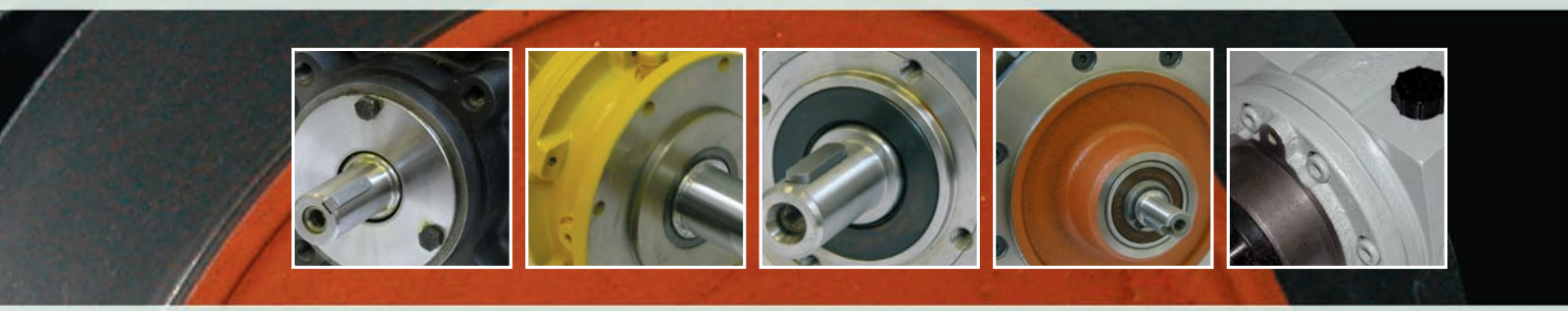
TSA TECNOLOGIE SPECIALI APPLICATE



General Catalogue 2008

AIR MOTORS
ARTICULATED ARMS
ASSEMBLY SYSTEMS
SPECIAL EQUIPMENTS
STUDY AND PROTOTYPE REALIZATIONS

Welcome to

TSA TECNOLOGIE SPECIALI APPLICATE

General Catalogue 2008

Release 0.01

TSA TECNOLOGIE SPECIALI APPLICATE

General Catalogue 2008

This catalogue presents the **T.S.A.** series of pneumatic motors and gear motors; a complete and flexible gamma that is easy to install and able to satisfy the majority of applications at a limited cost. Fast deliveries, a wide diversified and flexible offer, an efficient spare parts warehouse, and an effective pre and post sales assistance are the services that **T.S.A.** offers its clientele. All products placed on the market by **T.S.A.** are certified by the UNI EN ISO 9001 quality system and adhere to directive 94/9/EC-ATEX for products destined to be used in potentially explosive atmospheres.


TSA TECNOLOGIE SPECIALI APPLICATE

PNEUMATIC VANE MOTORS

PNEUMATIC MODULAR VANE MOTORS

PNEUMATIC MODULAR VANE MOTORS

PNEUMATIC EPICYCLOIDAL GEAR MOTORS

COMPACT PISTON PNEUMATIC MOTORS

RADIAL PISTON PNEUMATIC MOTORS

PNEUMATIC BREAKS FOR PISTON MOTORS

RADIAL PISTON PNEUMATIC GEAR MOTORS

INDEX

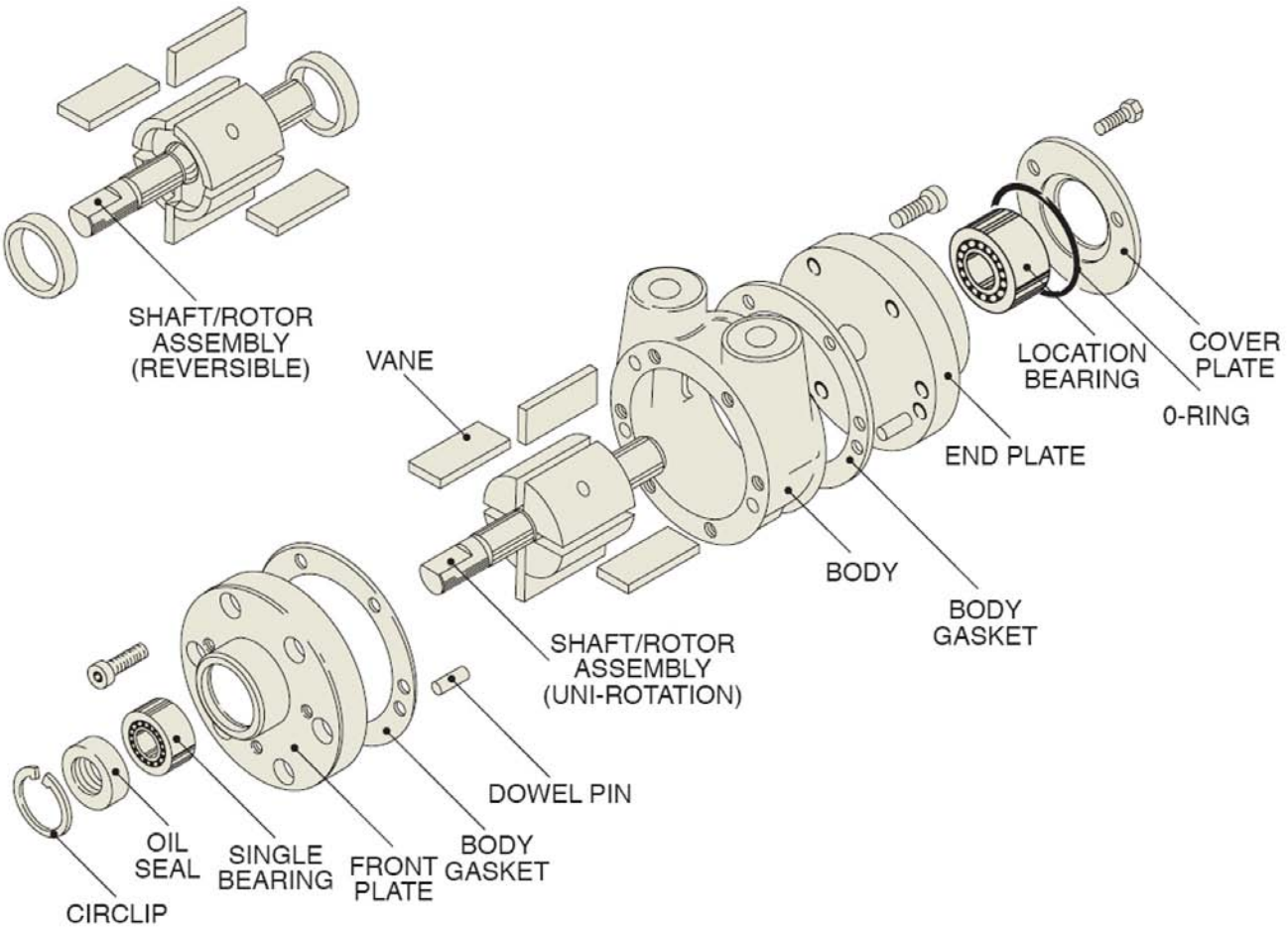
PNEUMATIC VANE MOTORS

In many companies, the use of compressed air allows the use of pneumatic motors which present a number of advantages such as:

- A complete line with powers ranging from 0.43 HP to 12 HP.
- Infinite velocities and variable torques obtained with a simple pressure regulator or tap.
- Safety from accidents.
- They may be used under stress for an indefinite amount of time without being damaged.
- Instant starts, stops and inversions.
- Resistant to dirt and humidity.
- Designed to last.
- Adapt for use with natural gas.
- Designed for the assembly of flanges, breaks and floor supports.

There are often applicable needs that require specific design and workmanship. **T.S.A.** offers its clientele the use of a technical office able to carry out special applications developed along the client's requirements.

TYPICAL CONSTRUCTION OF REVERSIBLE AND IRREVERSIBLE MOTORS



HP 0,31 KW 0,22

Series M30...

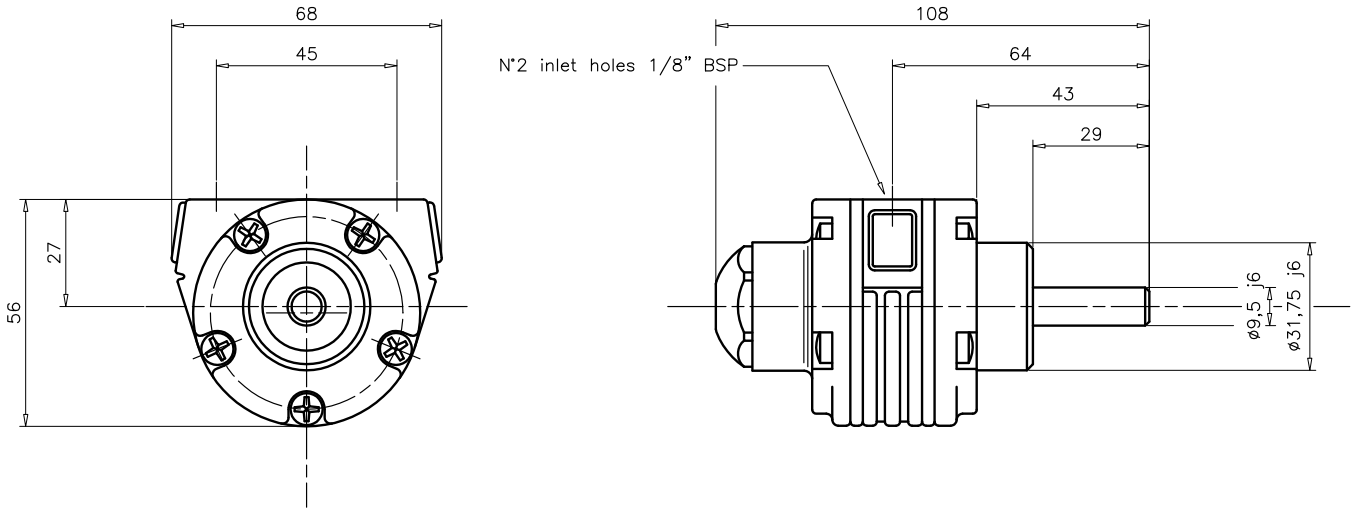
Performances and dimensions

	7 bar			6 bar			5 bar			4 bar			3 bar			2 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	0,43	0,58	0,55	0,36	0,50	0,46	0,30	0,41	0,39	0,23	0,32	0,31	0,17	0,23	0,23	0,10	0,15	0,15
	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec
6000	0,31	0,39	7,4	0,26	0,29	6,75	0,21	0,19	6,75	0,15	0,19	4,80	0,10	0,09	3,83	–	–	–
5500	0,30	0,39	7,1	0,25	0,29	6,46	0,20	0,29	6,46	0,15	0,19	4,57	0,10	0,09	3,63	–	–	–
5000	0,28	0,39	6,8	0,24	0,29	6,16	0,19	0,29	6,16	0,14	0,19	4,34	0,09	0,09	3,43	–	–	–
4500	0,26	0,39	6,4	0,22	0,39	5,87	0,18	0,29	5,87	0,13	0,19	4,11	0,09	0,09	3,23	0,05	0,09	2,36
4000	0,24	0,39	6,1	0,20	0,39	5,57	0,16	0,29	5,57	0,13	0,19	3,88	0,09	0,19	3,04	0,05	0,09	2,19
3500	0,22	0,49	5,8	0,19	0,39	5,28	0,15	0,29	5,28	0,12	0,19	3,65	0,08	0,19	2,84	0,05	0,09	2,03
3000	0,19	0,49	5,5	0,16	0,39	4,98	0,13	0,29	4,98	0,10	0,19	3,42	0,07	0,19	2,64	0,04	0,09	1,86
2500	0,17	0,49	5,2	0,14	0,39	4,68	0,12	0,29	4,68	0,09	0,29	3,19	0,07	0,19	2,44	0,04	0,09	1,70
2000	0,14	0,49	4,9	0,12	0,39	4,39	0,10	0,29	4,39	0,08	0,29	2,96	0,05	0,19	2,25	0,03	0,09	1,53
1500	0,11	0,49	4,6	0,09	0,39	4,09	0,08	0,39	4,09	0,06	0,29	2,73	0,04	0,19	2,05	0,03	0,09	1,37
1000	0,07	0,49	4,3	0,06	0,39	3,80	0,05	0,39	3,80	0,04	0,29	2,50	0,03	0,19	1,85	0,02	0,09	1,20
500	0,04	0,49	4,0	0,03	0,49	3,50	0,03	0,39	3,50	0,02	0,29	2,27	0,02	0,19	1,65	0,01	0,09	1,04

Available versions

M30F	like down drawing without foot
M30B14D63	flange B14 ø 90mm - shaft ø 11mm
M30B14D71	flange B14 ø 105mm - shaft ø 14mm
M30B5D63	flange B5 ø 140mm - shaft ø 11mm
M30B5D71	flange B5 ø 160mm - shaft ø 14mm
M30B5D71BN	motor with pneumatic brake BN71

Lubrication:	2-3 gocce/1' continuos operation 4-6 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	15 N max.
Axial load:	Not admitted
Moment of inertia:	200 g.m2
Operative temperature:	da –20°C a +80°C
Weight (version M30F):	Kg.0,6



PNEUMATIC VANE MOTORS

HP 0,63 KW 0,46

Series M55...

