

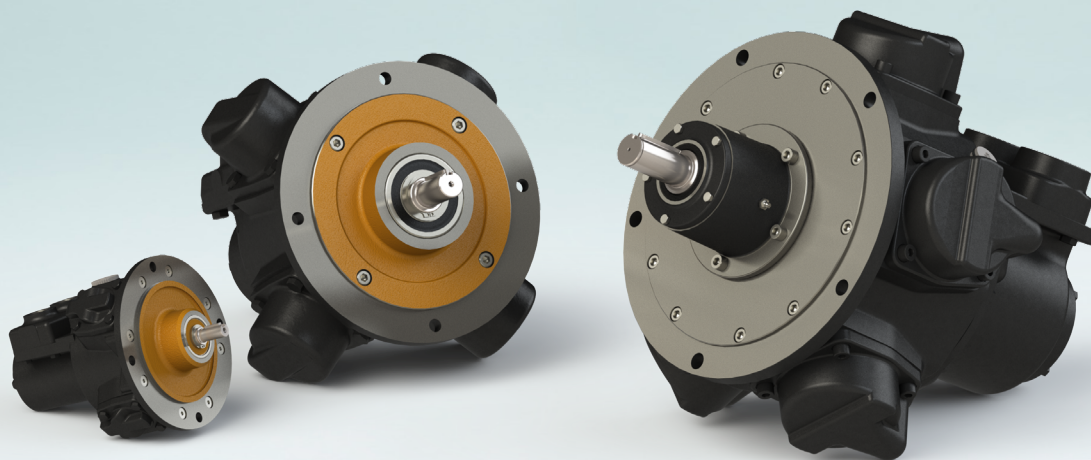


# GLOBE AIRMOTORS B.V.

GLOBE Airmotors | Boerhaaveweg 9-11 | NL - 2408 AD Alphen a/d Rijn | Tel +31 172 426 608 | [info@globe-benelux.nl](mailto:info@globe-benelux.nl)

