:1	200	130.00	11	12	165	495	50	40	3.5	50	25.01	8.00	28	33 kg
	7.9"	5.12"	0.4"	0.47"	6.5"	19.5"	2.0"	1.6"	0.1"	2.0"	.98"	0.3"	1.1"	72.5 lb
27- 56:1	250	180	13.5	15	215	532	60	50	4	60	30.01	8.00	33	42 kg
	9.8"	7.09"	0.5"	0.6"	8.5"	20.9"	2.4"	2.0"	0.2"	2.4"	1.18"	0.3"	1.3"	92.5 lb
56 - 61:1	250	180	13.5	15	215	532	60	50	4	60	30.01	8.00	33	43.5 kg
	9.8"	7.09"	0.5"	0.6"	8.5"	20.9"	2.4"	2.0"	0.2"	2.4"	1.18"	0.3"	1.3"	96 lb
60 - 88.59:1	300	230.05	13.5	16	265	610	80	70	4	80	40.01	12.0	43	62.5 kg
	11.8"	9.06"	0.5"	0.6"	10.4"	24.0"	3.1"	2.8"	0.2"	3.1"	1.58"	0.5"	1.7"	137 lb

## Options RM110 | Control Valve

### Why you need a control valve for your RM110 Piston Air Motor

Control valves allow you to change the speed and direction of the motor, they are mounted directly onto the air motor. This range of bolt on valves offers very sensitive speed and directional control. One frictionless matched spool and sleeve assembly is offered with two alternative means of actuation.

### Configuration

As standard these valves can be supplied with either EQUAL POWER OR BIASED POWER spools, the latter is suitable for hoisting applications (normal power for lifting - reduced power for lowering).

The direction of reduced power must be stated when ordering CW or CCW, when viewed on the output shaft of the motor.

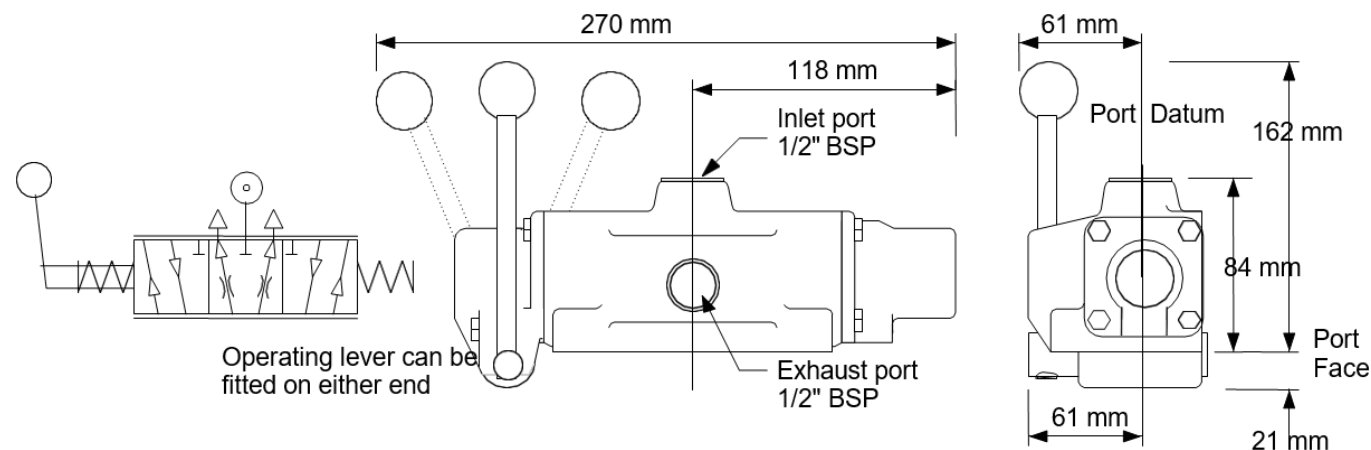
**Hand Controlled (HCV)** - The control valve spool is operated directly by a lever mechanism. Speed increase is obtained as the lever is moved in either direction from the centre (neutral) position.

**Remotely Controlled (RCV)** - This option is usually controlled from a remote position by one of the PC series or LC2 remote controllers. A variable air pilot signal is applied to either end of the valve spool, depending on the required direction of motor rotation. The pilot pressure range is between 1.4 bar (20 psi) and 4.8 bar (70 psi), increased pilot pressure gives increased speed. The valve is spring centred to neutral.

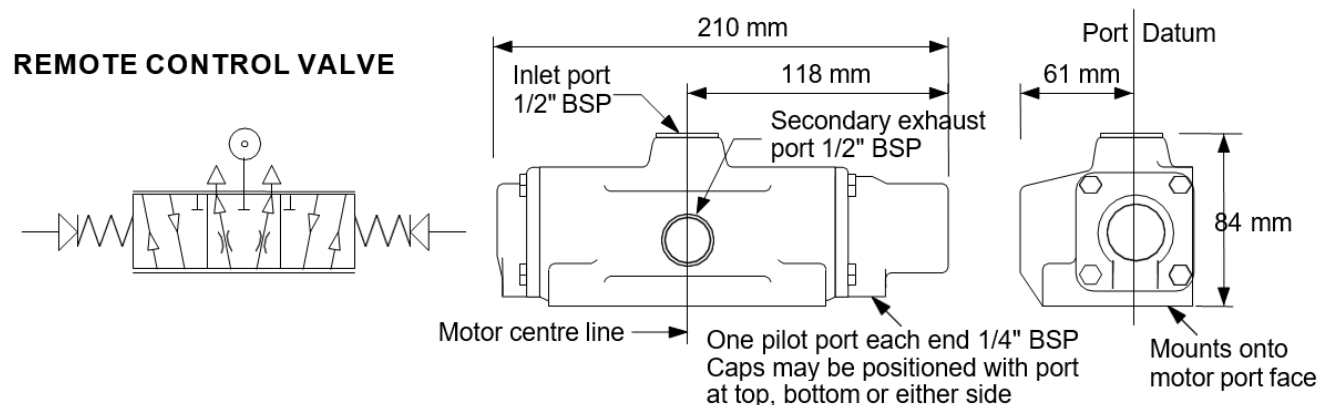
**Pressure Drop** - Minimal pressure drop will be experienced through the valves, having the effect of maintaining the output torque whilst reducing the motor output speed by approximately 10-15% at 6 bar (90 psi) at maximum power. The starting torque remains unaffected.

### Dimensions

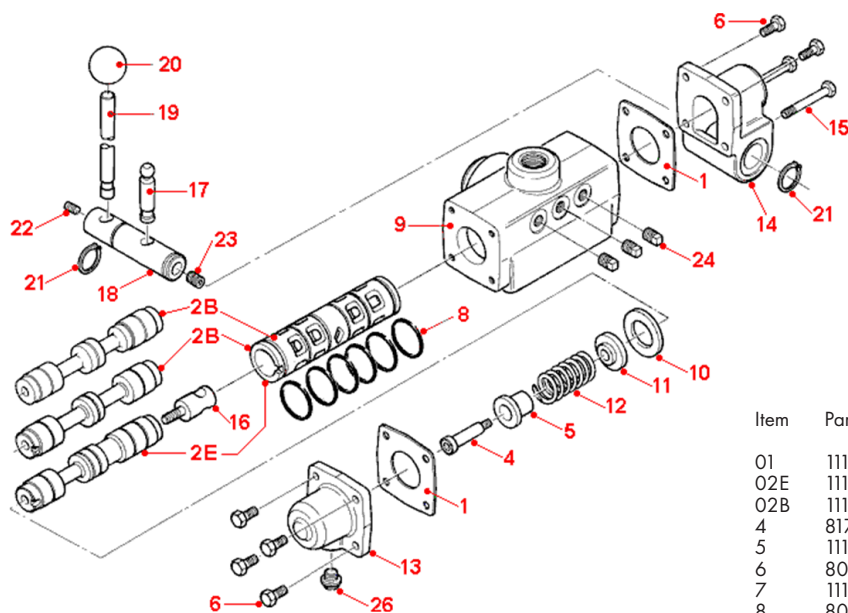
#### HAND CONTROL VALVE



#### REMOTE CONTROL VALVE

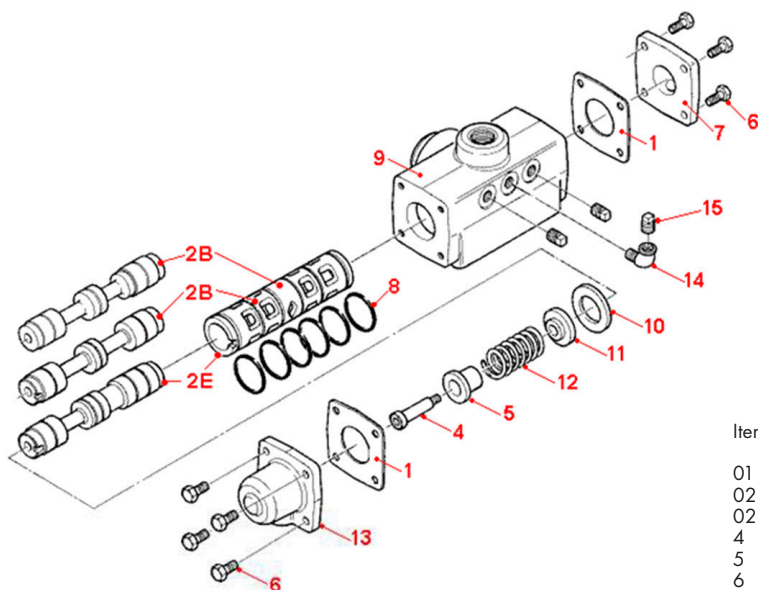


## Spare Parts List Hand Control Valve



Item	Part No.	Description	Qty	
01	111-066	End Cap Gasket	2	(Equipower)
02E	111-913	Matched Spool and Sleeve	1	(Biased)
02B	111-914	Matched Spool and Sleeve	1	
4	817-003	Shoulder Screw 8 mm	1	
5	111-071	Centering Shaft Guide	1	
6	802-016	Hex Head Screw M6 x 16	6	
7	111-065	End Cap - Plain End	1	
8	808-027	O Ring 27,5 x 30	6	
9	111-060	Valve Body	1	
10	111-068	Valve Sleeve Spacer	1	
11	111-072	Washer, Spring Centering	1	
12	814-016	Spring 323714	1	
13	111-064	End Cap - Spring End	1	
14	113-041	Lever Cap	1	
15	802-024	Hex Head Bolt M6 x 50	2	
16	113-024	Toggle Shaft	1	
17	113-026	Toggle Pin	1	
18	113-008	Hand Lever Pivot	1	
19	113-002	Hand Lever	1	
20	818-003	Black Plastic Knob 31 mm	1	
21	804-013	Circlip 20mm External	2	
22	815-010	Grub Screw M8 x 10	1	
23	815-002	Grub Screw M8 x 16	1	
24	816-063	Plug 1/8" BSPT Sq. Head	3	
26	113-050	Vent Plug	1	

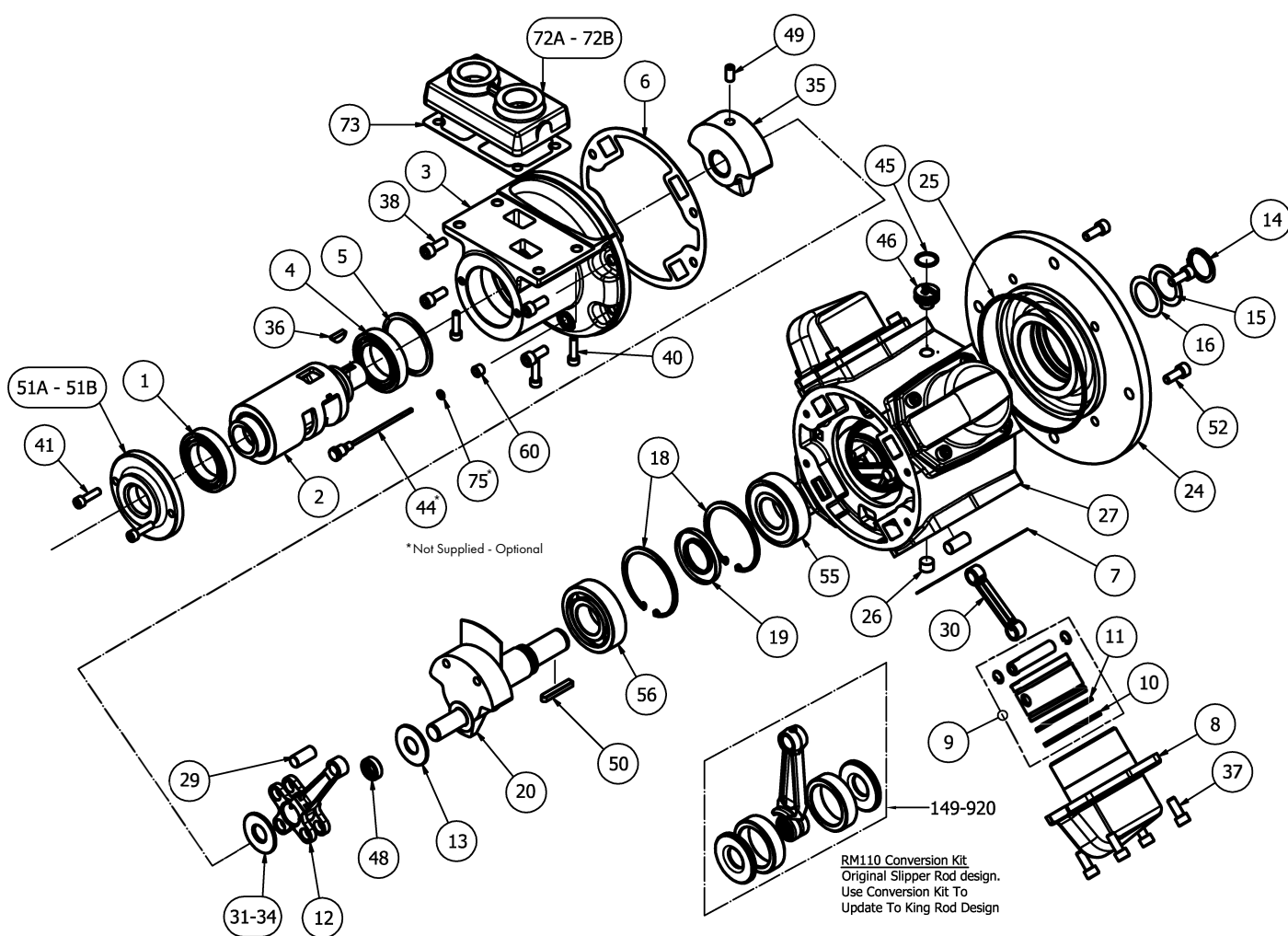
## Spare Parts List Remote Control Valve



Item	Part No.	Description	Qty	
01	111-066	End Cap Gasket	2	(Equipower)
02E	111-913	Matched Spool and Sleeve	1	(Biased)
02B	111-914	Matched Spool and Sleeve	1	
4	817-003	Shoulder Screw 8 mm	1	
5	111-071	Centering Shaft Guide	1	
6	802-016	Hex Head Screw M6 x 16	8	
7	111-065	End Cap - Plain End	1	
8	808-027	O Ring 27,5 x 30	6	
9	111-060	Valve Body	1	
10	111-068	Valve Sleeve Spacer	1	
11	111-072	Washer, Spring Centering	1	
12	814-017	Spring D13040	1	
13	111-064	End Cap - Spring End	1	
14	816-049	Elbow M/F 1/8" BSPT	1	
15	816-063	Plug 1/8" BSPT Sq. Head	3	

# Spare Parts List RM110

RM110



Item	Part No.	Description	Qty	Kit No.	Item	Part No.	Description	Qty	Kit No.
01	807-020	Rotary Valve Bearing (Outer)	1		36	811-016	Woodruff Key	1	
02	130-006	Rotary Valve	1		37	802-020	Cylinder Bolts	16	
03	130-011	Rotary Valve Housing	1		38	802-020	Valve Housing Bolts	4	
04	807-021	Rotary Valve Bearing (Inner)	1		40	802-020	Adaptor Plate Bolt	4	
05	804-051	Rotary Valve Bearing Circlip	1		41	802-016	Exhaust Cover Bolts	2	
06	100-001	Rotary Valve Housing Gasket	1*	139-911	44	100-040	Dipstick (vertical mounting)	1	
07	110-030	Cylinder Gasket	4*	139-911	45	808-004	Seal (transit only)	1	
08	110-082	Cylinder	4		46	130-066	Breather Plug	1	
09	130-902	Piston Assembly	4		48	807-042	Needle Bearing	1	
10	100-024	Compression Ring	4*	139-911	49	815-012	Grub Screw	1	
11	100-022	Oil Control Ring	4*	139-911	50	811-002	Key	1	
12	140-077	King Rod	1		51A	130-005	Rotary Valve Exhaust Cover BSP	1	
13	140-013	Crankshaft Spacer	1		51B	130-105	Rotary Valve Exhaust Cover NPT	1	
14	804-006	Crankshaft Circlip	1		52	810-003	Flange Bolt	8	
15	100-035	Crankshaft Spacer	1		55	807-007	Output Shaft Bearing (Outer)	1	
16	100-049	Crankshaft Spacer Shim	5		56	807-007	Output Shaft Bearing (Inner)	1	
18	804-051	Crankshaft Bearing Circlip	2		60	816-063	Oil Level Plug	1	
19	808-043	Crankshaft Oilseal	1*	139-911	72A	130-003	Inlet Adaptor Plate BSP	1	
20	110-901	Std. Crankshaft Assembly	1		72B	130-103	Inlet Adaptor Plate NPT	1	
24	130-076	Std. Flange Plate	1		73	130-004	Inlet Adaptor Plate Gasket	1*	139-911
25	808-033	Flange Plate Seal	1*	139-911	75	808-008	Dipstick Seal	1*	139-911
26	816-074	Plug	1			139-911	RM110 Seal Kit	1	
27	130-012	Engine Case	1			149-920	Conversion Kit		
29	140-081	Queen Rod Pivot	3						
30	140-078	Queen Rod	3						
31	140-052	Crank Spacer SELECT	1	149-920					
32	140-053	Crank Spacer ON	1	149-920					
33	140-054/055	Crank Spacer *ASSEMBLY	1	149-920					
34	140-056	Crank Spacer	1	149-920					
35	130-010	Balance Weight	1						

149-920 Conversion Kit:  
Comprises of items 12, 13, 29, 30, 31-34 and 48. These items may be used to convert a motor from the original design to the king rod design. If unit is pre 1990 supplied, consult manufacturer to confirm design.



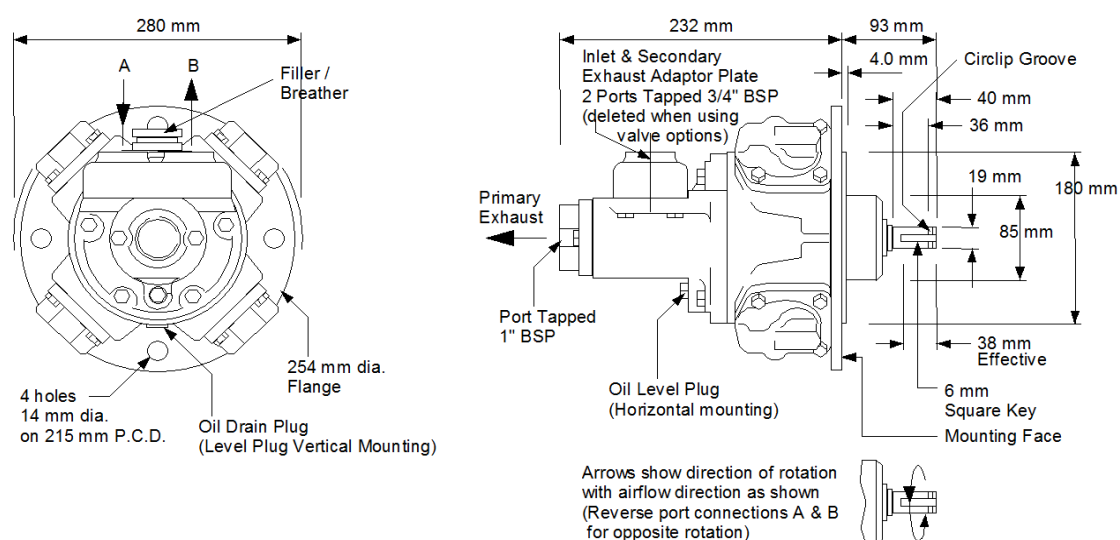
# RM210 Piston Air Motor

**4 kW / 5.4 H.P.**

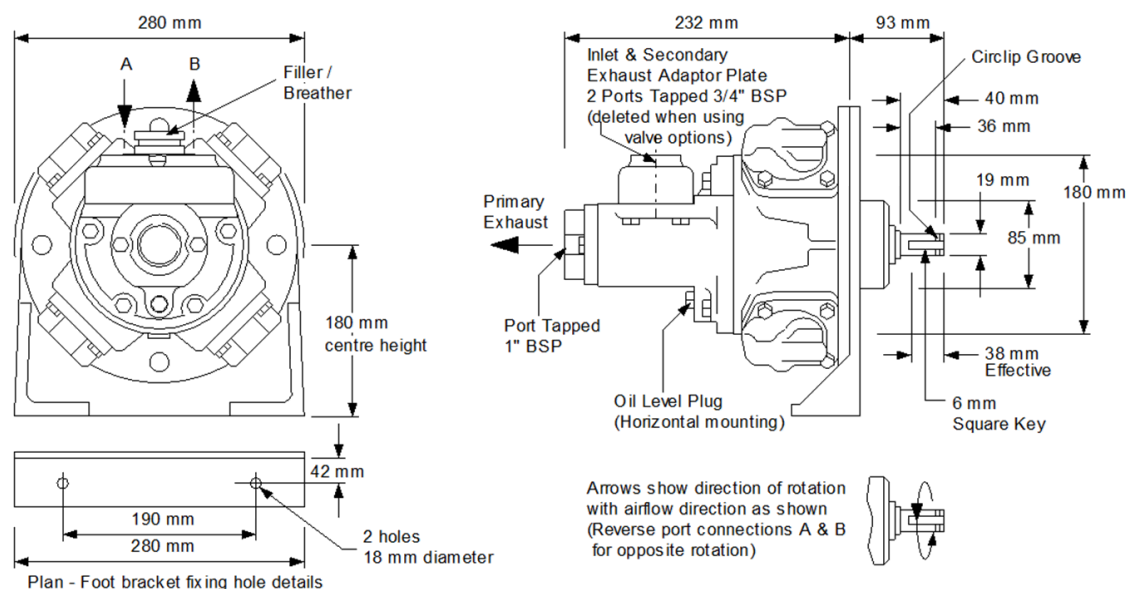
## Why buy RM210

Our RM210 Piston Air Motors have a power range of 4 kW (5.4 HP) with 20Nm (14.7 lbs ft.) torque at max. power. Our piston air motors are designed to develop greater power than other motors of equivalent size. These piston motors can be completed as desired with various accessories such as brakes, (control) valves and gear-boxes.

## Dimensions RM210



## Dimensions RM210 + Foot Bracket



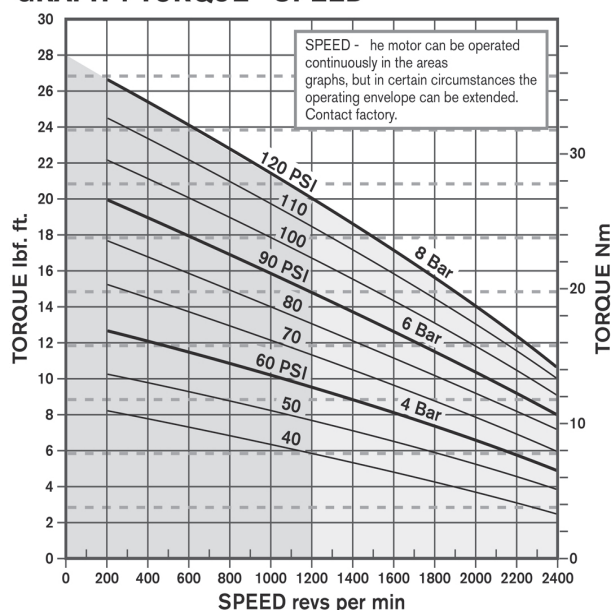
RM210

**Gearbox ratio: None**

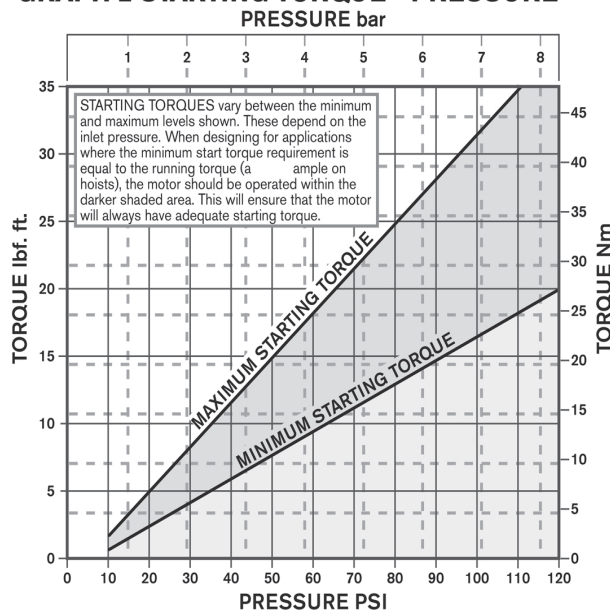
**Maximum speed: 2400 RPM**  
**No Control Valve fitted**

**Reading Graphs** - Scales have been adjusted to enable bar and psi to be read from a common curve. Therefore only read psi with the left hand axis and bar with the right hand axis.

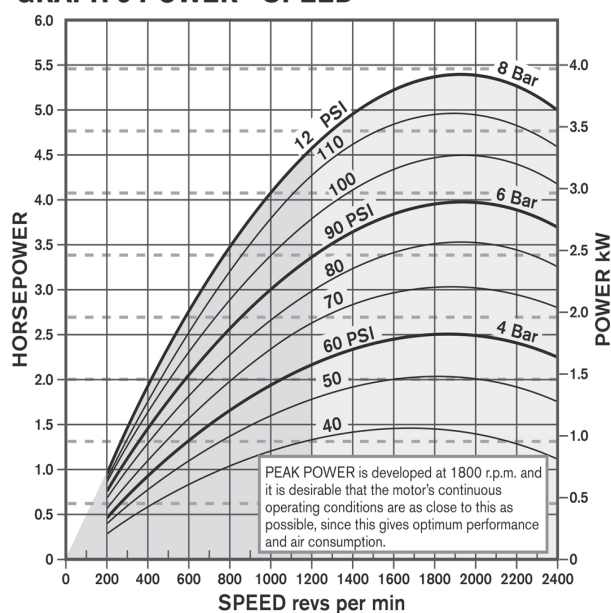
**GRAPH 1 TORQUE - SPEED**



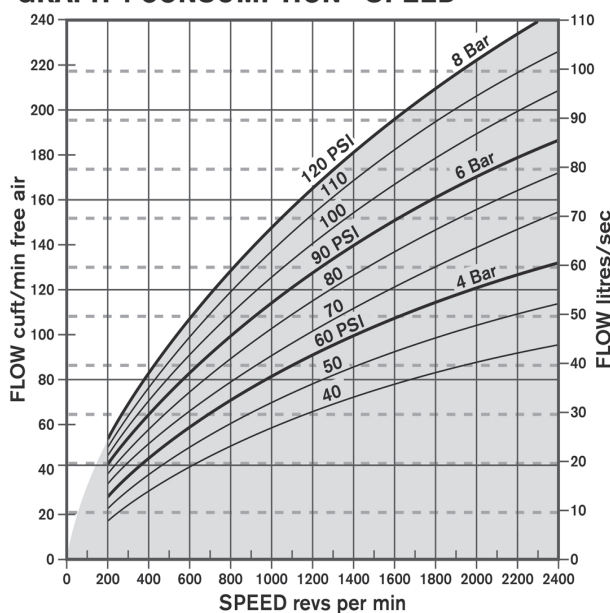
**GRAPH 2 STARTING TORQUE - PRESSURE**



**GRAPH 3 POWER - SPEED**



**GRAPH 4 CONSUMPTION - SPEED**



### LUBRICATING OIL CAPACITIES

Horizontal 330ml Vertical 450ml

Use a good quality hydraulic oil with a viscosity of around 100cSt (460SSU) at 40°C (104°F)

### AIRLINE FILTRATION AND LUBRICATION

Use 64 micron filtration or better. Choose a lubricator suitable for the flow required. Prior to initial start-up, inject oil into the inlet port.

Lubricator drop rate 4-5 drops/minute continuous operation

Lubricator drop rate 8-10 drops/minute intermittent operation

### GENERAL DATA

**MASS** (motor only) 26 kgs (57.3 lbs)

**MOMENT OF INERTIA** of rotating parts 0.56 gm<sup>2</sup> (motor only)

**MAX OVERHUNG FORCE** on motor shaft 890 N (200 lbf)

**TEMPERATURE RANGE** -20°C to +60°C (-4°F to +140°F)

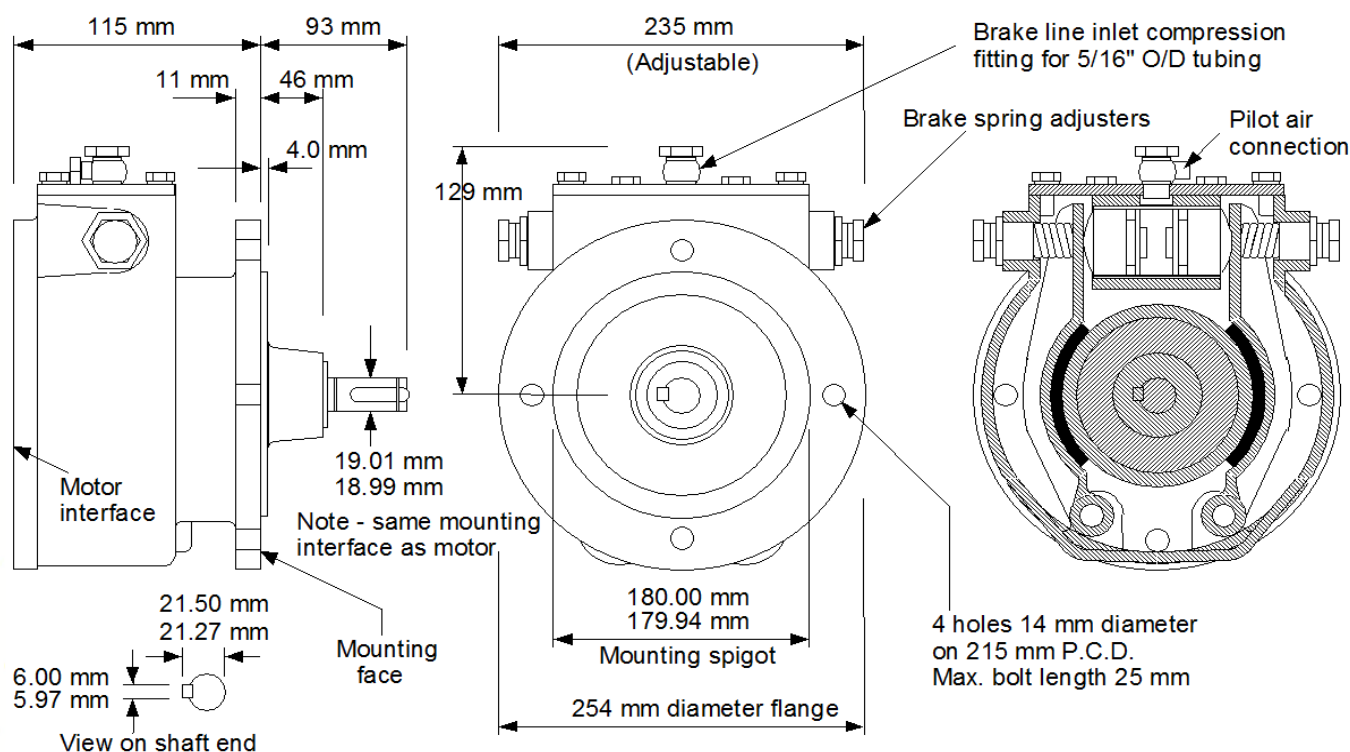
/ -10°C to +60°C (-14°F to +140°F) with brake

## Options RM210 | Brake

### Why you need a brake for your RM210 Piston Air Motor

The combination of motor with brake is widely used for winches, cranes and positioning devices. The brake module bolts directly onto the motor mounting face and has exactly the same interface as the motor.