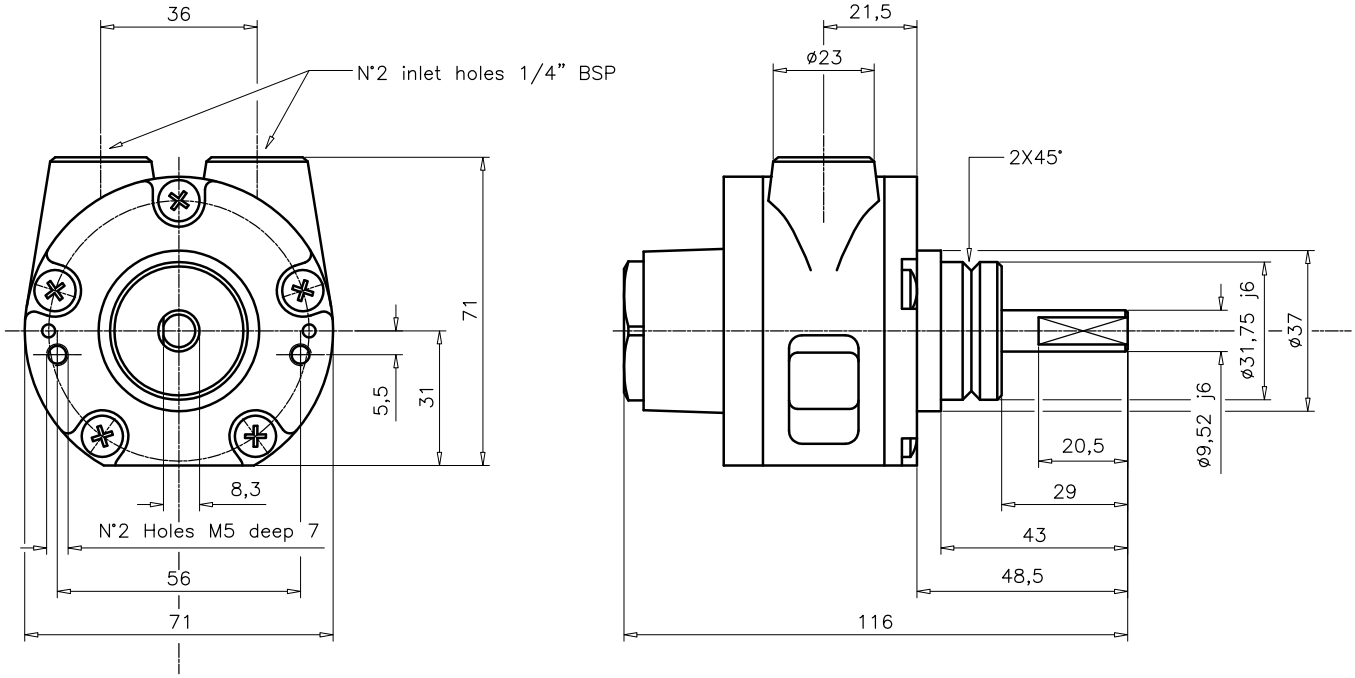
Performances and dimensions

	7 bar			6 bar			5 bar			4 bar			3 bar			2 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	0,86	1,17	1,08	0,73	0,99	0,93	0,60	0,82	0,77	0,47	0,64	0,61	0,34	0,47	0,46	0,21	0,31	0,31
Free speed r/mm	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm Nm	Consum l/sec	Power HP	Torque at max power NmNm	Consum l/sec	Power HP	Torque at max power Nm Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec
6000	0,63	0,74	14,7	0,52	0,61	13,5	0,41	0,48	11,6	0,30	0,35	9,6	0,19	0,23	7,7	0,08	0,10	5,7
5500	0,60	0,76	14,1	0,50	0,64	12,9	0,40	0,51	11,0	0,29	0,37	9,1	0,19	0,25	7,3	0,09	0,12	5,4
5000	0,57	0,79	13,5	0,47	0,67	12,3	0,38	0,53	10,5	0,28	0,40	8,7	0,19	0,26	6,9	0,09	0,14	5,0
4500	0,53	0,82	12,9	0,44	0,69	11,7	0,36	0,56	10,0	0,27	0,42	8,2	0,18	0,28	6,5	0,10	0,15	4,7
4000	0,49	0,85	12,3	0,41	0,72	11,1	0,33	0,58	9,4	0,25	0,44	7,8	0,17	0,30	6,1	0,10	0,17	4,4
3500	0,44	0,88	11,7	0,37	0,74	10,6	0,30	0,61	8,9	0,23	0,46	7,3	0,16	0,32	5,7	0,09	0,19	4,1
3000	0,39	0,91	11,1	0,33	0,77	10,0	0,27	0,63	8,4	0,21	0,49	6,8	0,15	0,34	5,3	0,09	0,21	3,7
2500	0,34	0,94	10,4	0,28	0,79	9,4	0,23	0,66	7,9	0,18	0,51	6,4	0,13	0,36	4,9	0,08	0,23	3,4
2000	0,28	0,97	9,8	0,23	0,82	8,8	0,19	0,68	7,3	0,15	0,53	5,9	0,11	0,38	4,5	0,07	0,24	3,1
1500	0,21	1,00	9,2	0,18	0,85	8,2	0,15	0,71	6,8	0,12	0,56	5,5	0,09	0,40	4,1	0,05	0,25	2,7
1000	0,15	1,03	8,6	0,13	0,88	7,6	0,10	0,73	6,3	0,08	0,58	5,0	0,06	0,42	3,7	0,04	0,27	2,4
500	0,08	1,06	8,0	0,06	0,90	7,0	0,05	0,75	5,8	0,04	0,60	4,5	0,03	0,44	3,3	0,02	0,29	2,1

Available versions

M55F	like down drawing without foot
M55B14D63	flange B14 ø 90mm - shaft ø 11mm
M55B14D71	flange B14 ø 105mm - shaft ø 14mm
M55B5D63	flange B5 ø 140mm - shaft ø 11mm
M55B5D71	flange B5 ø 160mm - shaft ø 14mm
M55B5D71BN	motor with pneumatic brake BN71

Lubrication:	4-5 gocce/1' continuos operation 9-12 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	18 N max.
Radial load:	Not admitted
Moment of inertia:	460 g.m2
Operative temperature:	da –20°C a +80°C
Weight (version M55F):	Kg.1,0



TSA TECNOLOGIE SPECIALI APPLICATE

HP 1,06 KW 0,73

Series M95...

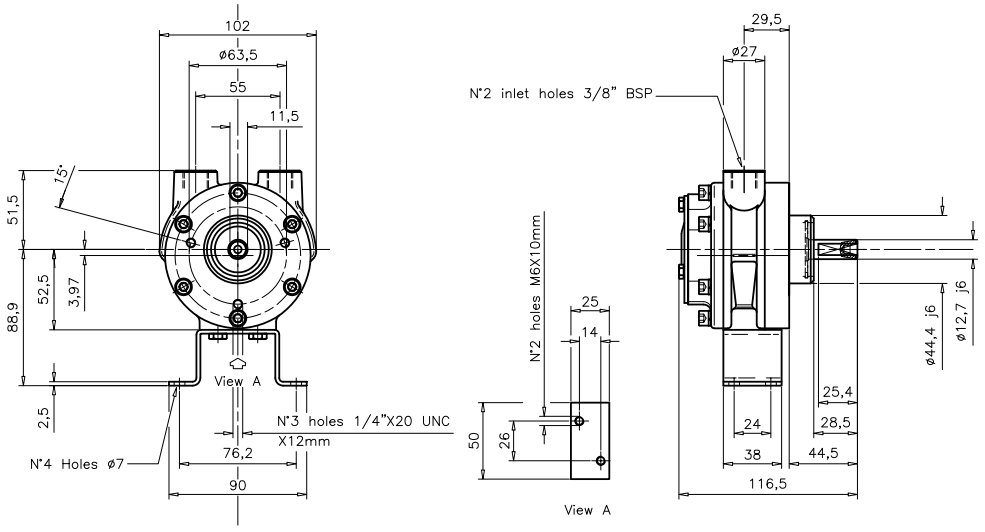
Performances and dimensions

	7 bar			6 bar			5 bar			4 bar			3 bar			2 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	2,21	3,61	3,03	1,91	3,1	2,61	1,60	2,60	2,18	1,31	2,10	1,76	0,92	1,60	1,33	0,71	1,10	0,98
Free speed r/min	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec
4000	1,06	1,86	29,3	0,83	1,45	25,7	0,59	1,04	22,1	0,36	0,63	18,5	0,12	0,22	14,9	_	_	_
3700	1,03	1,95	28,0	0,81	1,54	24,5	0,59	1,13	21,1	0,38	0,72	17,6	0,16	0,30	14,2	0,01	0,03	10,7
3400	0,99	2,04	26,7	0,79	1,63	23,4	0,59	1,22	20,1	0,39	0,79	16,8	0,19	0,38	13,5	0,05	0,11	10,2
3100	0,94	2,13	25,3	0,76	1,72	22,2	0,57	1,29	19,0	0,39	0,88	15,9	0,21	0,47	12,7	0,08	0,18	9,6
2800	0,88	2,21	24,0	0,72	1,80	21,0	0,55	1,38	18,0	0,39	0,97	15,0	0,22	0,55	12,0	0,10	0,25	9,0
2500	0,82	2,30	22,6	0,67	1,88	19,8	0,52	1,47	17,0	0,37	1,05	14,1	0,23	0,64	11,3	0,12	0,33	8,5
2200	0,75	2,39	21,3	0,62	1,97	18,6	0,49	1,56	15,9	0,36	1,14	13,3	0,23	0,72	10,6	0,13	0,41	7,9
1900	0,67	2,48	19,9	0,56	2,06	17,4	0,44	1,64	14,9	0,33	1,23	12,4	0,22	0,80	9,9	0,13	0,49	7,4
1600	0,59	2,57	18,6	0,49	2,15	16,2	0,39	1,72	13,9	0,30	1,30	11,5	0,20	0,89	9,1	0,13	0,57	6,8
1300	0,49	2,66	17,2	0,41	2,23	15,0	0,34	1,81	12,8	0,26	1,39	10,6	0,18	0,97	8,4	0,12	0,65	6,2
1000	0,39	2,74	15,9	0,33	2,32	13,8	0,27	1,90	11,8	0,21	1,48	9,7	0,15	1,06	7,7	0,10	0,73	5,7
700	0,28	2,83	14,5	0,24	2,41	12,7	0,20	1,99	10,8	0,16	1,56	8,9	0,11	1,14	7,0	0,08	0,80	5,1
400	0,17	2,92	13,2	0,14	2,50	11,5	0,12	2,06	9,7	0,09	1,64	8,0	0,07	1,22	6,3	0,05	0,88	4,5

Available versions

M95F	like down drawing without foot
M95P	like down drawing with foot
M95C	flange NEMA 56C ø 6.1/2”- shaft ø 5/8”
M95B14D71	flange B14 ø 105mm - shaft ø 14mm
M95B14D80	flange B14 ø 120mm - shaft ø 19mm
M95B14D90	flange B14 ø 140mm - shaft ø 24mm
M95B5D71	flange B5 ø 160mm - shaft ø 14mm
M95B5D71BN	motor with pneumatic brake BN71
M95B5D80	flange B5 ø 200mm - shaft ø 19mm
M95B5D90	flange B5 ø 200mm - shaft ø 24mm
M95B5D90BN	motor with pneumatic brake BN90

Lubrication:	4-5 gocce/1’ continuos operation 9-12 gocce/1’ intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	400 N max.
Axial load:	Not admitted
Moment of inertia:	0,139 g.m2
Operative temperature:	da –20°C a +80°C
Weight (version M95F):	Kg.3,2



PNEUMATIC VANE MOTORS

HP 1,67 KW 1,2

Series M150...

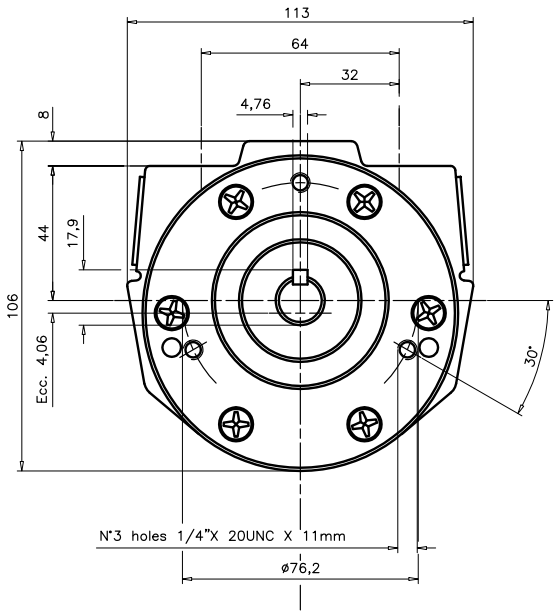
Performances and dimensions

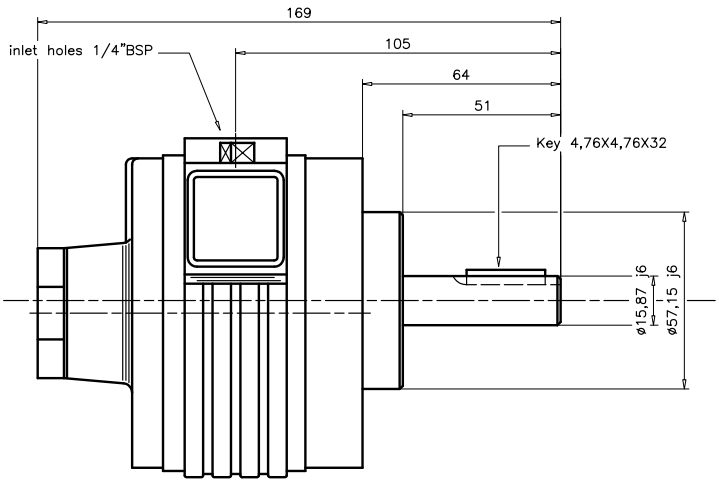
	7 bar			6 bar			5 bar			4 bar			3 bar			2 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	3,41	5,77	4,88	2,89	4,93	4,19	2,38	4,09	3,51	1,87	3,23	2,82	1,36	2,39	2,13	0,86	1,54	1,45
Free speed r/min	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec
3000	1,67	3,90	29,3	1,42	3,31	25,5	1,17	2,73	21,7	0,92	2,15	17,8	0,67	1,57	14,0	0,42	0,98	10,1
2800	1,58	3,96	28,0	1,35	3,37	24,4	1,11	2,78	20,7	0,88	2,20	17,0	0,64	1,61	13,3	0,40	1,02	9,7
2600	1,49	4,03	26,7	1,27	3,43	23,2	1,05	2,83	19,7	0,83	2,23	16,2	0,61	1,65	12,7	0,39	1,05	9,2
2400	1,45	4,06	26,1	1,23	3,46	22,7	1,02	2,86	19,3	0,81	2,26	15,8	0,59	1,66	12,4	0,38	1,06	9,0
2200	1,40	4,10	25,4	1,19	3,49	22,1	0,99	2,89	18,8	0,78	2,28	15,4	0,57	1,68	12,1	0,37	1,08	8,7
2000	1,30	4,16	24,2	1,11	3,55	21,0	0,92	2,94	17,8	0,73	2,33	14,6	0,54	1,72	11,4	0,35	1,11	8,3
1800	1,20	4,22	22,9	1,03	3,61	19,8	0,85	2,99	16,8	0,68	2,37	13,8	0,50	1,75	10,8	0,32	1,14	7,8
1600	1,10	4,29	21,6	0,94	3,67	18,7	0,78	3,04	15,9	0,62	2,42	13,0	0,46	1,79	10,2	0,30	1,17	7,3
1400	0,99	4,35	20,3	0,85	3,72	17,6	0,71	3,10	14,9	0,56	2,46	12,2	0,42	1,83	9,6	0,27	1,20	6,9
1200	0,88	4,42	19,0	0,75	3,78	16,5	0,63	3,15	13,9	0,50	2,51	11,4	0,37	1,87	8,9	0,25	1,23	6,4
1000	0,77	4,49	17,7	0,66	3,84	15,3	0,55	3,19	13,0	0,44	2,55	10,6	0,33	1,91	8,3	0,22	1,26	5,9
800	0,65	4,55	16,4	0,56	3,90	14,2	0,46	3,24	12,0	0,37	2,60	9,8	0,28	1,94	7,7	0,18	1,29	5,5
600	0,53	4,6	15,1	0,45	3,95	13,1	0,38	3,30	11,1	0,30	2,63	9,0	0,23	1,97	7,0	0,15	1,32	5,0

Available versions

M150F	like down drawing without foot
M150C	flange NEMA 56C ø 6.1/2”- shaft ø 5/8”

Lubrication:	4-5 gocce/1’ continuos operation 9-12 gocce/1’ intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	170 N max.
Axial load:	Not admitted
Moment of inertia:	0,200 g.m2
Operative temperature:	da –20°C a +80°C
Weight (version M150F):	Kg.4,2





HP 2,72 KW 1,9

Series M250...