## Specifications: RM310

Piston Air Motor



Order your  
**PISTON MOTOR:**  
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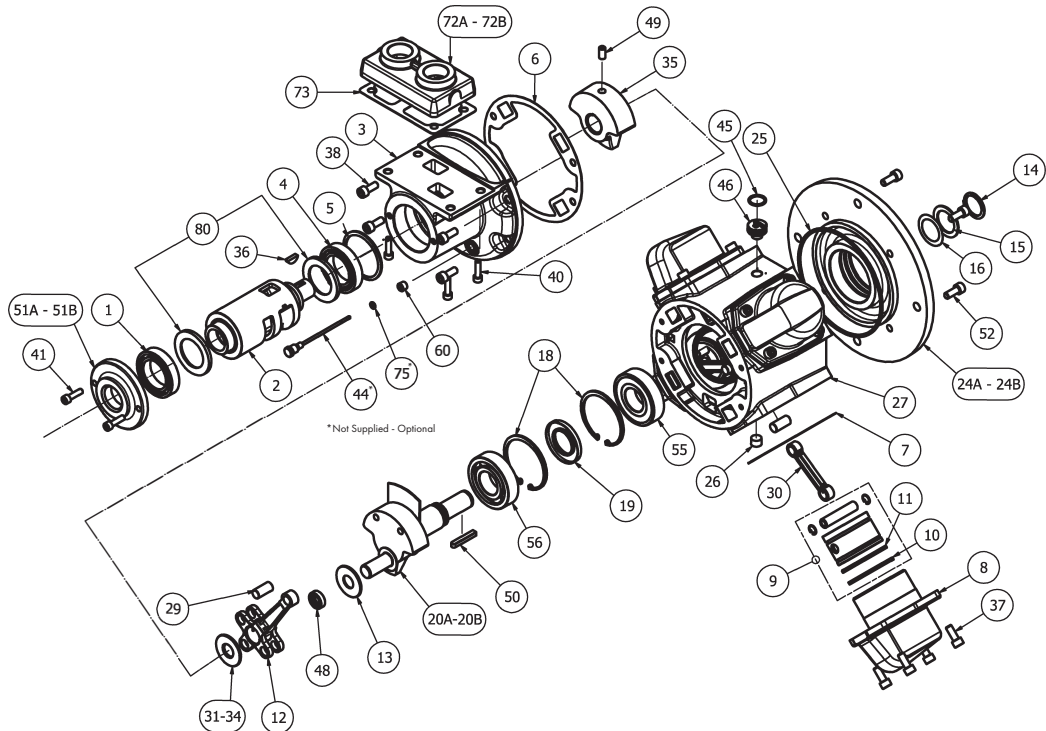
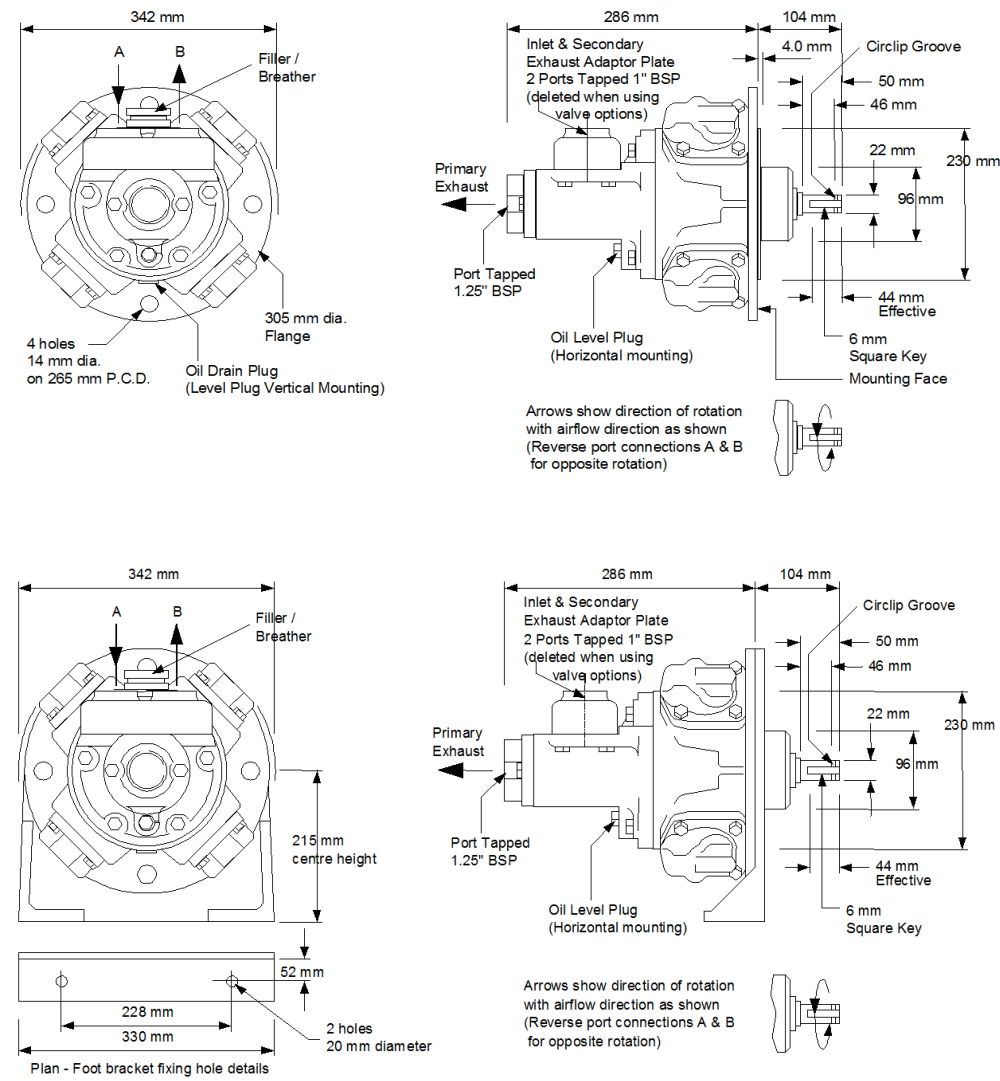
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**LRQA**  
CERTIFIED  
ISO 9001