### Dimensions RM210 Brake



RM210

### With or without ATEX Certification

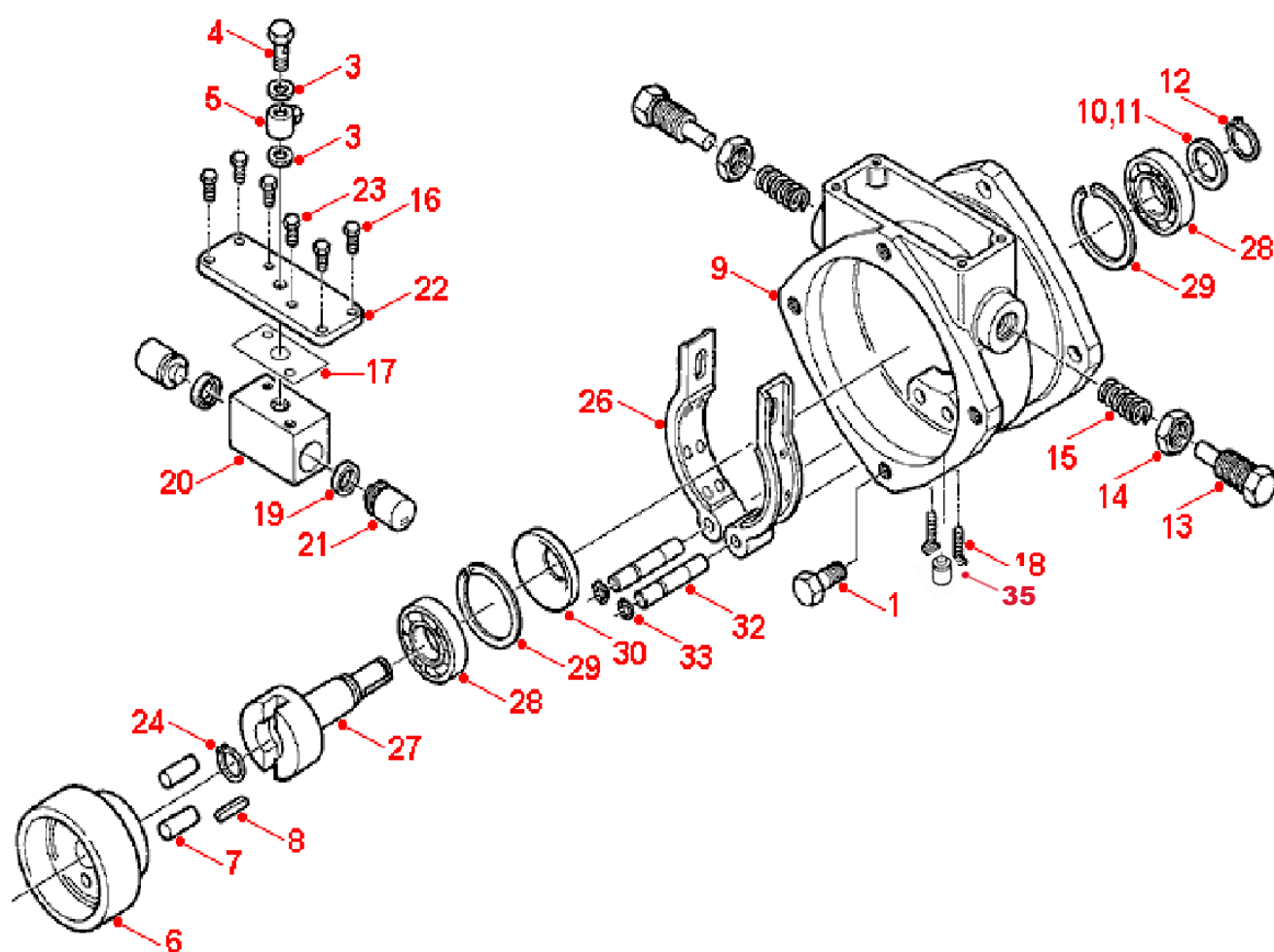
For ATEX it is important that there is no possibility for the brake to drag while the motor is running. This will cause friction which will heat up the brake. The GLOBE Brakes for the Piston RM Air Motor series are available with or without ATEX Certification for safe operations in hazardous environments. When used in an ATEX application, the brake torque is pre-set by GLOBE to a maximum torque which belongs to the desired operating pressure of the motor. The end-user has to inform GLOBE prior to the delivery about the (max.) operating pressure of the motor. At this pressure the brake will be fully released. This is done by adjusting the GLOBE APPV3214 valve which is integrated in the pneumatic control system. Whenever this system's pressure drops to a lower amount than 20% below the set release pressure, the valve closes and the brake will be blocked. This system prevents dragging of the brake shoes while operating by (unnoticed) pressure drops or incorrect handling.

Any unauthorized adjustment will make ATEX invalid. Changing or adjusting the pneumatic system, including the valves, which controls the brake will also make ATEX invalid.



## Spare Parts List Parking Brake

RM210



Item	Part No.	Description	Qty
01	802-072	Set Screw M10 x 20	4
03	808-090	Bonded Seal 1/4" BSP Dowty	2
04	816-004	Banjo Bolt Only 1/8 BSP	1
05	816-005	Banjo Bolt C/W/ Nut&Rin 5/16	1
06	212-001	Brake Wheel	1
07	806-001	Dowel Dia 10 x 30 Lg	2
09	811-001	Key 6 Sq.x30mm (K124)	1
10	222-008	Brake Housing	1
11	300-049	Shim - Output	5
12	300-035	Output Shaft Spacer	1
13	804-009	Circlip 27mm External	1
14	102-009	Brake Spring Adjuster	2
15	102-024	1/2" BSP Hex Nut	2
16	814-001	Spring 223712	2
17	802-016	Hex Head Screw M6 x 16	4
18	212-030	Piston Block Gasket	1
19	802-025	Hex Head Screw M6 x 25	2
20	808-075	U Packing U110	2
21	212-014	Piston Block	1
22	202-011	Brake Piston	2
23	212-013	Block Support Plate	1
24	802-012	Hex Head Screw M6 x 12	2
25	804-006	Circlip 19mm External	1
26	212-901	Brake Shoe Assembly	2
27	212-005	Output Shaft	1
28	807-008	Ball Bearing	2
29	804-058	Circlip 62mm Internal	2
30	808-044	Oilseal 30x62x10/R4	1
32	212-003	Brake Shoe Pivot	2
33	804-002	Circlip 11mm External	2
35	7008G18	Breather plug 1/8 BSPP (ATEX Only)	1



## Options RM210 | Gearbox

### Why you need a gearbox for your RM210 Piston Air Motor

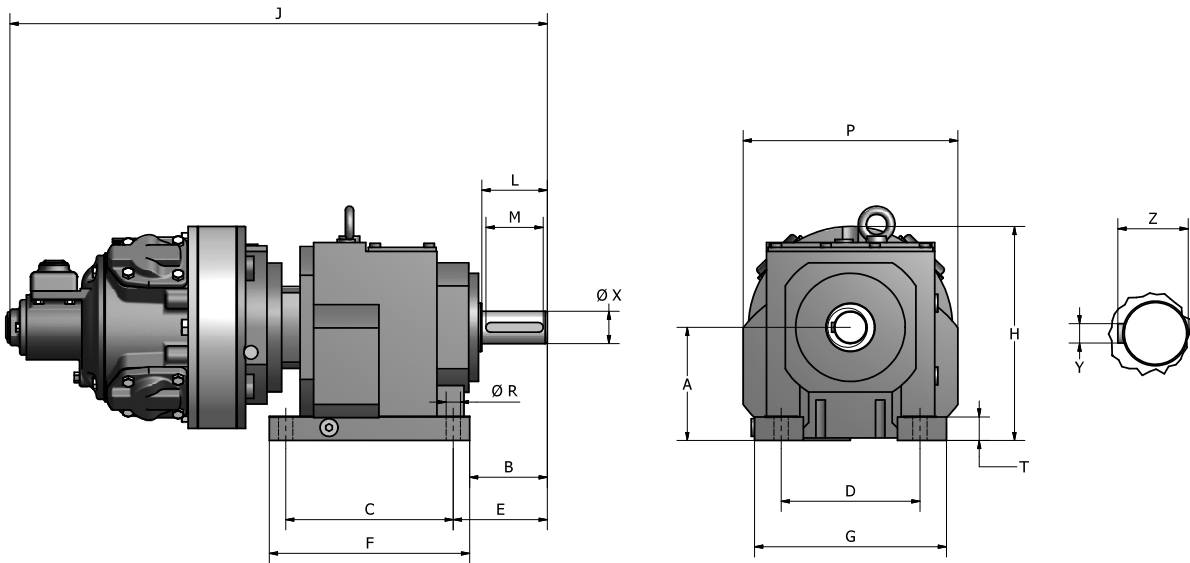
We can supply all our piston motors in combination with many different gearboxes. If you are looking for more torque for a certain application, we can assist you by selecting the right kind of gearbox. Order your RM210 Piston Air Motor in combination with a gearbox for higher torques and lower speeds.

### Performance summary

Gearbox Ratio	Maximum Power Conditions					Approx. Min. Start torque		Max Cont.	Max overhung Force		Weight			
	kW	HP	RPM	Torque							Gearbox	Adapter	Gearbox kit	Motor & Gearbox
				Nm	lbf. Ft.	Nm	lbf. Ft.		RPM	N				
5.15	3	4	369	77	57	93	68	461	2350	528	30	10	40	66
25.55	3	4	74	383	283	460	339	93	3380	760	47	10	57	83
49.42	3	4	38	741	547	890	657	48	14060	3161	79	10	89	115
74.88	3	4	25	1123	829	1348	995	32	16330	3671	79	10	89	115
105.08	3	4	18	1576	1163	1891	1396	23	20860	4690	129	10	139	165
126.90	3	4	15	1904	1405	2284	1686	19	23515	5287	129	10	139	165
148.99	3	4	13	2235	1649	2682	1979	16	26070	5861	194	10	204	230
171.62	3	4	11	2574	1900	3089	2280	14	31220	7019	194	10	204	230
201.22	3	4	9	3018	2228	3622	2673	12	36770	8267	194	10	204	230
254.70	3	4	7	3821	2820	4585	3383	9	38930	8752	312	10	322	348

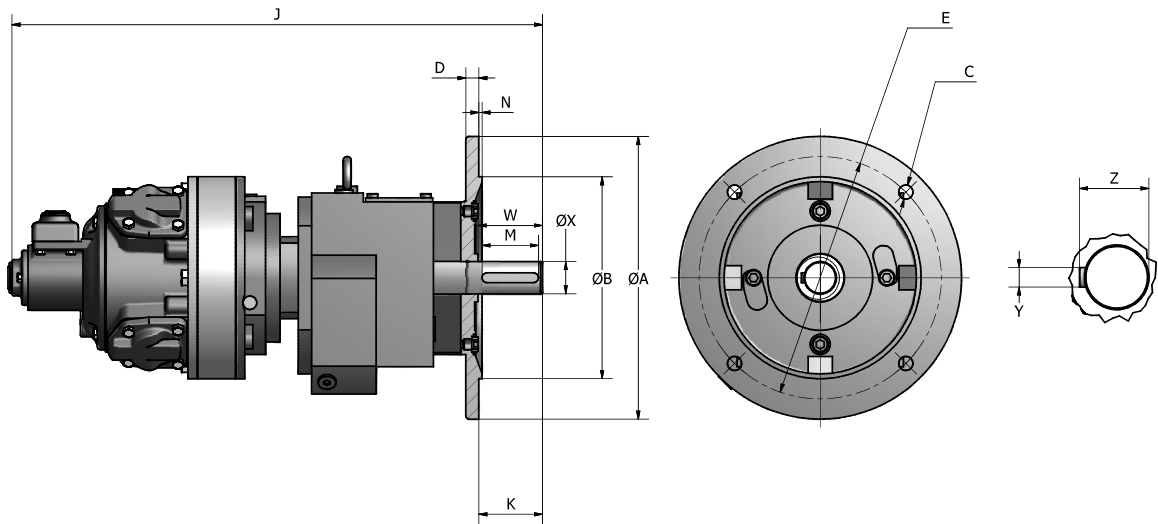
RM210

### Base mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	F	G	H	J	L	M	P	R	T	W	X	Y	Z	MASS
4.77 - 24.5:1	115+10.00	75	165	135	90	200	195	250	607	63	50	250	13.5	25	60	30.01	8.00	33	65.5 kg
	4.5"+0.4"	3.0"	6.5"	5.3"	3.5"	7.9"	7.7"	9.8"	23.9"	2.5"	2.0"	9.8"	0.5"	1.0"	2.4"	1.18"	0.3"	1.3"	144 lb
27- 56:1	140	96	205	170	115	245	235	290	657	84	70	263	17.5	30	80	40.01	12.0	43	82.5 kg
	5.5"	3.8"	8.1"	6.7"	4.5"	9.6"	9.3"	11.4"	25.9"	3.3"	2.8"	10.4"	0.7"	1.2"	3.1"	1.58"	0.5"	1.7"	182 lb
56 - 61:1	180	115	260	215	140	310	290	364	764	104	80	332	17.5	45	100	50.01	14	53.50	115 kg
	7.1"	4.5"	10.2"	8.5"	5.5"	12.2"	11.4"	14.3"	30.1"	4.1"	3.1"	13.1"	0.7"	1.8"	3.9"	1.97"	0.6"	2.1"	254 lb
60 - 88.59:1	225	132	310	250	160"	365	340	445	810	125	100	410	22	50	120	60.02	18	64	165 kg
	8.9"	5.19"	12.2"	9.8"	6.3"	14.4"	13.4"	17.5"	27.0"	4.9"	4.9"	16.1"	0.9"	2.0"	4.7"	2.36"	0.7"	2.5"	364 lb

### Flange mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	J	K	M	N	W	X	Y	Z	MASS
4.77 - 24.5:1	250	180.00	13.5	15	215	607	60	50	4	60	30.015	8.0	33	33 kg
	9.8"	7.1"	0.5"	0.6"	8.5"	23.9"	2.4"	2.0"	0.2"	2.4	1.18"	0.3"	1.3"	72.5 lb
27- 56:1	350	250.00	17.5	16	300	658	80	70	4	80	40	12	43	42 kg
	13.8"	9.8"	0.7"	.62	11.8"	25.9"	3.1"	2.8"	0.2"	3.1"	1.58"	0.5	1.7"	92.5 lb
56 - 61:1	350	250.00	17.5	18	300	743	100	80	5	100	50.01	14	53.5	43.5 kg
	13.8"	9.8"	0.7"	0.7	11.8"	29.3"	3.9"	3.1"	0.2"	3.9"	1.97"	0.6"	2.1"	96 lb
60 - 88.59:1	350	250.00	17.5	18	300	803	120	100	5	100	60.02	18	64	62.5 kg
	13.8"	9.8"	0.7"	0.7"	11.8"	31.6"	4.7"	3.9"	0.2"	3.9"	2.36"	0.7"	2.5"	137 lb

## Options RM210 | Control Valve

### Why you need a control valve for your RM210 Piston Air Motor

Control valves allow you to change the speed and direction of the motor, they are mounted directly onto the air motor. This range of bolt on valves offers very sensitive speed and directional control. One frictionless matched spool and sleeve assembly is offered with two alternative means of actuation.

### Configuration

As standard these valves can be supplied with either EQUAL POWER OR BIASED POWER spools, the latter is suitable for hoisting applications (normal power for lifting - reduced power for lowering).

The direction of reduced power must be stated when ordering CW or CCW, when viewed on the output shaft of the motor.

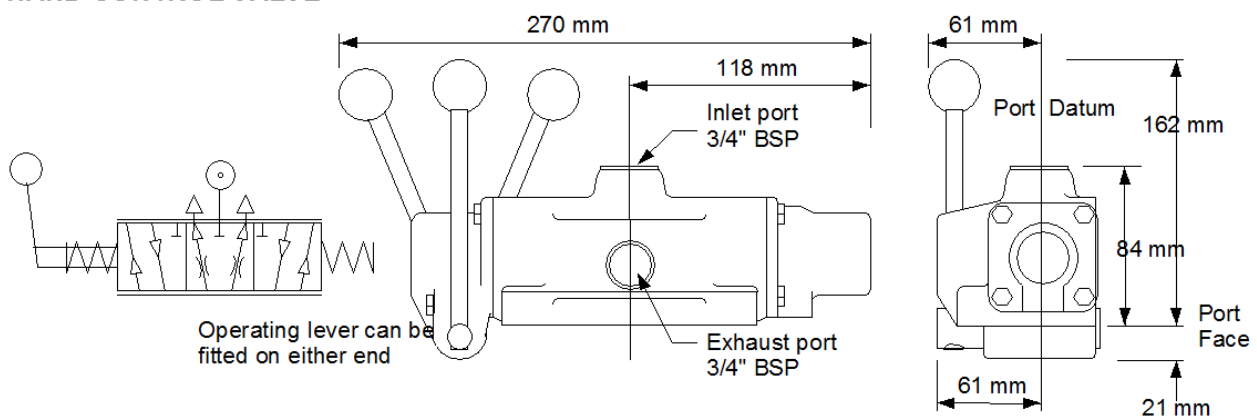
**Hand Controlled (HCV)** - The control valve spool is operated directly by a lever mechanism. Speed increase is obtained as the lever is moved in either direction from the centre (neutral) position.

**Remotely Controlled (RCV)** - This option is usually controlled from a remote position by one of the PC series or LC2 remote controllers. A variable air pilot signal is applied to either end of the valve spool, depending on the required direction of motor rotation. The pilot pressure range is between 1.4 bar (20 psi) and 4.8 bar (70 psi), increased pilot pressure gives increased speed. The valve is spring centred to neutral.

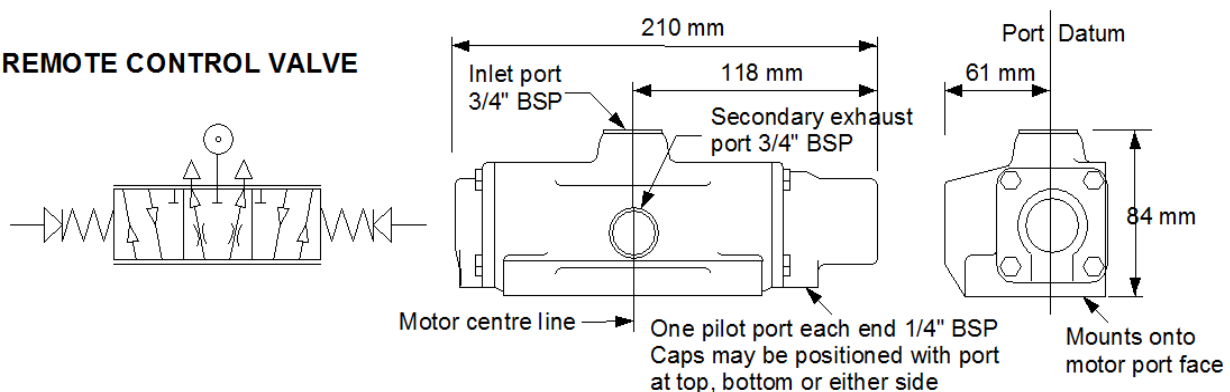
**Pressure Drop** - Minimal pressure drop will be experienced through the valves, having the effect of maintaining the output torque whilst reducing the motor output speed by approximately 10-15% at 6 bar (90 psi) at maximum power. The starting torque remains unaffected.

### Dimensions

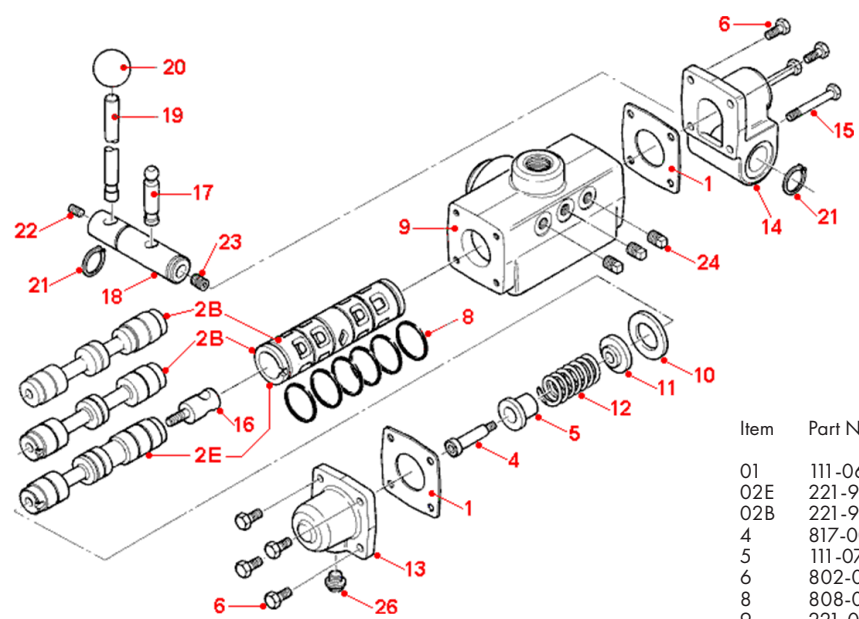
#### HAND CONTROL VALVE



#### REMOTE CONTROL VALVE

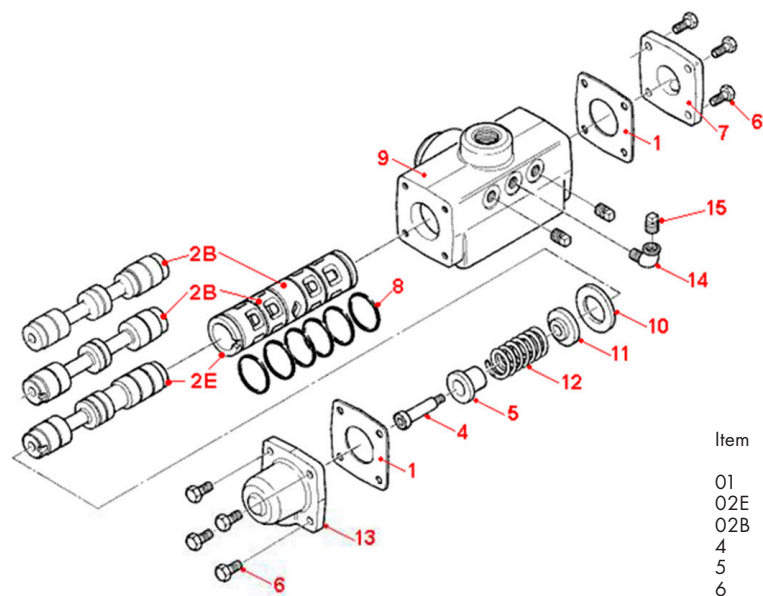


Spare Parts List Hand Control Valve



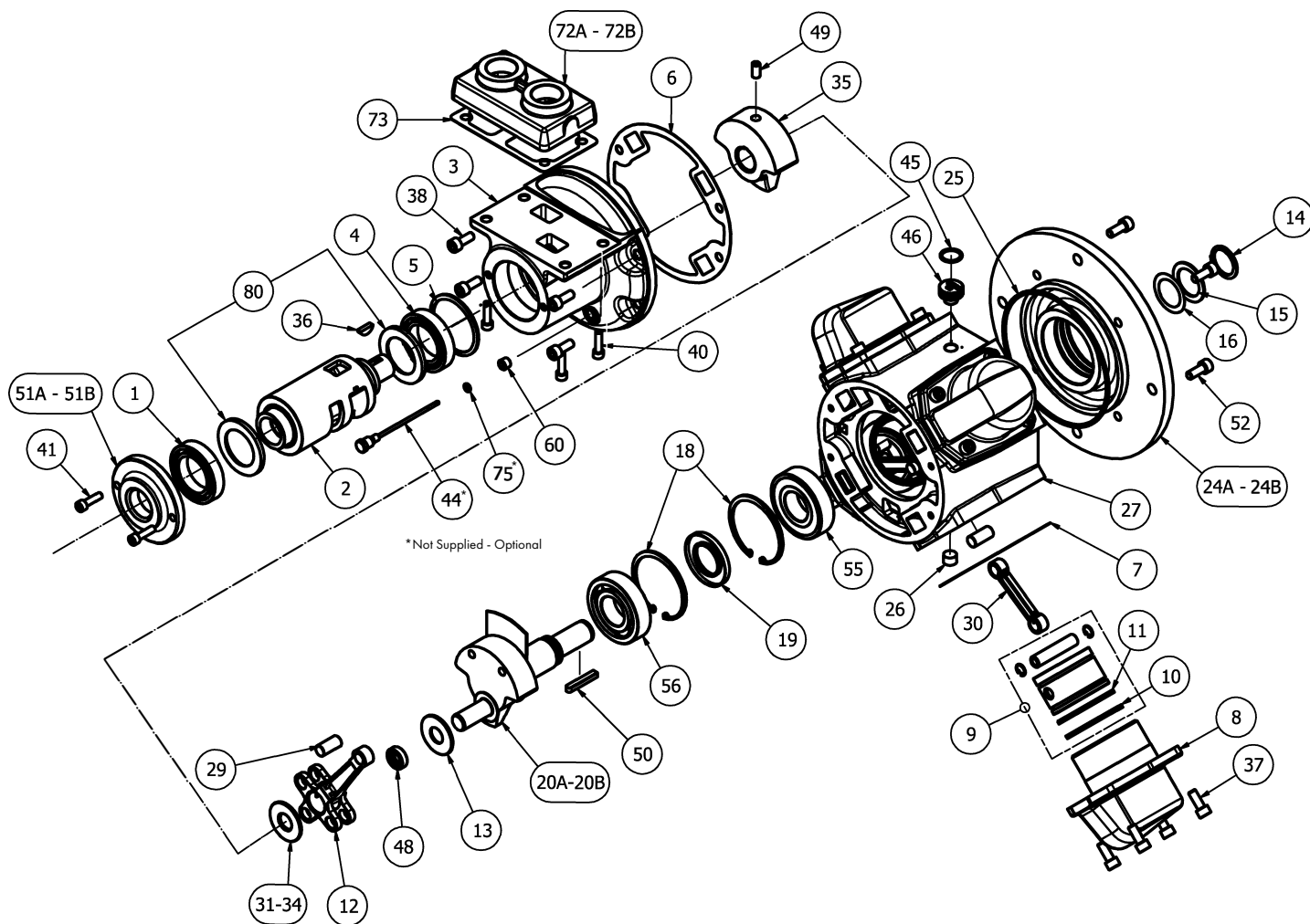
Item	Part No.	Description	Qty	
01	111-066	End Cap Gasket	2	
02E	221-913	Matched Spool and Sleeve	1	(Equipower)
02B	221-914	Matched Spool and Sleeve	1	(Biased)
4	817-003	Shoulder Screw 8 mm	1	
5	111-071	Centering Shaft Guide	1	
6	802-016	Hex Head Screw M6 x 16	6	
8	808-027	O Ring 27,5 x 30	6	
9	221-060	Valve Body	1	
10	111-068	Valve Sleeve Spacer	1	
11	111-072	Washer, Spring Centering	1	
12	814-016	Spring 323714	1	
13	111-064	End Cap - Spring End	1	
14	113-041	Lever Cap	1	
15	802-024	Hex Head Bolt M6 x 50	2	
16	113-024	Toggle Shaft	1	
17	113-026	Toggle Pin	1	
18	113-008	Hand Lever Pivot	1	
19	113-002	Hand Lever	1	
20	818-003	Black Plastic Knob 31mm	1	
21	804-013	Circlip 20mm External	2	
22	815-010	Grub Screw M8 x 10	1	
23	815-002	Grub Screw M8 x 16	1	
24	816-063	Plug 1/8" BSPT Sq. Head	3	
26	113-050	Vent Plug	1	

Spare Parts List Remote Control Valve



Item	Part No.	Description	Qty	
01	111-066	End Cap Gasket	2	
02E	111-913	Matched Spool and Sleeve	1	(Equipower)
02B	111-914	Matched Spool and Sleeve	1	(Biased)
4	817-003	Shoulder Screw 8 mm	1	
5	111-071	Centering Shaft Guide	1	
6	802-016	Hex Head Screw M6 x 16	8	
7	111-065	End Cap - Plain End	1	
8	808-027	O Ring 27,5 x 30	6	
9	111-060	Valve Body	1	
10	111-068	Valve Sleeve Spacer	1	
11	111-072	Washer, Spring Centering	1	
12	814-017	Spring D13040	1	
13	111-064	End Cap - Spring End	1	
14	816-049	Elbow M/F 1/8" BSPT	1	
15	816-063	Plug 1/8" BSPT Sq. Head	3	

## Spare Parts List RM210



Item	Part No.	Description	Qty	Kit No.	Item	Part No.	Description	Qty	Kit No.
01	807-020	Rotary Valve Bearing (Outer)	1		36	811-010	Woodruff Key	1	
02	230-059	Rotary Valve	1		37	802-032	Cylinder Bolts	16	
03	230-011	Rotary Valve Housing	1		38	802-033	Valve Housing Bolts	4	
04	807-021	Rotary Valve Bearing (Inner)	1		40	802-020	Adaptor Plate Bolt	4	
05	804-051	Rotary Valve Bearing Circlip	1		41	802-016	Exhaust Cover Bolts	2	
06	200-001	Rotary Valve Housing Gasket	1 *	239-911	44	200-040	Dipstick (Vertical Mounting)	1	
07	210-030	Cylinder Gasket	4 *	239-911	45	808-004	Seal (Transit Only)	1	
08	210-082	Cylinder	4		46	130-066	Breather Plug	1	
09	230-902A	Piston Assembly	4		48	807-048	Needle Bearing	2	
10	200-024	Compression Ring	4 *	239-911	49	815-001	Grub Screw	1	
11	200-022	Oil Control Ring	4 *	239-911	50	811-001	Key	1	
12	230-077	King Rod	1		51A	230-005	Rotary Valve Exhaust Cover BSP	1	
13	230-013	Crankshaft Spacer	1		51B	230-105	Rotary Valve Exhaust Cover NPT	1	
14	804-009	Crankshaft Circlip	1		52	810-001	Flange Bolts	8	
15	300-035	Crankshaft Spacer	1		55	807-007	Output Shaft Brg. (Outer)	0	
16	300-049	Crankshaft Spacer Shim	5		56	807-008	Output Shaft Brg. (Inner)	2	
18	804-058	Crankshaft Bearing Circlip	2		60	816-063	Oil Level Plug	1	
19	808-044	Crankshaft Oilseal	1 *	239-911	72A	230-003	Inlet Adaptor Plate BSP	1	
20	230-915	Std. Crankshaft Assembly	1		72B	230-103	Inlet Adaptor Plate NPT	1	
24	230-076	Std. Flange Plate	1		73	130-004	Inlet Adaptor Plate Gasket	1 *	239-911
25	808-028	Flange Plate Seal	1 *	239-911	75	808-008	Dipstick Seal	1 *	239-911
26	816-071	Plug	1			239-911	RM210 Seal Kit	1	
27	230-012	Engine Case	1		80	230-060	Rotary Valve Spacer	2	
29	230-081	Queen Rod Pivot	3						
30	230-078	Queen Rod	3						
31	230-052	Crank Spacer SELECT	1						
33	230-054/055	Crank Spacer ASSEMBLY	1						
34	230-056	Crank Spacer	1						
35	230-010	Balance Weight	1						

If unit is pre 1990 supplied, consult manufacturer to confirm design.



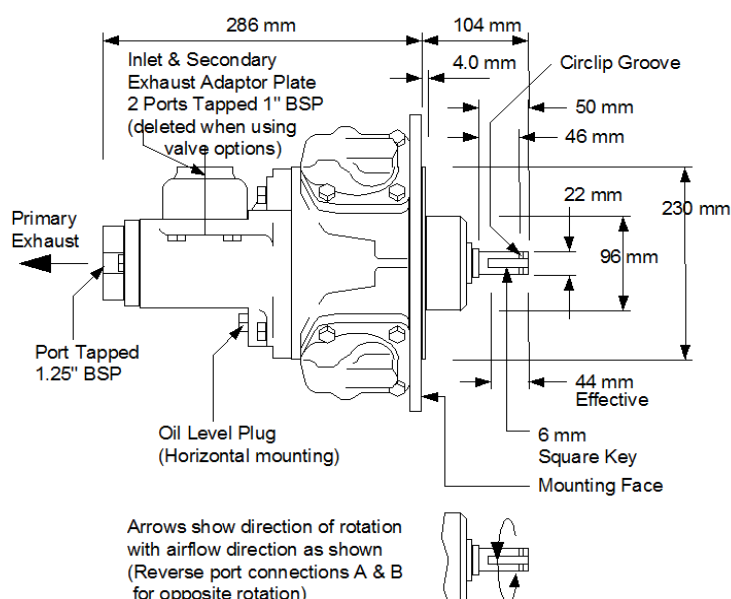
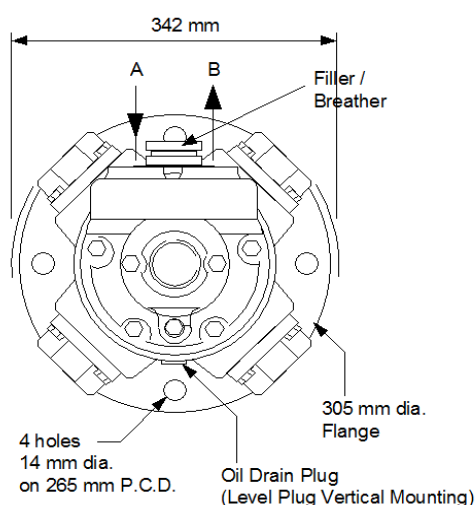
# RM310 Piston Air Motor

**7,5 kW / 10.2 H.P.**

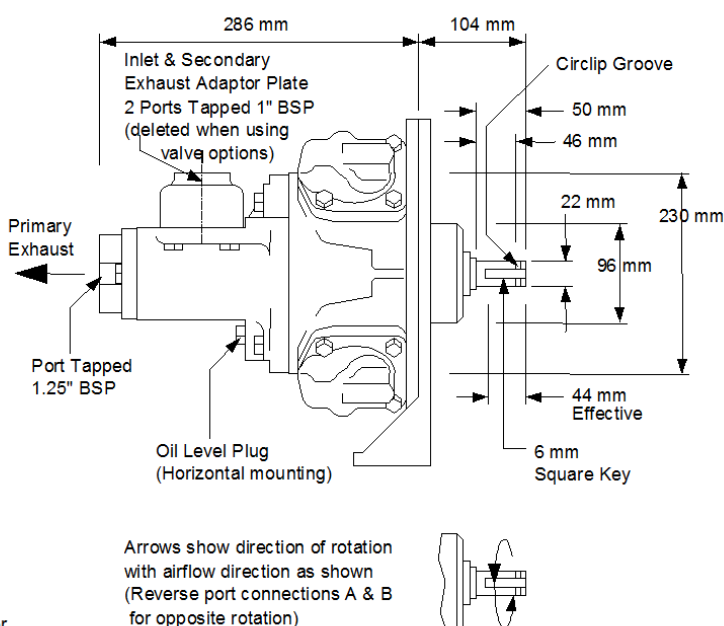
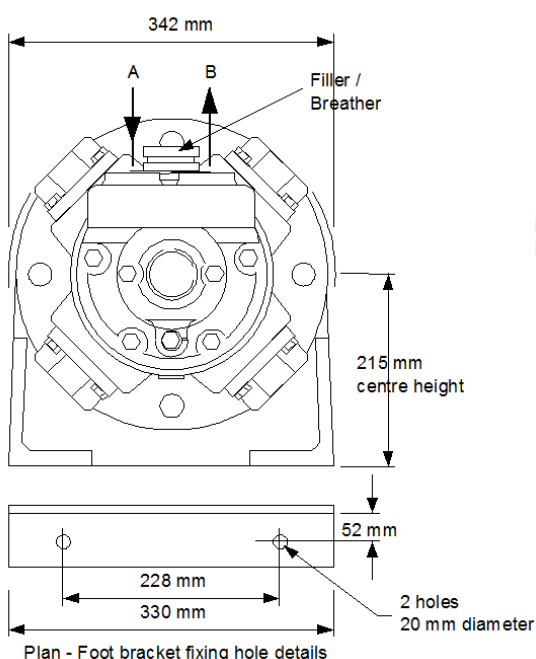
## Why buy the GLOBE RM310 Piston Air Motor

Our RM310 Piston Air Motors have a power range of 7,5 kW (10.2 HP) with 47 Nm (34.6 lbs ft.) torque at max. power. Our piston air motors are designed to develop greater power than other motors of equivalent size. These piston motors can be completed as desired with various accessories such as brakes, (control) valves and gear-boxes.