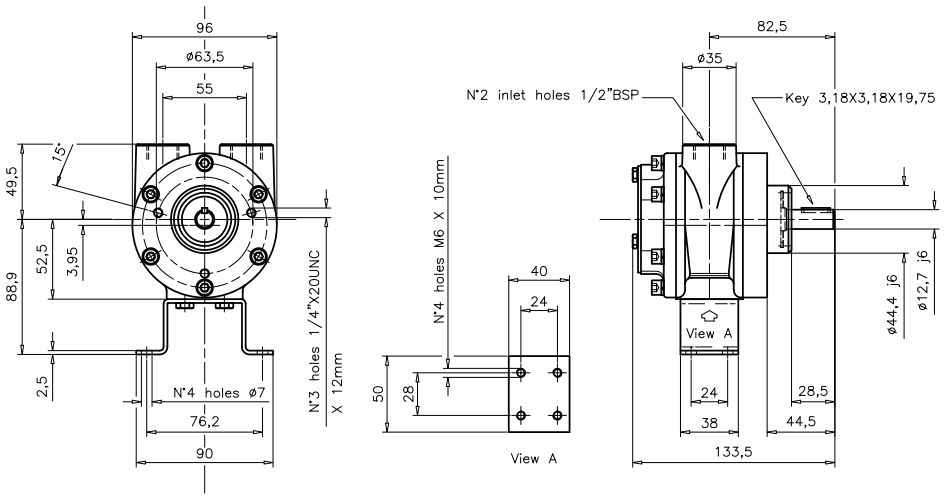
Performances and dimensions

	7 bar			6 bar			5 bar			4 bar			3 bar			2 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	4,55	7,72	6,51	3,87	6,59	5,60	3,18	5,45	4,68	2,49	4,33	3,77	1,81	3,19	2,85	1,15	2,00	1,94
Free speed r/min	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec
4000	2,72	4,77	47,9	2,30	4,04	41,6	1,89	3,31	35,4	1,47	2,58	29,1	1,05	1,84	22,9	0,63	0,113	16,7
3700	2,59	4,91	45,3	2,19	4,16	39,4	1,80	3,41	33,5	1,40	2,67	27,5	1,01	1,92	21,6	0,62	0,119	15,7
3400	2,44	5,04	42,7	2,07	4,27	37,1	1,70	3,52	31,5	1,33	2,75	25,9	0,97	1,99	20,4	0,60	0,126	14,8
3100	2,28	5,16	40,1	1,94	4,39	34,8	1,60	3,62	29,6	1,26	2,84	24,3	0,91	2,07	19,1	0,57	0,132	13,9
2800	2,11	5,30	37,5	1,80	4,51	32,6	1,48	3,72	27,7	1,17	2,93	22,7	0,86	2,15	17,8	0,54	0,138	12,9
2500	1,93	5,43	34,9	1,65	4,63	30,3	1,36	3,82	25,7	1,08	3,02	21,1	0,79	2,22	16,6	0,51	0,145	12,0
2200	1,74	5,56	32,3	1,49	4,74	28,0	1,23	3,93	23,8	0,98	3,12	19,5	0,72	2,29	15,3	0,46	0,151	11,1
1900	1,54	5,69	29,7	1,32	4,86	25,8	1,09	4,03	21,9	0,87	3,20	17,9	0,64	2,37	14,0	0,42	0,157	10,1
1600	1,33	5,82	27,1	1,13	4,98	23,5	0,94	4,14	19,9	0,75	3,29	16,3	0,56	2,45	12,8	0,37	0,164	9,2
1300	1,10	5,95	24,5	0,94	5,10	21,2	0,78	4,23	18,0	0,63	3,38	14,7	0,47	2,53	11,5	0,31	0,170	8,3
1000	0,87	6,09	21,9	0,74	5,21	19,0	0,62	4,34	16,1	0,49	3,47	13,1	0,37	2,60	10,2	0,25	0,176	7,3
700	0,62	6,21	19,3	0,53	5,33	16,7	0,44	4,45	14,1	0,36	3,56	11,5	0,27	2,68	9,0	0,18	0,183	6,4
400	0,36	6,34	16,7	0,31	5,44	14,5	0,26	4,54	12,2	0,21	3,64	9,9	0,16	2,75	7,7	0,11	1,85	5,4

Available versions

M250F	motor with pneumatic brake
M250P	like down drawing with foot
M250C	flange NEMA 56C ø 6.1/2”- shaft ø 5/8”
M250B14D71	flange B14 ø 105mm - shaft ø 14mm
M250B14D80	flange B14 ø 120mm - shaft ø 19mm
M250B14D90	flange B14 ø 140mm - shaft ø 24mm
M250B5D71	flange B5 ø 160mm - shaft ø 14mm
M250B5D71BN	motor with pneumatic brake BN71
M250B5D80	flange B5 ø 200mm - shaft ø 19mm
M250B5D90	flange B5 ø 200mm - shaft ø 24mm
M250B5D90BN	motor with pneumatic brake BN90

Lubrication:	4-5 gocce/1’ continuos operation 9-12 gocce/1’ intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	170 N max.
Axial load:	Not admitted
Moment of inertia:	0,226 g.m2
Operative temperature:	da –20°C a +80°C
Weight (version M250F):	Kg.3,8



MOTORI PNEUMATICI A PALETTE

HP 4,07 KW 3,2

Series M350...

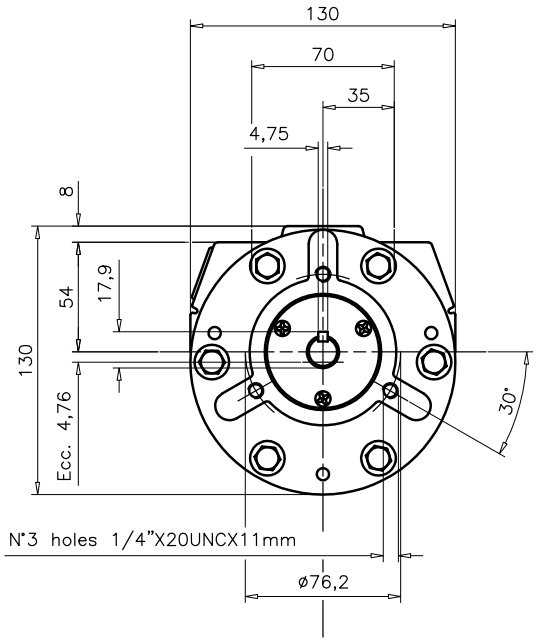
Performances and dimensions

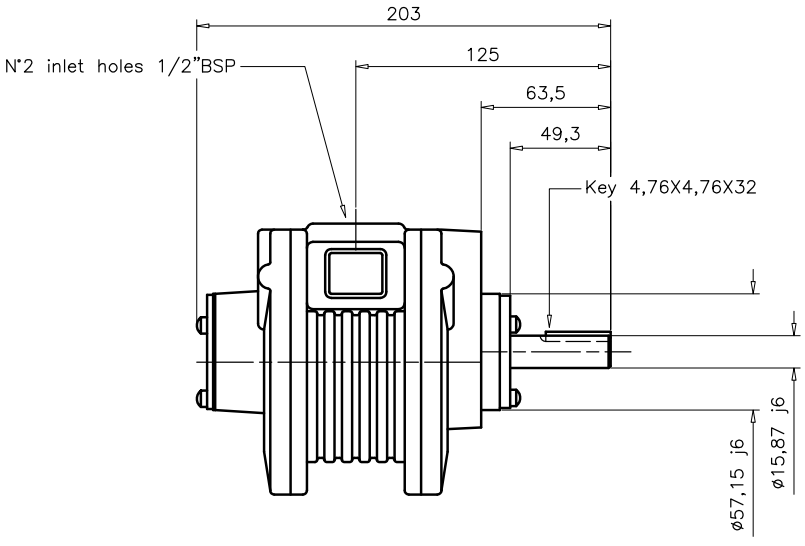
	7 bar			6 bar			5 bar			4 bar			3 bar			2 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	7,70	15,12	12,38	6,57	12,88	10,60	5,43	10,64	8,82	4,30	8,40	7,00	3,16	6,16	5,28	2,00	3,92	3,50
Free speed r/min	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec
3000	4,07	9,53	64,6	3,46	8,09	57,2	2,85	6,66	49,8	2,24	5,24	42,4	1,63	3,81	35,0	1,02	2,38	27,6
2800	3,88	9,72	61,9	3,30	8,26	54,7	2,72	6,81	47,6	2,14	5,36	40,5	1,56	3,91	33,4	0,98	2,46	26,3
2600	3,67	9,91	59,1	3,12	8,43	52,3	2,58	6,96	45,5	2,03	5,48	38,7	1,48	4,01	31,9	0,94	2,53	25,1
2400	3,45	10,09	56,4	2,94	8,59	49,9	2,43	7,11	43,4	1,92	5,61	36,8	1,40	4,11	30,3	0,89	2,61	23,8
2200	3,22	10,29	53,7	2,75	8,77	47,4	2,27	7,24	41,2	1,79	5,72	35,0	1,32	4,20	28,8	0,84	2,68	22,6
2000	2,99	10,48	51,0	2,55	8,94	45,0	2,11	7,39	39,1	1,67	5,84	33,2	1,23	4,30	27,2	0,79	2,75	21,3
1800	2,74	10,67	48,2	2,33	9,10	42,6	1,93	7,54	37,0	1,53	5,97	31,3	1,13	4,40	25,7	0,73	2,83	20,0
1600	2,48	10,86	45,5	2,11	9,27	40,2	1,75	7,67	34,8	1,39	6,09	29,5	1,02	4,50	24,1	0,66	2,90	18,8
1400	2,20	11,05	42,8	1,88	9,44	37,7	1,56	7,82	32,7	1,24	6,20	27,6	0,92	4,60	22,6	0,59	2,98	17,5
1200	1,92	11,24	40,1	1,64	9,60	35,3	1,36	7,97	30,5	1,08	6,33	25,8	0,80	4,69	21,0	0,52	3,06	16,2
1000	1,63	11,43	37,3	1,39	9,77	32,9	1,16	8,11	28,4	0,92	6,45	23,9	0,68	4,79	19,5	0,45	3,13	15,0
800	1,32	11,62	34,6	1,13	9,94	30,4	0,94	8,25	26,3	0,75	6,58	22,1	0,56	4,89	17,9	0,37	3,20	13,7
600	1,01	11,81	31,9	0,86	10,10	28,0	0,72	8,40	24,1	0,57	6,69	20,2	0,43	4,99	16,3	0,28	3,28	12,5
400	0,68	12,01	29,2	0,59	10,27	25,6	0,49	8,55	22,0	0,39	6,81	18,4	0,29	5,09	14,8	0,19	3,35	11,2

Available versions

M350F	motor with pneumatic brake
M350C	flange NEMA 56C ø 6.1/2”- shaft ø 5/8”

Lubrication:	5-6 gocce/1’ continuos operation 10-12 gocce/1’ intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	250 N max.
Axial load:	Not admitted
Moment of inertia:	0,35 g.m2
Operative temperature:	da –20°C a +80°C
Weight (version M350F):	Kg.7,4





PNEUMATIC VANE MOTORS

HP 4,43 KW 2,9

Series M410...