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

Dimensions RM310 & RM310 + Foot Bracket

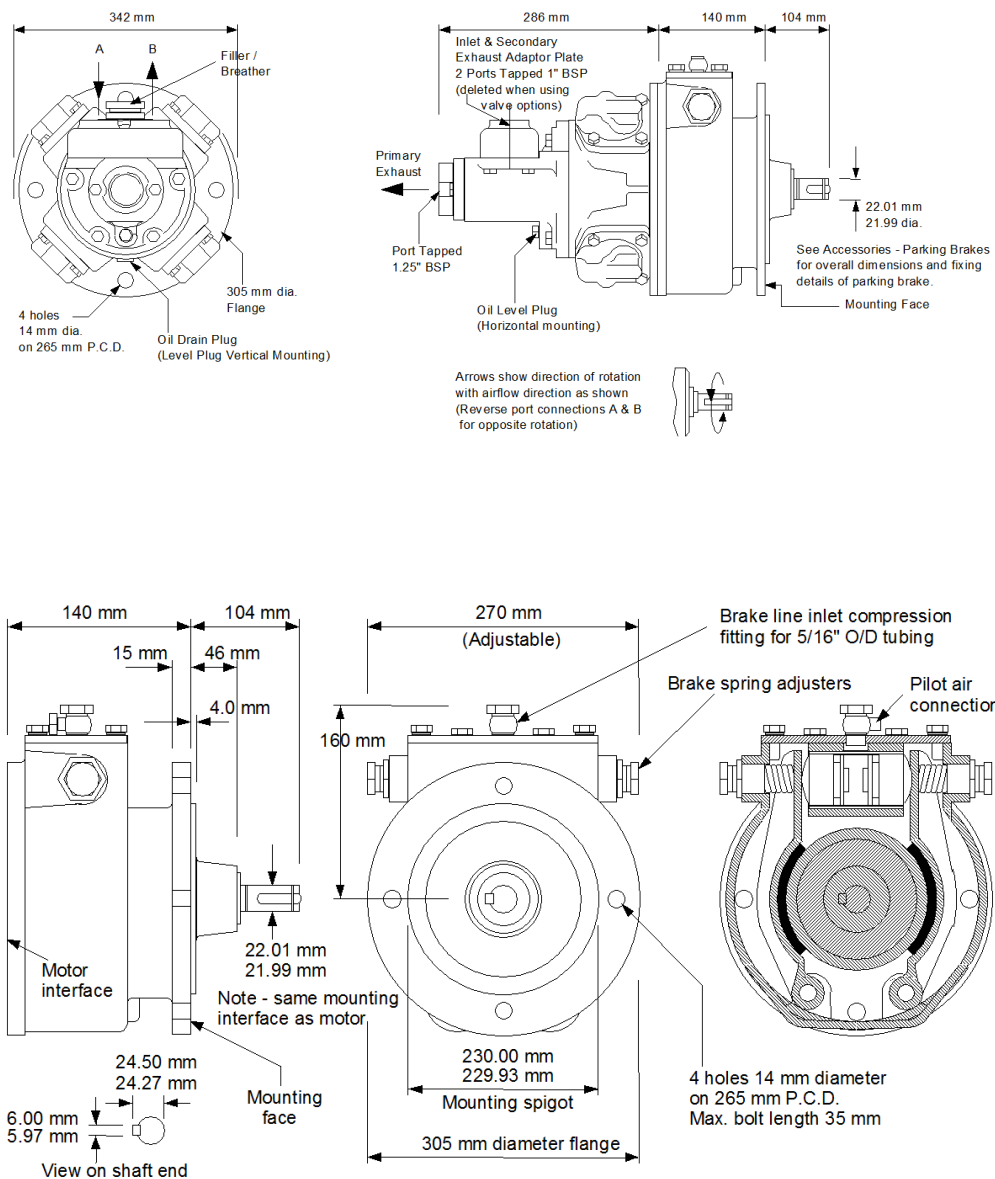
Spare Parts List RM310



| 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 Bolt             | 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  | Sld. Crankshaft Assembly     | 1   |         | 75   | 808-008  | Dipstick Seal                  | 1*  | 339-911 |
| 24   | 330-076  | Sld. 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.

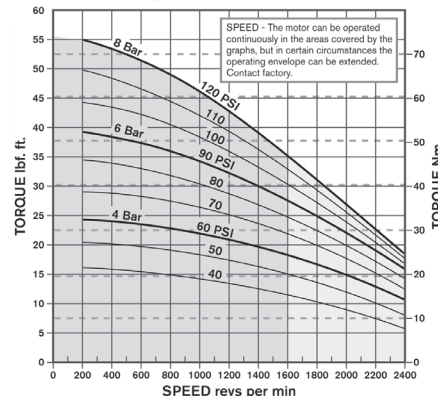
## Dimensions & Performance RM310 + Brake