## Dimensions RM310



## Dimensions RM310 + Foot Bracket

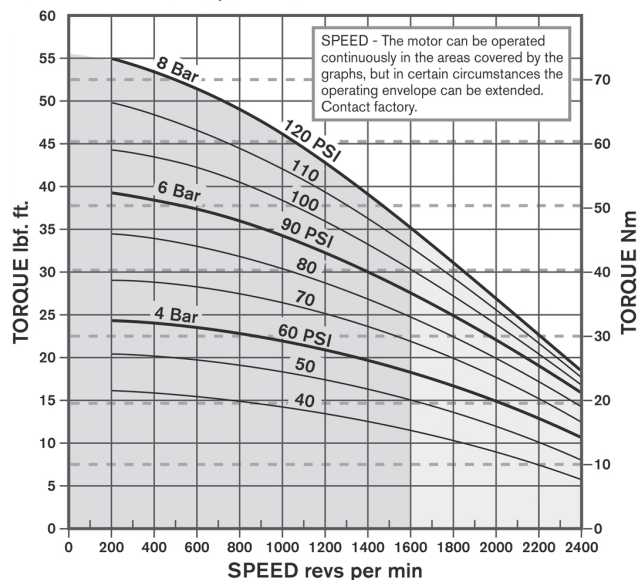


**Gearbox ratio: None**

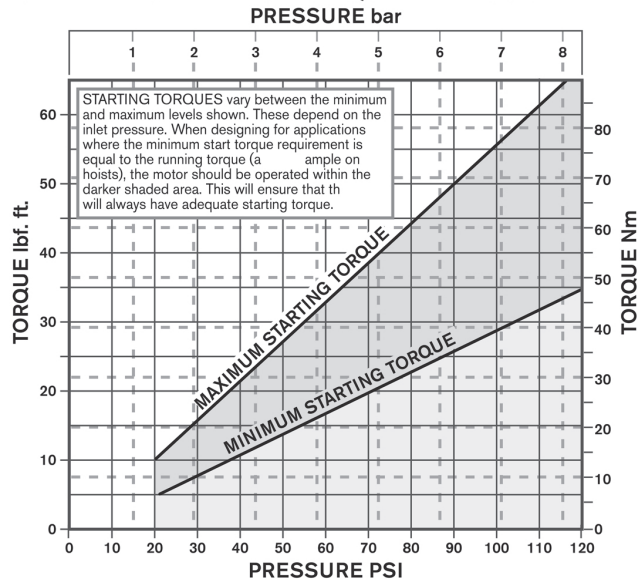
**Maximum speed: 2400 RPM**  
**No Control Valve fitted**

**Reading Graphs** - Scales have been adjusted to enable bar and psi to be read from a common curve. Therefore only read psi with the left hand axis and bar with the right hand axis.

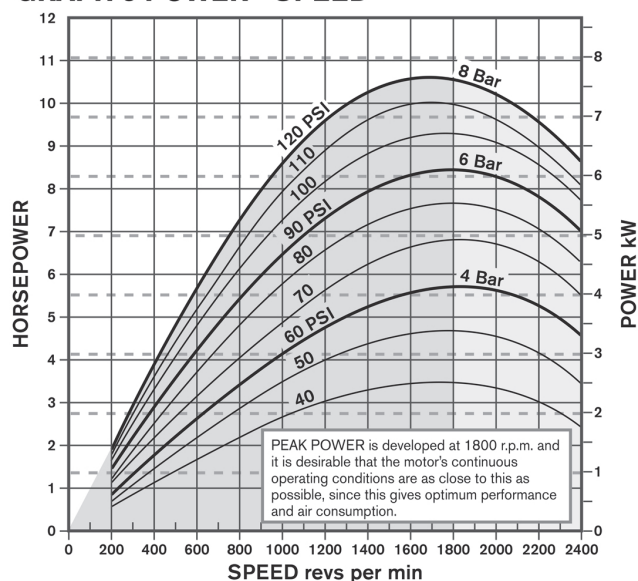
**GRAPH 1 TORQUE - SPEED**



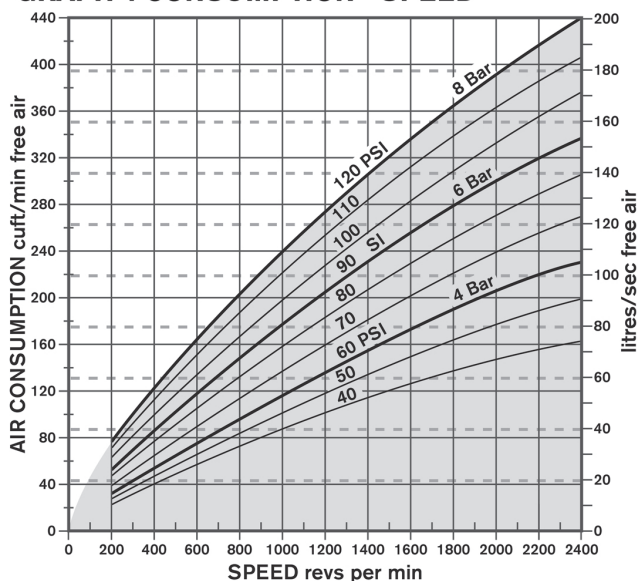
**GRAPH 2 STARTING TORQUE - PRESSURE**



**GRAPH 3 POWER - SPEED**



**GRAPH 4 CONSUMPTION - SPEED**



### LUBRICATING OIL CAPACITIES

Horizontal 350ml      Vertical 600ml

Use a good quality hydraulic oil with a viscosity of around 100cSt (460SSU) at 40°C (104°F)

### AIRLINE FILTRATION AND LUBRICATION

Use 64 micron filtration or better. Choose a lubricator suitable for the flow required. Prior to initial start-up, inject oil into the inlet port.

Lubricator drop rate 5-6 drops/minute continuous operation  
Lubricator drop rate 10-12 drops/minute intermittent operation

### GENERAL DATA

MASS (motor only) 48 kgs (106 lbs)

MOMENT OF INERTIA of rotating parts 1.8 gm<sup>2</sup> (motor only)

MAX OVERHUNG FORCE on motor shaft 1330 N (300 lbf)

TEMPERATURE RANGE -20°C to +60°C (-4°F to +140°F)  
/ -10°C to +60°C (-14°F to +140°F) with brake

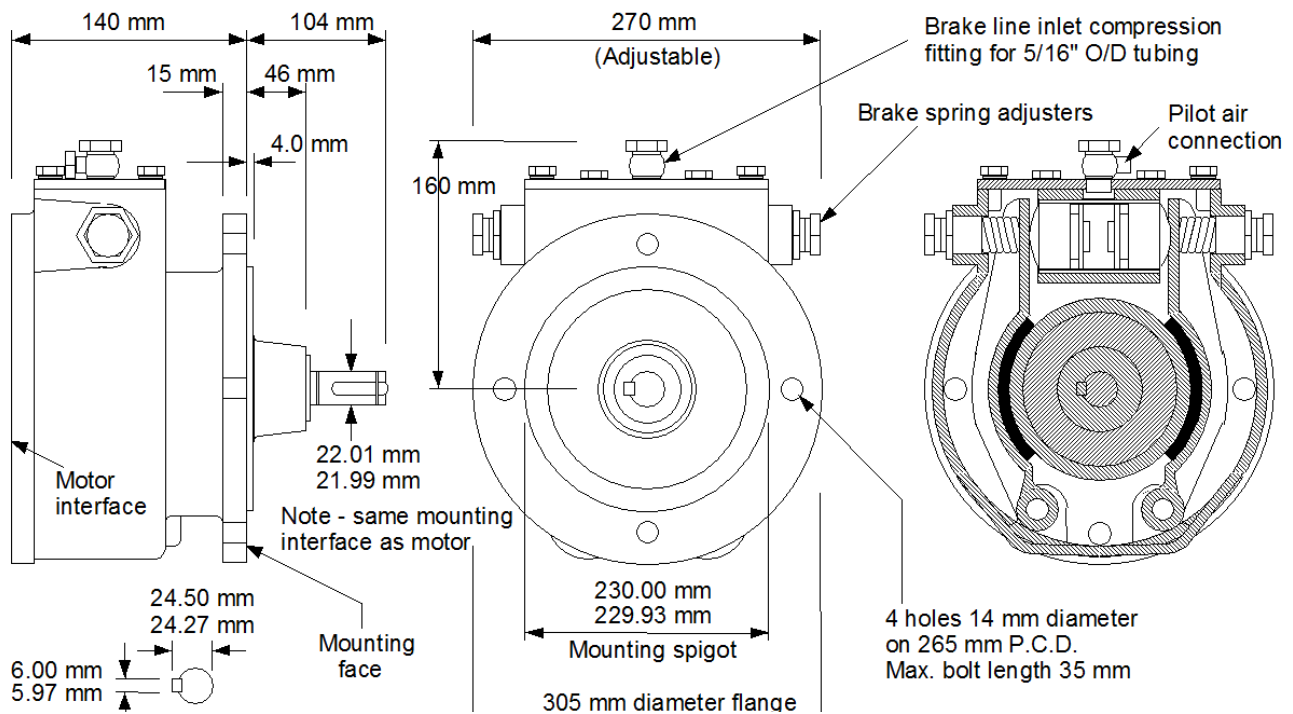
RM310

## Options RM310 | Brake

### Why you need a brake for your RM310 Piston Air Motor

The combination of motor with brake is widely used for winches, cranes and positioning devices. The brake module bolts directly onto the motor mounting face and has exactly the same interface as the motor.

### Dimensions RM310 Brake



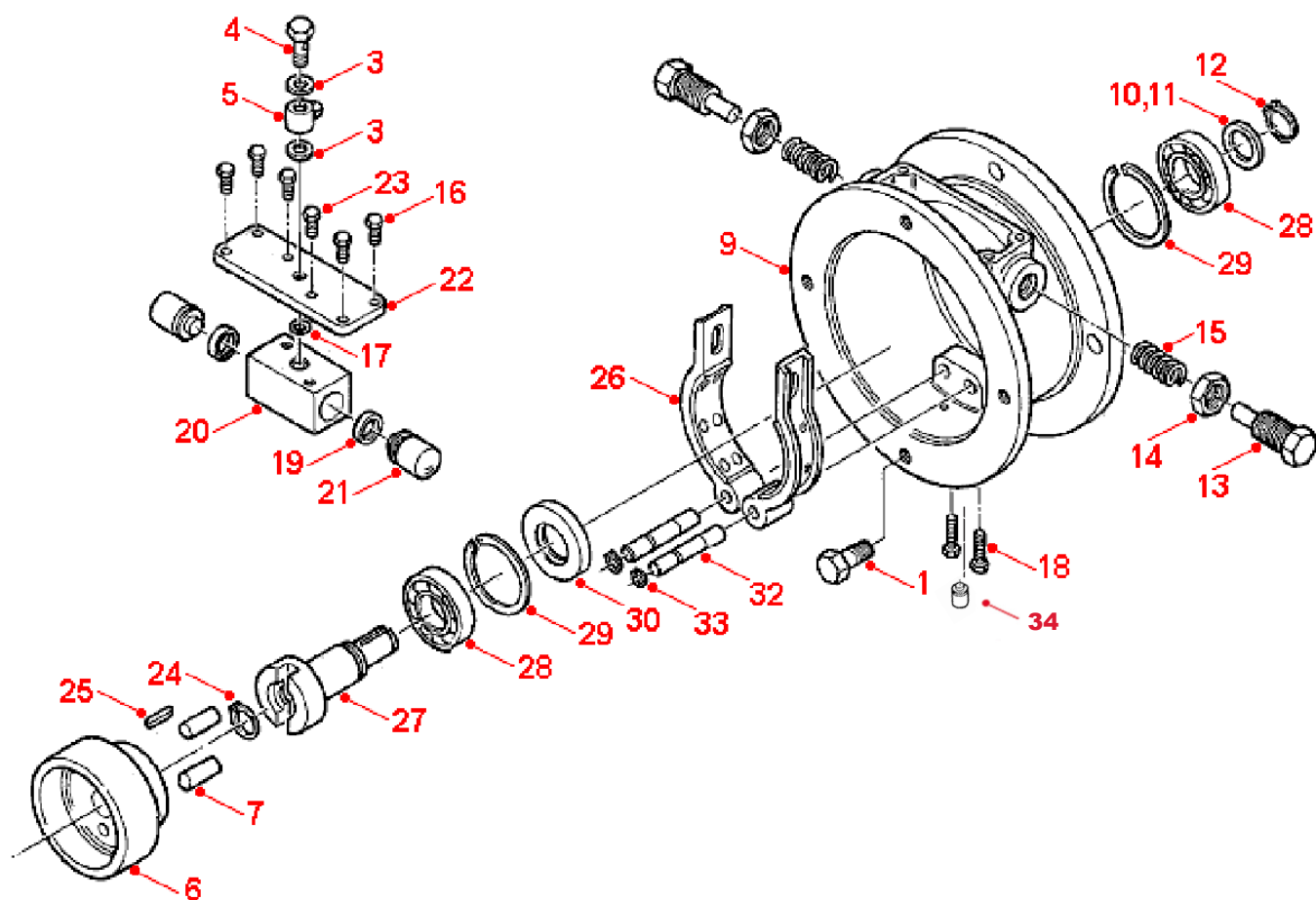
### With or without ATEX Certification

For ATEX it is important that there is no possibility for the brake to drag while the motor is running. This will cause friction which will heat up the brake. The GLOBE Brakes for the Piston RM Air Motor series are available with or without ATEX Certification for safe operations in hazardous environments. When used in an ATEX application, the brake torque is pre-set by GLOBE to a maximum torque which belongs to the desired operating pressure of the motor. The end-user has to inform GLOBE prior to the delivery about the (max.) operating pressure of the motor. At this pressure the brake will be fully released. This is done by adjusting the GLOBE APPV3214 valve which is integrated in the pneumatic control system. Whenever this system's pressure drops to a lower amount than 20% below the set release pressure, the valve closes and the brake will be blocked. This system prevents dragging of the brake shoes while operating by (unnoticed) pressure drops or incorrect handling.

Any unauthorized adjustment will make ATEX invalid. Changing or adjusting the pneumatic system, including the valves, which controls the brake will also make ATEX invalid.



## Spare Parts List Parking Brake



RM310

Item	Part No.	Description	Qty
01	802-073	Set Screw M12 x 30	4
03	808-090	Bonded Seal 1/4" BSP Dowty	2
04	816-004	Banjo Bolt Only 1/8 BSP	1
05	816-005	Banjo Bolt C/W/ Nut&Rin 5/16	1
06	312-001	Brake Wheel	1
07	806-002	Dowel Dia 12 x 35 Lg	2
08	811-003	Key 6 Sq.x40mm(K126)	1
09	312-008	Brake Housing	1
10	310-049	Shim - Output	5
11	310-036	Output Shaft Spacer 3.55	1
11	310-037	Output Shaft Spacer 3.80	1
11	310-038	Output Shaft Spacer 4.05	1
12	804-012	Circlip 32mm External	1
13	102-009	Brake Spring Adjuster	2
14	102-024	1/2" BSP Hex Nut	2
15	814-008	Spring 243914	2
16	802-031	Hex Head Screw M8 x 16	4
17	808-039	O Ring 9/16" x 3/4"	1
18	802-020	Hex Head Screw M6 x 20	2
19	808-073	U Packing	2
20	312-014	Piston Block	1
21	302-011	Brake Piston	2
22	312-013	Block Support Plate	1
23	802-012	Hex Head Screw M6 x 12	2
24	804-007	Circlip 22mm External	1
26	312-901	Brake Shoe Assembly	2
27	312-005	Output Shaft	1
28	807-009	Ball Bearing	2
29	804-062	Circlip 72mm Internal	2
30	808-045	Oilseal 35x72x10/R4	1
32	312-003	Brake Shoe Pivot	2
33	804-122	Circlip 1/2" External Ander	2
34	7008G18	Breather plug 1/8 BSPP (ATEX only)	1

## Options RM310 | Gearbox

### Why you need a gearbox for your RM310 Piston Air Motor

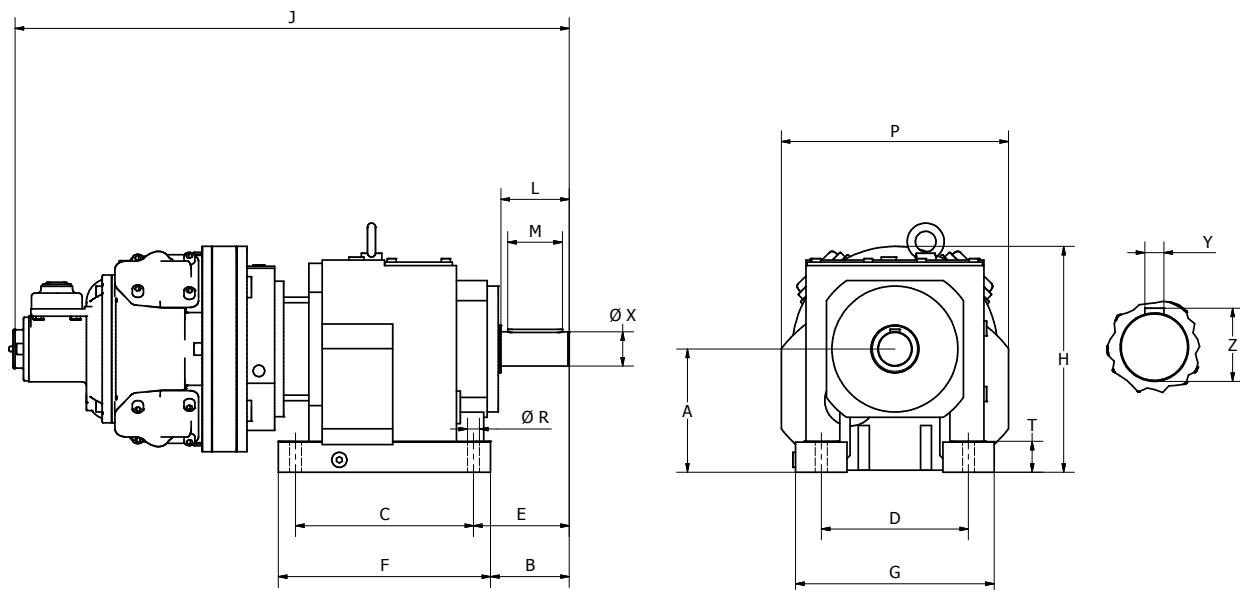
We can supply all our piston motors in combination with many different gearboxes. If you are looking for more torque for a certain application, we can assist you by selecting the right kind of gearbox. Order your RM310 Piston Air Motor in combination with a gearbox for higher torques and lower speeds.

### Performance summary

Gearbox Ratio	Maximum Power Conditions					Approx. Min. Start torque		Max Cont.	Max overhung Force		Weight			
	kW	HP	RPM	Torque							Gearbox	Adapter	Gearbox kit	Motor & Gearbox
				Nm	lbf. Ft.	Nm	lbf. Ft.	RPM	N	lbf.				
5.15	6.37	8.5	350	165	122	170	125	461	2350	528	38	14	52	100
25.01	6.37	8.5	72	800	591	824	608	95	14060	3161	92	14	106	154
51.97	6.37	8.5	35	1663	1227	1713	1264	46	18830	4233	130	14	144	192
78.06	6.37	8.5	23	2498	1843	2573	1899	30	26070	5861	194	14	208	256
103.80	6.37	8.5	17	3322	2451	3421	2525	23	26070	5861	194	14	208	256
123.37	6.37	8.5	15	3948	2914	4066	3001	19	27600	6205	312	14	326	374
156.38	6.37	8.5	12	5004	3693	5154	3804	15	35280	7932	312	14	326	374
178.38	6.37	8.5	10	5708	4213	5879	4339	13	86311	19404	475	14	489	537
198.71	6.37	8.5	9	6359	4693	6549	4834	12	86311	19404	475	14	489	537
253.08	6.37	8.5	7	8099	5977	8342	6156	9	86311	19404	475	14	489	537

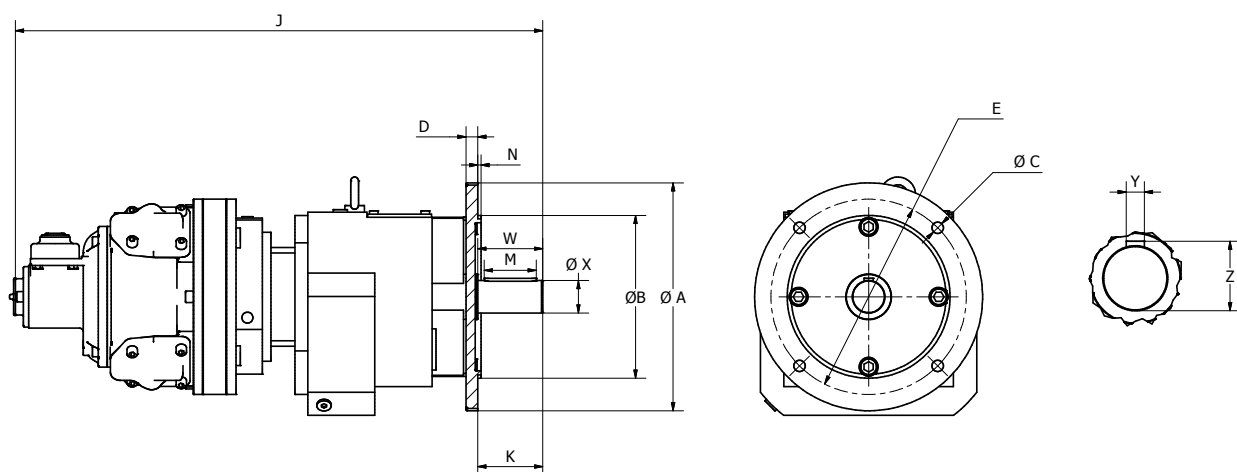


## Base mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	F	G	H	J	L	M	P	R	T	W	X	Y	Z	MASS
4.28 - 6.9:1	115 + 35	92.5	165	135	110	200	195	265 + 35	722	83	70	300	13.5	25	70	40.01	12	43	96 kg
	4.5" + 1.4"	3.0"	6.5"	5.3"	4.3"	7.9"	7.7"	10.4" + 1.4"	28.4"	3.3"	2.8"	11.8"	0.5"	1.0"	2.8"	1.585"	0.5"	1.7"	212 lb
8.11 - 16.45	140 + 10	95	205	170	115	245	235	290 + 10	748	84	70	290	17.5	30	80	40.01	12	43	113 kg
	5.5" + 0.4"	3.7"	8.1"	6.7"	4.5"	9.6"	9.3"	11.4" + 0.4"	29.4"	3.3"	2.8"	11.4"	0.7"	1.2"	3.1"	1.585"	0.5"	1.7"	250 lb
20.81 - 31.32	180	115	260	215	140	310	290	364	806	104	80	332	17.5	45	100	50.01	14	53.5	150 kg
	7.1"	4.5"	10.2"	8.5"	5.5"	12.2"	11.4"	14.3"	31.7"	4.1"	3.1"	13.1"	0.7"	1.8"	3.9"	1.985"	0.6"	2.1"	330 lb
35.14 - 60.9:1	225	132	310	250	159.5	365	340	445	891	125	100	410	22	50	120	60.02	18	64	184 kg
	8.9"	5.2"	12.2"	9.8"	6.3"	14.4"	13.4"	17.5"	35.0"	4.9"	3.9"	16.1"	0.9"	2.0"	4.7"	2.38"	0.7"	2.5"	406 lb
78.06 - 88.46:1	250	150	370	290	185	440	400	507	965	145	110	462	26	55	140	70.02	20	74.5	252 kg
	9.8"	5.9"	14.6"	11.4"	7.3"	17.3"	15.7"	20.0"	38.0"	5.7"	4.3"	18.2"	1.0"	2.2"	5.5"	2.78"	0.8"	2.9"	556 lb

## Flange mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	J	K	M	N	W	X	Y	Z	MASS
4.28 - 6.9:1	300	230.00	13.5	15	265	721	80	70	4	80	40.01	12.0	43	96
	11.8"	9.1"	0.5"	0.6"	10.4"	28.4"	3.1"	2.8"	0.2"	3.1"	1.6"	0.5"	1.7"	212
8.11 - 16.45	300	230.00	13.5	16	265	749	80	70	4	80	40.01	12.0	43	113
	11.8"	9.1"	0.5"	0.6"	10.4"	29.5"	3.1"	2.8"	0.2"	3.1"	1.6"	0.5"	1.7"	250
20.81 - 31.32	350	250.01	17.5	18	300	806	100	80	5	100	50.01	14	53.5	150
	13.8"	9.8"	0.7"	0.7"	11.8"	31.7"	3.9"	3.1"	0.2"	3.9"	2.0"	0.6"	2.1"	330
35.14 - 60.9:1	450	350.00	17.5	20	400	891	120	100	5	120	60.02	18	64	188
	17.7"	13.8"	0.7"	0.8"	15.7"	35.1"	4.7"	3.9"	0.2"	4.7"	2.4"	0.7"	2.5"	414
78.06 - 88.46:1	550	450.00	17.5	22	500	969	140	110	5	140	70.02	20	74.5	252
	21.7"	17.7"	0.7"	0.9"	19.7"	38.1"	5.5"	4.3"	0.2"	5.5"	2.8"	0.8"	2.9"	556

## Options RM310 | Control Valve

### Why you need a control valve for your RM310 Piston Air Motor

Control valves allow you to change the speed and direction of the motor, they are mounted directly onto the air motor. This range of bolt on valves offers very sensitive speed and directional control. One frictionless matched spool and sleeve assembly is offered with two alternative means of actuation.

### Configuration

As standard these valves can be supplied with either EQUAL POWER OR BIASED POWER spools, the latter is suitable for hoisting applications (normal power for lifting - reduced power for lowering).

The direction of reduced power must be stated when ordering CW or CCW, when viewed on the output shaft of the motor.

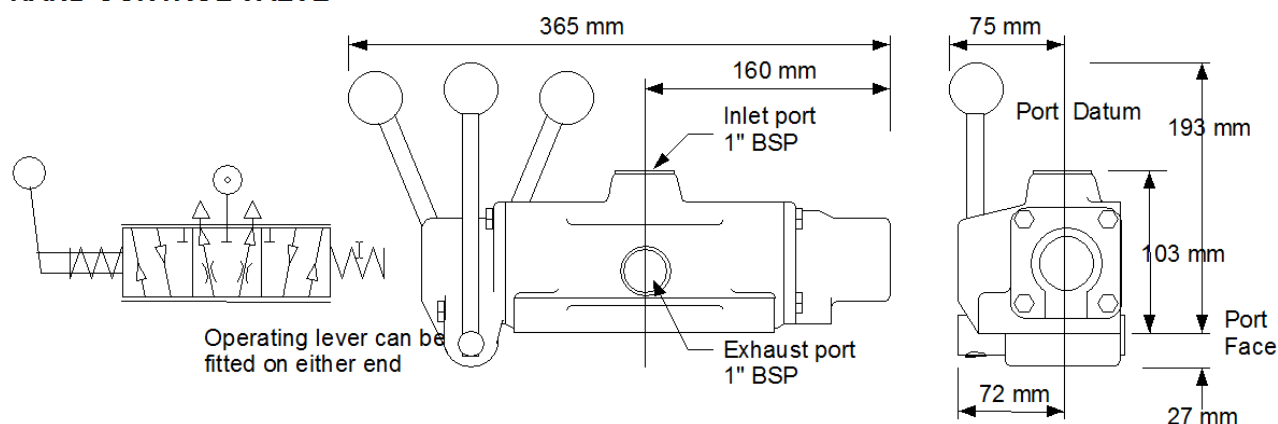
**Hand Controlled (HCV)** - The control valve spool is operated directly by a lever mechanism. Speed increase is obtained as the lever is moved in either direction from the centre (neutral) position.

**Remotely Controlled (RCV)** - This option is usually controlled from a remote position by one of the PC series or LC2 remote controllers. A variable air pilot signal is applied to either end of the valve spool, depending on the required direction of motor rotation. The pilot pressure range is between 1.4 bar (20 psi) and 4.8 bar (70 psi), increased pilot pressure gives increased speed. The valve is spring centred to neutral.

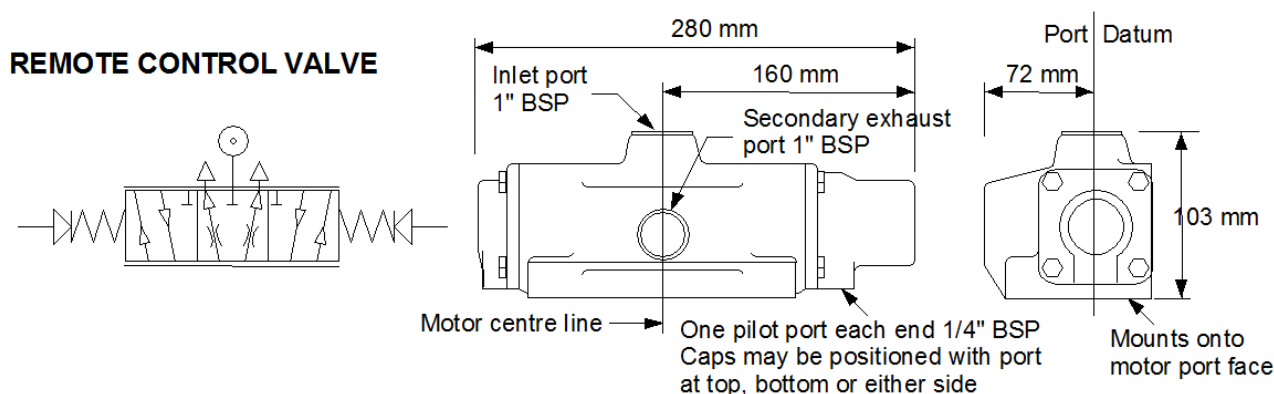
**Pressure Drop** - Minimal pressure drop will be experienced through the valves, having the effect of maintaining the output torque whilst reducing the motor output speed by approximately 10-15% at 6 bar (90 psi) at maximum power. The starting torque remains unaffected.