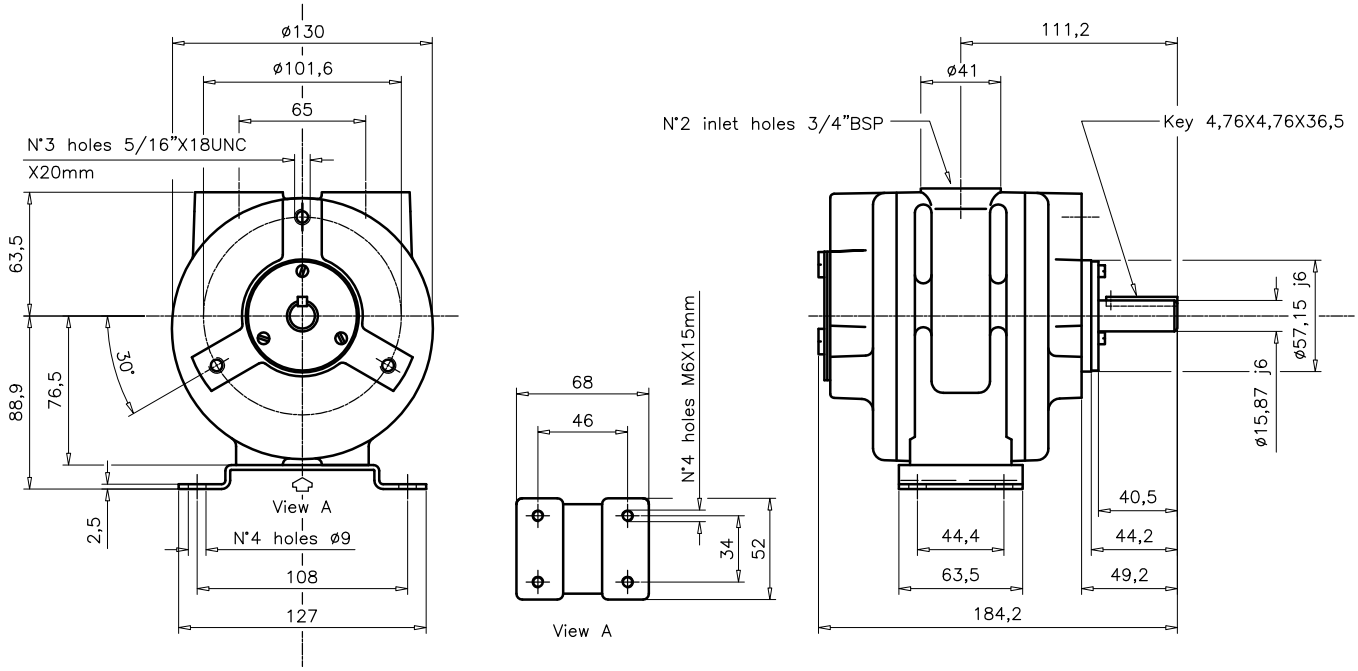
Performances and dimensions

	7 bar			6 bar			5 bar			4 bar			3 bar			2 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	8,37	16,43	13,46	7,14	14,00	11,53	5,90	11,57	9,60	4,67	9,13	7,67	3,44	6,70	5,74	2,21	4,27	3,81
Free speed r/min	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec
3000	4,43	10,36	70,2	3,76	8,80	62,2	3,10	7,25	54,1	2,43	5,69	46,1	1,77	4,15	38,0	1,11	0,264	30,0
2800	4,21	10,56	67,2	3,58	8,99	59,5	2,95	7,41	51,8	2,32	5,82	44,1	1,69	4,24	36,3	1,06	0,272	28,6
2600	3,99	10,77	64,3	3,40	9,16	56,9	2,80	7,57	49,5	2,21	5,96	42,1	1,61	4,35	34,7	1,02	0,281	27,3
2400	3,75	10,98	61,3	3,20	9,35	54,2	2,64	7,72	47,1	2,08	6,09	40,1	1,53	4,46	33,0	0,97	0,289	25,9
2200	3,51	11,18	58,3	2,99	9,53	51,6	2,47	7,88	44,8	1,95	6,22	38,0	1,43	4,57	31,3	0,91	0,297	24,5
2000	3,25	11,39	55,4	2,77	9,71	48,9	2,29	8,04	42,5	1,81	6,35	36,0	1,33	4,67	29,6	0,85	0,306	23,1
1800	2,97	11,59	52,4	2,54	9,89	46,3	2,10	8,19	40,2	1,66	6,49	34,0	1,23	4,78	27,9	0,79	0,314	21,8
1600	2,69	11,80	49,5	2,30	10,07	43,6	1,90	8,35	37,8	1,51	6,62	32,0	1,11	4,89	26,2	0,72	0,322	20,4
1400	2,40	12,01	46,5	2,05	10,26	41,0	1,70	8,51	35,5	1,35	6,75	30,0	1,00	5,00	24,5	0,65	0,330	19,0
1200	2,09	12,22	43,5	1,78	10,44	38,4	1,48	8,66	33,2	1,18	6,88	28,0	0,87	5,10	22,8	0,57	0,339	17,7
1000	1,77	12,43	40,6	1,51	10,62	35,7	1,26	8,82	30,9	1,00	7,01	26,0	0,74	5,20	21,1	0,48	0,347	16,3
800	1,44	12,63	37,6	1,23	10,80	33,1	1,02	8,98	28,5	0,81	7,14	24,0	0,61	5,31	19,5	0,40	0,355	14,9
600	1,10	12,84	34,7	0,94	10,99	30,4	0,78	9,13	26,2	0,62	7,27	22,0	0,46	5,42	17,8	0,30	0,364	13,5
400	0,74	13,04	31,7	0,64	11,16	27,8	0,53	9,29	23,9	0,42	7,41	20,0	0,31	7,41	16,1	0,21	0,372	12,2

Available versions

M410F	motor with pneumatic brake
M410P	like down drawing with foot
M410C	flange NEMA 56C ø 6.1/2"- shaft ø 5/8"
M410B14D80	flange B14 ø 120mm - shaft ø 19mm
M410B14D90	flange B14 ø 140mm - shaft ø 24mm
M410B5D80	flange B5 ø 200mm - shaft ø 19mm
M410B5D90	flange B5 ø 200mm - shaft ø 24mm
M410B5D90BN	motor with pneumatic brake BN90

Lubrication:	5-6 gocce/1' continuos operation 10-12 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	300 N max.
Axial load:	Not admitted
Moment of inertia:	0,45 g.m2
Operative temperature:	da –20°C a +80°C
Weight (version M410F):	Kg.7,6



PNEUMATIC VANE MOTORS

HP 5,42 KW 3,9

Series M500...

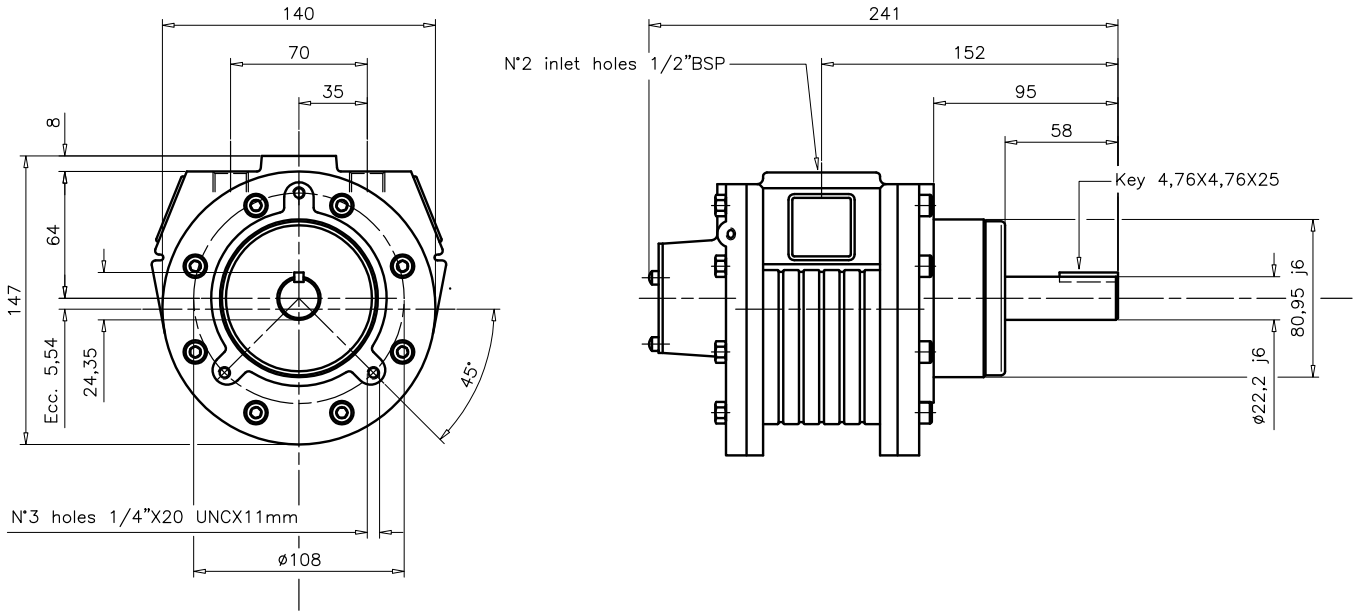
Performances and dimensions

	7 bar			6 bar			5 bar			4 bar			3 bar			2 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	11,73	23,01	18,85	10,01	19,61	16,14	8,27	16,20	13,44	6,55	12,79	10,74	4,82	9,38	8,04	3,10	5,98	5,33
Free speed r/min	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec
2500	5,42	15,22	87,9	4,62	12,96	77,8	3,81	10,69	67,6	3,00	8,43	57,5	2,20	6,17	47,3	1,39	3,91	37,2
2300	5,08	15,51	83,8	4,33	13,21	74,1	3,58	10,92	64,4	2,82	8,61	54,7	2,07	6,32	45,0	1,32	4,02	35,3
2100	4,73	15,80	79,6	4,03	13,47	70,4	3,33	11,13	61,1	2,63	8,80	51,9	1,94	6,47	42,6	1,24	4,14	33,4
1900	4,36	16,09	75,5	3,71	13,72	66,7	3,07	11,36	57,9	2,43	8,99	49,0	1,79	6,62	40,2	1,15	4,25	31,4
1700	3,97	16,39	71,3	3,39	13,97	63,0	2,80	11,57	54,6	2,22	9,17	46,2	1,64	6,77	37,9	1,06	4,36	29,5
1500	3,56	16,67	67,2	3,04	14,23	59,3	2,52	11,79	51,3	2,00	9,36	43,4	1,48	6,92	35,5	0,96	4,48	27,6
1300	3,14	16,96	63,0	2,68	14,48	55,5	2,22	12,01	48,1	1,77	9,54	40,6	1,31	7,07	33,1	0,85	4,60	25,7
1100	2,70	17,25	58,9	2,31	14,74	51,8	1,92	12,23	44,8	1,52	9,72	37,8	1,13	7,21	30,8	0,74	4,70	23,8
900	2,25	17,54	54,7	1,92	14,99	48,1	1,60	12,46	41,6	1,27	9,91	35,0	0,94	7,36	28,4	0,62	4,82	21,8
700	1,78	17,83	50,6	1,52	15,25	44,4	1,26	12,67	38,3	1,01	10,09	32,2	0,75	7,52	26,1	0,49	4,93	19,9
500	1,29	18,12	46,4	1,10	15,50	40,7	0,92	12,89	35,1	0,73	10,28	29,4	0,55	7,66	23,7	0,36	5,05	18,0
300	0,79	18,41	42,3	0,67	15,76	37,0	0,56	13,11	31,8	0,45	10,46	26,6	0,33	7,81	21,3	0,22	5,16	16,1

Available versions

M500F	motor with pneumatic brake
M500C	flange NEMA 145TC ø 6.1/2"- shaft ø 7/8"

Lubrication:	6-7 gocce/1' continuos operation 12-15 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	550 N max.
Axial load:	Not admitted
Moment of inertia:	0,90 g.m2
Operative temperature:	da –20°C a +80°C
Weight (version M500F):	Kg.10,2



TSA TECNOLOGIE SPECIALI APPLICATE

HP 6,94 KW 5,1

Series M620...

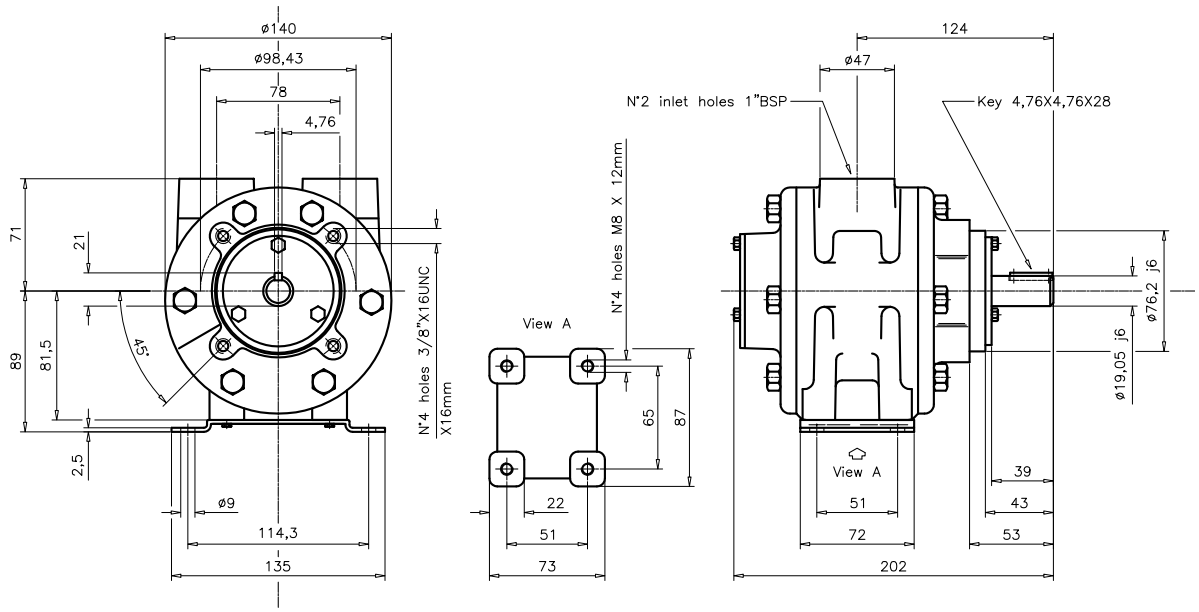
Performances and dimensions

	7 bar			6 bar			5 bar			4 bar			3 bar			2 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	16,56	30,10	21,93	14,14	25,67	19,01	11,71	21,24	16,10	9,29	16,80	13,18	6,86	12,37	10,27	4,43	7,94	7,35
Free speed r/min	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec
3000	6,94	16,23	116,1	5,86	13,72	101,9	4,79	11,21	87,6	3,72	8,69	73,4	2,64	6,18	59,1	1,57	3,68	44,9
2800	6,63	16,61	110,3	5,61	14,07	96,8	4,60	11,53	83,3	3,59	9,00	69,7	2,58	6,46	56,2	1,56	3,92	42,7
2600	6,29	16,99	104,6	5,34	14,43	91,7	4,39	11,86	78,9	3,44	9,29	66,1	2,49	6,73	53,3	1,54	4,17	40,4
2400	5,94	17,37	98,8	5,05	14,78	86,7	4,17	12,18	74,6	3,28	9,59	62,4	2,39	7,00	50,3	1,51	4,41	38,2
2200	5,56	17,75	93,0	4,74	15,13	81,6	3,92	12,51	70,2	3,10	9,89	58,8	2,28	7,27	47,4	1,46	4,66	36,0
2000	5,17	18,13	87,3	4,41	15,48	76,6	3,66	12,84	65,9	2,90	10,19	55,1	2,15	7,55	44,4	1,40	4,90	33,7
1800	4,75	18,51	81,5	4,06	15,84	71,5	3,38	13,16	61,5	2,69	10,49	51,5	2,00	7,82	41,5	1,32	5,15	31,5
1600	4,31	18,88	75,8	3,69	16,19	66,5	3,08	13,49	57,2	2,46	10,79	47,9	1,84	8,09	38,6	1,23	5,39	29,3
1400	3,84	19,27	70,0	3,30	16,54	61,4	2,76	13,82	52,8	2,21	11,08	44,2	1,67	8,36	35,6	1,12	5,64	27,0
1200	3,36	19,65	64,2	2,89	16,90	56,3	2,42	14,14	48,5	1,95	11,39	40,6	1,48	8,63	32,7	1,01	5,88	24,8
1000	2,85	20,03	58,5	2,46	17,25	51,3	2,06	14,46	44,1	1,66	11,68	36,9	1,27	8,91	29,7	0,87	6,13	22,5
800	2,33	20,40	52,7	2,01	17,60	46,2	1,69	14,80	39,8	1,37	11,99	33,3	1,05	9,18	26,8	0,73	6,37	20,3
600	1,78	20,79	46,9	1,53	17,95	41,2	1,29	15,12	35,4	1,05	12,28	29,6	0,81	9,45	23,8	0,57	6,62	18,1
400	1,21	21,17	41,2	1,04	18,31	36,1	0,88	15,44	31,0	0,72	12,58	26,0	0,55	9,72	20,9	0,39	6,86	15,8

Available versions

M620F	motor with pneumatic brake
M620P	like down drawing with foot
M620C	flange NEMA 145TC ø 6.1/2"- shaft ø 7/8"
M620B14D90	flange B14 ø 140mm - shaft ø 24mm
M620B14D100	flange B14 ø 160mm - shaft ø 28mm
M620B5D90	flange B5 ø 200mm - shaft ø 24mm
M620B5D90BN	motor with pneumatic brake BN90
M620B5D100	flange B5 ø 250mm - shaft ø 28mm
M620B5D100BN	motor with pneumatic brake BN100

Lubrication:	6-7 gocce/1' continuos operation 12-15 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	620 N max.
Axial load:	Not admitted
Moment of inertia:	1,02 g.m2
Operative temperature:	da –20°C a +80°C
Weight (version M620F):	Kg.11,1



PNEUMATIC VANE MOTORS

HP 12,53 KW 9,2

Series M1100...