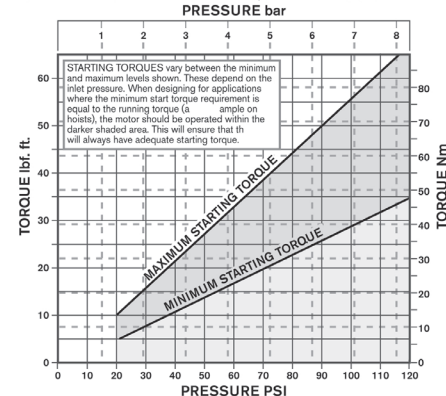
Gearbox ratio: None

Maximum speed: 2400 RPM  
No Control Valve fitted

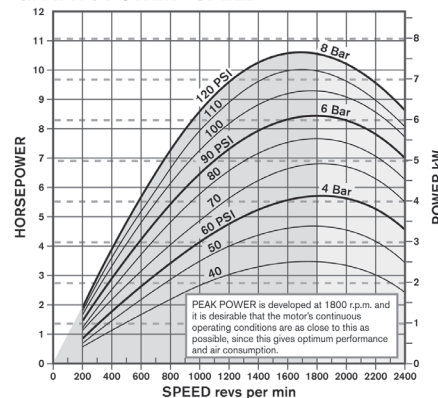
GRAPH 1 TORQUE - SPEED



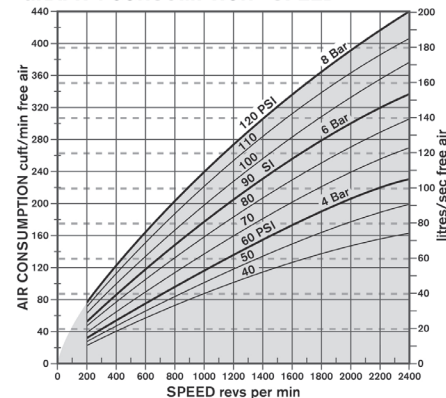
GRAPH 2 STARTING TORQUE - PRESSURE



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.

### GENERAL DATA

MASS (motor only) 48 kgs (106 lbs)

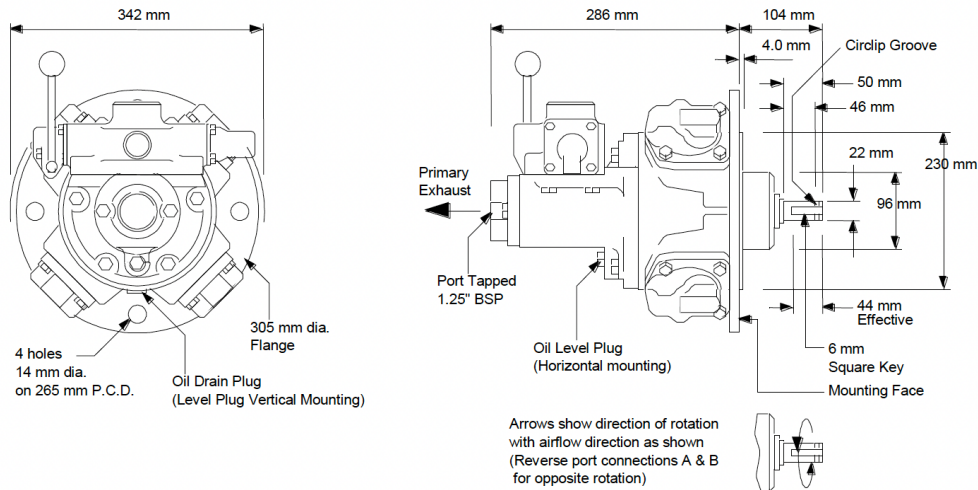
MOMENT OF INERTIA of rotating parts 1.8 gm<sup>2</sup> (motor only)

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

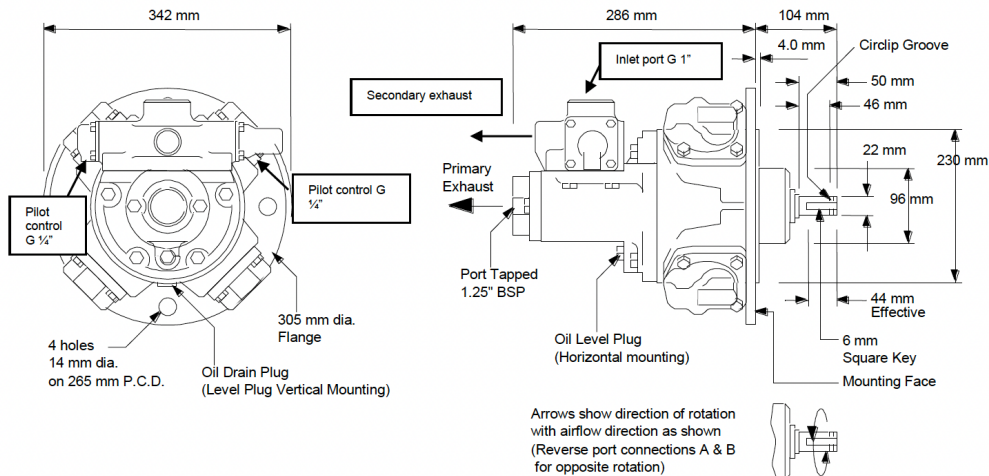
TEMPERATURE RANGE -20°C to +60°C (-4°F to +140°F) / -10°C to +60°C (-14°F to +140°F) with brake