### Dimensions

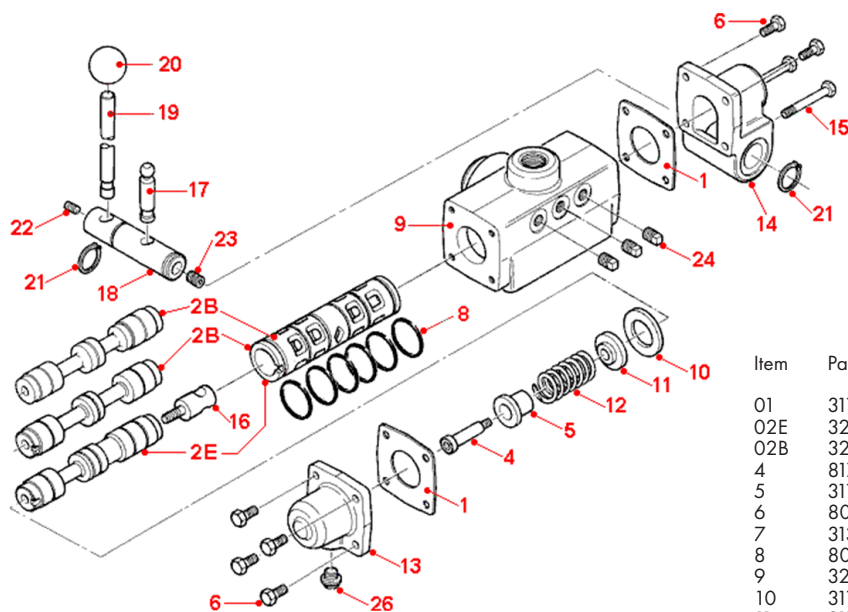
#### HAND CONTROL VALVE



#### REMOTE CONTROL VALVE



## Spare Parts List Hand Control Valve

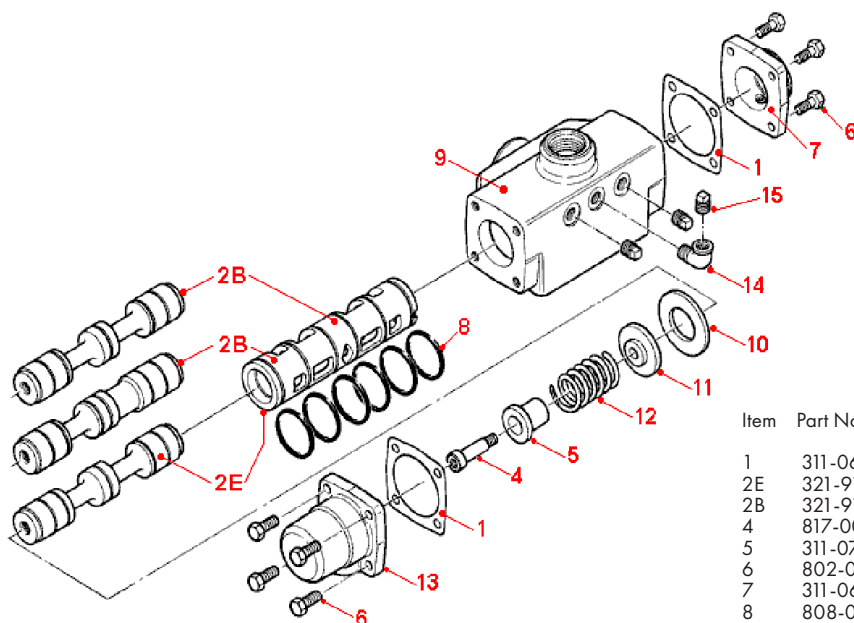


Item	Part No.	Description	Qty
01	311-066	End Cap Gasket	2
02E	321-913	Matched Spool and Sleeve	1
02B	321-914	Matched Spool and Sleeve	1
4	817-002	Shoulder Screw 10 mm	1
5	311-071	Centering Shaft Guide	1
6	802-032	Hex Head Screw M8 x 20	6
7	313-041	Hand Lever Cap	1
8	808-010	O Ring 1-9/16" x 1-11/16"	6
9	321-060	Valve Body	1
10	311-068	Valve Sleeve Spacer	1
11	311-072	Washer, Spring Centering	1
12	814-015	Spring 343720	1
13	311-064	End Cap - Spring End	1
14	313-026	Toggle Pin	1
15	313-024	Toggle Shaft	1
16	815-010	Grub Screw M8 x 10	1
17	804-013	Circlip 20mm External	2
18	313-008	Hand Lever Pivot	1
19	815-002	Grub Screw M8 x 16	1
20	802-045	Hex Bolt M8 x 60	2
21	313-002	Hand Lever	1
22	818-002	Black Plastic Knob 1-1/2"	1
23	816-061	Plug 1/4" BSPT Sq. Head	3
25	113-050	Vent Plug	1

(Equipower)  
(Biased)

RM310

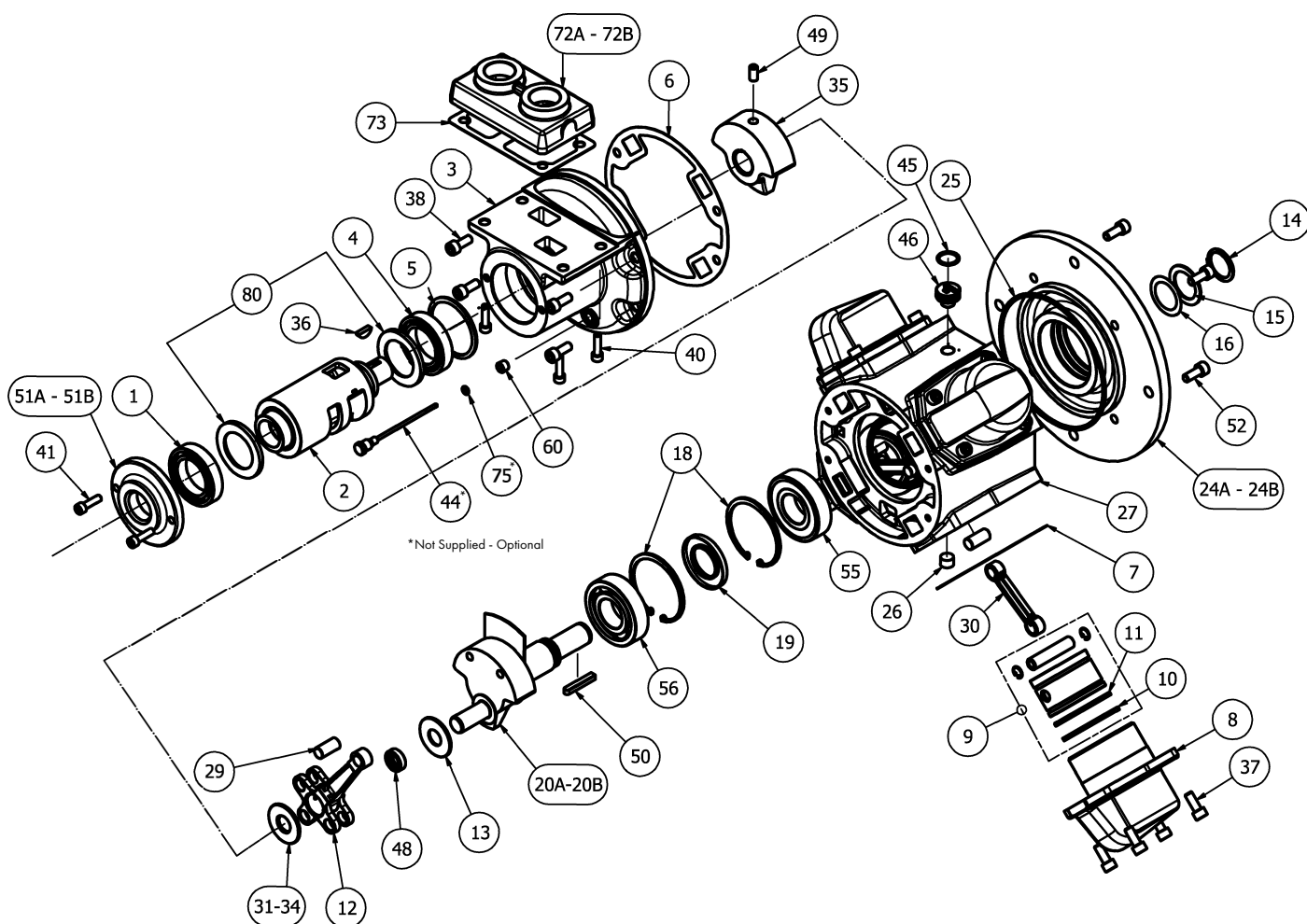
## Spare Parts List Remote Control Valve



Item	Part No.	Description	Qty
1	311-066	End Cap Gasket	2
2E	321-913	Matched Spool and Sleeve	1
2B	321-914	(Equipower)	1
4	817-002	Matched Spool and Sleeve (Biased)	1
5	311-071	Shoulder Screw 10mm	1
6	802-032	Centering Shaft Guide	8
7	311-065	Set Screw M8 x 20	1
8	808-010	End Cap - Plain End	6
9	321-060	O-Ring 1-9/16" x 1-11/16"	1
10	311-068	Valve Body	1
11	311-072	Valve Sleeve Spacer	1
12	311-073	Washer, Spring Centering	1
13	311-064	Spring, Control Spool	1
14	816-048	End Cap - Spring End	1
15	816-061	Elbow M/F 1/4" BSPT	3
		Plug 1/4" BSPT	

(Equipower)  
(Biased)

## Spare Parts List RM310



Item	Part No.	Description	Qty	Kit No.	Item	Part No.	Description	Qty	Kit No.
01	807-002	Rotary Valve Bearing (Outer)	1		38	802-053	Valve Housing Bolts	4	
02	330-059	Rotary Valve	1		40	802-032	Adaptor Plate Bolt	4	
03	330-011	Rotary Valve Housing	1		41	802-032	Exhaust Cover Bolts	2	
04	807-001	Rotary Valve Bearing (Inner)	1		44	300-040	Dipstick (vertical mounting)	1	
05	804-054	Rotary Valve Bearing Circlip	1		45	808-004	Seal (transit only)	1	
06	300-001	Rotary Valve Housing Gasket	1*	339-911	46	130-066	Breather Plug	1	
07	310-030	Cylinder Gasket	4*	339-911	48	807-065	Needle Bearing	1	
08	310-082	Cylinder	4		49	815-002	Grub Screw	1	
09	330-902A	Piston Assembly	4		50	811-003	Key	1	
10	300-024	Compression Ring	4*	339-911	51A	330-005	Rotary Valve Exhaust Cover BSP	1	
11	300-022	Oil Control Ring	4*	339-911	51B	330-105	Rotary Valve Exhaust Cover NPT	1	
12	330-077	King Rod	1		52	810-002	Flange Bolt	8	
13	330-013	Crankshaft Spacer	1		55	807-009	Output Shaft Brg. (Outer)	1	
14	804-012	Crankshaft Circlip	1		56	807-009	Output Shaft Brg. (Inner)	1	
15	310-036	Crankshaft Spacer	1		60	816-063	Oil Level Plug	1	
16	310-049	Crankshaft Spacer Shim	5		72A	330-003	Inlet Adaptor Plate BSP	1	
18	804-062	Crankshaft Bearing Circlip	2		72B	230-103	Inlet Adaptor Plate NPT	1	
19	808-045	Crankshaft Oilseal	1*	339-911	73	330-004	Inlet Adaptor Plate Gasket	1*	339-911
20	330-911	Std. Crankshaft Assembly	1		75	808-008	Dipstick Seal	1*	339-911
24	330-076	Std. Flange Plate	1		80	330-060	Rotary Valve Spacer	2	
25	808-026	Flange Plate Seal	1*	339-911		339-911	RM310 Seal Kit	1	
26	816-071	Plug	1						
27	330-012	Engine Case	1						
29	320-081	Queen Rod Pivot	3						
30	330-078	Queen Rod	3						
31	320-052	Crank Spacer SELECT	1						
32	320-053	Crank Spacer ON	1						
33	320-054	Crank Spacer ASSEMBLY	1						
35	330-010	Balance Weight	1						
36	811-010	Woodruff Key	1						
37	802-053	Cylinder Bolts	16						

If unit is pre 1990 supplied, consult manufacturer to confirm design.

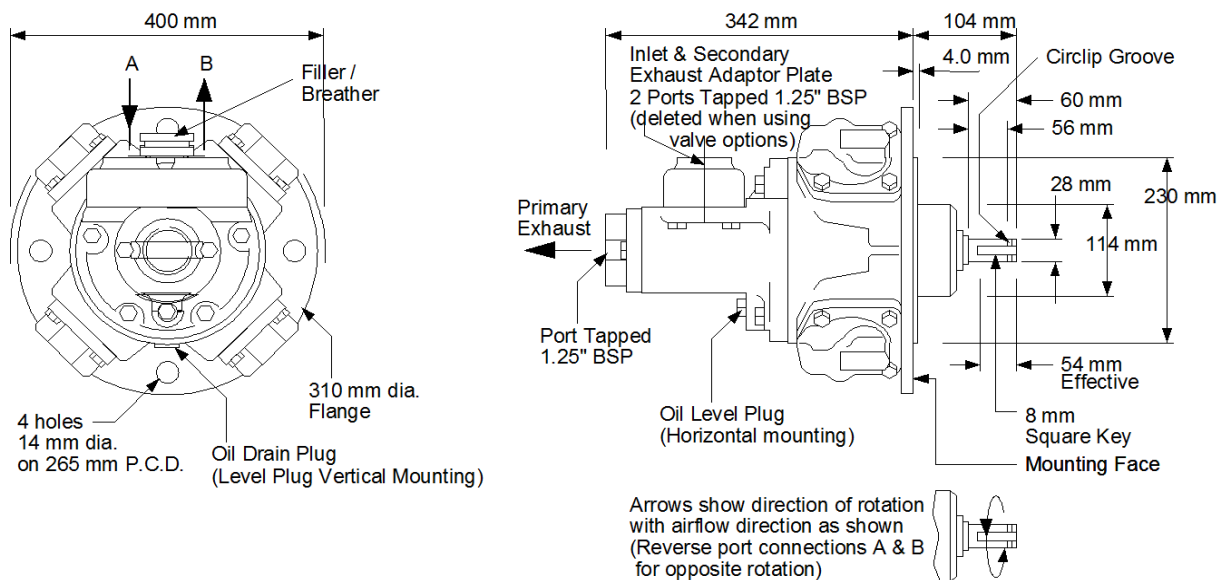
# RM410 Piston Air Motor

**14 kW / 19 H.P.**

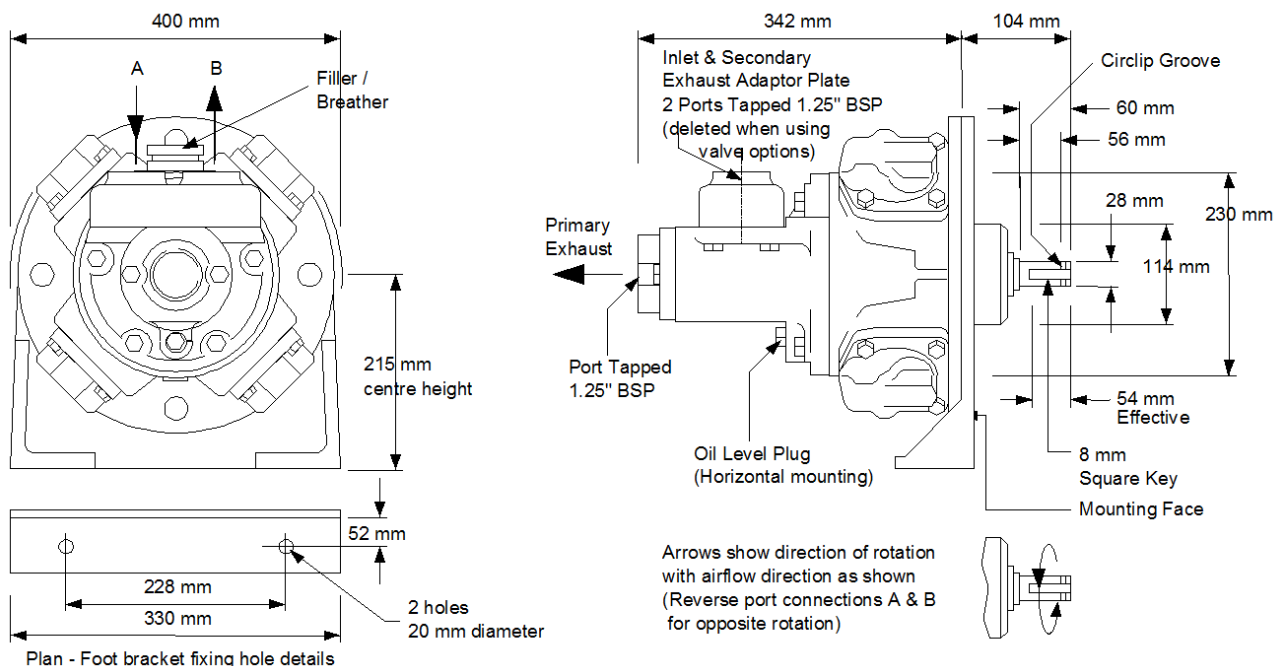
## Why buy the GLOBE RM410 Piston Air Motor

Our RM410 Piston Air Motors have a power range of 14 kW (19 HP) with 85 Nm (62.7 lbs ft.) torque at max. power. Our piston air motors are designed to develop greater power than other motors of equivalent size. These piston motors can be completed as desired with various accessories such as brakes, (control) valves and gear-boxes.

## Dimensions RM410



## Dimensions RM410 + Foot Bracket



RM410

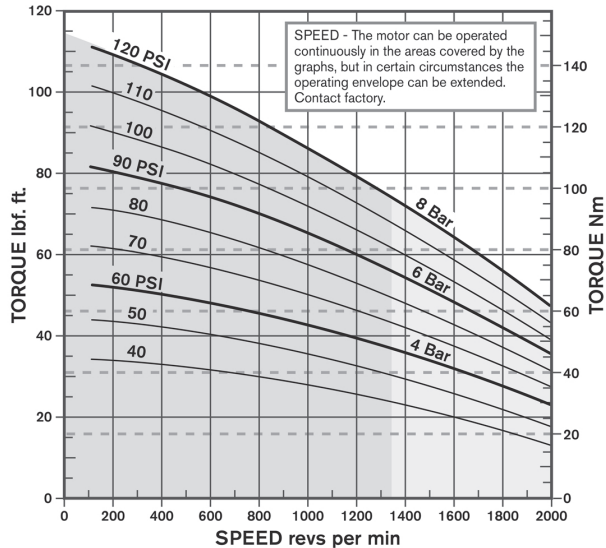


**Gearbox ratio: None**

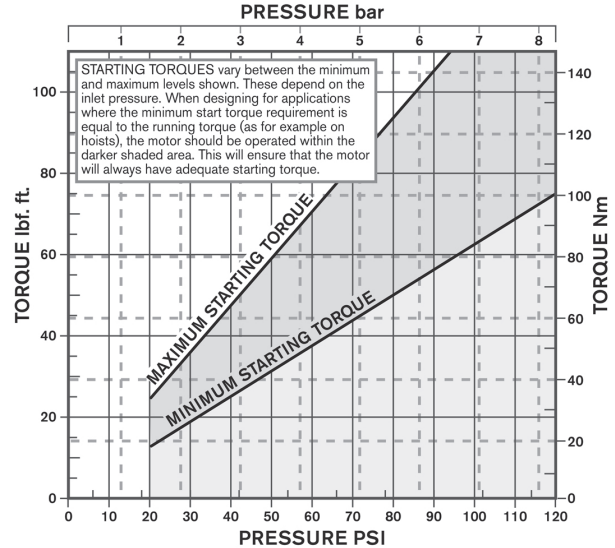
**Maximum speed: 2000 RPM  
No Control Valve fitted**

**Reading Graphs** - Scales have been adjusted to enable bar and psi to be read from a common curve. Therefore only read psi with the left hand axis and bar with the right hand axis.

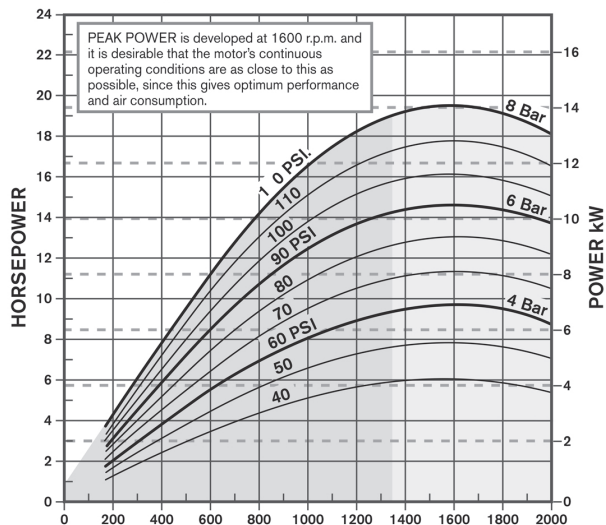
**GRAPH 1 TORQUE - SPEED**



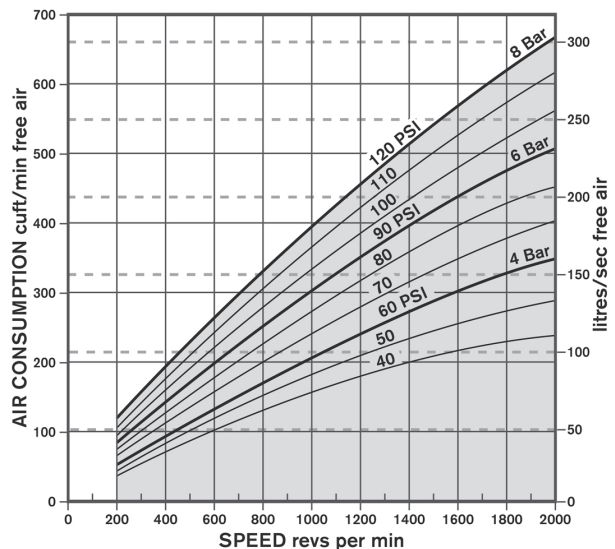
**GRAPH 2 STARTING TORQUE - PRESSURE**



**GRAPH 3 POWER - SPEED**



**GRAPH 4 CONSUMPTION - SPEED**



### LUBRICATING OIL CAPACITIES

Horizontal 500ml      Vertical 940ml

Use a good quality hydraulic oil with a viscosity of around 100cSt (460SSU) at 40°C (104°F)

### AIRLINE FILTRATION AND LUBRICATION

Use 64 micron filtration or better. Choose a lubricator suitable for the flow required. Prior to initial start-up, inject oil into the inlet port.

### GENERAL DATA

**MASS** (motor only) 62 kgs (137 lbs)

**MOMENT OF INERTIA** of rotating parts 4.1 gm<sup>2</sup> (motor only)

**MAX OVERHUNG FORCE** on motor shaft 1330 N (300 lbf)

**TEMPERATURE RANGE** -20°C to +60°C (-4°F to +140°F)  
/ -10°C to +60°C (-14°F to +140°F) with brake

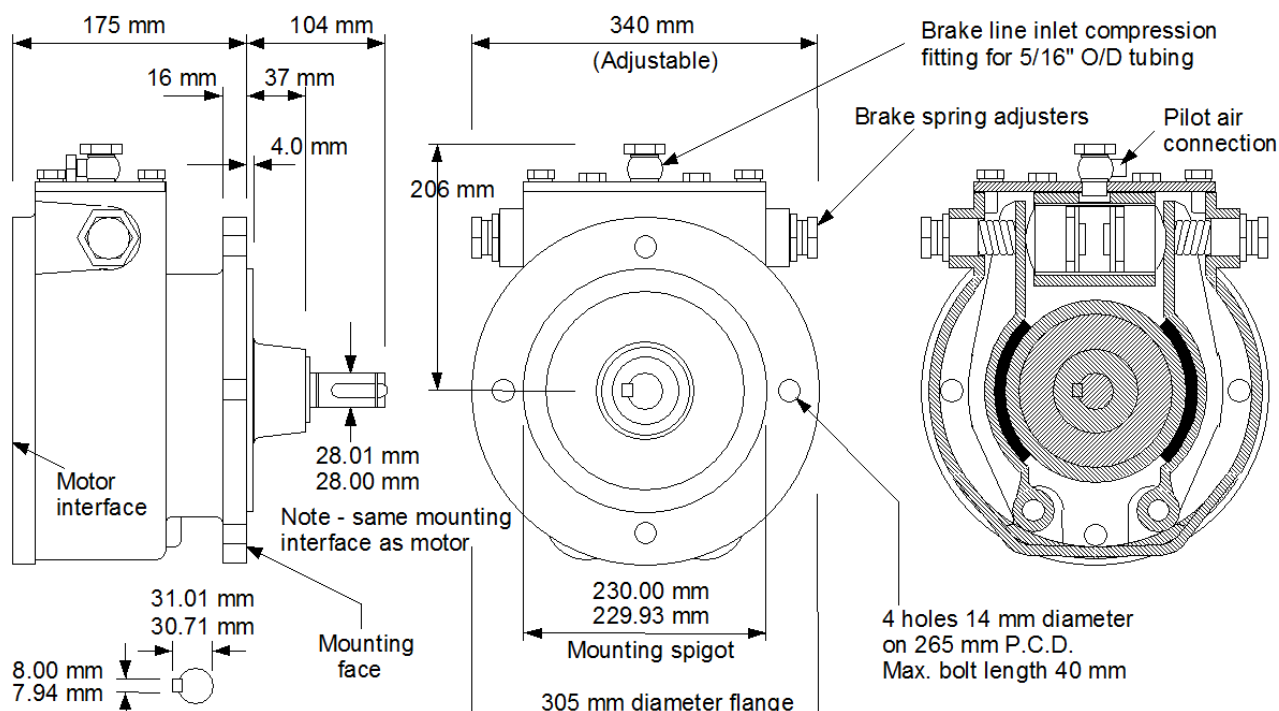
Lubricator drop rate 6-8 drops/minute continuous operation  
Lubricator drop rate 12-16 drops/minute intermittent operation

## Options RM410 | Brake

### Why you need a brake for your RM410 Piston Air Motor

The combination of motor with brake is widely used for winches, cranes and positioning devices. The brake module bolts directly onto the motor mounting face and has exactly the same interface as the motor.

### Dimensions RM410 Brake



RM410

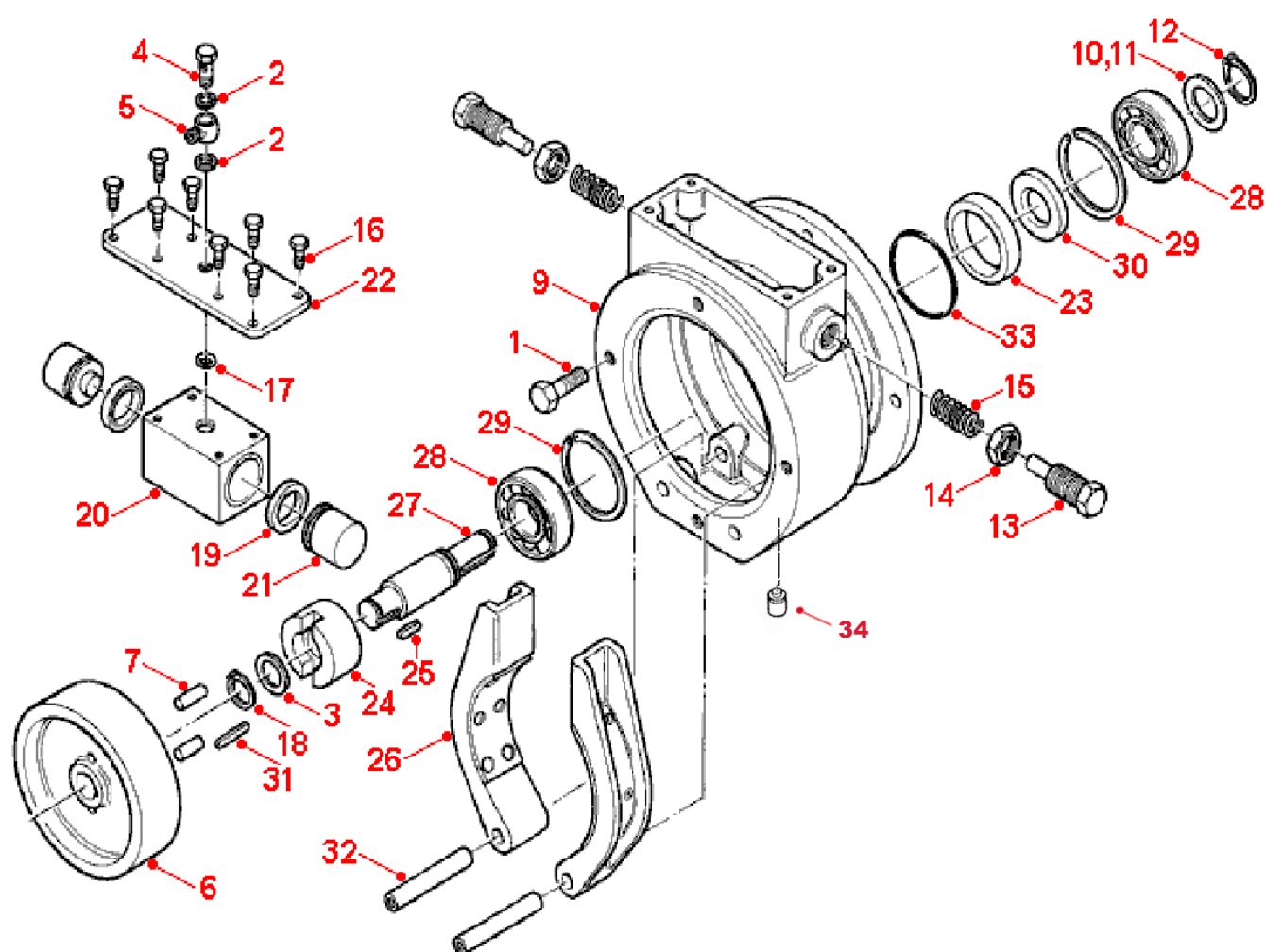
### With or without ATEX Certification

For ATEX it is important that there is no possibility for the brake to drag while the motor is running. This will cause friction which will heat up the brake. The GLOBE Brakes for the Piston RM Air Motor series are available with or without ATEX Certification for safe operations in hazardous environments. When used in an ATEX application, the brake torque is pre-set by GLOBE to a maximum torque which belongs to the desired operating pressure of the motor. The end-user has to inform GLOBE prior to the delivery about the (max.) operating pressure of the motor. At this pressure the brake will be fully released. This is done by adjusting the GLOBE APPV3214 valve which is integrated in the pneumatic control system. Whenever this system's pressure drops to a lower amount than 20% below the set release pressure, the valve closes and the brake will be blocked. This system prevents dragging of the brake shoes while operating by (unnoticed) pressure drops or incorrect handling.

Any unauthorized adjustment will make ATEX invalid. Changing or adjusting the pneumatic system, including the valves, which controls the brake will also make ATEX invalid.



## Spare Parts List Parking Brake



Item	Part No.	Description	Qty
01	802-073	Set Screw M12 x 30	4
02	808-090	Bonded Seal 1/4" BSP Dowty	2
03	412-034	Spacer-Output Shaft	1
04	816-004	Banjo Bolt Only 1/8 BSP	1
05	816-005	Banjo Bolt C/W/ Nut&Rin 5/16	1
06	412-001	Brake Wheel	1
07	806-002	Dowel Dia 12 x 35 Lg	2
09	412-010	Brake Housing	1
10	430-049	Shim - Output	5
11	430-035	Output Shaft Spacer	1
12	804-016	Circlip 38mm External	1
13	412-009	Brake Spring Adjuster	2
14	412-024	Locknut	2
15	814-010	Spring 304114	2
16	802-031	Hex Head Screw M8 x 16	4
17	808-112	O Ring 11/16" x 7/8"	1
18	804-010	Circlip 28mm External	2
19	808-076	U Packing 210-319-4490	2
20	412-902A	Piston Block assy	1
21	412-011	Brake Piston	2
22	412-013	Block Support Plate	1
23	430-083	Oil Seal Sleeve	1
24	812-131	Brake Shaft Driver	1
25	811-004	Key K121	1
26	412-901	Brake Shoe Assembly	2
27	412-133	Brake Shaft	1
28	807-013	Bearing 6308 2 RS	2
29	804-068	Circlip 90mm Internal	2
30	808-048	Oilseal 40x72x10/R21	1
31	811-005	Key K128	1
32	412-003	Brake Shoe Pivot	2
33	808-133	O Ring 3-1/2" ID x .139	1
34	7008G18	Breather plug 1/8 BSPP (ATEX only)	1

## Options RM410 | Gearbox

### Why you need a gearbox for your RM410 Piston Air Motor

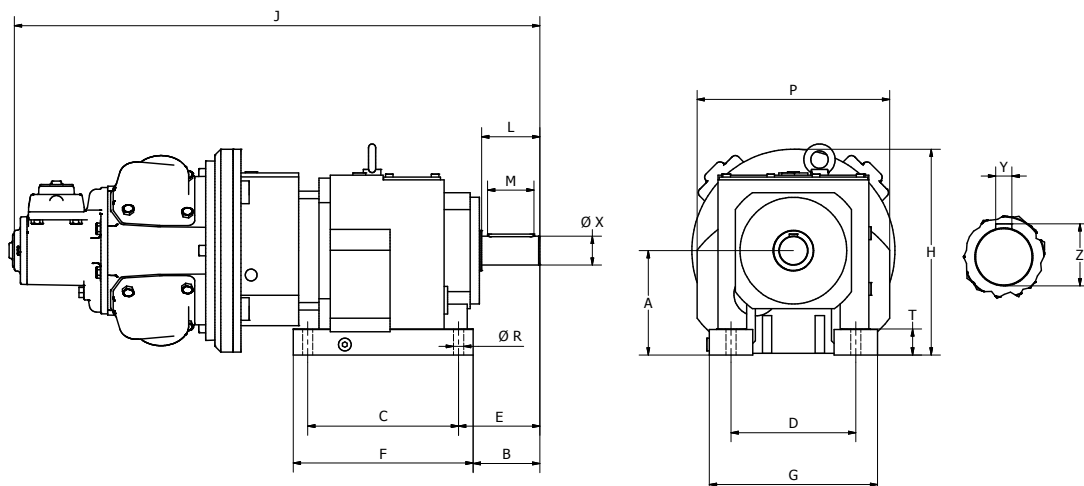
We can supply all our piston motors in combination with many different gearboxes. If you are looking for more torque for a certain application, we can assist you by selecting the right kind of gearbox. Order your RM410 Piston Air Motor in combination with a gearbox for higher torques and lower speeds.