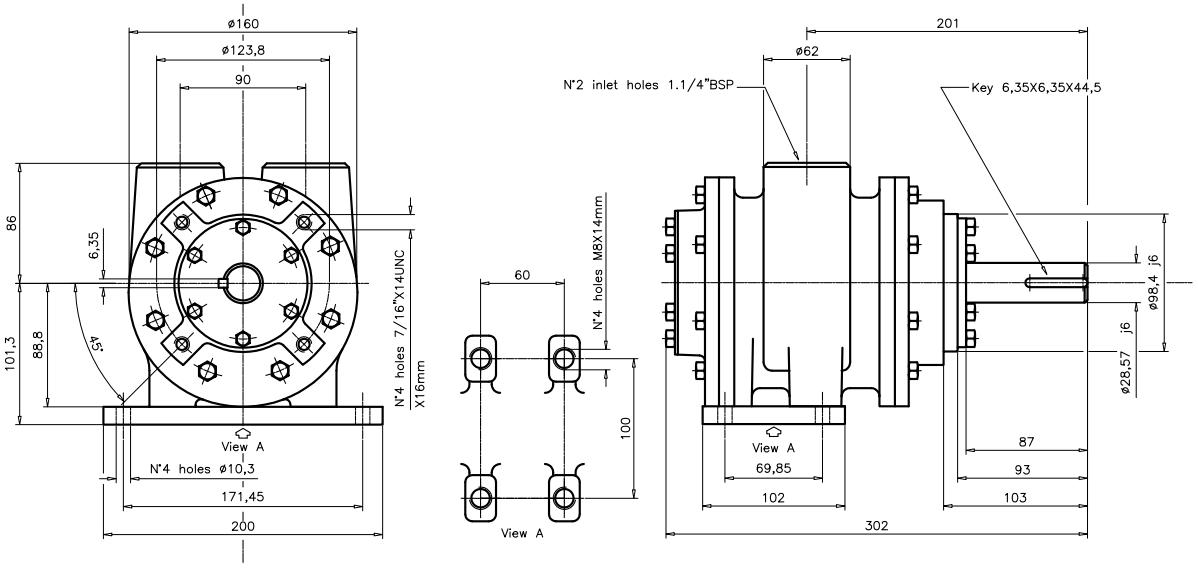
Performances and dimensions

	7 bar			6 bar			5 bar			4 bar			3 bar			2 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	33,32	47,53	45,26	28,47	40,71	39,24	23,62	33,89	33,24	18,78	26,97	27,20	13,92	19,67	21,19	9,07	13,43	15,17
Free speed r/min	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec
2400	12,53	36,65	149,0	10,63	31,10	132,5	8,73	25,53	116,0	6,83	19,97	99,5	4,93	14,41	83,0	3,03	8,85	66,7
2200	11,67	37,24	140,1	9,96	31,77	124,6	8,20	26,18	109,0	6,45	20,57	93,5	4,69	14,97	78,0	2,94	9,38	62,6
2000	10,72	37,62	131,2	9,25	32,45	116,6	7,64	26,81	102,1	6,03	21,18	87,5	4,43	15,54	73,0	2,82	9,91	58,5
1800	9,75	38,00	122,3	8,50	33,12	108,7	7,04	27,46	95,1	5,59	21,78	81,5	4,13	16,10	68,0	2,68	10,43	54,4
1600	8,75	38,39	113,3	7,71	33,81	100,7	6,41	28,10	88,1	5,10	22,38	75,5	3,80	16,67	62,9	2,50	10,96	50,3
1400	7,73	38,76	104,4	6,88	34,49	92,8	5,73	28,74	81,2	4,58	22,99	69,5	3,44	17,24	57,9	2,29	11,49	46,2
1200	6,69	39,14	95,5	6,01	35,16	84,9	5,02	29,39	74,2	4,03	23,59	63,6	3,04	17,80	52,9	2,05	12,01	42,1
1000	5,63	39,52	86,6	5,11	35,85	76,9	4,28	30,03	67,2	3,45	24,20	57,6	2,62	18,37	47,9	1,79	12,54	38,0
800	4,55	39,91	77,7	4,16	36,52	69,0	3,50	30,67	60,3	2,83	24,79	51,6	2,16	18,93	42,9	1,49	13,06	33,9
600	3,75	43,90	68,8	3,18	37,20	61,0	2,68	31,31	53,3	2,17	25,40	45,6	1,67	19,49	37,9	1,16	13,59	29,9
400	2,54	44,49	59,8	2,16	37,88	53,1	1,82	31,96	46,3	1,48	26,00	39,6	1,14	20,06	32,8	0,80	14,12	25,8

Available versions

M1100F	motor with pneumatic brake
M1100P	like down drawing with foot
M1100C	flange NEMA 145TC ø 6.1/2"- shaft ø 7/8"
M1100B14D90	flange B14 ø 140mm - shaft ø 24mm
M1100B14D100	flange B14 ø 160mm - shaft ø 28mm
M1100B5D90	flange B5 ø 200mm - shaft ø 24mm
M1100B5D90BN	motor with pneumatic brake BN90
M1100B5D100	flange B5 ø 250mm - shaft ø 28mm
M1100B5D100BN	motor with pneumatic brake BN100

Lubrication:	8-10 gocce/1' continuos operation 14-16 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	1750 N max.
Axial load:	Not admitted
Moment of inertia:	8,8 g.m2
Operative temperature:	da –20°C a +80°C
Weight (version M1100F):	Kg.21



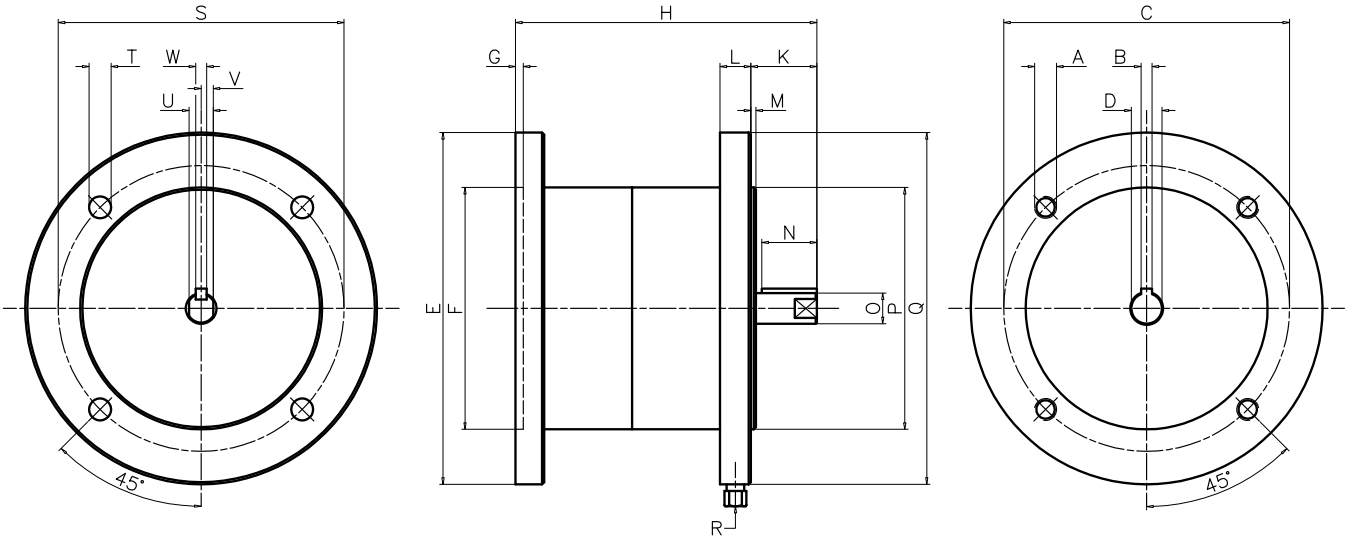
PNEUMATIC BREAKS FOR VANE MOTORS

Series BN...

The BN series presents safety breaks which are usually closed (the spring breaks and the air releases them) and used as static breaks, but can also be used in dynamic conditions in certain applications. The breaking module is easily coalesced with motors thanks to connection flanges which respect IEC or NEMA standards. The pneumatic breaks are certified according to European Directive for products destined to be used in potentially explosive atmospheres ATEX II cat.2 G&D T3 (in static applications).

These breaks have the following advantages:

- They can be used in dynamic applications.
- Field practicality.
- Practical connection flanges in accordance to IEC and NEMA standards.
- Compact encumbrance.
- Steel Cases with excellent insulation useful in environments with drastic temperature changes.

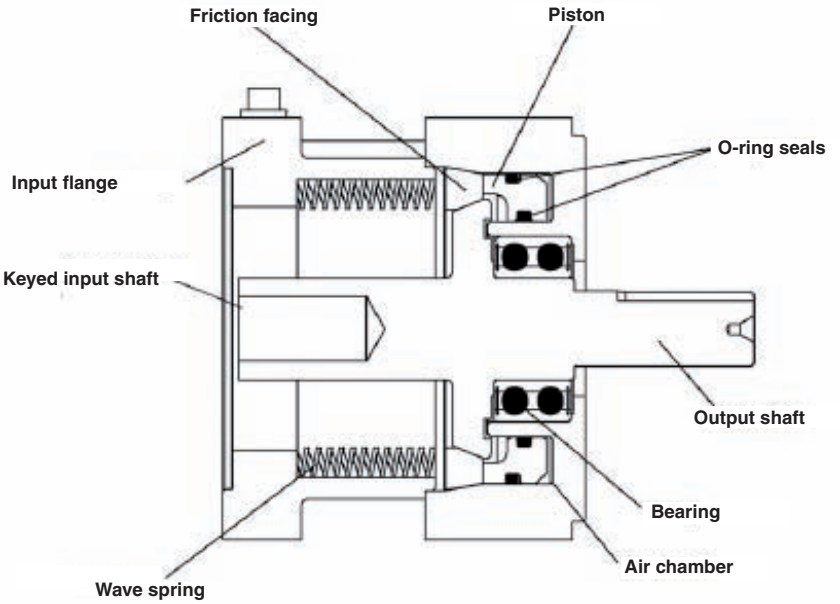


Performances and dimensions

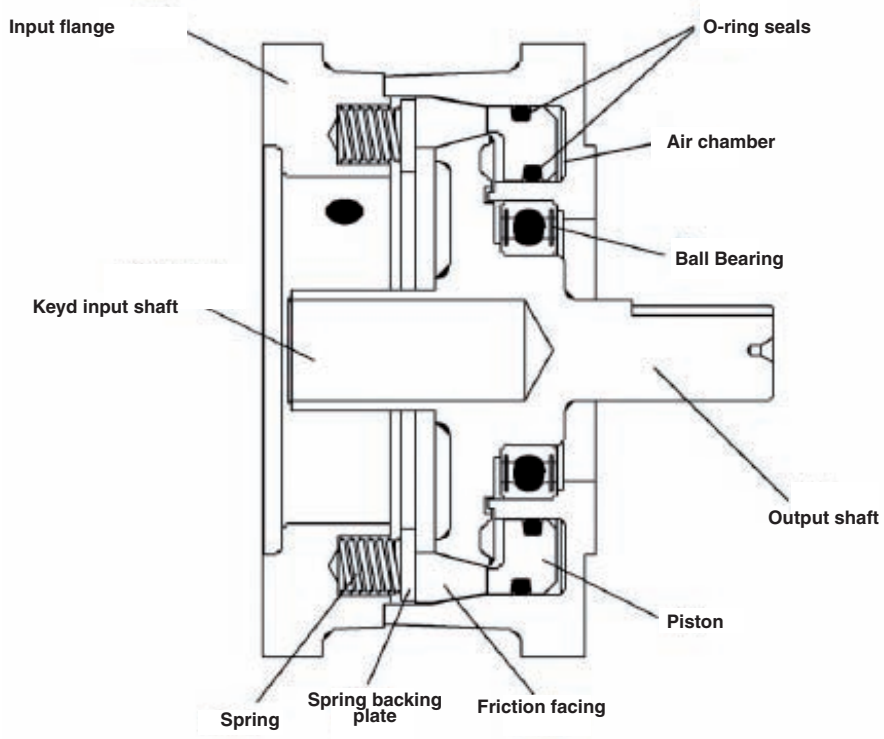
MOD.	A Ø	B	C Ø	D Ø	E Ø	F Ø	G	H	K	L	M	N	O Ø	P Ø	Q Ø	R	S Ø	T Ø	U	V	W
BN71	M10	5	130	14H7	160	110H7	3,5	137	30	44,6	2,3	25	14H7	110H7	160	1/8NPT	130	10	11	5,5	5
BN90	M10	8	165	24H7	200	130H7	5	195	50	13	3,5	45	24H7	130H7	200	1/4BSP	165	12	18	9	8
BN100	M12	8	215	28H7	250	180H7	5	163	60	19	4	55	28H7	180H7	250	1/4BSP	215	14	20,6	10,3	8

MODEL	FLANGE TYPE	HOLDING TORQUE	RELEASE PRESSARE
BN71	IEC 71 (B5)	14Nm	3,4bar
BN90	IEC 90 (B5)	29Nm	3,4bar
BN100	IEC 100 (B5)	75Nm	3,4bar

SECTION DRAWING BN71 BRAKE



SECTION DRAWING BN90 AND BN100 BRAKE



PNEUMATIC MODULAR VANE MOTORS

The M53 and M400 Series of pneumatic modular vane motors are sturdy, reliable and extremely versatile. The use of these motors presents many advantages when compared to electrical motors, such as: weight and reduced encumbrance space, safety during use, especially when employed in places having the presence of inflammable substances, or in damp environments.
There are often applicable needs that require specific design and workmanship. **T.S.A.** offers the experience acquired in this field to its clientele, thanks to a technical office which is able to carry out special applications developed along the client's requirements.

Some special models may have:

- Squared exit shaft.
- Telescopic squared exit shaft.
- Threaded shaft.
- Shaft with diameter or length different than those in catalogue.
- Special flanges.

PNEUMATIC MODULAR VANE MOTORS

HP 0,53 KW 0,38

Series M53...