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

## Dimensions & Performance RM310 + HCV



## Dimensions & Performance RM310 + RCV



## Operational principle RM310 Control Valve Options

This range of bolt on valves offers very sensitive speed and directional control. One frictional matched spool and sleeve assembly is offered with two alternative means of actuation.

### Configuration

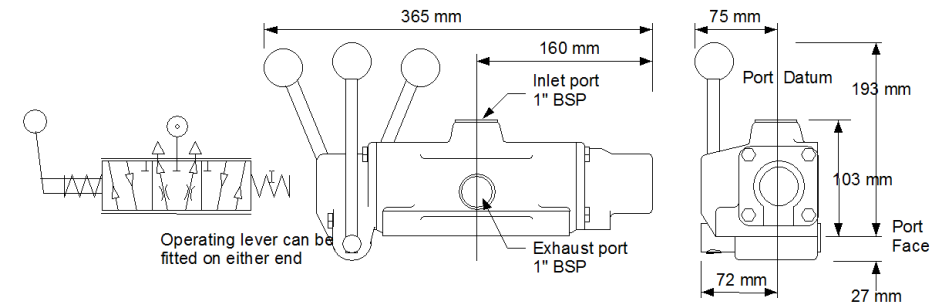
As standard these valves can be supplied with either **EQUAL POWER OR BIASED POWER** spools, the latter is suitable for hoisting applications (normal power for lifting - reduced power for lowering). The direction of reduced power must be stated when ordering **CW** or **CCW**, when viewed on the output 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.

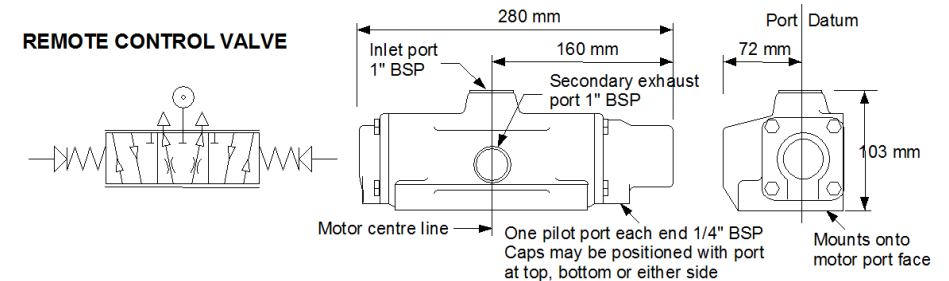
**Remotely Controlled (RCV)** - This option is usually controlled from a remote position by one of the PC series or LC2 remote controllers. A variable air pilot signal is applied to either end of the valve spool, depending on the required direction of motor rotation. The pilot pressure range is between 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.