### Performance summary

Gearbox Ratio	Maximum Power Conditions					Approx. Min. Start torque		Max Cont.	Max overhung Force		Weight			
	kW	HP	RPM	Torque							Gearbox	Adapter	Gearbox kit	Motor & Gearbox
				Nm	lbf. Ft.	Nm	lbf. Ft.	RPM	N	lbf.				
5.06	11.25	15	316	288	213	317	234	390	3010	677	67	14	81	143
24.94	11.25	15	64	1422	1049	1564	1154	79	13780	3098	132	14	146	208
48.44	11.25	15	33	2761	2038	3037	2241	41	22270	5007	215	14	229	291
69.36	11.25	15	23	3954	2918	4349	3209	28	31140	7001	312	14	326	388
92.91	11.25	15	17	5296	3908	5825	4299	21	31140	7001	312	14	326	388
123.59	11.25	15	13	7045	5199	7749	5719	16	86311	19404	475	14	489	551
141.28	11.25	15	11	8053	5943	8858	6537	14	86311	19404	475	14	489	551
177.23	11.25	15	9	10102	7455	11112	8201	11	101570	22835	635	14	649	711
206.34	11.25	15	8	11761	8680	12938	9548	10	120000	26978	635	14	649	711

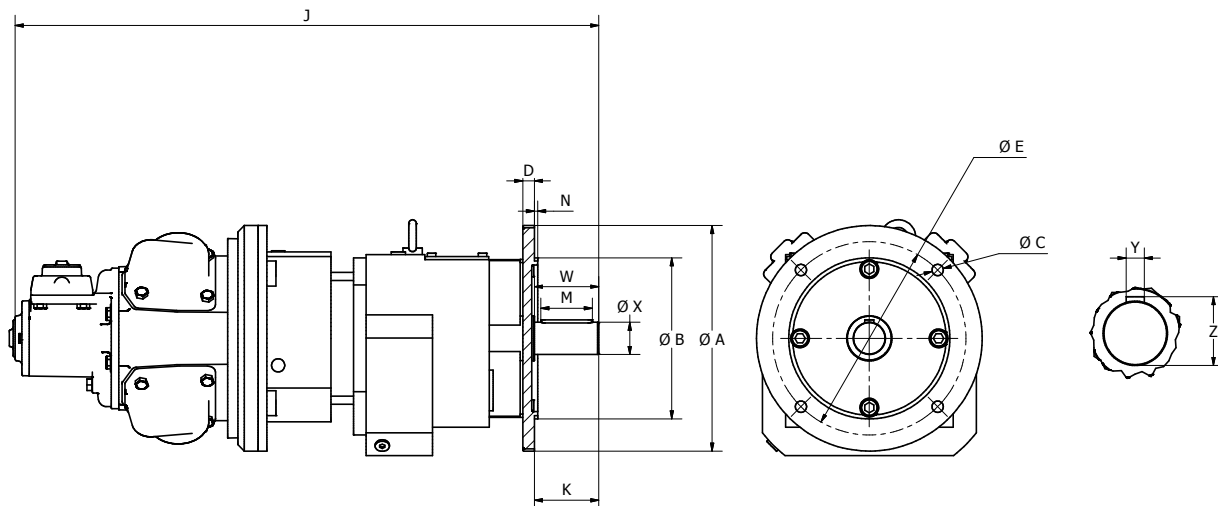
RM410

## Base mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	F	G	H	J	L	M	P	R	T	W	X	Y	Z	MASS
3.49 - 6.72:1	140 - 35	115.00	205	170	135	245	235	315 + 35	865	104	80	350	17.5	30	100	50.01	14	53.5	143 kg
	5.5-1.3	4.5"	8.1"	6.7"	5.3"	9.7"	9.25"	12.4"+1.4"	34.1"	4.1"	3.2"	13.8"	0.7"	1.2"	3.9"	1.97"	0.6"	2.1"	315 lb
7.59 - 17.27:1	180	115.00	260	215	140	310	290	364	900	104	80	350	17.5	45	100	50.01	14	53.5	161 kg
	7.1"	4.5"	10.2"	8.5"	5.5"	12.2"	11.4"	14.3"	35.4"	4.1"	3.2"	13.8"	0.7"	1.8"	3.9"	1.97"	0.6"	2.1"	355 lb
19.48 - 35.14:1	225	132.00	310	250	159.5	365	340	445	959	125	100	410	22	50	120	60.02	18	64	208 kg
	8.9"	5.2"	12.2"	9.8"	6.3"	14.4"	13.4"	17.5"	37.8	4.9"	3.9"	16.1"	0.9"	1.97"	4.7"	2.4"	0.7"	2.5"	459 lb
37.57 - 57.56:1	250	150.00	370	290	185	440	400	507	1063	146	110	462	26	55	140	70.02	20	75	291 kg
	9.8"	5.9"	14.6"	11.4"	7.3"	17.3"	15.7"	19.96"	41.9"	5.8"	4.3"	18.2"	1.02"	2.2"	5.5"	2.8"	0.8"	2.9"	642 lb
62.12 - 81.04:1	315	220.00	410	340	260	490	450	578	1163	210	180	510	33	60	210	100.02	28	106	388 kg
	12.4"	8.7"	16.1"	13.4"	10.2"	19.3"	17.7"	22.755"	45.8"	8.3"	7.1"	20.1"	1.3"	2.4"	8.3"	3.9"	1.1"	4.2"	815 lb

## Flange mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	J	K	M	N	W	X	Y	Z	MASS
4.28 - 6.9:1	350	250.01	17.5	16	300	865	100	80	4	100	50.01	14	53.5	143 kg
	13.8"	9.8"	0.7"	0.6"	11.8"	34.1"	3.9"	3.2"	0.2"	3.9"	1.96"	0.6"	2.1"	315 lb
8.11 - 16.45	350	250.01	17.5	18	300	906	100	80	5	100	50.01	14	53.5	161 kg
	13.8"	9.8"	0.7"	0.7"	11.8"	35.7"	3.9"	3.2"	0.2"	3.9"	1.96"	0.6"	2.1"	355 lb
20.81 - 31.32	450	350.00	17.5	20	400	959	120	100	5	120	60.02	18	64	208 kg
	17.7"	13.8"	0.7"	0.8"	15.7"	37.8"	4.7"	3.9"	0.2"	4.7"	2.4"	0.7"	2.5"	459 lb
35.14 - 60.9:1	450	350.00	17.5	22	400	1063	140	110	5	140	70.03	20	74.5	291 kg
	17.7"	13.8"	0.7"	0.9"	15.7"	41.9"	5.5"	4.3"	0.2"	5.5"	2.8"	0.8"	2.9"	642 lb
78.06 - 88.46:1	550	450	17.5	25	500	1125	170	140	5	210	90.02	25	106	388 kg
	21.7"	17.7"	0.7"	1.0"	19.7"	44.3"	6.7"	5.5"	0.2"	8.3"	3.54"	1.0"	4.2"	815 lb



## Options RM410 | Control Valve

### Why you need a control valve for your RM410 Piston Air Motor

Control valves allow you to change the speed and direction of the motor, they are mounted directly onto the air motor. This range of bolt on valves offers very sensitive speed and directional control. One frictionless matched spool and sleeve assembly is offered with two alternative means of actuation.

### Configuration

As standard these valves can be supplied with either EQUAL POWER OR BIASED POWER spools, the latter is suitable for hoisting applications (normal power for lifting - reduced power for lowering).

The direction of reduced power must be stated when ordering CW or CCW, when viewed on the output shaft of the motor.

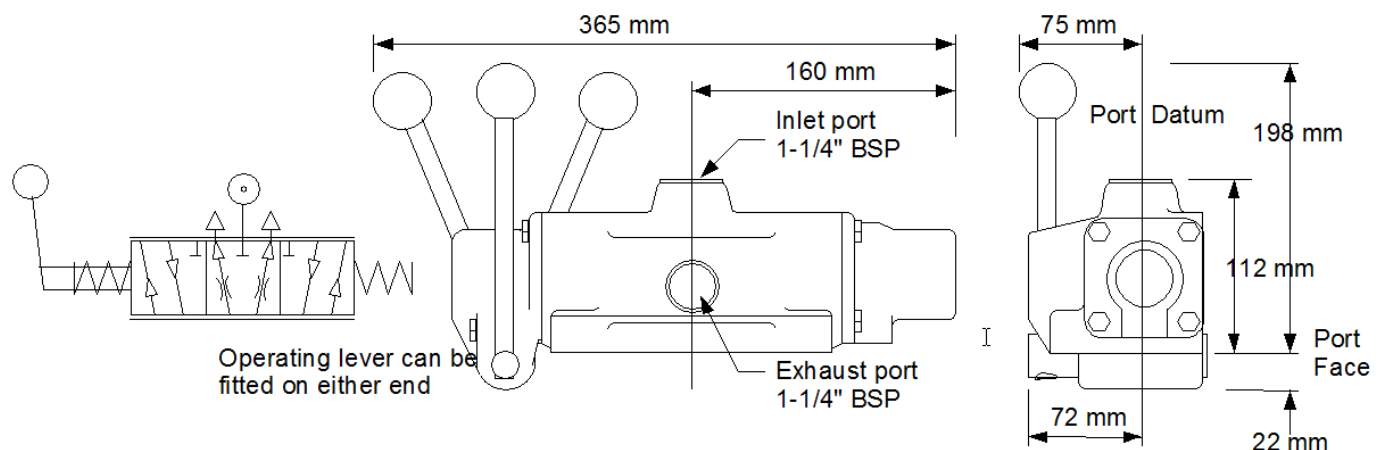
**Hand Controlled (HCV)** - The control valve spool is operated directly by a lever mechanism. Speed increase is obtained as the lever is moved in either direction from the centre (neutral) position.

**Remotely Controlled (RCV)** - This option is usually controlled from a remote position by one of the PC series or LC2 remote controllers. A variable air pilot signal is applied to either end of the valve spool, depending on the required direction of motor rotation. The pilot pressure range is between 1.4 bar (20 psi) and 4.8 bar (70 psi), increased pilot pressure gives increased speed. The valve is spring centred to neutral.

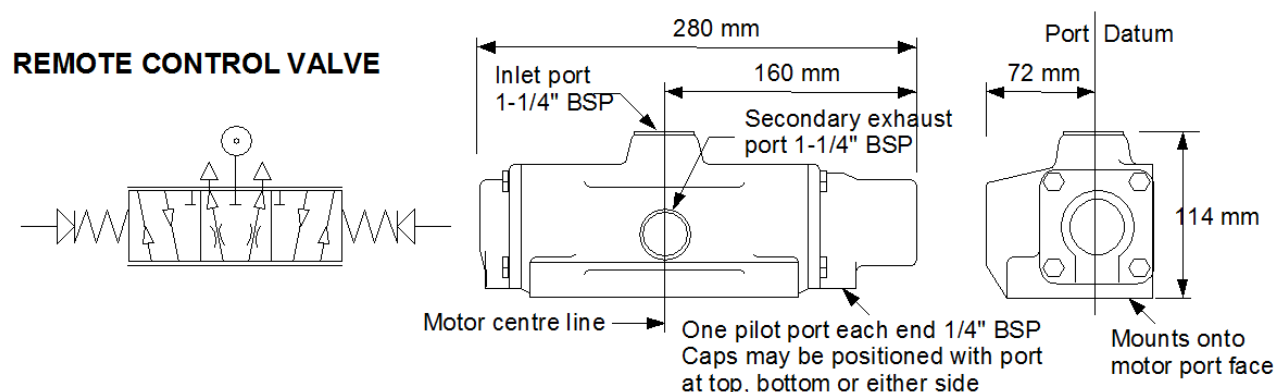
**Pressure Drop** - Minimal pressure drop will be experienced through the valves, having the effect of maintaining the output torque whilst reducing the motor output speed by approximately 10-15% at 6 bar (90 psi) at maximum power. The starting torque remains unaffected.

### Dimensions

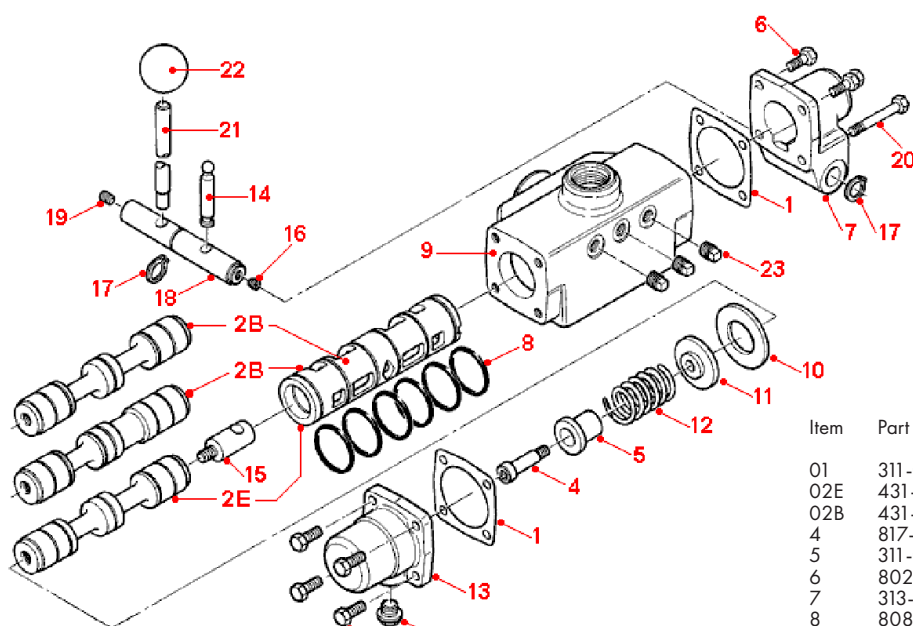
#### HAND CONTROL VALVE



#### REMOTE CONTROL VALVE

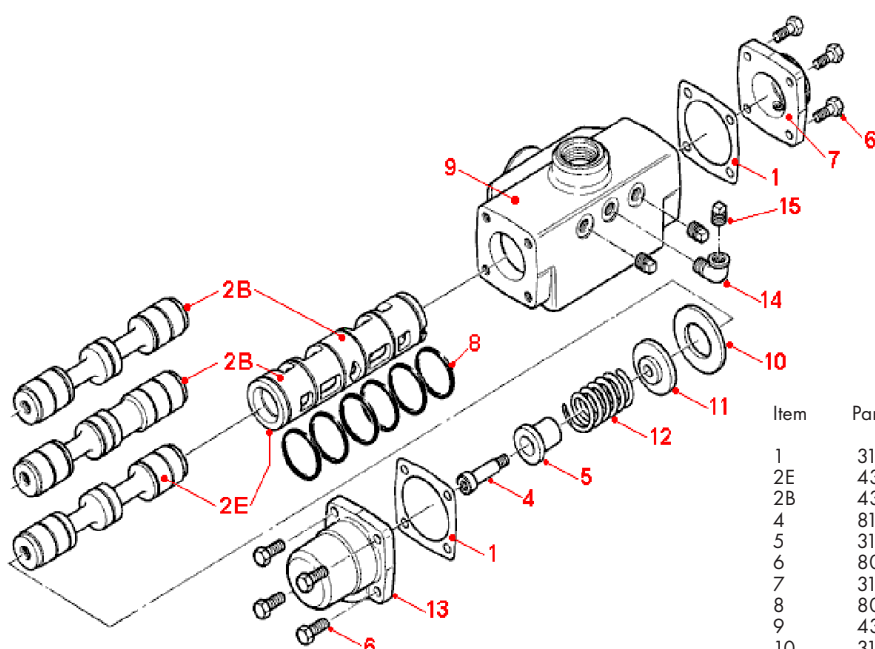


## Spare Parts List Hand Control Valve



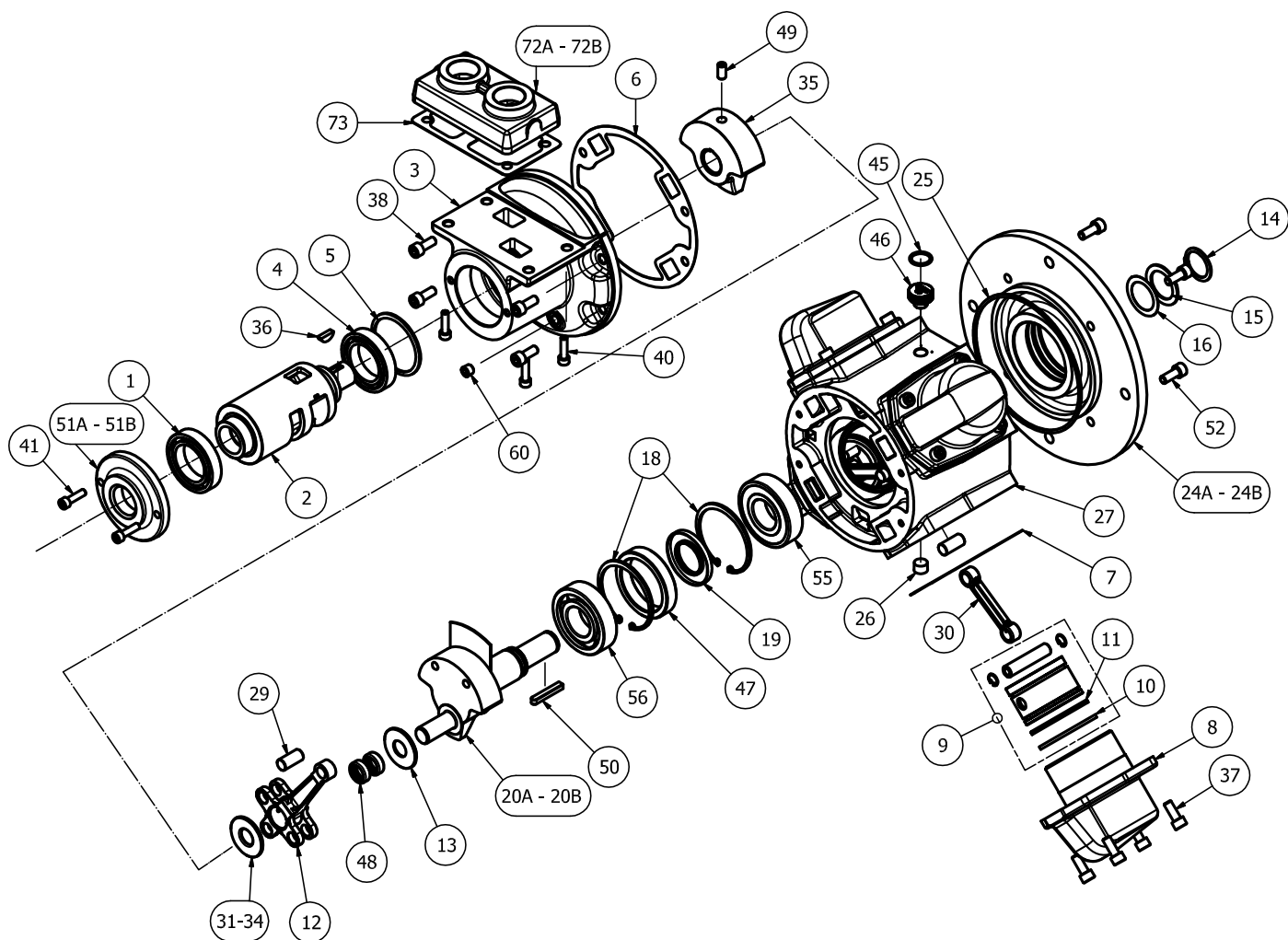
Item	Part No.	Description	Qty
01	311-066	End Cap Gasket	2
02E	431-913	Matched Spool and Sleeve	1
02B	431-914	Matched Spool and Sleeve	1
4	817-002	Shoulder Screw 10 mm	1
5	311-071	Centering Shaft Guide	1
6	802-032	Hex Head Screw M8 x 20	6
7	313-041	Hand Lever Cap	1
8	808-010	O Ring 1-9/16" x 1-11/16"	6
9	431-060	Valve Body	1
10	311-068	Valve Sleeve Spacer	1
11	311-072	Washer, Spring Centering	1
12	814-015	Spring 343720	1
13	311-064	End Cap - Spring End	1
14	313-026	Toggle Pin	1
15	313-024	Toggle Shaft	1
16	815-010	Grub Screw M8 x 10	1
17	804-013	Circlip 20mm External	2
18	313-008	Hand Lever Pivot	1
19	815-002	Grub Screw M8 x 16	1
20	802-045	Hex Bolt M8 x 60	2
21	313-002	Hand Lever	1
22	818-002	Black Plastic Knob 1-1/2"	1
23	816-061	Plug 1/4" BSPT Sq. Head	3
25	113-050	Vent Plug	1

## Spare Parts List Remote Control Valve



Item	Part No.	Description	Qty
1	311-066	End Cap Gasket	2
2E	431-913	Matched Spool and Sleeve	1
2B	431-914	Matched Spool and Sleeve	1
4	817-002	Shoulder Screw 10mm	1
5	311-071	Centering Shaft Guide	1
6	802-032	Hex Head Screw M8 x 20	8
7	311-065	End Cap - Plain End	1
8	808-010	O-Ring 1-9/16" x 1-11/16"	6
9	431-060	Valve Body	1
10	311-068	Valve Sleeve Spacer	1
11	311-072	Washer, Spring Centering	1
12	311-073	Spring, Control Spool	1
13	311-064	End Cap - Spring End	1
14	816-048	Elbow M/F 1/4" BSPT	1
15	816-074	Plug 1/4" BSPT	3

## Spare Parts List RM410



Item	Part No.	Description	Qty	Kit No.	Item	Part No.	Description	Qty	Kit No.
01	807-006	Rotary Valve Bearing (Outer)	1		37	802-054	Cylinder Bolts	16	
02	430-006	Rotary Valve	1		38	802-054	Valve Housing Bolts	4	
03	430-011	Rotary Valve Housing	1		40	802-054	Adaptor Plate Bolt	4	
04	807-005	Rotary Valve Bearing (Inner)	1		41	802-033	Exhaust Cover Bolts	2	
05	804-066	Rotary Valve Bearing Circlip	1		45	808-004	Seal (transit only)	1	
06	430-001	Rotary Valve Housing Gasket	1*	439-910	46	130-066	Breather Plug	1	
07	430-030	Cylinder Gasket	4*	439-910	47	430-083	Oil Seal Carrier	1	
08	430-082	Cylinder	4		48	807-045	Needle Bearing	2	
09	430-902A	Piston Assembly	4		49	815-003	Grub Screw	1	
10	430-024	Compression Ring	4*	439-910	50	811-005	Key	1	
11	430-022	Oil Control Ring	4*	439-910	51A	430-005	Rotary Valve Exhaust Cover BSP	1	
12	430-077	King Rod	1		51B	430-105	Rotary Valve Exhaust Cover NPT	1	
13	430-053	Crankshaft Spacer	2		52	809-001	Flange Bolts	4	
14	804-016	Crankshaft Circlip	1		55	807-013	Output Shaft Brg. (Outer)	1	
15	430-035	Crankshaft Spacer	1		56	807-012	Output Shaft Brg. (Inner)	1	
16	430-049	Crankshaft Spacer Shim	5		60	816-074	Oil Level Plug	1	
18	804-068	Crankshaft Bearing Circlip	2		72A	430-003	Inlet Adaptor Plate BSP	1	
19	808-048	Crankshaft Oilseal	1*	439-910	72B	430-103	Inlet Adaptor Plate NPT	1	
20	430-901	Std. Crankshaft Assembly	1		73	430-004	Inlet Adaptor Plate Gasket	1*	439-910
24A	430-076	Std. Flange Plate	1			439-910	RM410 Seal Kit	1	
24B	430-097	SAE Flange Plate	1						
25	808-018	Flange Plate Seal	1*	439-910					
26	816-071	Plug	1						
27	430-012	Engine Case	1						
29	430-081	Queen Rod Pivot	3						
30	430-078	Queen Rod	3						
31	430-052	Crank Spacer SELECT	1						
32	430-053	Crank Spacer ON	1						
33	430-054	Crank Spacer ASSEMBLY	1						
35	430-010	Balance Weight	1						
36	811-009	Woodruff Key	1						

RM410

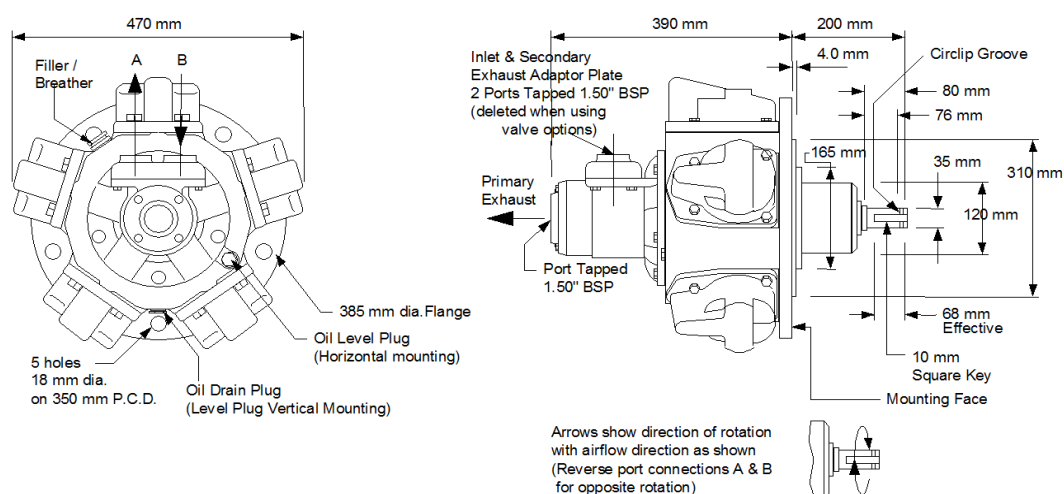
# RM510 Piston Air Motor

**22 kW / 30 H.P.**

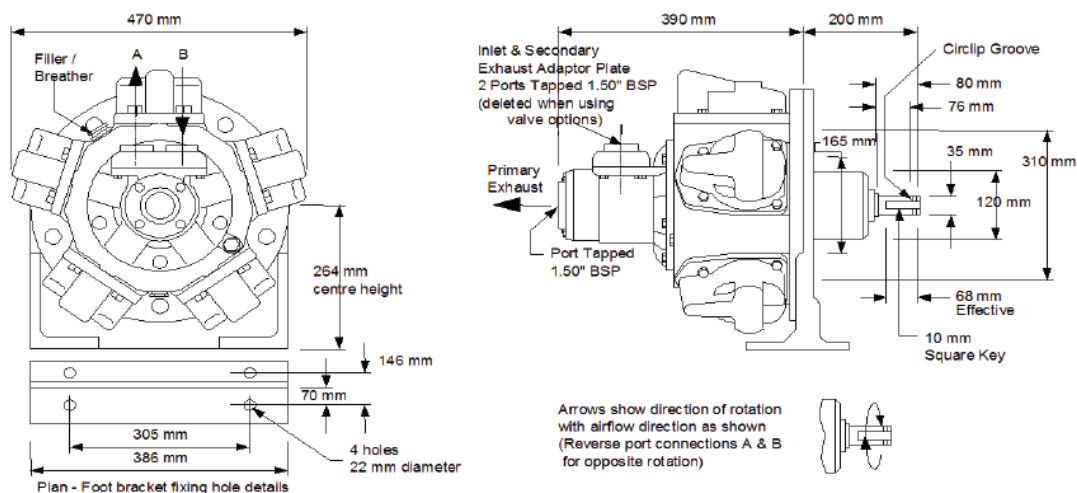
## Why buy the GLOBE RM510 Piston Air Motor

Our RM510 Piston Air Motors have a power range of 22 kW (30 HP) with 200 Nm (147.5 lbs ft.) torque at max. power. Our piston air motors are designed to develop greater power than other motors of equivalent size. These piston motors can be completed as desired with various accessories such as brakes, (control) valves and gear-boxes.

## Dimensions RM510



## Dimensions RM510 + Foot Bracket

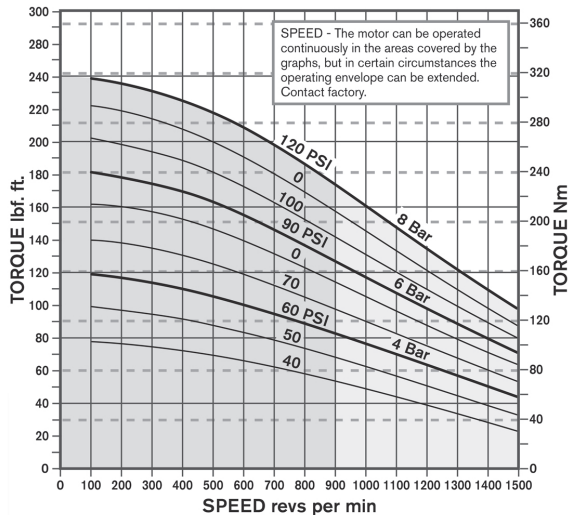


**Gearbox ratio: None**

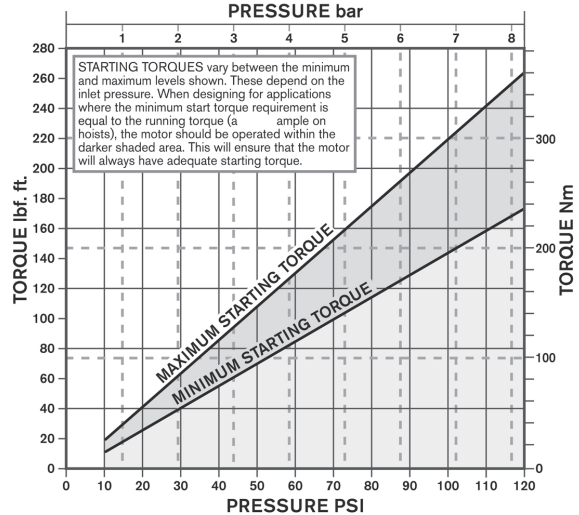
**Maximum speed: 1500 RPM  
No Control Valve fitted**

**Reading Graphs -** Scales have been adjusted to enable bar and psi to be read from a common curve. Therefore only read psi with the left hand axis and bar with the right hand axis.

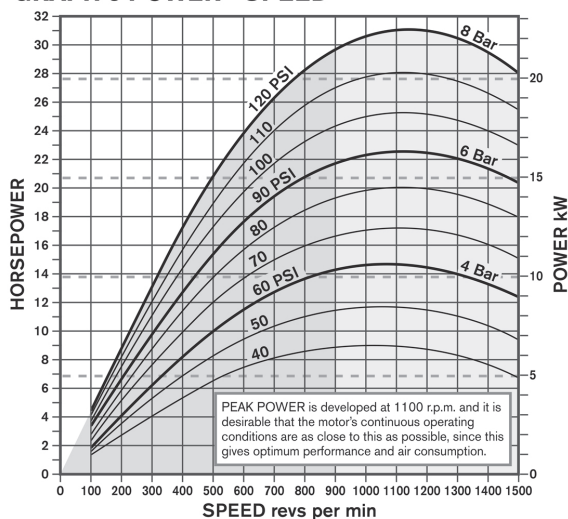
**GRAPH 1 TORQUE - SPEED**



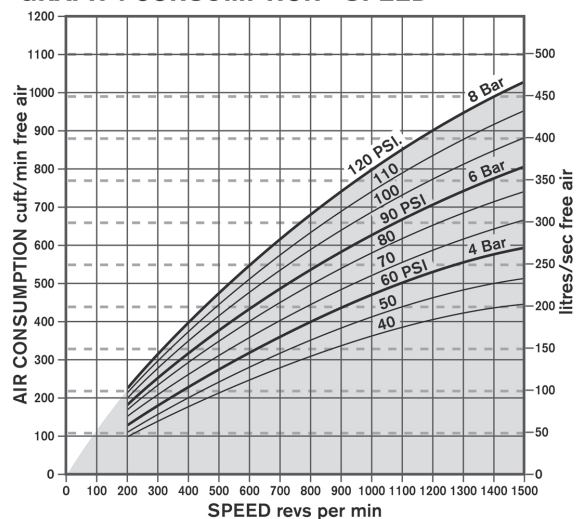
**GRAPH 2 STARTING TORQUE - PRESSURE**



**GRAPH 3 POWER - SPEED**



**GRAPH 4 CONSUMPTION - SPEED**



### LUBRICATING OIL CAPACITIES

Horizontal 1,1 litres      Vertical 2,1 litres

Use a good quality hydraulic oil with a viscosity of around 100cSt (460SSU) at 40°C (104°F)

### AIRLINE FILTRATION AND LUBRICATION

Use 64 micron filtration or better. Choose a lubricator suitable for the flow required. Prior to initial start-up, inject oil into the inlet port.