The motors of the M53 series are endowed with case and end plate in AISI 303 stainless steel, and the possibility, upon request, of having even the exit shaft in the same material by adding "051" after the M53 code.
The gamma offers reversible and non reversible motors. Non reversible motors are furnished with standard dextrorse rotation (counter clockwise facing the shaft). To order them with sinistrorse rotation add "015" after the code.
There is often the need to coalesce the motor to other equipment or simply to an interfacing flange, in this case safe alignment is necessary. To achieve this, all motors may be assembled with a protruding bearing. To order the motor with this modification, add "019" after the code.
The single-stage, two-stage and three-stage models may also be internally equipped with an irreversibility devise that prevents the exit shaft to rotate when the motor is in static condition. To order the motor with this devise, add "102" after the code.
The entire gamma is in accordance to European Directive for products destined to be used in potentially explosive atmospheres ATEX II cat.2 G&D T3.

All the models of the M53 series can be ordered in version NO LUBE adding the N letter in front of the code of the article standard.

Performances and dimensions

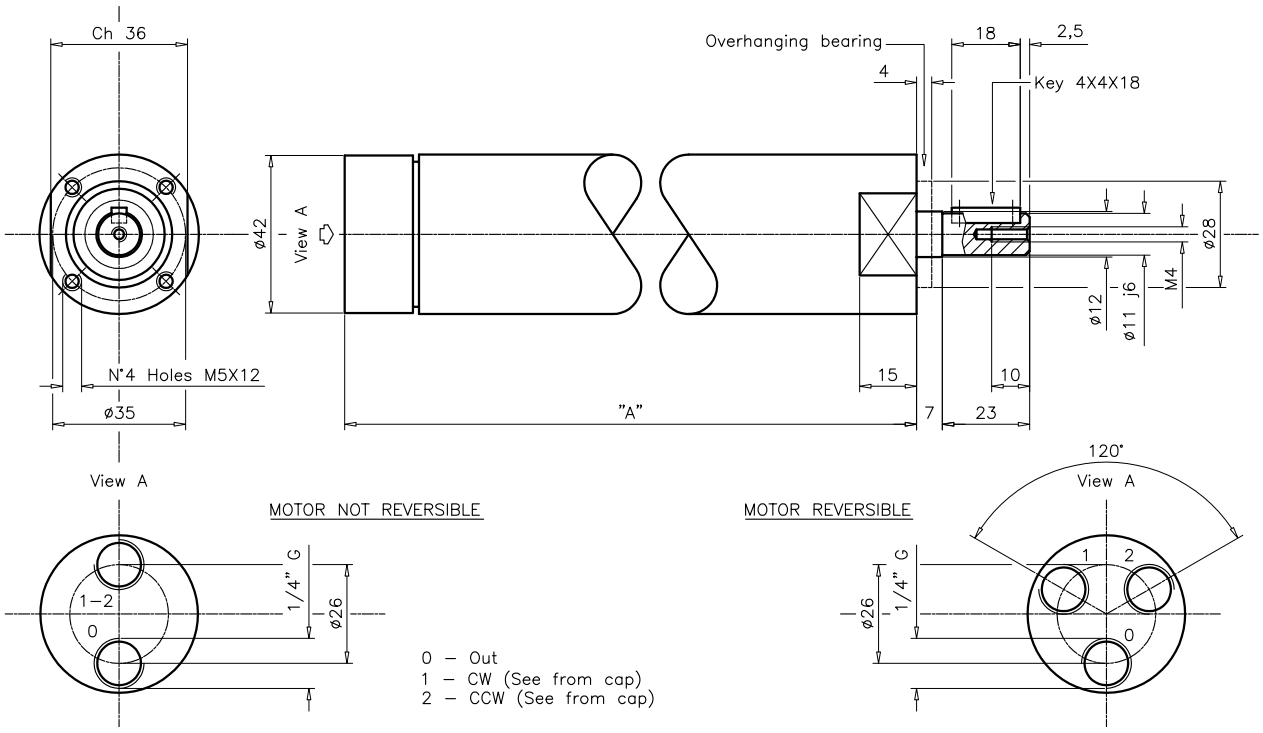
MODEL		Free speed r/min			Speed at max power r/min			Torque max. power Nm			Starting torque Nm			Torque Nm			Quote "A" mm	Weight Kg.	N° Reduction gear
Reversible	Not Reversible	7 bar HP 0,53	5 bar HP 0,35	3 bar HP 0,15	7 bar HP 0,53	5 bar HP 0,35	3 bar HP 0,15	7 bar HP 0,53	5 bar HP 0,35	3 bar HP 0,15	7 bar HP 0,53	5 bar HP 0,35	3 bar HP 0,15	7 bar HP 0,53	5 bar HP 0,35	3 bar HP 0,15			
M53R0	M53N0	15000	13400	11800	7500	6700	5900	0,5	0,3	0,1	0,6	0,4	0,2	0,9	0,6	0,3	118	0,9	0
M53R1A	M53N1A	3800	3400	3000	1900	1700	1500	1,9	1,4	0,7	2,9	1,8	1,0	3,9	2,8	1,4	118	0,9	1
M53R1B	M53N1B	2800	2550	2250	1400	1275	1125	2,6	1,9	0,9	3,9	2,8	1,3	5,2	3,8	1,8	118	0,9	1
M53R1C	M53N1C	2400	2180	1930	1200	1090	965	3,0	2,2	1,1	4,5	3,3	1,6	6,0	4,4	2,2	118	0,9	1
M53R1D	M53N1D	2100	1900	1690	1050	850	845	3,5	2,4	1,2	5,2	4,2	1,8	7,0	5,6	2,4	118	0,9	1
M53R2	M53N2	1200	1000	900	600	500	450	6,3	4,8	2,3	9,6	6,0	3,3	13	9,3	4,7	135	1,0	2
M53R2A	M53N2A	900	755	670	450	377	335	8,0	6,3	3,1	12	9,4	4,6	16	13	6,2	135	1,0	2
M53R2B	M53N2B	630	565	500	315	282	230	11	8,4	4,2	17	13	6,3	23	17	8,4	135	1,0	2
M53R2C	M53N2C	540	485	430	270	242	215	13	10	4,9	19	15	7,3	26	20	9,8	135	1,0	2
M53R2D	M53N2D	480	425	375	240	212	187	15	11	5,6	22	16	8,4	30	22	11	135	1,0	2
M53R3	M53N3	270	220	200	135	110	100	27	20	10	40	31	15	53	41	21	157	1,2	3
M53R3A	M53N3A	190	168	150	85	84	75	42	28	14	63	42	21	84	56	28	157	1,2	3
M53R3B	M53N3B	140	126	110	70	63	55	51	38	19	75	57	28	102	76	38	157	1,2	3
M53R3C	M53N3C	120	108	95	60	54	48	60	44	22	90	66	33	120	88	44	157	1,2	3
M53R3D	M53N3D	110	95	83	55	47	42	65	50	25	97	75	37	130	100	50	157	1,2	3
M53R4	M53N4	60	50	45	30	25	22	140	93	47	210	140	70	280	185	93	175	1,3	4
M53R4A	M53N4A	46	37	33	23	19	16	157	125	65	235	187	97	315	250	130	175	1,3	4
M53R4B	M53N4B	32	28	24	16	14	12	230	170	87	345	255	145	460	340	194	175	1,3	4
M53R4C	M53N4C	26	24	21	13	12	10	277	198	105	410	297	157	550	396	210	175	1,3	4
M53R4D	M53N4D	23	21	18	11	10	9	328	238	117	485	357	175	650	476	234	175	1,3	4

Air consum	a 6 bar 13,5 l/sec	a 5 bar 11,6 l/sec	a 4 bar 9,6 l/sec	a 3 bar 7,7 l/sec	a 2 bar 5,7 l/sec

ATTENTION

The M53 air motors cannot be used over 60Nm torque. The figures shown in the green colored area should be considered purely as an indication.

Lubrication:	2-3 gocce/1' continuos operation 4-6 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	2000 N max.
Axial load:	Not admitted
Operative temperature:	da –20°C a +80°C



PNEUMATIC MODULAR VANE MOTORS

HP 4,0 KW 2,9

Series M400...

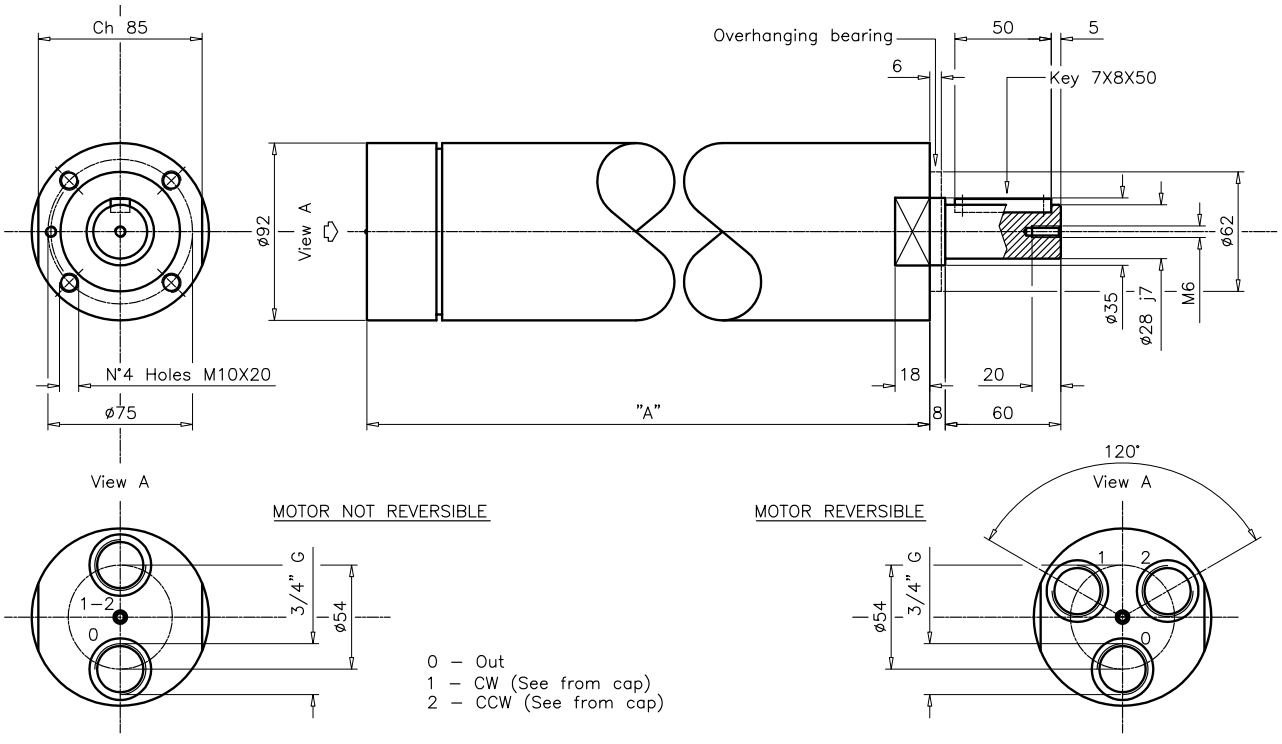
The M400 series gamma offers reversible and non reversible motors. The non reversible motors are furnished with a standard dextrorse rotation (counter clockwise facing the shaft). To order them with a sinistrorse rotation, add "012" after the code.
There is often the need to coalesce the motor with other equipment or simply to an interfacing flange, in this case a safe alignment is necessary. To achieve this, all motors may be assembled with a protruding bearing. To order the motor with this modification, add"007" after the code.
The entire gamma is in accordance to European directive for products destined to be used in potentially explosive atmospheres ATEX II cat.2 G&D T3.

Performances and dimensions

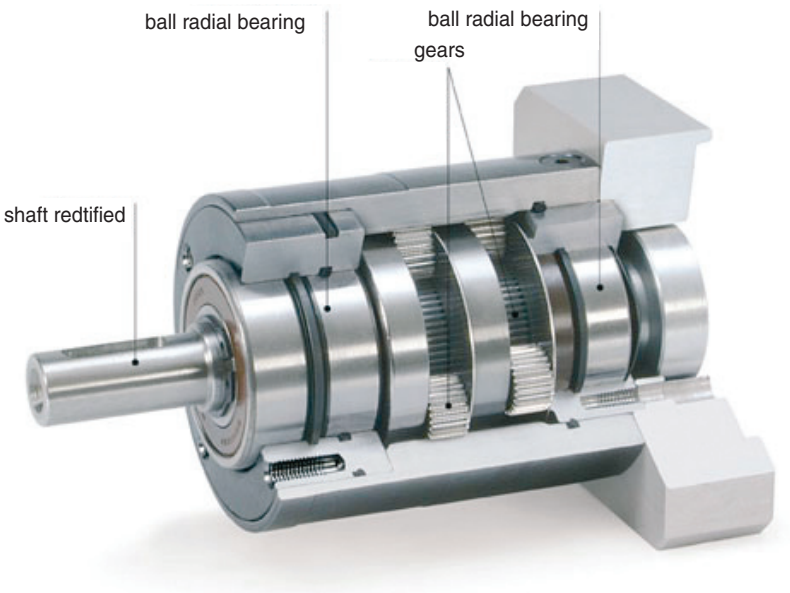
MODEL		Free speed r/min			Speed at max power r/min			Torque max. power Nm			Starting torque Nm			Torque Nm			Quote "A" mm	Weight Kg.	N° Reduction gear
Reversible	Not Reversible	7 bar HP 4,0	5 bar HP 2,6	3 bar HP 1,6	7 bar HP 4,0	5 bar HP 2,6	3 bar HP 1,6	7 bar HP 4,0	5 bar HP 2,6	3 bar HP 1,6	7 bar HP 4,0	5 bar HP 2,6	3 bar HP 1,6	7 bar HP 4,0	5 bar HP 2,6	3 bar HP 1,6			
M400RA	M400NA	3200	2900	2400	1600	1450	1200	17	12	8	27	19	13	35	25	17	210	6,2	1
M400RB	M400NB	1900	1700	1400	950	850	700	29	21	14	47	33	23	58	43	29	210	6,2	1
M400RC	M400NC	1050	950	800	525	475	400	53	37	27	83	58	44	107	74	54	210	6,2	1
M400RAA	M400NAA	650	570	480	325	285	240	86	66	44	137	105	73	171	132	88	247	7,8	2
M400RAB	M400NAB	460	410	350	230	205	175	117	86	63	186	137	100	235	171	127	247	7,8	2
M400RBA	M400NBA	380	340	280	190	170	140	147	107	78	235	166	122	294	215	156	247	7,8	2
M400RBB	M400NBB	270	240	200	135	120	100	200	147	105	323	235	171	401	294	210	247	7,8	2
M400RCA	M400NCA	210	180	160	105	90	80	264	176	137	421	284	225	529	352	274	247	7,8	2
M400RCB	M400NCB	150	130	110	75	65	55	372	264	196	588	421	313	744	529	392	247	7,8	2
M400RAB4	M400NAB4	110	104	85	55	52	43	480	343	254	764	548	406	960	686	509	292	9,8	3
M400RBA4	M400NBA4	95	84	70	47	42	35	588	421	308	940	676	490	1.176	842	617	292	9,8	3
M400RBB4	M400NBB4	70	60	50	35	30	25	808	578	426	1.293	931	686	1.617	1.156	852	292	9,8	3
M400RCA4	M400NCA4	52	46	40	26	23	20	1.058	764	558	1.685	1.225	891	2.116	1.528	1.117	292	9,8	3
M400RCB4	M400NCB4	36	32	28	18	16	14	1.470	1.078	784	2.381	1.715	1.254	2.940	2.156	1.568	292	9,8	3