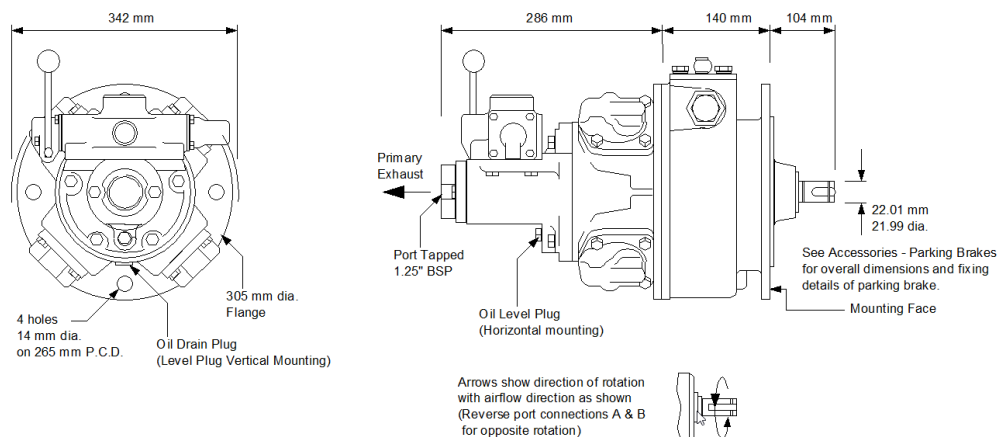
### HAND CONTROL VALVE



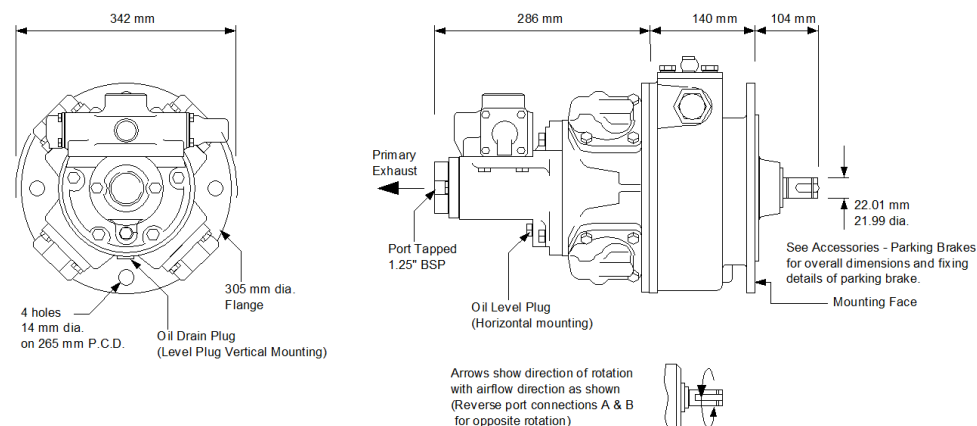
### REMOTE CONTROL VALVE



## Dimensions & Performance RM310 + Brake + HCV

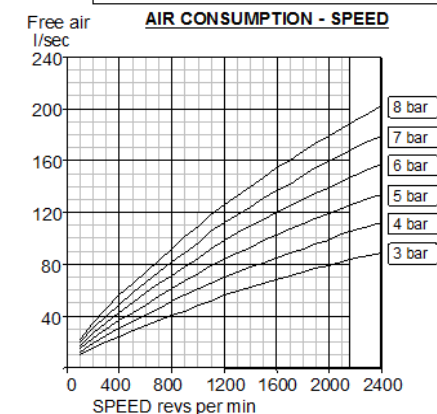
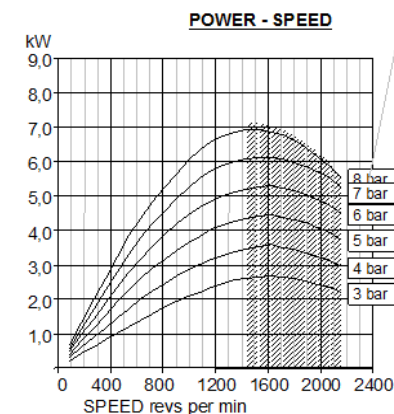
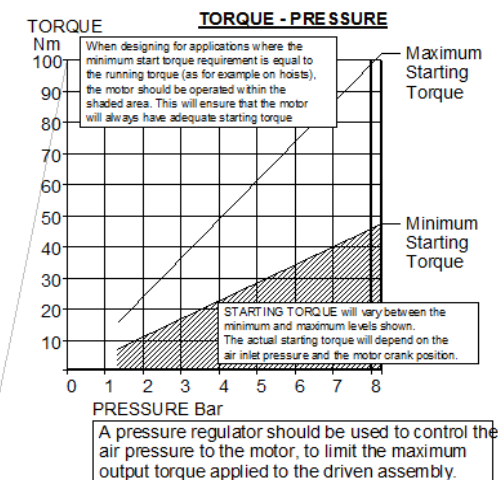
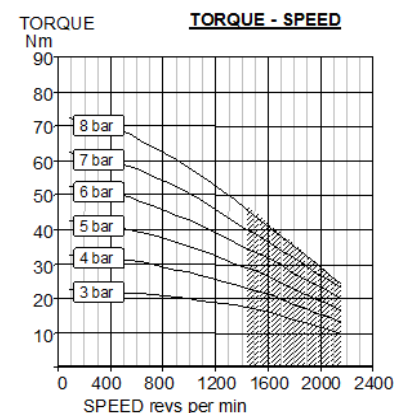