Lubricator drop rate 6-8 drops/minute continuous operation

Lubricator drop rate 12-16 drops/minute intermittent operation

### GENERAL DATA

**MASS** (motor only) 115 kgs (254 lbs)

**MOMENT OF INERTIA** of rotating parts 14 gm<sup>2</sup> (motor only)

**MAX OVERHUNG FORCE** on motor shaft 6500 N (1460 lbf)

**TEMPERATURE RANGE** -20°C to +60°C (-4°F to +140°F)  
/ -10°C to +60°C (-14°F to +140°F) with brake

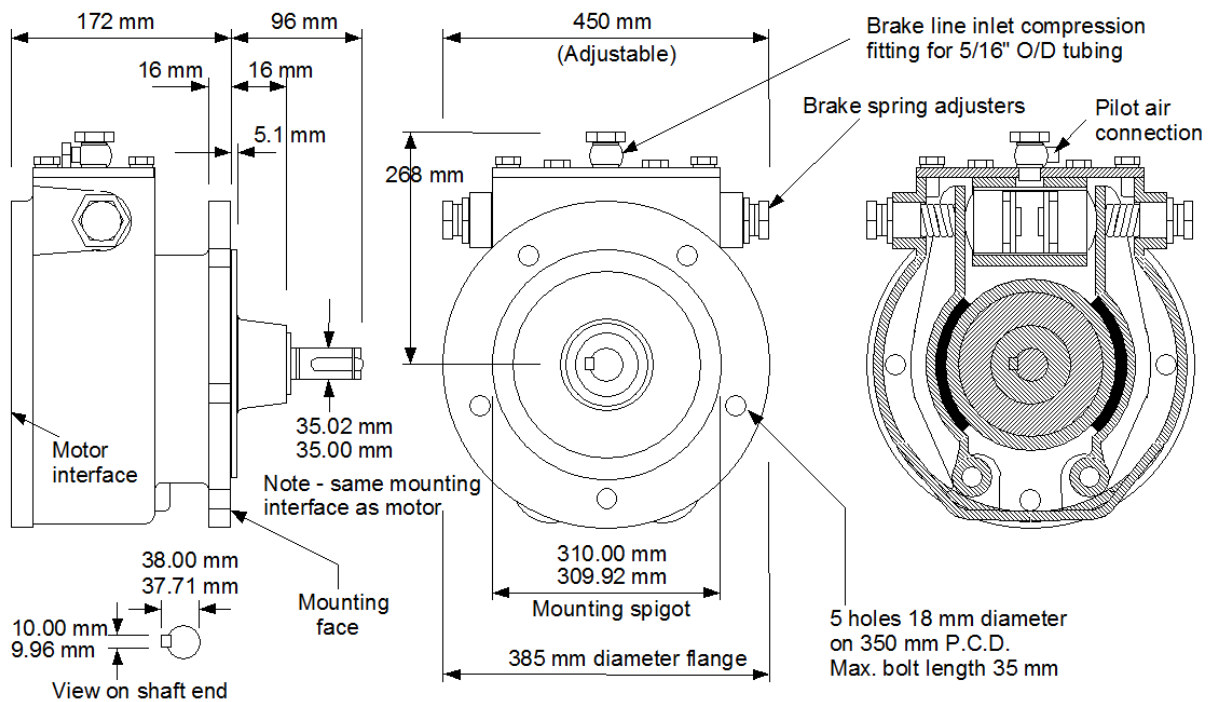
**RM510**

## Options RM510 | Brake

### Why you need a brake for your RM510 Piston Air Motor

The combination of motor with brake is widely used for winches, cranes and positioning devices. The brake module bolts directly onto the motor mounting face and has exactly the same interface as the motor.

### Dimensions RM510 Brake



### With or without ATEX Certification

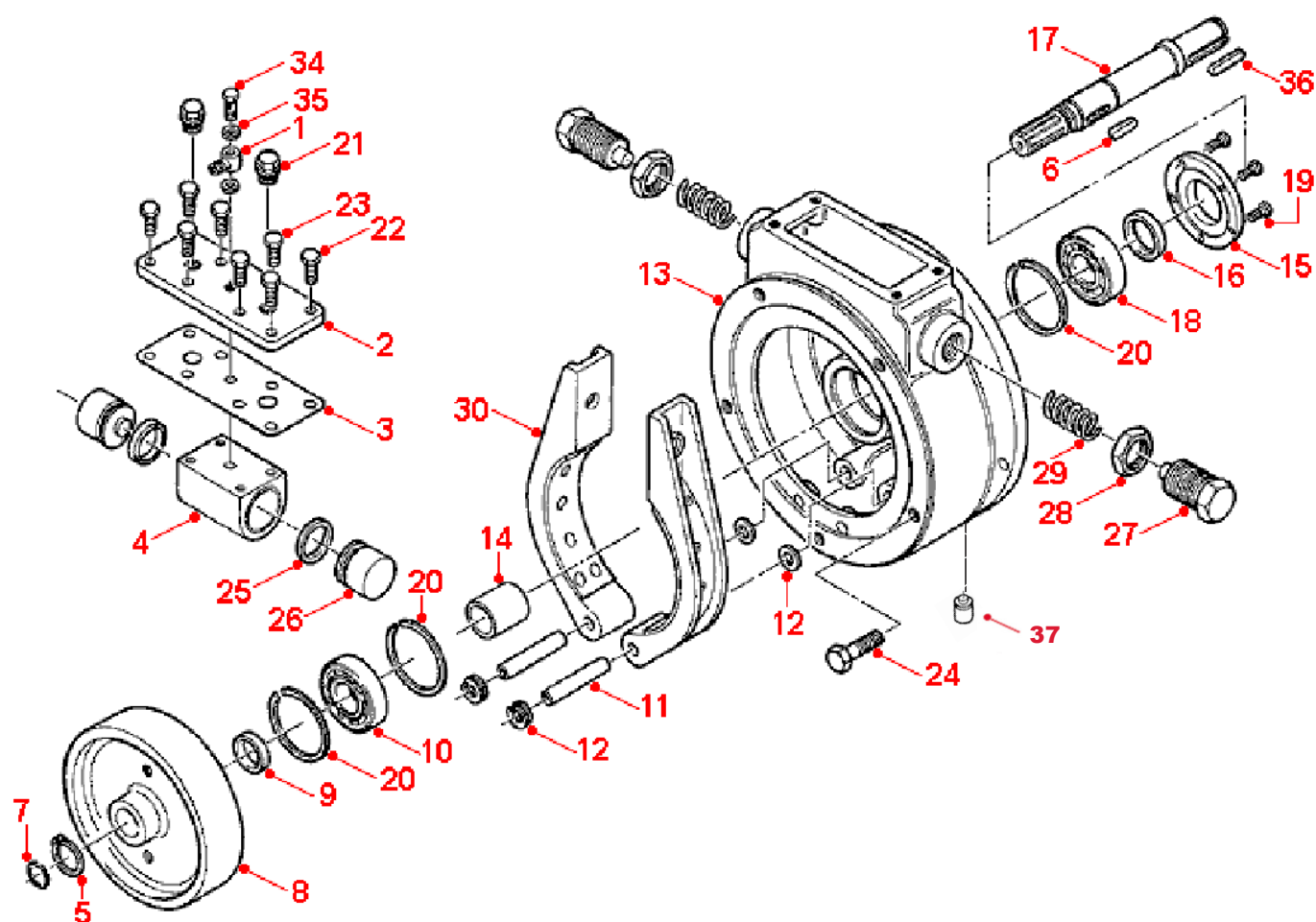
For ATEX it is important that there is no possibility for the brake to drag while the motor is running. This will cause friction which will heat up the brake. The GLOBE Brakes for the Piston RM Air Motor series are available with or without ATEX Certification for safe operations in hazardous environments. When used in an ATEX application, the brake torque is pre-set by GLOBE to a maximum torque which belongs to the desired operating pressure of the motor. The end-user has to inform GLOBE prior to the delivery about the (max.) operating pressure of the motor. At this pressure the brake will be fully released. This is done by adjusting the GLOBE APPV3214 valve which is integrated in the pneumatic control system. Whenever this system's pressure drops to a lower amount than 20% below the set release pressure, the valve closes and the brake will be blocked. This system prevents dragging of the brake shoes while operating by (unnoticed) pressure drops or incorrect handling.

Any unauthorized adjustment will make ATEX invalid. Changing or adjusting the pneumatic system, including the valves, which controls the brake will also make ATEX invalid.





## Spare Parts List Parking Brake



Item	Part No.	Description	Qty
1	816-005	Banjo Body C/W Nut & Pin 5/16"	1
2	512-013	Plunger Plate	1
3	512-030	Gasket Plunger Block	1
4	512-021	Plunger Block	1
5	804-017	Circlip 40mm External	2
6	811-006	Key K130	1
7	808-002	O-Ring - 1/8" x 1-3/8"	1
8	512-001	Brake Wheel	1
9	512-036	Wheel Spacer	1
10	807-013	Bearing 6308 2RS	1
11	412-003	Pin	2
12	803-003	Washer M16	6
13	512-008	Brake Housing	1
14	518-001	Output Bearing Spacer	1
15	518-002	Output Bearing Housing Cap	1
16	808-042	Oilseal 48 x 62 x 8/R4	1
17	512-005	Brake Shaft	1
18	807-063	Roller Bearing	1
19	802-016	Hex Head Screw M6 x 16	5
20	804-068	Circlip 90mm External	3
21	816-265	Screw Plugs (Blueamay)	2
22	802-053	Set Screw M10 x 25	4
23	802-052	Set Screw M10 x 20	4
24	802-094	Bolt M6 x 40 Hex Head	5
25	808-071	U Packing U132	2
26	512-011	Plunger	2
27	512-009	Adjuster Screw	2
28	512-024	Locknut	2
29	814-011	Spring MSD15	2
30	512-901	Brake Shoe Assembly	2
34	816-006	Banjo Bolt 1/4" BSP	1
35	808-090	Bonded Seal 1/4" BSP Dowty	2
36	811-030	Key 10 x 8 x 63	1
37	7008G18	Breather plug 1/8 BSPP (ATEX only)	1

## Options RM510 | Gearbox

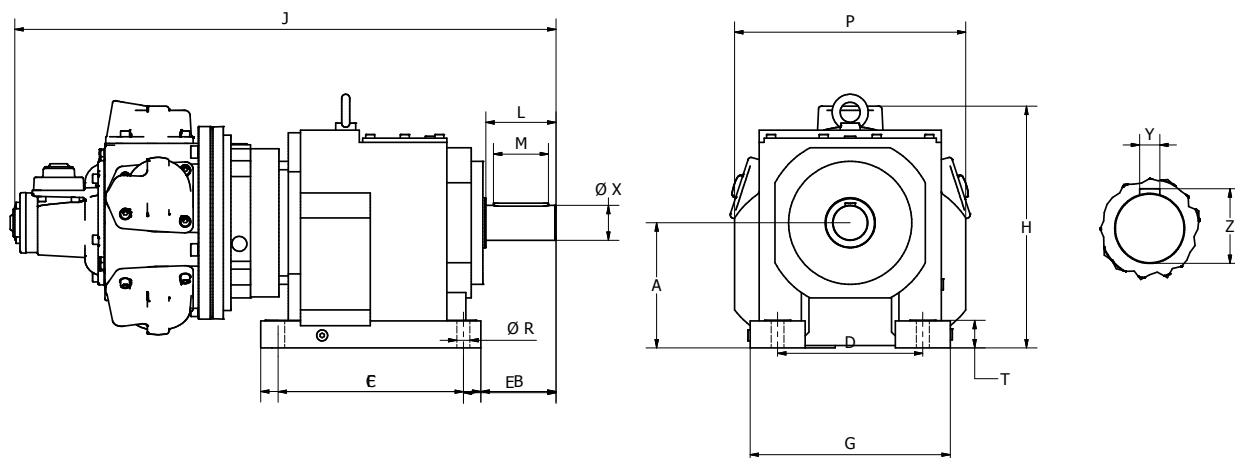
### Why you need a gearbox for your RM510 Piston Air Motor

We can supply all our piston motors in combination with many different gearboxes. If you are looking for more torque for a certain application, we can assist you by selecting the right kind of gearbox. Order your RM510 Piston Air Motor in combination with a gearbox for higher torques and lower speeds.

### Performance summary

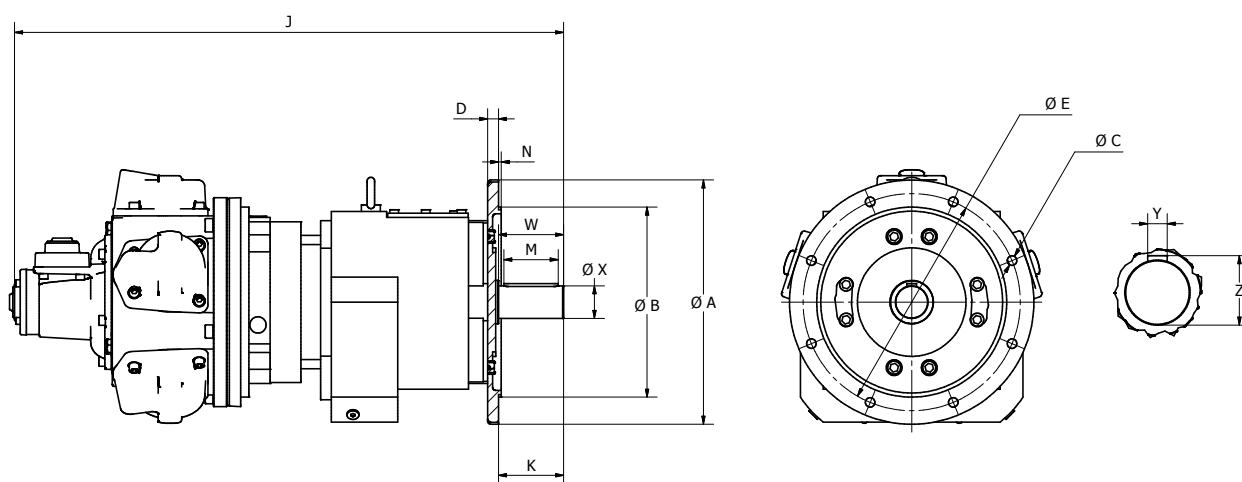
Gearbox Ratio	Maximum Power Conditions					Approx. Min. Start torque		Max Cont.	Max overhung Force		Weight			
	kW	HP	RPM	Torque							Gearbox	Adapter	Gearbox kit	Motor & Gearbox
				Nm	lbf. Ft.	Nm	lbf. Ft.	RPM	N	lbf.				
5.24	16	22.5	210	734	541	807	596	281	13870	3118	85	18	103	218
25.05	16	22.5	44	3507	2588	3858	2847	59	45000	10117	215	18	233	348
50.74	16	22.5	22	7104	5243	7814	5767	29	50000	11241	305	18	323	438
92.06	16	22.5	12	12888	9512	14177	10463	16	120000	26978	635	18	653	768

## Base mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	F	G	H	J	L	M	P	R	T	W	X	Y	Z	MASS
3.42 - 12.68:1	225	132	310	250	159.5	365	340	469	1131	125	100	410	22	50	120	60.02	18	64	218 kg
	8.9"	5.2"	12.2"	9.8"	6.3"	14.4"	13.4"	18.5"	44.5"	4.9"	3.9"	16.1"	0.9"	2.0"	4.7"	2.4"	0.7"	2.5"	481 lb
14.06 - 21.41:1	250	150	370	290	185	440	400	507	1092	145	110	462	26	55	140	70.02	20	74.5	348 kg
	9.8"	5.9"	14.6"	11.4"	7.3"	17.3"	15.7"	20.0"	43.0"	5.7"	4.3"	18.2"	1.02"	2.2"	5.5"	2.8"	0.8"	2.9"	767 lb
23.04 - 35.09:1	315	220	410	340	260	490	450	578	1199	216	180	510	33	60	210	100.03	28	106	438 kg
	12.4"	8.7"	16.1"	13.4	10.2"	19.3"	17.7"	22.8"	47.2"	8.5"	7.1"	20.1"	1.3"	2.4"	8.3	3.9"	1.1"	4.2"	966 lb
39.45 - 63.08:1	355	215	500	380	260	590	530	660	1305	216	180	580	39	65	210	100.03	28	106	608 kg
	14.0"	8.5"	19.7"	15.0"	10.2"	23.2"	20.9"	26.0"	51.4"	8.5"	7.1"	22.8"	1.5"	2.6"	8.3"	3.9"	1.1"	4.2"	1340 lb
69.41 - 92.06:1	425	225	580	500	270	670	630	758	1373	216	180	630	39	100	210	120.03	32	127	768 kg
	16.7"	8.9"	22.8"	19.7"	10.6"	26.4"	24.8"	29.8"	54.1"	8.5"	7.1"	24.8"	1.5"	3.9"	8.3"	4.7"	1.3"	5.0"	1693 lb

## Flange mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	J	K	M	N	W	X	Y	Z	MASS
3.42 - 12.68:1	450	350.00	17.5	20	400	1020	120	100	5	120	60.02	18	64	218
	17.7"	13.8"	0.7"	0.8"	15.7"	40.2"	4.7"	3.9"	0.2"	4.7"	2.4"	0.7"	2.5"	481
14.06 - 21.41:1	450	350.00	17.5	22	400	1103	140	110	5	140	70.02	20	74.5	348
	17.7"	13.8"	0.7"	0.9"	15.7"	43.4"	5.5"	4.3"	0.2"	5.5"	2.8"	0.8"	2.9"	767
23.04 - 35.09:1	450	350.00	17.5	22	400	1170	170	140	5	210	90.03	25	95	438
	17.7"	13.8"	0.7"	0.9"	15.7"	46.1"	6.7"	5.5"	0.2"	8.3	3.5"	1.0"	3.7"	966
39.45 - 63.08:1	550	450.00	18	31	500	1305	210	180	5	210	100.03	28	106	608
	21.7"	17.7"	0.7"	1.2"	19.7"	51.4"	8.3"	7.1"	0.2"	8.3"	3.9"	1.1"	4.2"	1340
69.41 - 92.06:1	550	450.00	18	31	500	1392	210	180	5	210	120.03	32	127	768
	21.7"	17.7"	0.7"	1.2"	19.7"	54.8"	8.3"	7.1"	0.2"	8.3"	4.7"	1.3"	5.0"	1693

RM510

## Options RM510 | Control Valve

### Why you need a control valve for your RM510 Piston Air Motor

Control valves allow you to change the speed and direction of the motor, they are mounted directly onto the air motor. This range of bolt on valves offers very sensitive speed and directional control. One frictionless matched spool and sleeve assembly is offered with two alternative means of actuation.

### Configuration

As standard these valves can be supplied with either EQUAL POWER OR BIASED POWER spools, the latter is suitable for hoisting applications (normal power for lifting - reduced power for lowering).

The direction of reduced power must be stated when ordering CW or CCW, when viewed on the output shaft of the motor.

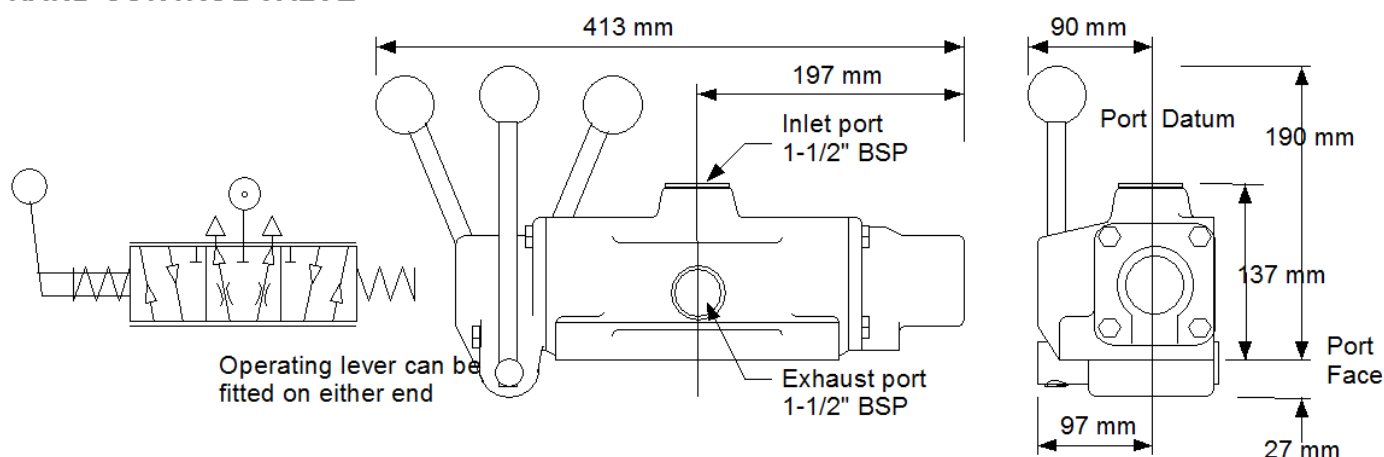
**Hand Controlled (HCV)** - The control valve spool is operated directly by a lever mechanism. Speed increase is obtained as the lever is moved in either direction from the centre (neutral) position.

**Remotely Controlled (RCV)** - This option is usually controlled from a remote position by one of the PC series or LC2 remote controllers. A variable air pilot signal is applied to either end of the valve spool, depending on the required direction of motor rotation. The pilot pressure range is between 1.4 bar (20 psi) and 4.8 bar (70 psi), increased pilot pressure gives increased speed. The valve is spring centred to neutral.

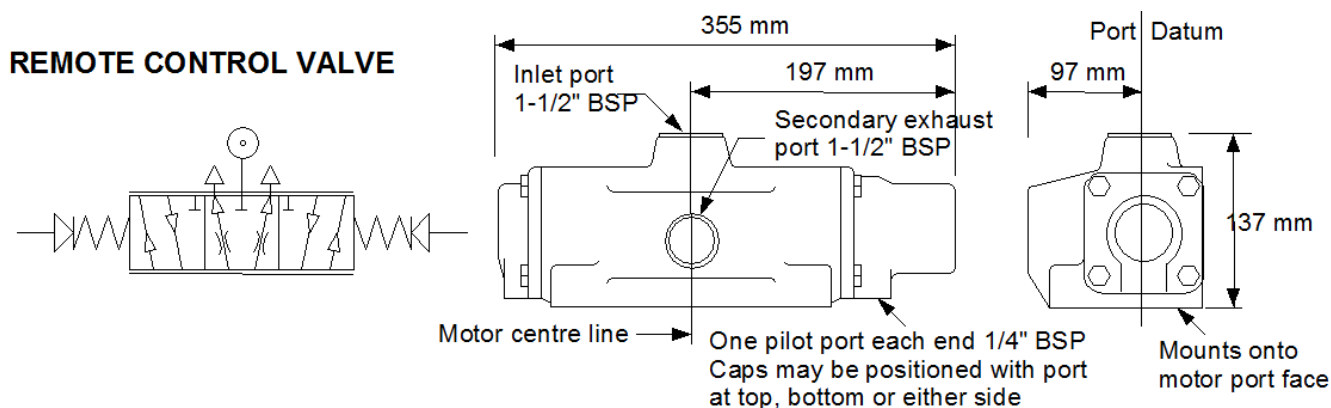
**Pressure Drop** - Minimal pressure drop will be experienced through the valves, having the effect of maintaining the output torque whilst reducing the motor output speed by approximately 10-15% at 6 bar (90 psi) at maximum power. The starting torque remains unaffected.

### Dimensions

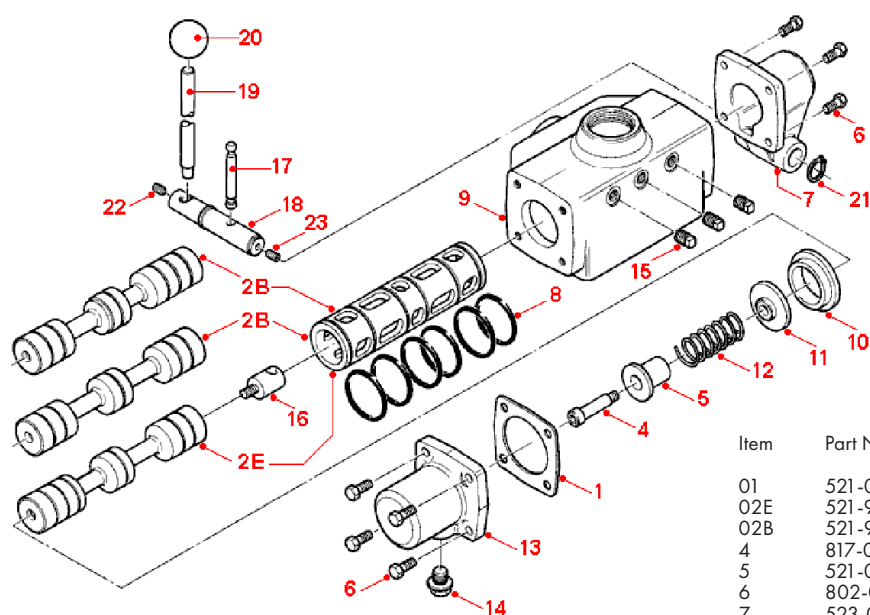
#### HAND CONTROL VALVE



#### REMOTE CONTROL VALVE

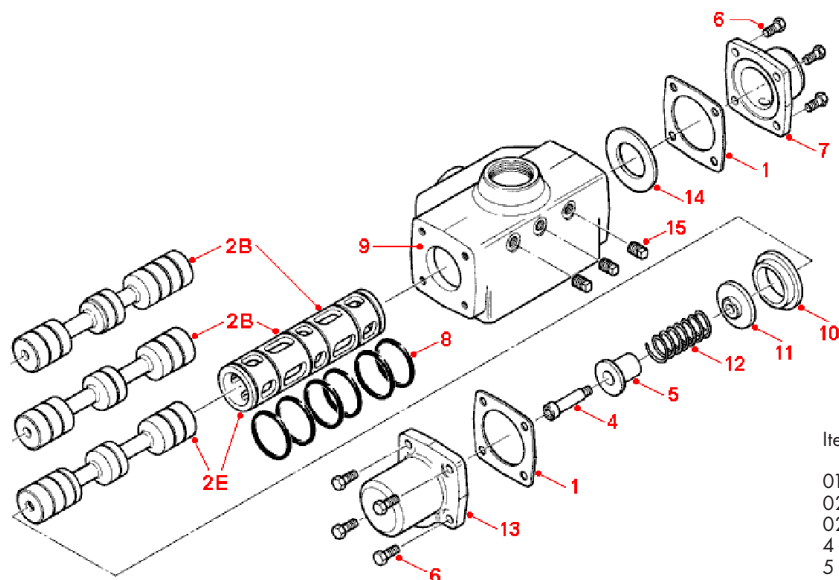


## Spare Parts List Hand Control Valve



Item	Part No.	Description	Qty
01	521-066	End Cap Gasket	1
02E	521-913	Matched Spool and Sleeve	1 (Equipower)
02B	521-914	Matched Spool and Sleeve	1 (Biased)
4	817-002	Shoulder Screw 10 mm	1
5	521-071	Centering Shaft Guide	1
6	802-033	Set Screw M8 x 25	8
7	523-041	Lever Cap	1
8	808-013	O Ring 2" x 1/8"	6
9	521-060	Valve Body	1
10	521-068	Valve Sleeve Spacer	1
11	521-072	Washer, Spring Centering	1
12	814-020	Spring Flexo 403824	1
13	521-064	End Cap - Spring End	1
14	113-050	Vent Plug	1
15	816-061	Plug 1/4" BSPT Sq. Head	3
16	523-024	Toggle Shaft	1
17	523-026	Toggle Pin	1
18	523-008	Hand Lever Pivot	1
19	313-002	Hand Lever	1
20	818-002	Black Plastic Knob 1-1/2"	1
21	804-013	Circlip 20mm External	2
22	815-010	Grub Screw M8 x 10	1
23	815-002	Grub Screw M8 x 16	1

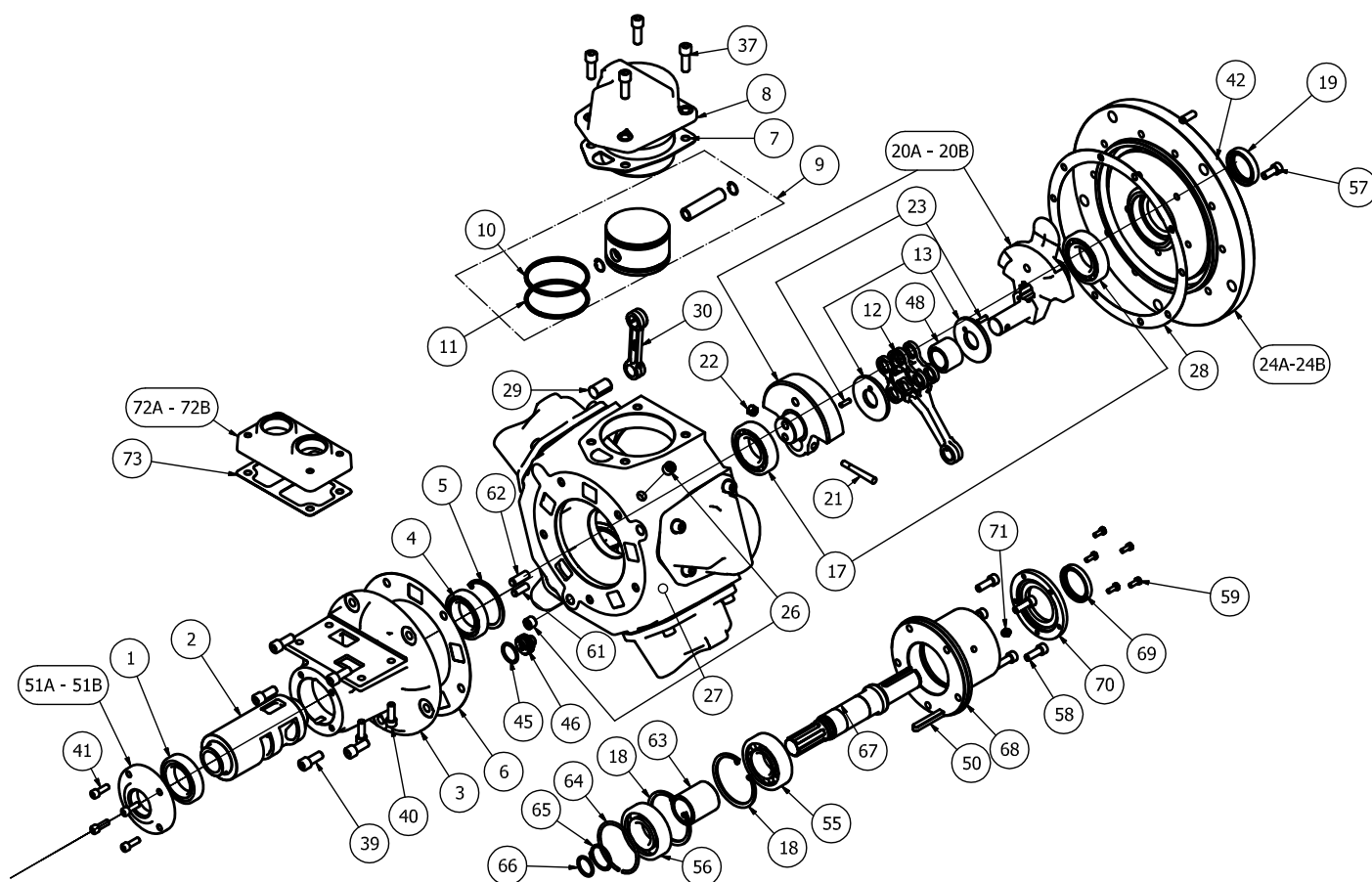
## Spare Parts List Remote Control Valve



Item	Part No.	Description	Qty
01	521-066	End Cap Gasket	2
02E	521-913	Matched Spool and Sleeve	1 (Equipower)
02B	521-914	Matched Spool and Sleeve	1 (Biased)
4	817-002	Shoulder Screw 10 mm	1
5	521-071	Centering Shaft Guide	1
6	802-033	Hex Head Screw M8 x 25	8
7	521-065	End Cap - Plain End	1
8	808-013	O Ring 2"x2-1/8"	6
9	521-060	Valve Body	1
10	521-068	Valve Sleeve Spacer	1
11	521-072	Washer, Spring Centering	1
12	814-019	Spring, Control Spool	1
13	521-064	End Cap - Spring End	1
14	521-033	End Cap Washer	1
15	816-074	Plug 1/4" BSPT	3

RM510

# Spare Parts List RM510



Item	Part No.	Description	Qty	Kit No.	Item	Part No.	Description	Qty	Kit No.
01	807-006	Rotary Valve Bearing (Outer)	1		45	808-004	Seal (transit only)	1	
02	520-006	Rotary Valve	1		46	130-066	Breather Plug	1	
03	520-011	Rotary Valve Housing	1		48	807-047	Needle Bearing	1	
04	807-005	Rotary Valve Bearing (Inner)	1		50	811-030	Key	1	
05	804-066	Rotary Valve Bearing Circlip	1		51A	520-005	Rotary Valve Exhaust Cover BSP	1	
06	510-001	Rotary Valve Housing Gasket	1*	529-911	51A	520-105	Rotary Valve Exhaust Cover NPT	1	
07	510-030	Cylinder Gasket	5*	529-911	55	807-063	Output Shaft Bearing (Outer)	1	
08	510-082	Cylinder	5		56	807-012	Output Shaft Bearing (Inner)	1	
09	520-902A	Piston Assembly	5		57	809-001	Flange Plate Cap Screws	10	
10	520-024	Compression Ring	5*	529-911	58	809-002	Output Housing Bolts	5	
11	520-022	Oil Control Ring	5*	529-911	59	802-016	Output Housing Cover Bolts	5	
12	530-077	King Rod	1		61	806-011	Drive Pin (Dia. 10mm)	1	
13	520-052	Crankshaft Spacer	2		62	806-022	Drive Pin (Dia. 12mm)	1	
17	807-062	Crankshaft Bearing	2		63	518-001	Output Shaft Bearing Spacer	1	
18	804-068	Crankshaft Bearing Circlip	2		64	518-004	Output Shaft Spring Ring	1	
19	808-047	Crankshaft Oilseal	1*	529-911	65	804-017	Output Shaft Circlip	1	
20A	520-901	Std. Crankshaft Assembly	1		66	804-002	Output Shaft Seal	1*	529-911
20B	520-904	SAE Crankshaft Assembly	1		67	518-003	Output Shaft	1	
21	510-088	Crank Bolt	1		68	518-005	Output Shaft Housing	1	
22	801-009	Crank Nut	1		69	808-042	Output Shaft Oil Seal	1*	
23	806-013	Spring Dowel	2		70	518-002	Output Shaft Housing Cover	1	
24A	520-076	Std. Flange Plate	1		71	816-015	Output Shaft Grease Nipple	1	
24B	520-113	SAE Flange Plate	1		72A	520-003	Inlet Adaptor Plate BSP	1	
26	816-071	Plug	1		72B	520-103	Inlet Adaptor Plate NPT	1	
27	520-012	Engine Case	1		73	430-004	Inlet Adaptor Plate Gasket	1*	529-911
28	510-090	Engine Case Gasket (520)	1*	529-911		529-911	RM510 Seal Kit	1	
29	520-081	Queen Rod Pivot	4						
30	520-078	Queen Rod	4						
37	809-035	Cylinder Bolts	20						
38	802-073	Valve Housing Bolts	4						
39	803-015	Washer for Item #38							
40	802-054	Adaptor Plate Bolt	4						
41	802-033	Exhaust Cover Bolts	4						
42	815-008	Flange Plate Plugs	5						

If unit is pre 1990 supplied, consult manufacturer to confirm design.