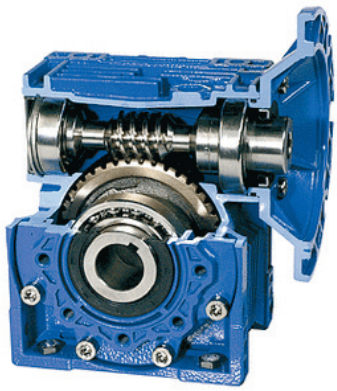
Air consum	a 7 bar 63 l/sec	a 6 bar 58 l/sec	a 5 bar 52 l/sec	a 4 bar 44 l/sec	a 3 bar 32 l/sec	a 2 bar 21 l/sec

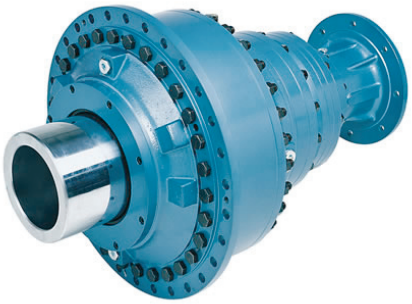
Lubrication:	5-6 gocce/1' continuos operation 10-12 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	4000 N max.
Axial load:	Not admitted
Operative temperature:	da –20°C a +80°C



PNEUMATIC EPICYCLOIDAL GEAR MOTORS







The epicycloidal gear boxes used in gear motors are able to guarantee an excellent weight/force ratio, performance, and reduced encumbrance space with respect to torque, all of which combined with exceptional sturdiness and durability. Together with years of experience of the best manufactures of gear boxes, **T.S.A.** guarantees a wide variety of epicycloidal gear boxes. This section takes into consideration only coalesces between pneumatic vane motors and coaxial epicycloidal gearboxes, but coalesces with orthogonal epicycloidal gearboxes and worm gearboxes are also possible. For requests and information please contact our technical office.

PNEUMATIC EPICYCLOIDAL GEAR MOTORS

HP 0,49 KW 0,36

Performances and dimensions

Series M55EN6F...

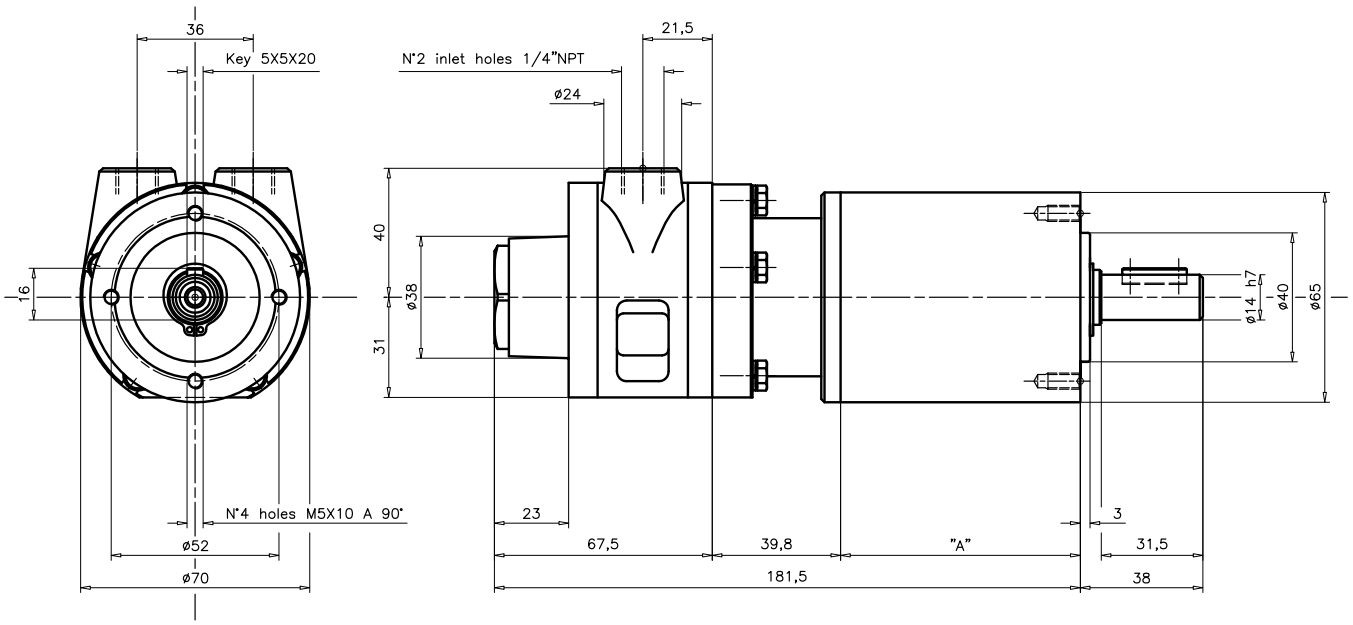
MODEL	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Limit torque (*) Nm	Quote "A" mm	Weight Kg.
		6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar			
M55EN6F 3	2000	0,49	0,29	0,08	2,06	1,37	0,59	2,65	1,76	0,88	1,76	0,98	0,29	18	57,6	3,4
M55EN6F 4	1500	0,49	0,29	0,08	2,74	1,86	0,78	3,53	2,35	1,18	2,25	1,37	0,39	25	57,6	3,4
M55EN6F 5	1200	0,49	0,29	0,08	3,43	2,25	0,98	4,41	2,94	1,47	2,84	1,67	0,49	25	57,6	3,4
M55EN6F 7	857	0,49	0,29	0,08	4,80	3,23	1,37	6,17	4,12	2,06	4,02	2,35	0,69	25	57,6	3,4
M55EN6F 10	600	0,49	0,29	0,08	6,86	4,61	1,96	8,82	5,88	2,94	5,68	3,43	0,98	18	57,6	3,4
M55EN6F 12	500	0,47	0,27	0,08	7,94	5,10	2,35	10,19	6,57	3,53	6,57	3,82	1,08	30	74,3	4,0
M55EN6F 15	400	0,47	0,27	0,08	9,90	6,37	2,94	12,64	8,23	4,41	8,23	4,70	1,37	30	74,3	4,0
M55EN6F 20	300	0,47	0,27	0,08	13,13	8,53	3,92	16,95	10,98	5,88	10,98	6,27	1,86	30	74,3	4,0
M55EN6F 25	240	0,47	0,27	0,08	16,46	10,68	4,90	21,17	13,72	7,35	13,72	7,94	2,35	30	74,3	4,0
M55EN6F 30	200	0,47	0,27	0,08	19,70	12,74	5,88	25,38	16,46	8,82	16,46	9,51	2,84	18	74,3	4,0
M55EN6F 35	171	0,47	0,27	0,08	23,03	14,90	6,86	29,60	19,21	10,29	19,21	11,07	3,23	30	74,3	4,0
M55EN6F 40	150	0,47	0,27	0,08	26,36	17,05	7,84	33,81	21,85	11,76	21,95	12,64	3,72	30	74,3	4,0
M55EN6F 50	120	0,47	0,27	0,08	32,93	21,27	9,80	42,34	27,34	14,70	27,54	15,78	4,70	30	74,3	4,0
M55EN6F 70	86	0,47	0,27	0,08	46,06	29,79	13,72	59,19	38,32	20,58	38,51	22,15	6,57	30	74,3	4,0
M55EN6F 80	75	0,45	0,26	0,07	50,37	32,83	13,72	64,78	42,14	20,58	42,14	24,30	6,57	30	91,0	4,9
M55EN6F 90	67	0,45	0,26	0,07	56,74	36,95	15,48	72,91	47,43	23,13	47,33	27,34	7,35	18	91,0	4,9
M55EN6F 100	60	0,45	0,26	0,07	63,01	40,96	17,15	81,05	52,72	25,77	52,63	30,38	8,23	18	91,0	4,9
M55EN6F 125	48	0,45	0,26	0,07	78,79	51,25	21,46	101,23	65,86	32,14	65,76	38,02	10,19	30	91,0	4,9
M55EN6F 150	40	0,45	0,26	0,07	94,47	61,54	25,77	121,52	79,09	38,61	78,99	45,67	12,25	30	91,0	4,9
M55EN6F 175	34	0,45	0,26	0,07	110,25	71,74	29,99	141,71	92,22	44,98	92,12	53,21	14,31	30	91,0	4,9
M55EN6F 200	30	0,45	0,26	0,07	126,03	82,03	34,30	161,99	105,45	51,45	105,25	60,86	16,37	30	91,0	4,9
M55EN6F 250	24	0,45	0,26	0,07	157,49	102,51	42,92	202,47	131,81	64,29	131,61	76,05	20,48	30	91,0	4,9

Air consum	a 6 bar 13,5 l/sec	a 5 bar 11,6 l/sec	a 4 bar 9,6 l/sec	a 3 bar 7,7 l/sec	a 2 bar 5,7 l/sec

ATTENTION

The M55EN6F air motors cannot be used over limit torque. The figures shown in the green colored area should be considered purely as an indication.

Lubrication:	4-5 gocce/1' continuos operation 9-12 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	1300 N max.
Axial load:	1400 N max.
Operative temperature:	da –20°C a +80°C



PNEUMATIC EPICYCLOIDAL GEAR MOTORS

HP 0,49 KW 0,36

Series M55EN8F...

Performances and dimensions

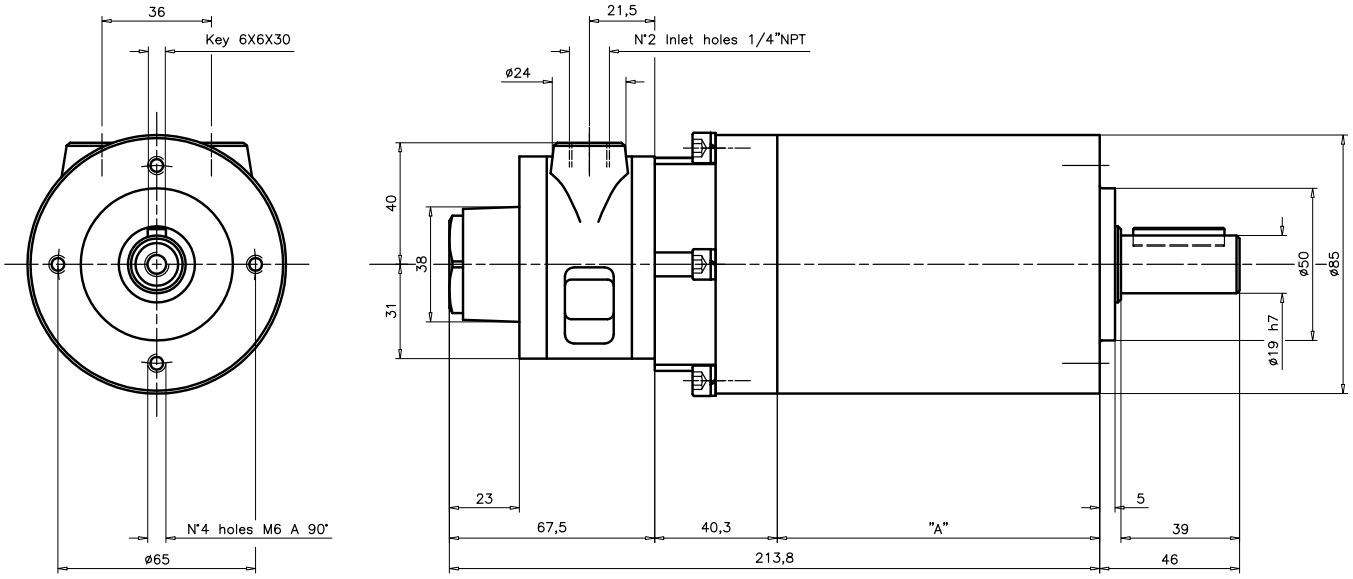
MODEL	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Limit torque (*) Nm	Quote "A" mm	Weight Kg.
		6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar			
M55EN8F 3	2000	0,49	0,29	0,08	2,06	1,37	0,59	2,65	1,76	0,88	1,76	0,98	0,29	40	83,5	3,4
M55EN8F 4	1500	0,49	0,29	0,08	2,74	1,86	0,78	3,53	2,35	1,18	2,25	1,37	0,39	50	83,5	3,4
M55EN8F 5	1200	0,49	0,29	0,08	3,43	2,25	0,98	4,41	2,94	1,47	2,84	1,67	0,49	50	83,5	3,4
M55EN8F 7	857	0,49	0,29	0,08	4,80	3,23	1,37	6,17	4,12	2,06	4,02	2,35	0,69	50	83,5	3,4
M55EN8F 10	600	0,49	0,29	0,08	6,86	4,61	1,96	8,82	5,88	2,94	5,68	3,43	0,98	40	83,5	3,4
M55EN8F 12	500	0,47	0,27	0,08	7,94	5,10	2,35	10,19	6,57	3,53	6,57	3,82	1,08	70	108,0	4,0
M55EN8F 15	400	0,47	0,27	0,08	9,90	6,37	2,94	12,64	8,23	4,41	8,23	4,70	1,37	70	108,0	4,0
M55EN8F 20	300	0,47	0,27	0,08	13,13	8,53	3,92	16,95	10,98	5,88	10,98	6,27	1,86	70	108,0	4,0
M55EN8F 25	240	0,47	0,27	0,08	16,46	10,68	4,90	21,17	13,72	7,35	13,72	7,94	2,35	70	108,0	4,0
M55EN8F 30	200	0,47	0,27	0,08	19,70	12,74	5,88	25,38	16,46	8,82	16,46	9,51	2,84	40	108,0	4,0
M55EN8F 35	171	0,47	0,27	0,08	23,03	14,90	6,86	29,60	19,21	10,29	19,21	11,07	3,23	70	108,0	4,0
M55EN8F 40	150	0,47	0,27	0,08	26,36	17,05	7,84	33,81	21,85	11,76	21,95	12,64	3,72	70	108,0	4,0
M55EN8F 50	120	0,47	0,27	0,08	32,93	21,27	9,80	42,34	27,34	14,70	27,54	15,78	4,70	70	108,0	4,0
M55EN8F 70	86	0,47	0,27	0,08	46,06	29,79	13,72	59,19	38,32	20,58	38,51	22,15	6,57	70	108,0	4,0
M55EN8F 80	75	0,45	0,26	0,07	50,37	32,83	13,72	64,78	42,14	20,58	42,14	24,30	6,57	70	132,5	4,9
M55EN8F 90	67	0,45	0,26	0,07	56,74	36,95	15,48	72,91	47,43	23,13	47,33	27,34	7,35	40	132,5	4,9
M55EN8F 100	60	0,45	0,26	0,07	63,01	40,96	17,15	81,05	52,72	25,77	52,63	30,38	8,23	40	132,5	4,9
M55EN8F 125	48	0,45	0,26	0,07	78,79	51,25	21,46	101,23	65,86	32,14	65,76	38,02	10,19	70	132,5	4,9
M55EN8F 150	40	0,45	0,26	0,07	94,47	61,54	25,77	121,52	79,09	38,61	78,99	45,67	12,25	70	132,5	4,9
M55EN8F 175	34	0,45	0,26	0,07	110,25	71,74	29,99	141,71	92,22	44,98	92,12	53,21	14,31	70	132,5	4,9
M55EN8F 200	30	0,45	0,26	0,07	126,03	82,03	34,30	161,99	105,45	51,45	105,25	60,86	16,37	70	132,5	4,9
M55EN8F 250	24	0,45	0,26	0,07	157,49	102,51	42,92	202,47	131,81	64,29	131,61	76,05	20,48	70	132,5	4,9

Air consum	a 6 bar 13,5 l/sec	a 5 bar 11,6 l/sec	a 4 bar 9,6 l/sec	a 3 bar 7,7 l/sec	a 2 bar 5,7 l/sec

ATTENTION

The M55EN8F air motors cannot be used over limit torque. The figures shown in the green colored area should be considered purely as an indication.