## Dimensions & Performance RM310 + Brake + RCV



Gearbox ratio: None

Maximum speed: 2160 RPM  
Control Valve Fitted



### 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

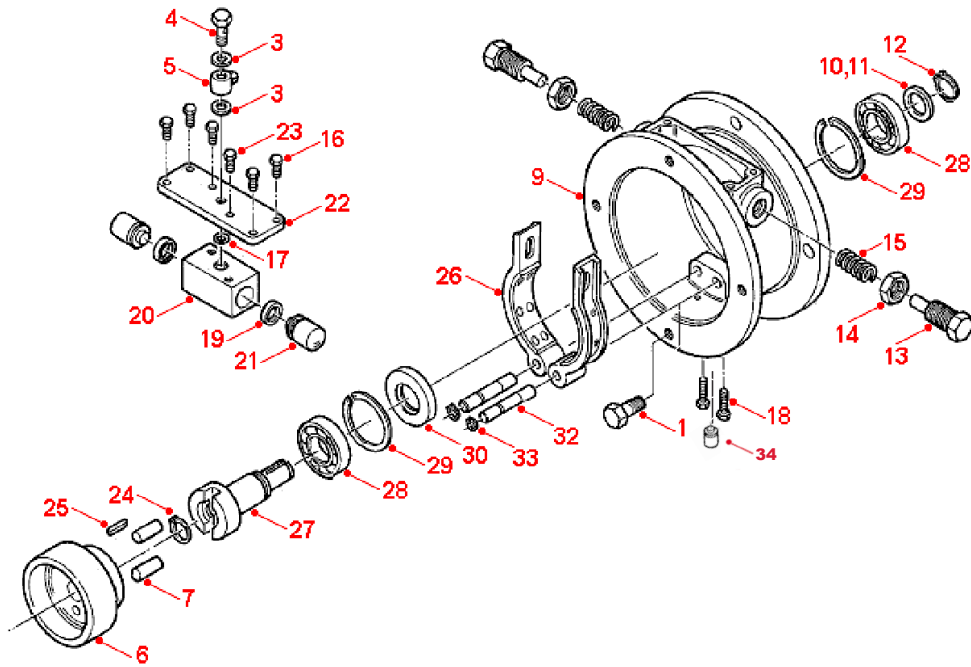
MASS (motor only) 48 kgs (106 lbs)

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

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

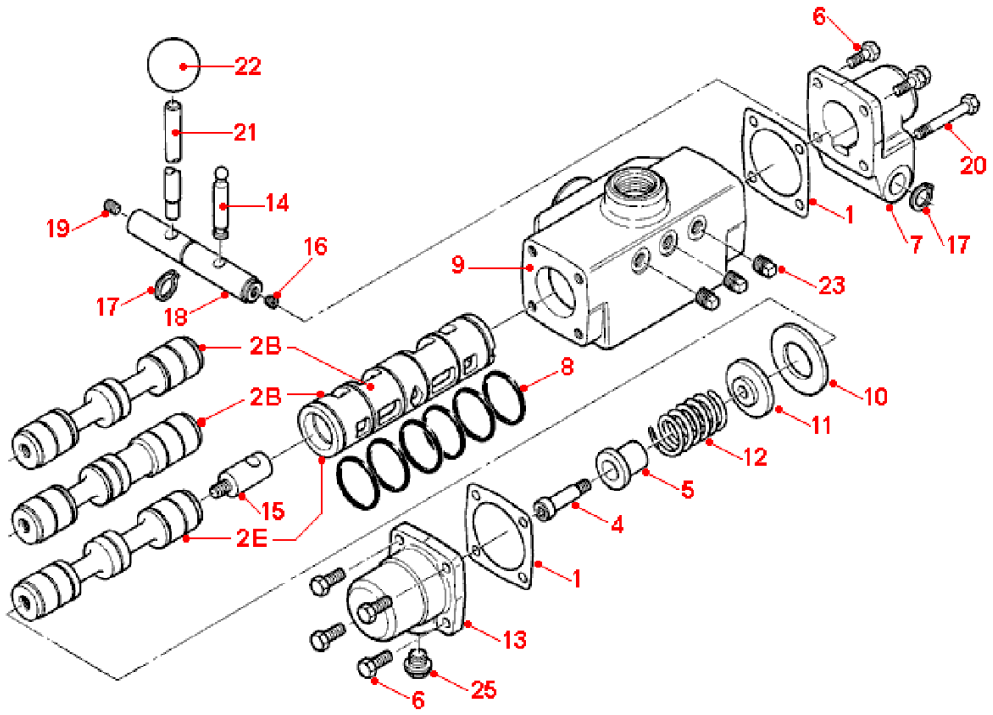
TEMPERATURE RANGE -20°C to +60°C (-4°F to +140°F) / -10°C to +60°C (-14°F to +140°F) with brake