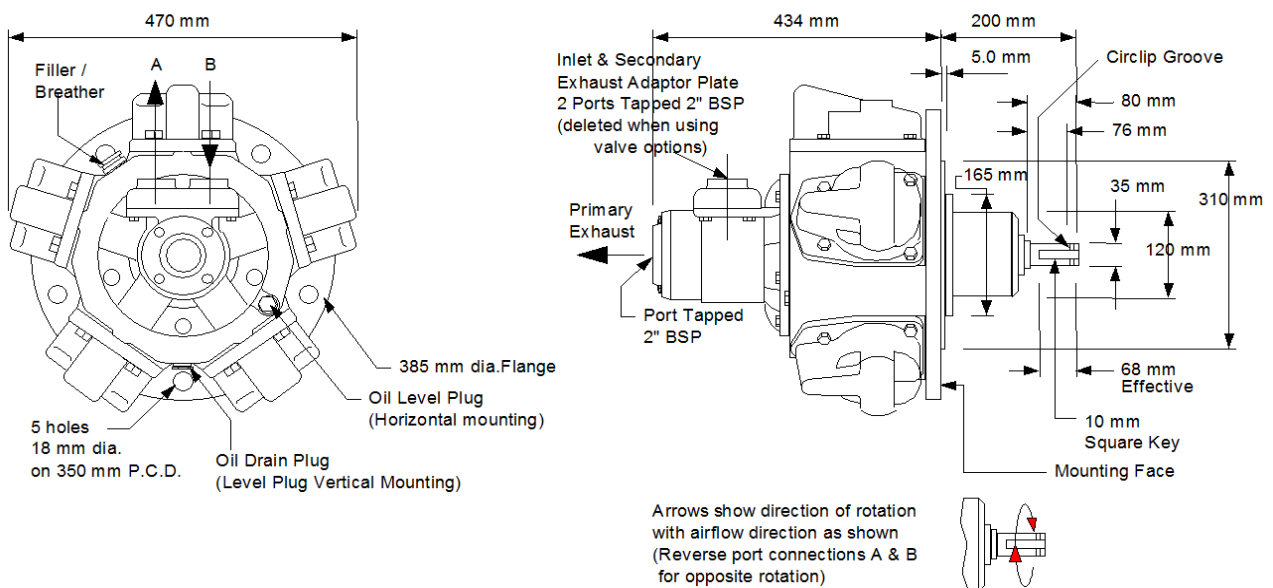
# RM610 Piston Air Motor

**23 kW / 31.3 H.P.**

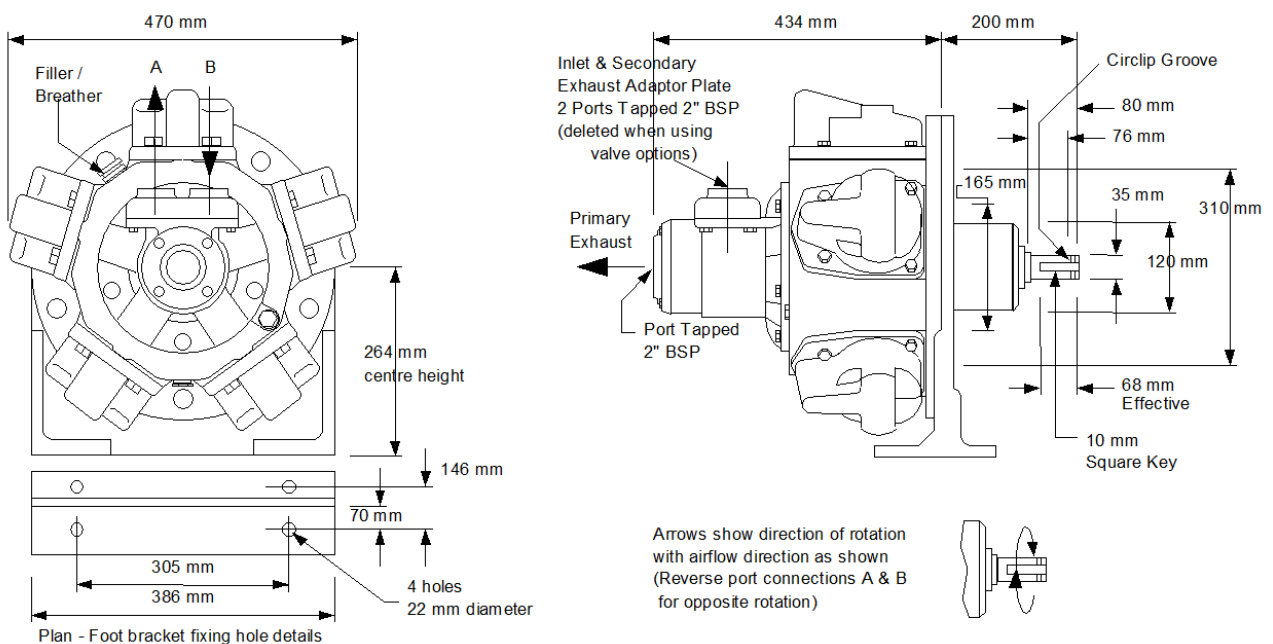
## Why buy the GLOBE RM610 Piston Air Motor

Our RM610 Piston Air Motors have a power range of 23 kW (31.3 HP) with 150 Nm (110 lbs ft.) torque at max. power. Our piston air motors are designed to develop greater power than other motors of equivalent size. These piston motors can be completed as desired with various accessories such as brakes, (control) valves and gear-boxes.

## Dimensions RM610



## Dimensions RM610 + Foot Bracket



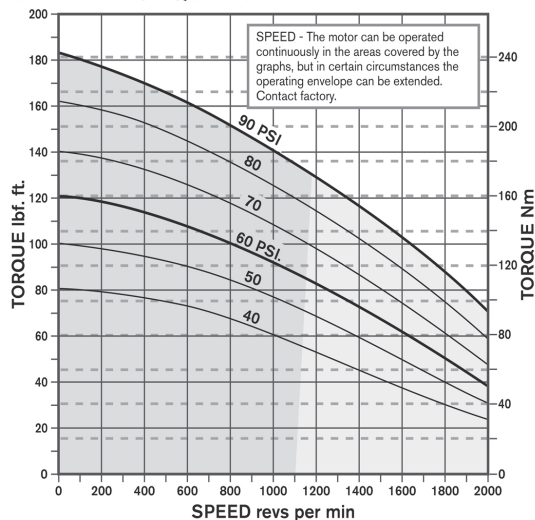
RM610

**Gearbox ratio: None**

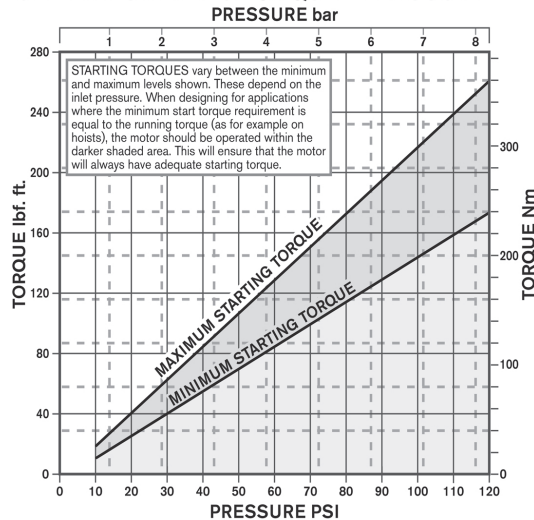
**Maximum speed: 2000 RPM  
No Control Valve fitted**

**Reading Graphs** - Scales have been adjusted to enable bar and psi to be read from a common curve. Therefore only read psi with the left hand axis and bar with the right hand axis.

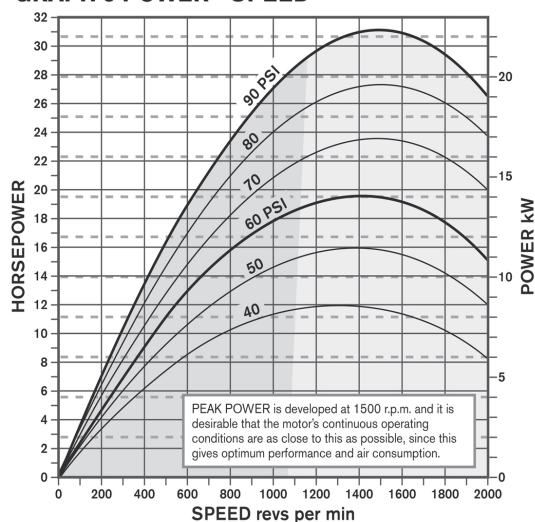
**GRAPH 1 TORQUE - SPEED**



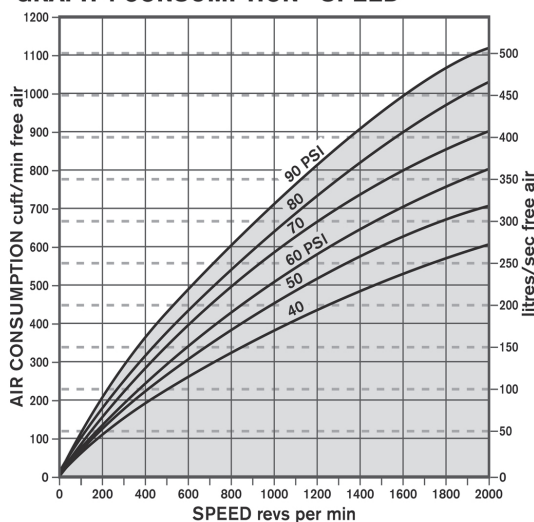
**GRAPH 2 STARTING TORQUE - PRESSURE**



**GRAPH 3 POWER - SPEED**



**GRAPH 4 CONSUMPTION - SPEED**



## LUBRICATING OIL CAPACITIES

Horizontal 1,1 litres      Vertical 2,1 litres

Use a good quality hydraulic oil with a viscosity of around 100cSt (460SSU) at 40°C (104°F)

## AIRLINE FILTRATION AND LUBRICATION

Use 64 micron filtration or better. Choose a lubricator suitable for the flow required. Prior to initial start-up, inject oil into the inlet port.

## GENERAL DATA

**MASS** (motor only) 125 kgs (276 lbs)

**MOMENT OF INERTIA** of rotating parts 14 gm<sup>2</sup> (motor only)

**MAX OVERHUNG FORCE** on motor shaft 6500 N (1460 lbf)

**TEMPERATURE RANGE** -20°C to +60°C (-4°F to +140°F)  
/ -10°C to +60°C (-14°F to +140°F) with brake

Lubricator drop rate 8-10 drops/minute continuous operation

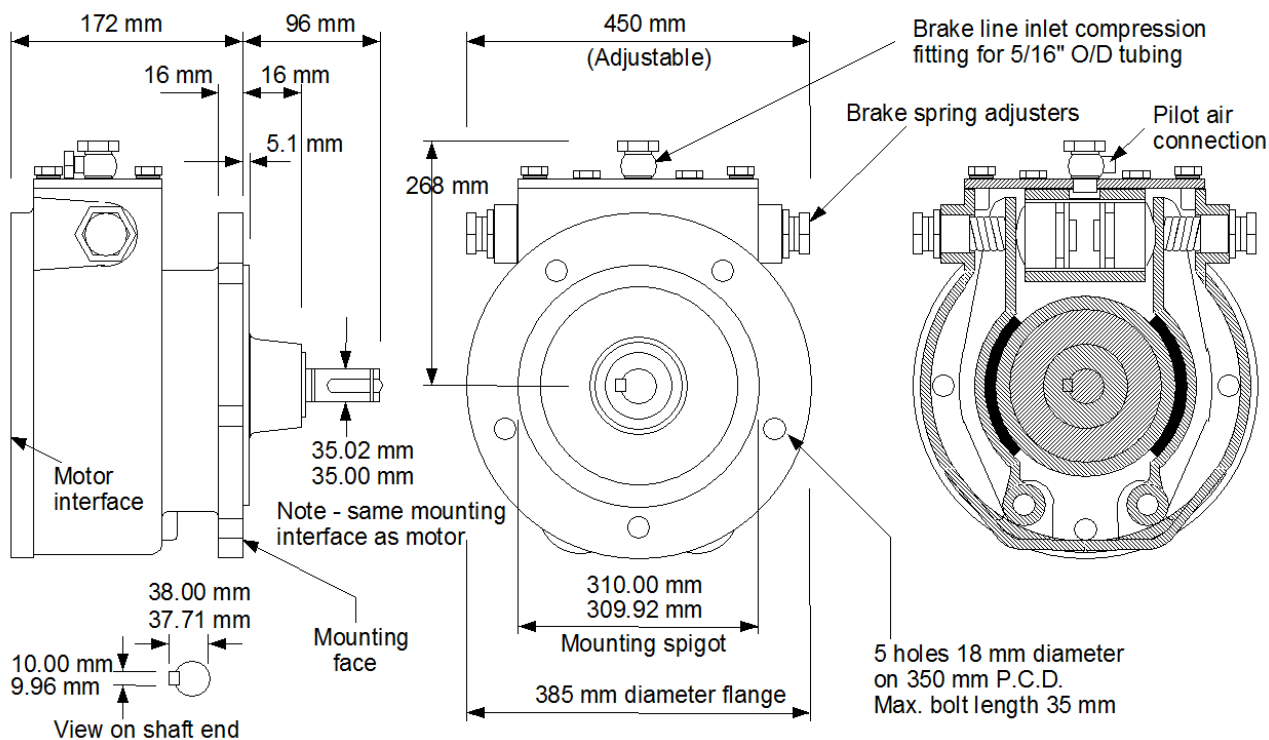
Lubricator drop rate 16-20 drops/minute intermittent operation

## Options RM610 | Brake

### Why you need a brake for your RM610 Piston Air Motor

The combination of motor with brake is widely used for winches, cranes and positioning devices. The brake module bolts directly onto the motor mounting face and has exactly the same interface as the motor.

### Dimensions RM610 Brake



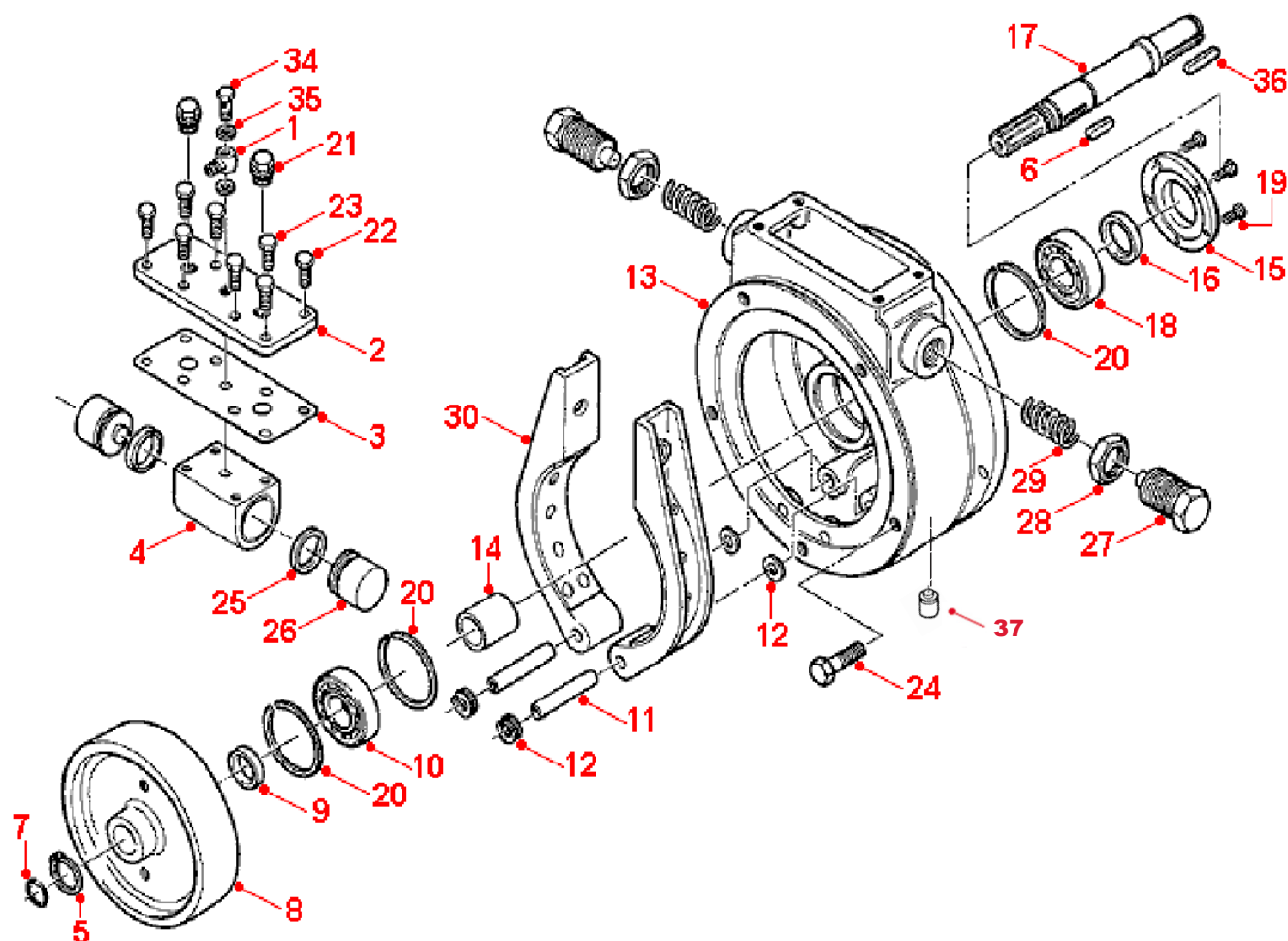
### With or without ATEX Certification

For ATEX it is important that there is no possibility for the brake to drag while the motor is running. This will cause friction which will heat up the brake. The GLOBE Brakes for the Piston RM Air Motor series are available with or without ATEX Certification for safe operations in hazardous environments. When used in an ATEX application, the brake torque is pre-set by GLOBE to a maximum torque which belongs to the desired operating pressure of the motor. The end-user has to inform GLOBE prior to the delivery about the (max.) operating pressure of the motor. At this pressure the brake will be fully released. This is done by adjusting the GLOBE APPV3214 valve which is integrated in the pneumatic control system. Whenever this system's pressure drops to a lower amount than 20% below the set release pressure, the valve closes and the brake will be blocked. This system prevents dragging of the brake shoes while operating by (unnoticed) pressure drops or incorrect handling.

Any unauthorized adjustment will make ATEX invalid. Changing or adjusting the pneumatic system, including the valves, which controls the brake will also make ATEX invalid.



## Spare Parts List Parking Brake



Item	Part No.	Description	Qty
01	816-005	Banjo Bolt C/W/ Nut&Rin 5/16	1
02	512-013	Plunger Plate	1
03	512-030	Gasket Plunger Block	1
04	512-021	Plunger Block	1
05	804-017	Circlip 40mm External	2
06	811-006	Key K130	1
07	808-002	O Ring-1/8"x1-3/8"	1
08	512-001	Brake Wheel	1
09	512-036	Wheel Spacer	1
10	807-013	Bearing 6308 2RS	1
11	412-003	Pin	2
12	803-003	Washer M 16	6
13	512-008	Brake Housing	1
14	518-001	Output Brg Spacer	1
15	518-002	Output Bearing Housing Cap	1
16	808-042	Oilseal 48x62x8/R4	1
17	512-005	Brake Shaft	1
18	807-063	Roller Bearing	1
19	802-016	Hex Head Screw M6 x 16	5
20	804-068	Circlip 90mm External	3
21	816-265	Screw Plugs (Blumay)	2
22	802-053	Set Screw M10 x 25	4
23	802-052	Set Screw M10 x 20	4
24	802-094	Bolt M16 x 40 Hex Head	5
25	808-071	U Packing U132	2
26	512-011	Plunger	2
27	512-009	Adjuster Screw	2
28	512-024	Locknut	2
29	814-011	Spring MSD15	2
30	512-901	Brake Shoe Assy	2
34	816-006	Banjo Bolt 1/4" BSP	1
35	808-090	Bonded Seal 1/4"BSP Dowty	2
36	811-030	Key 10 x 8 x 63	1
37	7008G18	Breather plug 1/8 BSPP (ATEX only)	1

## Options RM610 | Gearbox

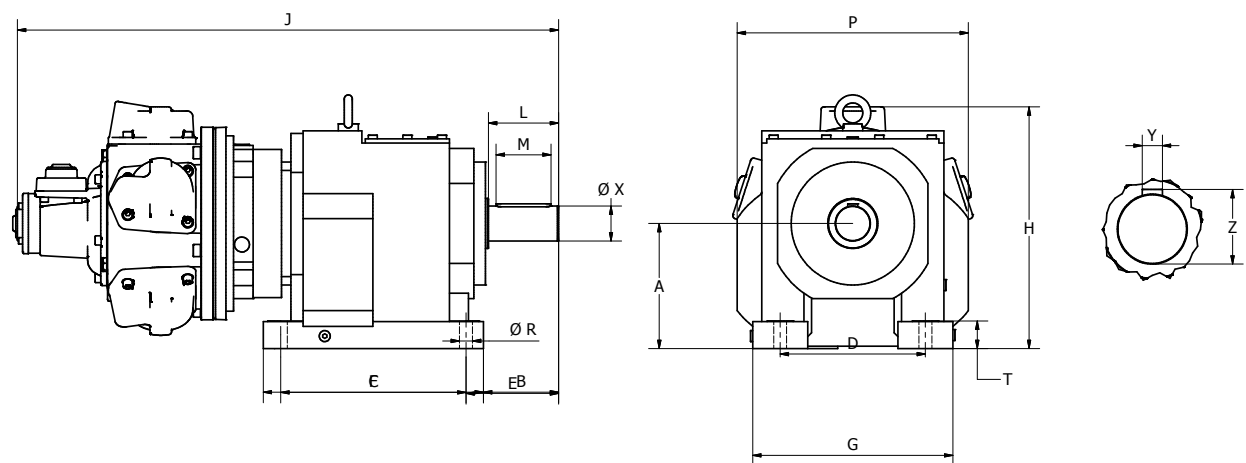
### Why you need a gearbox for your RM610 Piston Air Motor

We can supply all our piston motors in combination with many different gearboxes. If you are looking for more torque for a certain application, we can assist you by selecting the right kind of gearbox. Order your RM610 Piston Air Motor in combination with a gearbox for higher torques and lower speeds.

### Performance summary

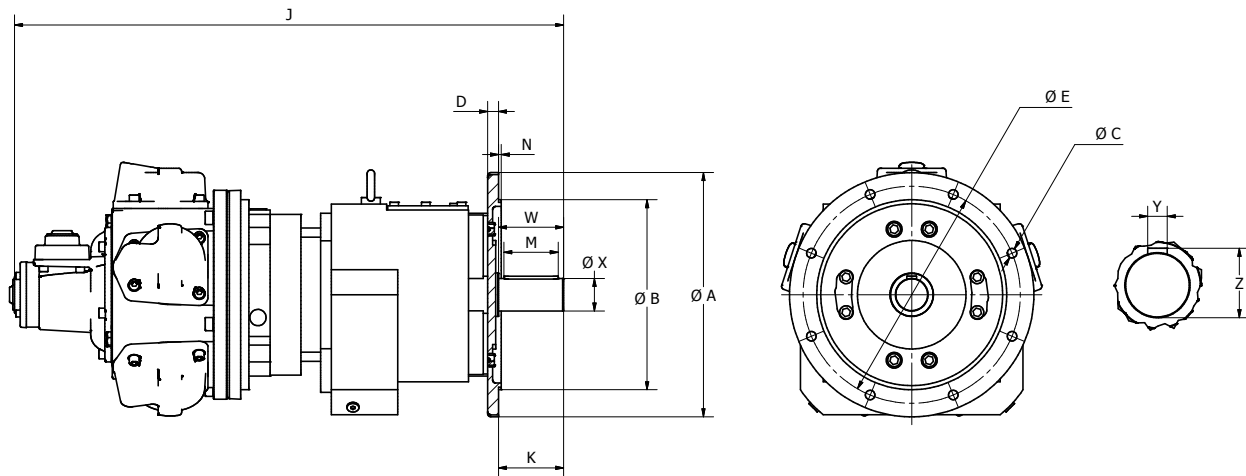
Gearbox Ratio	Maximum Power Conditions					Approx. Min. Start torque		Max Cont.	Max overhung Force		Weight			
	kW	HP	RPM	Torque							Gearbox	Adapter	Gearbox kit	Motor & Gearbox
				Nm	lbf. Ft.	Nm	lbf. Ft.	RPM	N	lbf.				
5.24	16	22.5	210	734	541	807	596	281	13870	3118	85	18	103	218
25.05	16	22.5	44	3507	2588	3858	2847	59	45000	10117	215	18	233	348
50.74	16	22.5	22	7104	5243	7814	5767	29	50000	11241	305	18	323	438
92.06	16	22.5	12	12888	9512	14177	10463	16	120000	26978	635	18	653	768

Base mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	F	G	H	J	L	M	P	R	T	W	X	Y	Z	MASS
3.42 - 12.68:1	225	132	310	250	159.5	365	340	469	1131	125	100	410	22	50	120	60.02	18	64	228 kg
	8.9	5.2	12.2"	9.8"	6.3"	14.4"	13.4"	18.5"	44.5"	4.9"	3.9"	16.1"	0.9"	2.0"	4.7"	2.4"	0.7"	2.5"	503 lb
14.06 - 21.41:1	250	150	370	290	185	440	400	507	1092	145	110	462	26	55	140	70.02	20	74.5	358 kg
	9.8"	5.9"	14.6"	11.4"	7.3"	17.3"	15.7"	20.0"	43.0"	5.7"	4.3"	18.2"	1.02"	2.2"	5.5"	2.8"	0.8"	2.9"	789 lb
23.04 - 35.09:1	315	220	410	340	260	490	450	578	1199	216	180	510	33	60	210	100.03	28	106	438 kg
	12.4"	8.7"	16.1"	13.4"	10.2"	19.3"	17.7"	22.8"	47.2"	8.5"	7.1"	20.1"	1.3"	2.4"	8.3"	3.9"	1.1"	4.2"	988 lb
39.45 - 63.08:1	355	215	500	380	260	590	530	660	1305	216	180	580	39	65	210	100.03	28	106	608 kg
	14.0"	8.5"	19.7"	15.0"	10.2"	23.2"	20.9"	26.0"	51.4"	8.5"	7.1"	22.8"	1.5"	2.6"	8.3"	3.9"	1.1"	4.2"	1362 lb
69.41 - 92.06:1	425	225	580	500	270	670	630	758	1373	216	180	630	39	100	210	120.03	32	127	768 kg
	16.7"	8.9"	22.8"	19.7"	10.6"	26.4"	24.8"	29.8"	54.1"	8.5"	7.1"	24.8"	1.5"	3.9"	8.3"	4.7"	1.3"	5.0"	1715 lb

Flange mounted Gear Box Dimensions



RANGE RATIO	A	B	C	D	E	J	K	M	N	X	Y	Z	MASS
3.42 - 12.68:1	450	350.00	17.5	20	400	1020	120	100	5	60.02	18	64	218 kg
	17.7"	13.8"	0.7"	0.8"	15.7"	40.2"	4.7"	3.9"	0.2"	2.4"	0.7"	2.5"	481 lb
14.06 - 21.41:1	450	350.00	17.5	22	400	1103	140	110	5	70.02	20	74.5	348 kg
	17.7"	13.8"	0.7"	0.9"	15.7"	43.4"	5.5"	4.3"	0.2"	2.8"	0.8"	2.9"	767 lb
23.04 - 35.09:1	450	350.00	17.5	22	400	1170	170	140	5	90.03	25	95	438 kg
	17.7"	13.8"	0.7"	0.9"	15.7"	46.1"	6.7"	5.5"	0.2"	3.5"	1.0"	3.7"	966 lb
39.45 - 63.08:1	550	450.00	18	31	500	1305	210	180	5	100.03	28	106	608 kg
	21.7"	17.7"	0.7"	1.2"	19.7"	51.4"	8.3"	7.1"	0.2"	3.9"	1.1"	4.2"	1340 lb
69.41 - 92.06:1	550	450.00	18	31	500	1392	210	180	5	120.03	32	127	768 kg
	21.7"	17.7"	0.7"	1.2"	19.7"	54.8"	8.3"	7.1"	0.2"	4.7"	1.3"	5.0"	1693 lb

RM610



## Options RM610 | Control Valve

### Why you need a control valve for your RM610 Piston Air Motor

Control valves allow you to change the speed and direction of the motor, they are mounted directly onto the air motor. This range of bolt on valves offers very sensitive speed and directional control. One frictionless matched spool and sleeve assembly is offered with two alternative means of actuation.

### Configuration

As standard these valves can be supplied with either EQUAL POWER OR BIASED POWER spools, the latter is suitable for hoisting applications (normal power for lifting - reduced power for lowering).

The direction of reduced power must be stated when ordering CW or CCW, when viewed on the output shaft of the motor.

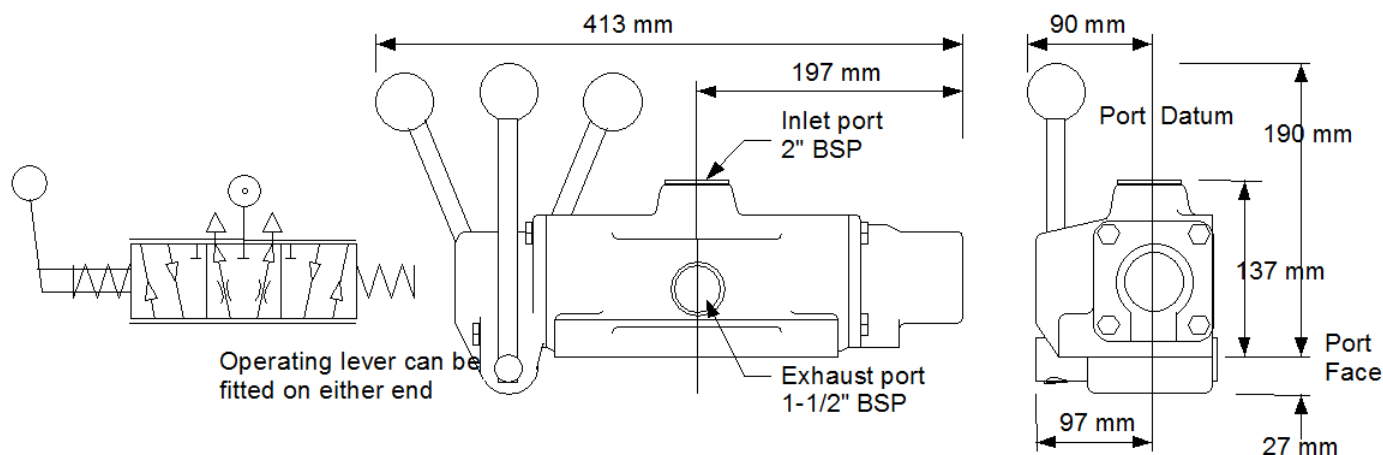
**Hand Controlled (HCV)** - The control valve spool is operated directly by a lever mechanism. Speed increase is obtained as the lever is moved in either direction from the centre (neutral) position.

**Remotely Controlled (RCV)** - This option is usually controlled from a remote position by one of the PC series or LC2 remote controllers. A variable air pilot signal is applied to either end of the valve spool, depending on the required direction of motor rotation. The pilot pressure range is between 1.4 bar (20 psi) and 4.8 bar (70 psi), increased pilot pressure gives increased speed. The valve is spring centred to neutral.

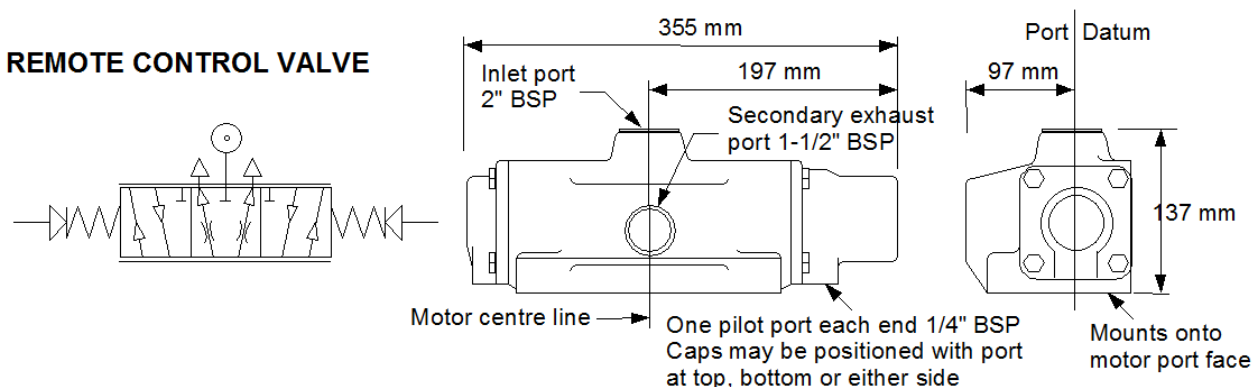
**Pressure Drop** - Minimal pressure drop will be experienced through the valves, having the effect of maintaining the output torque whilst reducing the motor output speed by approximately 10-15% at 6 bar (90 psi) at maximum power. The starting torque remains unaffected.