Spare Parts List Parking Brake



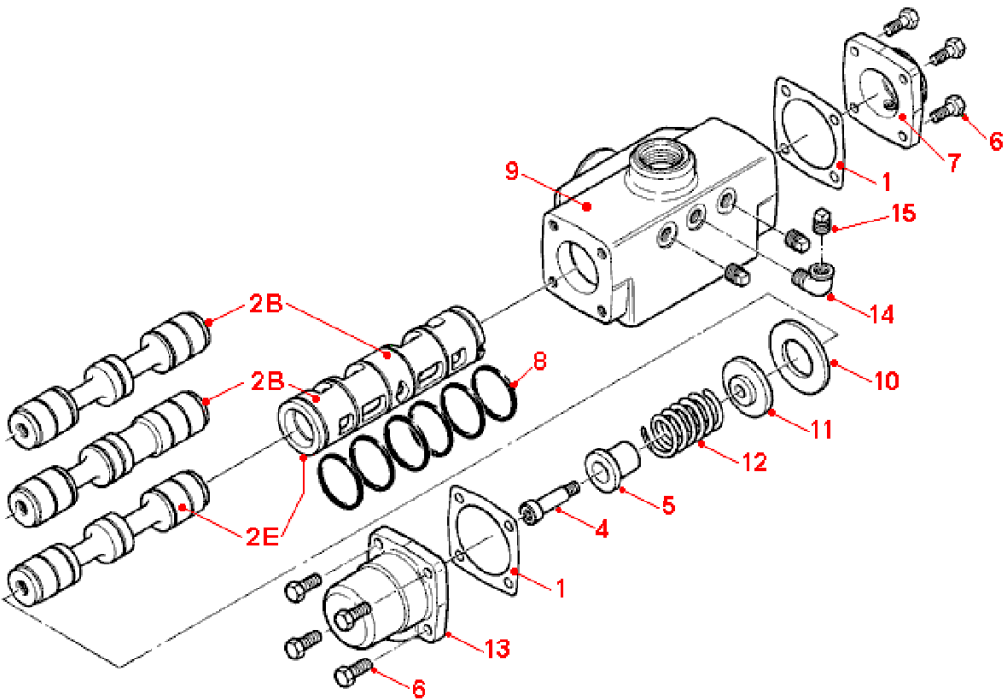
| Item | Part No. | Description                        | Qty |
|------|----------|------------------------------------|-----|
| 01   | 802-073  | Set Screw M12 x 30                 | 4   |
| 03   | 808-090  | Bonded Seal 1/4"BSP Dowty          | 2   |
| 04   | 816-004  | Banjo Bolt Only 1/8 BSP            | 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        | 1   |
| 34   | 7008G18  | Breather plug 1/8 BSPP (ATEX only) | 1   |

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 (Equipower) |
| 02B  | 321-914  | Matched Spool and Sleeve  | 1 (Biased)    |
| 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             |

# 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 (Equipower) | 1 (Equipower) |
| 2B   | 321-914  | Matched Spool and Sleeve (Biased)    | 1 (Biased)    |
| 4    | 817-002  | Shoulder Screw 10mm                  | 1             |
| 5    | 311-071  | Centering Shaft Guide                | 1             |
| 6    | 802-032  | Set 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    | 321-060  | 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   | 816-061  | Plug 1/4" BSPT                       | 3             |

# 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.

X = Motor Only Maleshaft  
D = Motor + Brake  
M = Motor Only Female Shaft  
N = SAE 'C' Hydraulic Pump Output  
V = Grease Lubricated for Shaft Upwards Operation

A = Motor with Inlet Plate  
H = Hand Lever Control Valve  
R = Remote Controlled Valve  
X = No Valving or Adaptor Plate

## OUTPUT OPTIONS

R43

X

XX

H

1

0

0 = Standard Motor & Ancillaries, for Standard Mounting

## VALVE OPTIONS

## NOMINAL GEARBOX RATIO

XX = No Gearbox

## DESIGN CODE

RM 110 (1.7 KW / 2.4 HP) = R14  
RM 210 (4 KW / 5.5 HP) = R23  
RM 310 (7.5 KW / 10 HP) = R33  
RM 410 (14 KW / 19 HP) = R43  
RM 510 (14 KW / 31 HP) = R52  
RM 610 (14 KW / 32 HP) = R62

## VALVE

0 = BSP  
1 = NPT  
2 = Biased: CW Lowering (BSP)  
3 = Biased: CCW Lowering (BSP)  
4 = Biased: CW Lowering (NPT)  
5 = Biased: CCW Lowering (NPT)