### Dimensions

#### HAND CONTROL VALVE

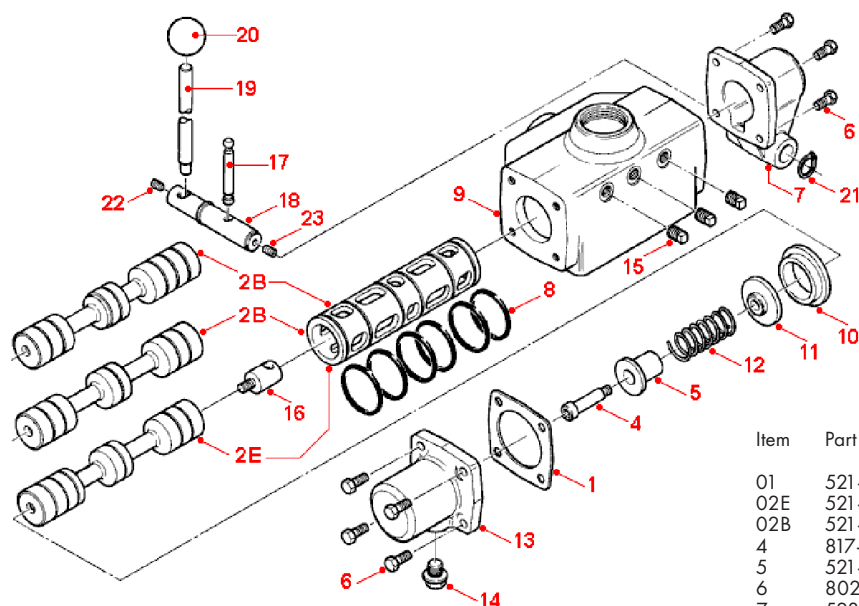


#### REMOTE CONTROL VALVE



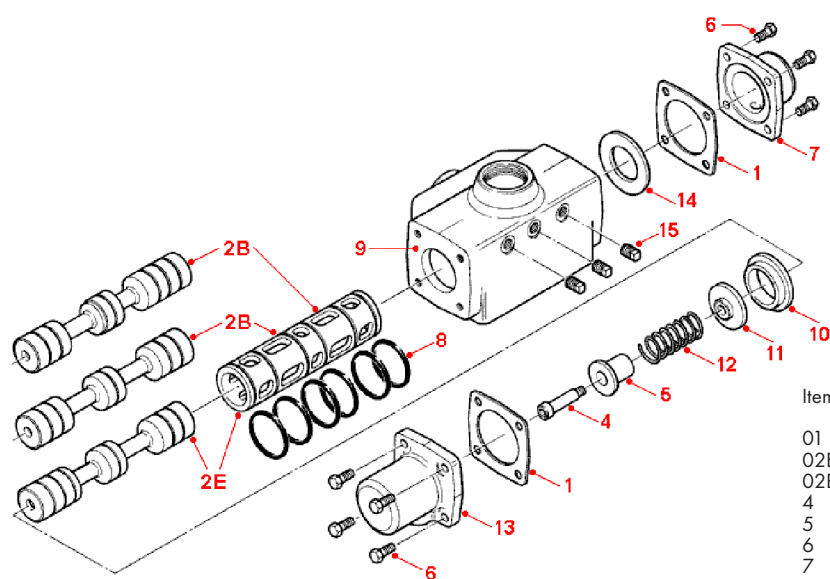
RM610

## Spare Parts List Hand Control Valve



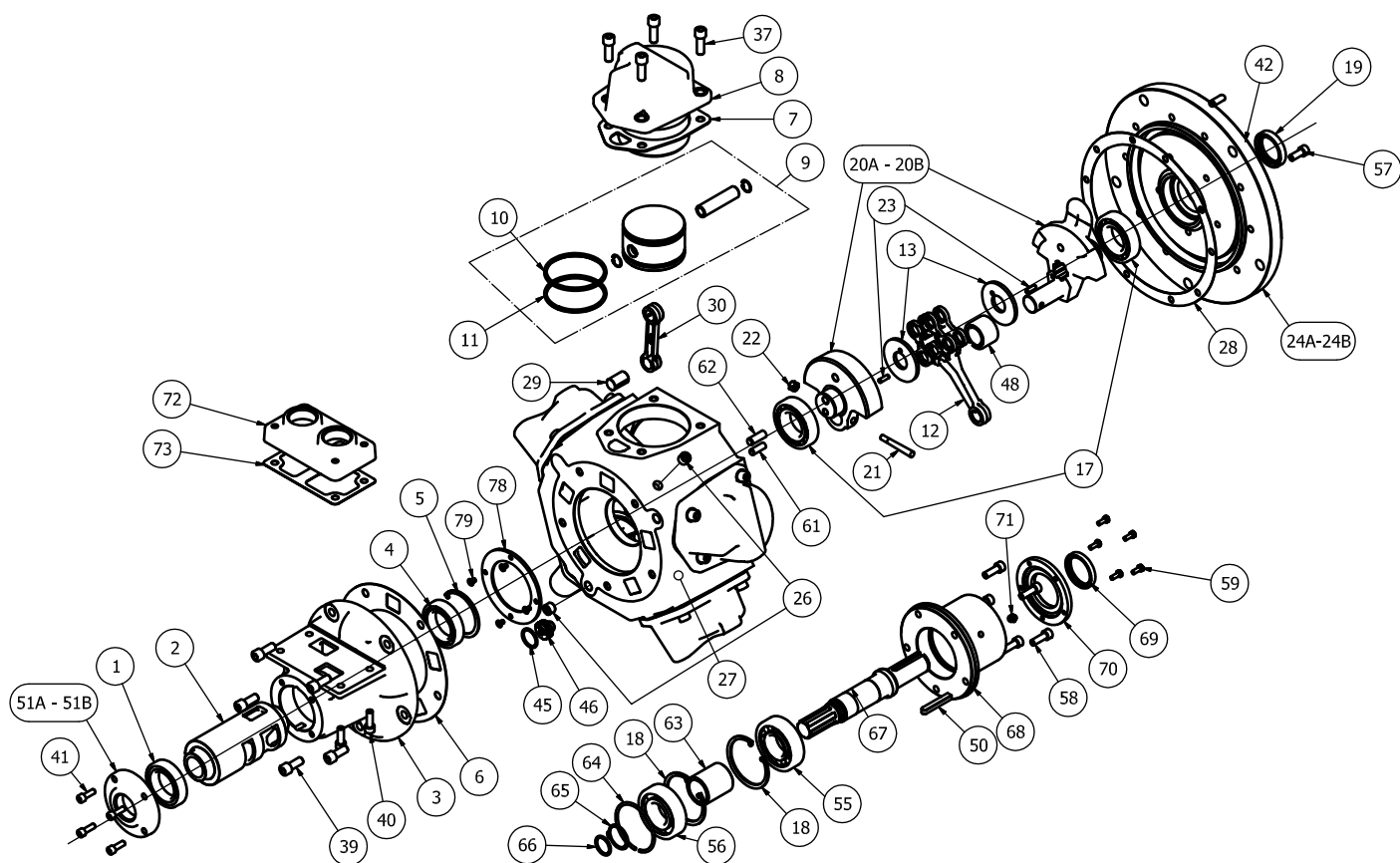
Item	Part No.	Description	Qty	
01	521-066	End Cap Gasket	2	
02E	521-913	Matched Spool and Sleeve	1	(Equipower)
02B	521-914	Matched Spool and Sleeve	1	(Biased)
4	817-002	Shoulder Screw 10 mm	1	
5	521-071	Centering Shaft Guide	1	
6	802-033	Set Screw M8 x 25	8	
7	523-041	Lever Cap	1	
8	808-013	O Ring 2" x 1/8"	6	
9	521-060	Valve Body	1	
10	521-068	Valve Sleeve Spacer	1	
11	521-072	Washer, Spring Centering	1	
12	814-020	Spring Flexo 403824	1	
13	521-064	End Cap - Spring End	1	
14	113-050	Vent Plug	1	
15	816-061	Plug 1/4" BSPT Sq. Head	3	
16	523-024	Toggle Shaft	1	
17	523-026	Toggle Pin	1	
18	523-008	Hand Lever Pivot	1	
19	313-002	Hand Lever	1	
20	818-002	Black Plastic Knob 1-1/2"	1	
21	804-013	Circlip 20mm External	2	
22	815-010	Grub Screw M8 x 10	1	
23	815-002	Grub Screw M8 x 16	1	

## Spare Parts List Remote Control Valve



Item	Part No.	Description	Qty	
01	521-066	End Cap Gasket	2	
02E	521-913	Matched Spool and Sleeve	1	(Equipower)
02B	521-914	Matched Spool and Sleeve	1	(Biased)
4	817-002	Shoulder Screw 10 mm	1	
5	521-071	Centering Shaft Guide	1	
6	802-033	Hex Head Screw M8 x 25	8	
7	521-065	End Cap - Plain End	1	
8	808-013	O Ring 2"x2-1/8"	6	
9	521-060	Valve Body	1	
10	521-068	Valve Sleeve Spacer	1	
11	521-072	Washer, Spring Centering	1	
12	814-019	Spring, Control Spool	1	
13	521-064	End Cap - Spring End	1	
14	521-033	End Cap Washer	1	
15	816-074	Plug 1/8" BSPT Sq. Head	3	

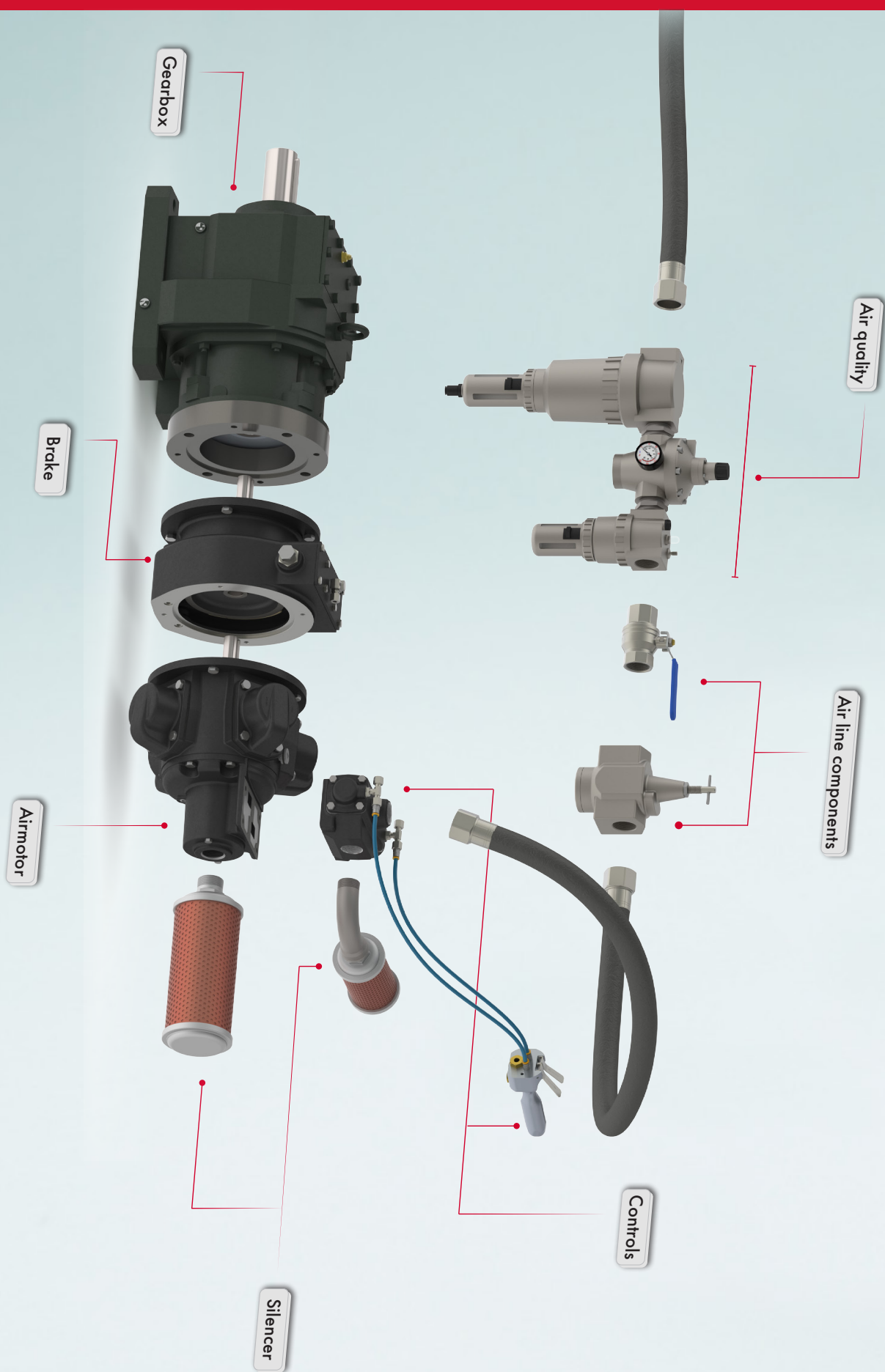
## Spare Parts List RM610



Item	Part No.	Description	Qty	Kit No.	Item	Part No.	Description	Qty	Kit No.
01	807-056	Rotary Valve Bearing (Outer)	1		45	808-004	Seal (transit only)	1	
02	620-006	Rotary Valve	1		46	130-066	Breather Plug	1	
03	620-011	Rotary Valve Housing	1		48	807-047	Needle Bearing	1	
04	807-055	Rotary Valve Bearing (Inner)	1		50	811-030	Key	1	
05	804-070	Rotary Valve Bearing Circlip	1		51A	620-042	Rotary Valve Exhaust Cover BSP	1	
06	620-001	Rotary Valve Housing Gasket	1*	629-912	51B	620-042N	Rotary Valve Exhaust Cover NPT	1	
07	510-030	Cylinder Gasket	5*	629-912	55	807-063	Output Shaft Brg. (Outer)	1	
08	510-082	Cylinder	5		56	807-012	Output Shaft Brg. (Inner)	1	
09	520-902A	Piston Assembly	5		57	809-001	Flange Plate Cap Screws	10	
10	520-024	Compression Ring	5*	629-912	58	809-002	Output Housing Bolts	5	
11	520-022	Oil Control Ring	5*	629-912	59	802-016	Output Housing Cover Bolts	5	
12	520-077	King Rod	1		61	806-001	Drive Pin (dia. 10mm)	1	
13	520-052	Crank Pin Spacer	2		62	806-002	Drive Pin (dia. 12mm)	1	
17	807-062	Crankshaft Bearing	2		63	518-001	Output Shaft Bearing Spacer	1	
18	804-068	Crankshaft Bearing Circlip	2		64	518-004	Output Shaft Spring Ring	1	
19	808-047	Crankshaft Oilseal	1*	629-912	65	804-017	Output Shaft Circlip	1	
20A	520-901	Std. Crankshaft Assembly	1		66	808-002	Output Shaft Seal	1*	629-912
20B	520-904	SAE Crankshaft Assembly	1		67	518-003	Output Shaft	1	
21	510-088	Crank Bolt	1		68	518-005	Output Shaft Housing	1	
22	801-009	Crank Nut	1		69	808-042	Output Shaft Oil Seal	1*	629-912
23	806-013	Spring Dowel	1		70	518-002	Output Shaft Housing Cover	1	
24A	520-076	Std. Flange Plate	1		71	816-015	Output Shaft Grease Nipple	1	
24B	520-113	SAE Flange Plate	1		72A	620-046	Inlet Adaptor Plate BSP	1	
26	816-071	Plug	1		72B	620-046N	Inlet Adaptor Plate NPT	1	
27	620-012	Engine Case	1		73	620-047	Inlet Adaptor Plate Gasket	1*	629-912
28	510-090	Engine Case Gasket (520)	1*	629-912	78	620-045	Bearing Cap	1	
29	520-081	Queen Rod Pivot	5		79	810-016	Bearing Cap C'sk Screw	4	
30	520-078	Queen Rod	5			149-920	Conversion Kit	1	
37	809-035	Cylinder Bolts	20			629-912	RM610 Seal Kit	1	
39	802-054	Valve Housing Bolts	4						
40	802-054	Adaptor Plate Bolt	4						
41	802-033	Exhaust Cover Bolts	2						
42	815-008	Flange Plate Plugs	5*						

RM610

## » Accessories for the GLOBE Piston Air Motor



# Accessories

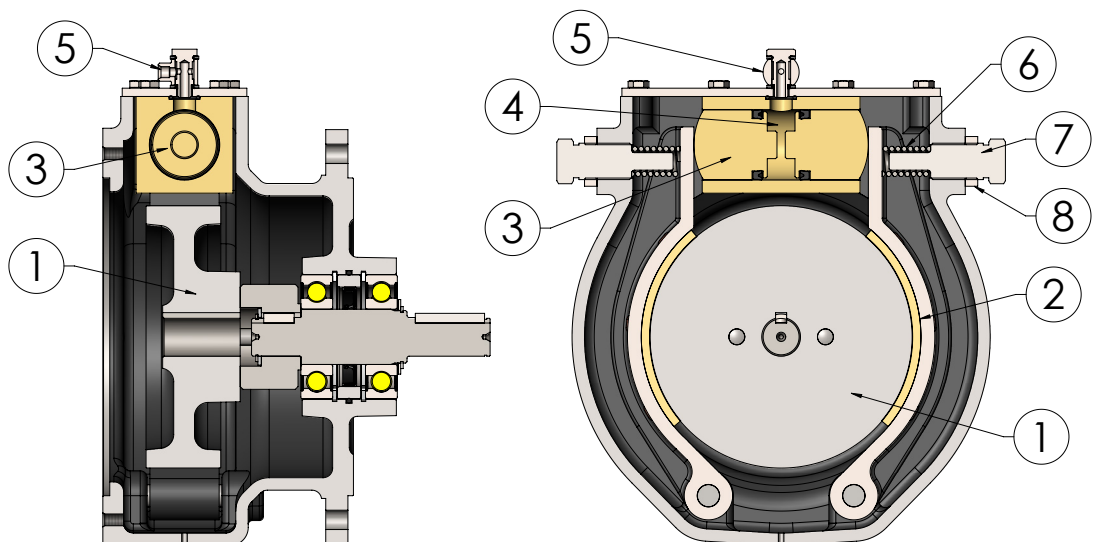
## Brakes

Our pneumatic brakes can be combined with all our air motors. The combination of motor with brake is widely used for winches, cranes and positioning devices. All brakes are built from cast iron or steel housings and are available with either a IEC or NEMA flange mounting. This makes our brakes easy to install on our air motors and gearboxes. If you have special requirements, we are happy to advise you on compound combinations.

### Operating Principle Brake

The brake has a corresponding mounting interface, thus can be directly mounted on the motor. This brake consists of two spring applied brake shoes (2) pressed against a central hub (1), which is mounted on the output shaft of the motor. These shoes are released by applying air pressure to the cylinder / piston assembly (3/4). The brake torque can be varied by means of two spring adjusters (7).

The brake must be mounted to a GLOBE Piston motor of equivalent size (for instance: RM 110 Brake on RM 110 Motor), including the correct piping and control valves which are supplied by GLOBE. Under no circumstances should these parking brakes be offered or used for dynamic braking applications; they have not been designed to meet the different criteria that apply in these cases.

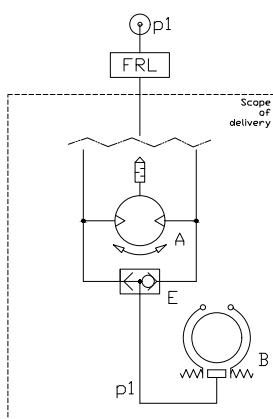


- |   |   |   |   |
|---|---|---|---|
| 1 | Brake wheel                                       | 5 | Pilot pressure connection                       |
| 2 | Brake shoe (2x)                                   | 6 | Brake shoe spring (2x);<br>brake force actuator |
| 3 | Brake release piston (2x);<br>brake force release | 7 | Brake force adjuster (2x)                       |
| 4 | Brake release cylinder;<br>pressure chamber       | 8 | Brake force adjuster locknut (2x)               |

## With or without ATEX Certification

For ATEX it is important that there is no possibility for the brake to drag while the motor is running. This will cause friction which will heat up the brake. The GLOBE Brakes for the Piston RM Air Motor series are available with or without ATEX Certification for safe operations in hazardous environments. When used in an ATEX application, the brake torque is pre-set by GLOBE to a maximum torque which belongs to the desired operating pressure of the motor. The end-user has to inform GLOBE prior to the delivery about the (max.) operating pressure of the motor. At this pressure the brake will be fully released. This is done by adjusting the GLOBE APPV3214 valve which is integrated in the pneumatic control system. Whenever this system's pressure drops to a lower amount than 20% below the set release pressure, the valve closes and the brake will be blocked. This system prevents dragging of the brake shoes while operating by (unnoticed) pressure drops or incorrect handling.

Any unauthorized adjustment will make ATEX invalid. Changing or adjusting the pneumatic system, including the valves, which controls the brake will also make ATEX invalid. Our GLOBE Piston Air Motors with ATEX are available on request.

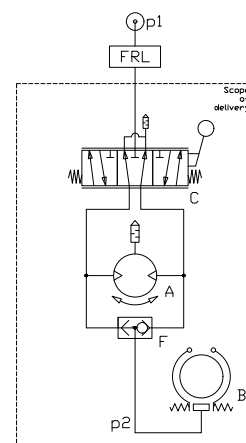


### Circuit A (Non ATEX)

Applies to braked motors supplied without control valving. The unit will be fitted with a shuttle valve to allow brake operation for dual rotation.

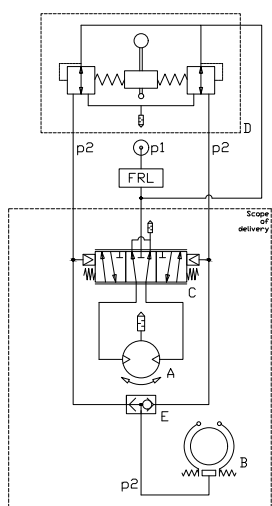
### Circuit B (Non ATEX)

Units supplied with hand (HCV) proportional control reversible valve (C). When the HCV (C) is operated a pneumatic signal will be passed onto the the shuttle valve (F) and the brake (B) is released.



### Circuit C (Non ATEX)

Units supplied with remote (RCV) proportional control reversible valve (C). When the RCV is actuated by one of the pilot lines (p2) a pneumatic signal will be passed onto the shuttle valve (E) and the brake (B) is released.

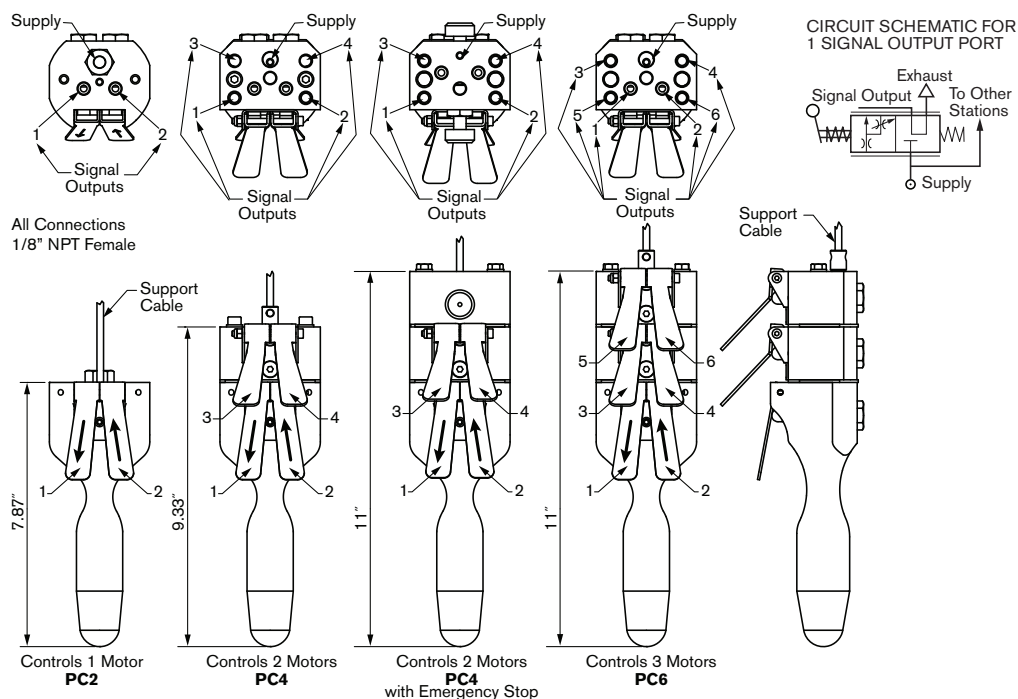




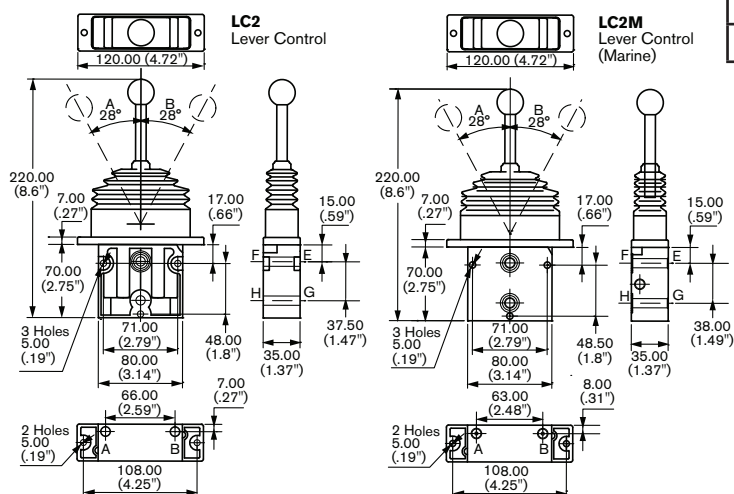
## Controls

### Pendant Controls (PC2, 4 or 6)

The PC2, 4 and 6 remote controllers are designed specifically for use with the RCV modules. They provide the correct range of pilot pressure required to operate the RCV units, and give excellent control of motor speed. The PC2 is used to control one (hoist) motor; the PC4 can control two motors independently (say hoist and long travel); the PC6 can control three motors independently (hoist, long travel, traverse). Motors of different sizes can be controlled from the same unit. Control line lengths of 36 m / 120 ft. give excellent response. For distance in excess of this contact factory. The control lines are small bore eliminating the need for large capacity air supply lines between motor and controller. If required, supply pressure can be taken from the tapping on the RCV. MARINE VERSION AVAILABLE. PC2M, PC4M OR PC6M.

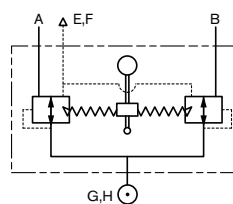


### Lever control (LC2) Marine Style (LC2M)



	PC2	PC4	PC6	PC4L	PC6L
KG	1.0	1.5	2.0	1.6	2.1
LBS.	2.3	3.3	4.3	3.5	4.7

#### CIRCUIT SYMBOL LEVER CONTROL VALVE



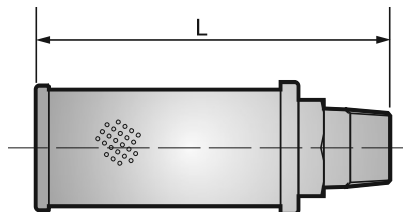
#### NOTE:

H and G are alternative supply ports.  
A and B are outlet ports.  
Plug alternative ports not connected.  
E and F are exhaust ports.  
All ports are 1/8" (BSP).

## Silencers

Mufflers screw directly into the primary and secondary exhaust ports. Note - control valves also have secondary exhaust ports. These mufflers are designed for intermittent use. For continuous operation contact factory.

If it is necessary to pipe the exhaust away from the motor, care must be taken to adequately size the pipe-work to avoid build up of back pressure in the system. If in doubt consult our Applications Department.

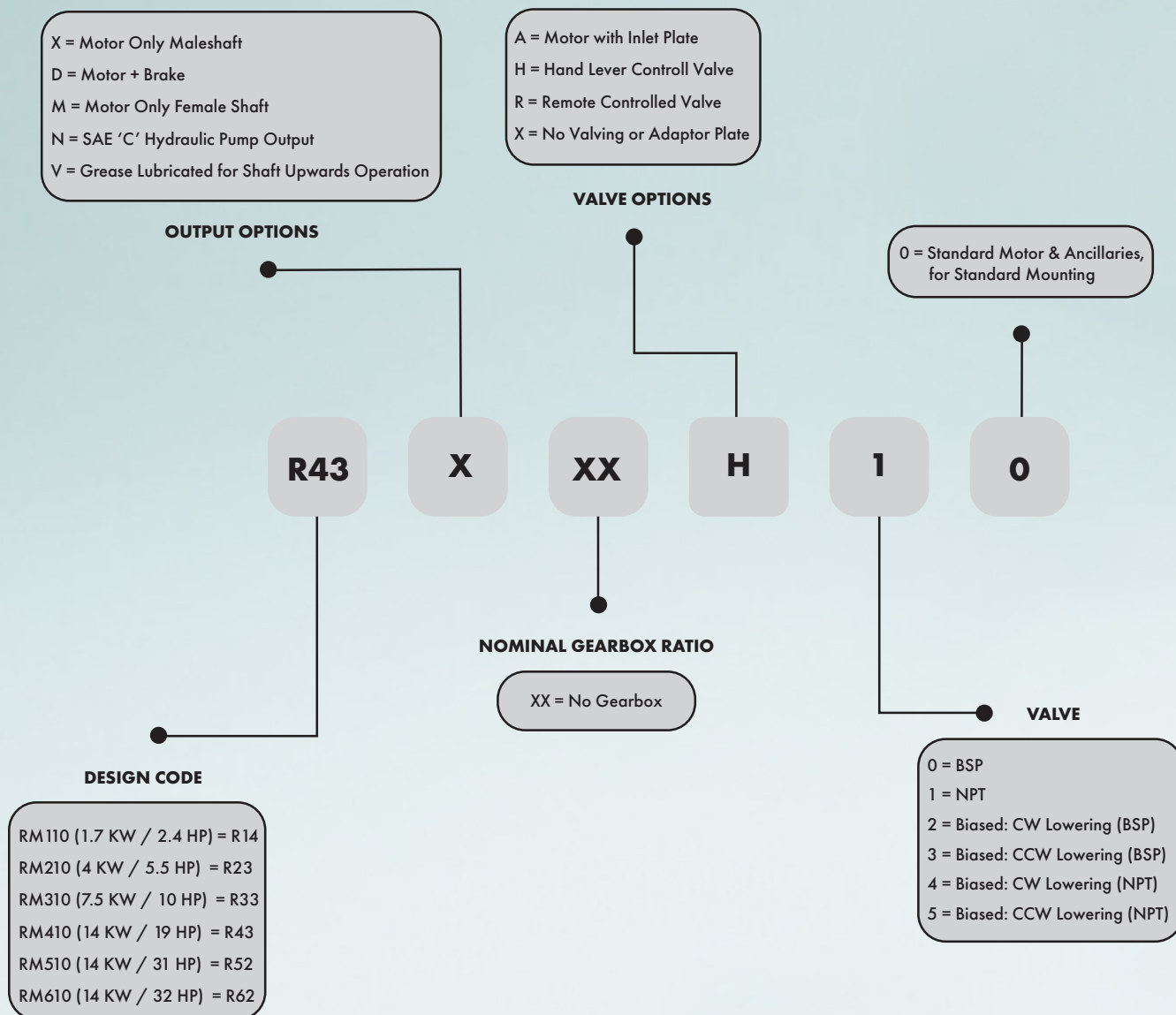


	110 Primary	110 Secondary	210 Primary	210 Secondary	310	410	510	610
Size	19.05 3/4"	12.70 1/2"	25.40 1"	19.05 3/4"	31.75 1-1/4"	31.75 1-1/4"	38.10 1-1/2"	50.80 2"
L	171.45 6.75	139.7 5.5	203.2 8.0	171.45 6.75	209.55 8.25	209.55 8.25	336.55 13.25	463.55 18.25

Normally supplied in kit form complete with fittings.

## Ordering code

Select easily with the ordering code your version and order it at our sales team. Do you have special wishes? For example ATEX Certified, different mountings, brakes etc. You name it and we make it possible. Contact us for your wishes and we will be happy to engineer a proposal to suit your requirements.



Order your  
**PISTON MOTOR:**  
[orders@globe-benelux.nl](mailto:orders@globe-benelux.nl)

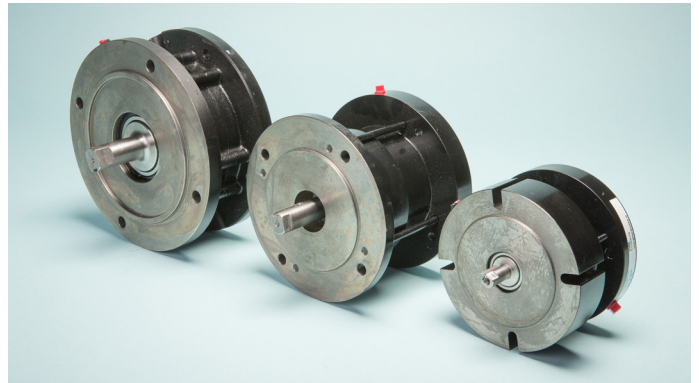


# GLOBE AIRMOTORS B.V.

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**Compact Piston Air Motors**



**Pneumatic Brakes**



**Compact Vane Air Motors**



**Planetary Geared Vane Air Motor**



**Vane Air Motors**



**Specials: Costum Build**

This document, as well as the CAD data of the vane air motors are available for download on [globe-benelux.nl](http://globe-benelux.nl).

**[globe-benelux.nl](http://globe-benelux.nl)**