Lubrication:	4-5 gocce/1' continuos operation 9-12 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	1300 N max.
Axial load:	1400 N max.
Operative temperature:	da –20°C a +80°C



PNEUMATIC EPICYCLOIDAL GEAR MOTORS

HP 0,79 KW 0,58

Performances and dimensions

Series M95EN8F...

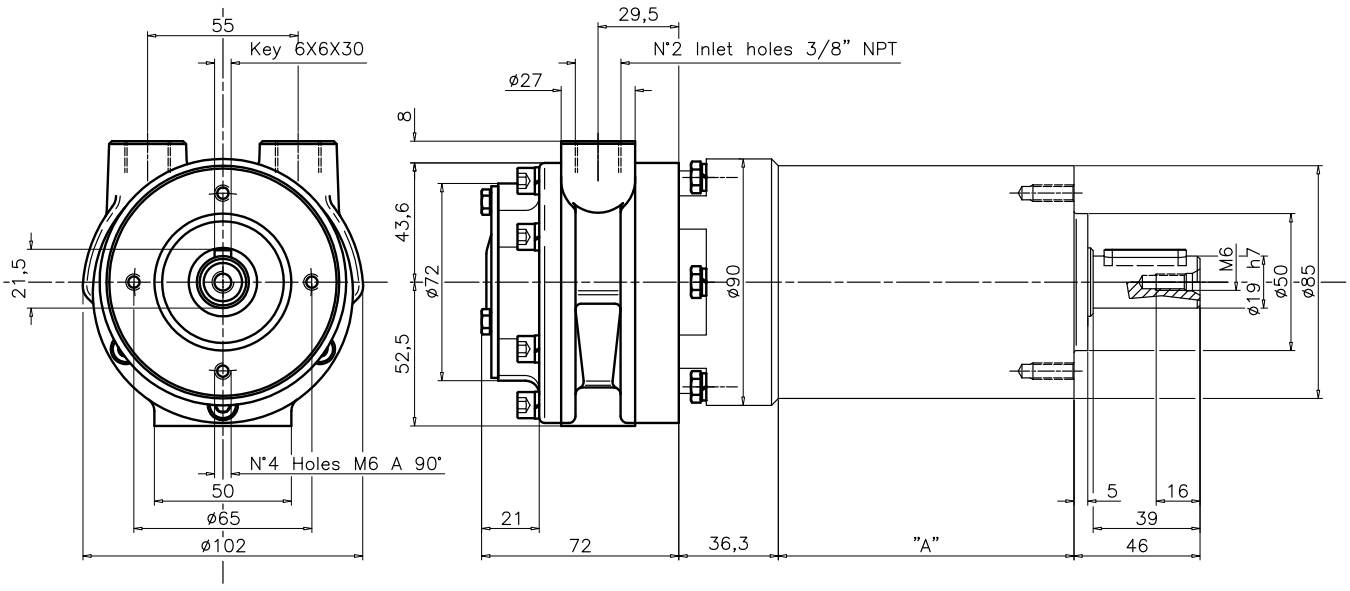
MODEL	Speed at max power N° Reduction gear r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Limit torque (*) Nm	Quote "A" mm	Weight Kg.
		6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar			
M95EN8F 3	1333	0,79	0,34	0,04	5,49	3,72	2,06	7,45	5,00	2,84	4,12	1,76	0,20	40	83,5	6,1
M95EN8F 4	1000	0,79	0,34	0,04	7,35	5,00	2,74	9,90	6,66	3,82	5,59	2,35	0,29	50	83,5	6,1
M95EN8F 5	800	0,79	0,34	0,04	9,11	6,17	3,43	12,45	8,33	4,70	6,96	2,94	0,39	50	83,5	6,1
M95EN8F 7	571	0,79	0,34	0,04	12,84	8,72	4,80	17,35	11,66	6,66	9,70	4,21	0,49	50	83,5	6,1
M95EN8F 10	400	0,79	0,34	0,04	18,33	12,45	6,86	24,79	16,66	9,51	13,82	5,98	0,69	40	83,5	6,1
M95EN8F 12	333	0,75	0,32	0,03	20,87	14,01	6,17	28,32	18,82	8,53	15,78	6,76	0,59	70	108,0	6,8
M95EN8F 15	267	0,75	0,32	0,03	26,07	17,54	7,74	35,38	23,52	10,68	19,70	8,43	0,78	70	108,0	6,8
M95EN8F 20	200	0,75	0,32	0,03	34,69	23,32	10,29	47,14	31,36	14,21	26,36	11,27	1,08	70	108,0	6,8
M95EN8F 25	160	0,75	0,32	0,03	43,41	29,20	12,84	58,90	39,20	17,74	32,93	14,01	1,27	70	108,0	6,8
M95EN8F 30	133	0,75	0,32	0,03	52,14	35,08	15,48	70,76	47,04	21,36	39,49	16,86	1,57	40	108,0	6,8
M95EN8F 35	114	0,75	0,32	0,03	60,76	40,87	18,03	82,52	54,88	24,89	46,06	19,70	1,86	70	108,0	6,8
M95EN8F 40	100	0,75	0,32	0,03	69,48	46,75	20,58	94,28	62,72	28,42	52,63	22,44	2,06	70	108,0	6,8
M95EN8F 50	80	0,75	0,32	0,03	86,83	58,41	25,77	117,89	78,40	35,57	65,76	28,03	2,65	70	108,0	6,8
M95EN8F 70	57	0,75	0,32	0,03	121,62	81,83	36,06	165,03	109,76	49,78	92,12	39,30	3,72	70	108,0	6,8
M95EN8F 80	50	0,71	0,31	0,03	131,52	90,55	41,16	178,46	121,52	56,84	99,67	43,51	4,21	70	132,5	7,6
M95EN8F 90	44	0,71	0,31	0,03	147,98	101,82	46,35	200,80	136,71	63,99	112,11	49,00	4,70	40	132,5	7,6
M95EN8F 100	40	0,71	0,31	0,03	164,44	113,19	51,45	223,15	151,90	71,05	124,56	54,39	5,29	40	132,5	7,6
M95EN8F 125	32	0,71	0,31	0,03	205,51	141,51	64,29	278,91	189,92	88,79	155,72	68,01	6,57	70	132,5	7,6
M95EN8F 150	27	0,71	0,31	0,03	246,57	169,74	77,22	334,67	227,85	106,62	186,89	81,63	7,94	70	132,5	7,6
M95EN8F 175	23	0,71	0,31	0,03	287,73	198,06	90,06	390,43	265,87	124,36	218,05	95,16	9,21	70	132,5	7,6
M95EN8F 200	20	0,71	0,31	0,03	328,79	226,38	102,90	446,29	303,80	142,10	249,21	108,78	10,49	70	132,5	7,6
M95EN8F 250	16	0,71	0,31	0,03	411,01	282,93	128,67	557,82	379,75	177,67	311,44	136,02	13,13	70	132,5	7,6

Air consum	a 6 bar 25,7 l/sec	a 5 bar 22,1 l/sec	a 4 bar 18,5 l/sec	a 3 bar 14,9 l/sec	a 2 bar 10,4 l/sec

ATTENTION

The M95EN8F air motors cannot be used over limit torque. The figures shown in the green colored area should be considered purely as an indication.

Lubrication:	4-5 gocce/1' continuos operation 9-12 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	1300 N max.
Axial load:	1400 N max.
Operative temperature:	da –20°C a +80°C



PNEUMATIC EPICYCLOIDAL GEAR MOTORS

HP 0,79 KW 0,58

Series M95EN10F...

Performances and dimensions

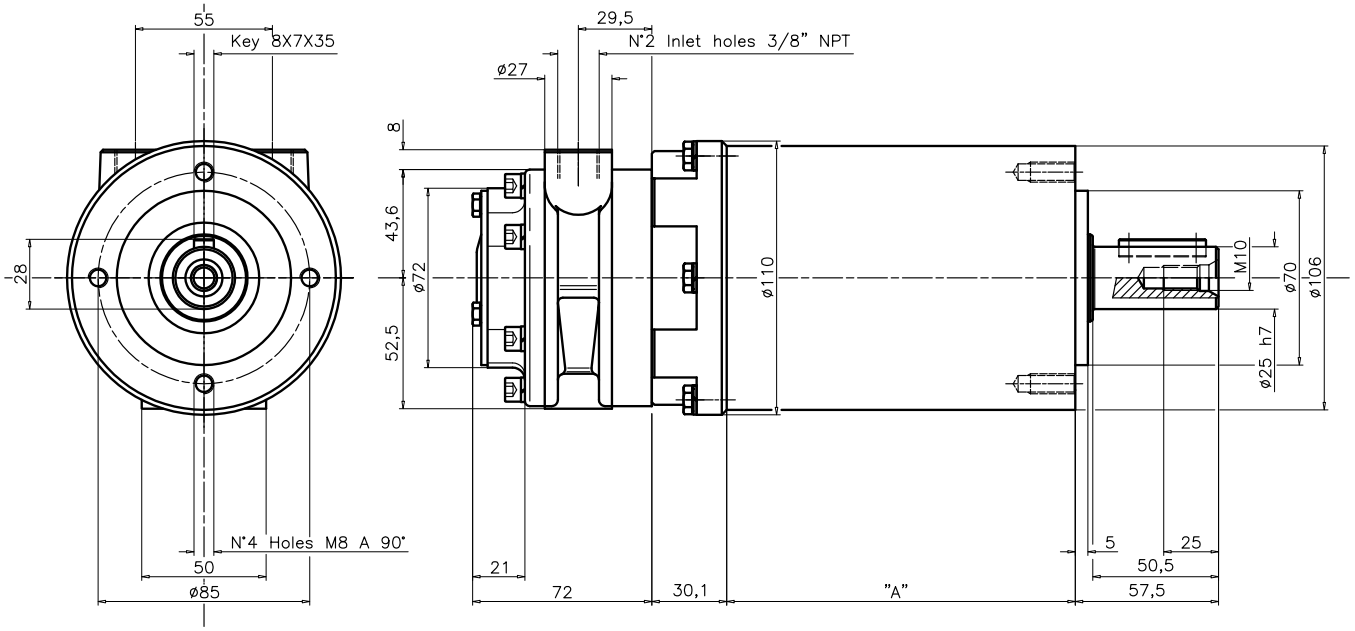
MODEL	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Limit torque (*) Nm	Quote "A" mm	Weight Kg.
		6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar			
M95EN10F 3	1333	0,79	0,34	0,04	5,49	3,72	2,06	7,45	5,00	2,84	4,12	1,76	0,20	100	107,5	10,1
M95EN10F 4	1000	0,79	0,34	0,04	7,35	5,00	2,74	9,90	6,66	3,82	5,59	2,35	0,29	140	107,5	10,1
M95EN10F 5	800	0,79	0,34	0,04	9,11	6,17	3,43	12,45	8,33	4,70	6,96	2,94	0,39	140	107,5	10,1
M95EN10F 7	571	0,79	0,34	0,04	12,84	8,72	4,80	17,35	11,66	6,66	9,70	4,21	0,49	140	107,5	10,1
M95EN10F 10	400	0,79	0,34	0,04	18,33	12,45	6,86	24,79	16,66	9,51	13,82	5,98	0,69	100	107,5	10,1
M95EN10F 12	333	0,75	0,32	0,03	20,87	14,01	6,17	28,32	18,82	8,53	15,78	6,76	0,59	170	140,0	11,8
M95EN10F 15	267	0,75	0,32	0,03	26,07	17,54	7,74	35,38	23,52	10,68	19,70	8,43	0,78	170	140,0	11,8
M95EN10F 20	200	0,75	0,32	0,03	34,69	23,32	10,29	47,14	31,36	14,21	26,36	11,27	1,08	170	140,0	11,8
M95EN10F 25	160	0,75	0,32	0,03	43,41	29,20	12,84	58,90	39,20	17,74	32,93	14,01	1,27	170	140,0	11,8
M95EN10F 30	133	0,75	0,32	0,03	52,14	35,08	15,48	70,76	47,04	21,36	39,49	16,86	1,57	100	140,0	11,8
M95EN10F 35	114	0,75	0,32	0,03	60,76	40,87	18,03	82,52	54,88	24,89	46,06	19,70	1,86	170	140,0	11,8
M95EN10F 40	100	0,75	0,32	0,03	69,48	46,75	20,58	94,28	62,72	28,42	52,63	22,44	2,06	170	140,0	11,8
M95EN10F 50	80	0,75	0,32	0,03	86,83	58,41	25,77	117,89	78,40	35,57	65,76	28,03	2,65	170	140,0	11,8
M95EN10F 70	57	0,75	0,32	0,03	121,62	81,83	36,06	165,03	109,76	49,78	92,12	39,30	3,72	170	140,0	11,8
M95EN10F 80	50	0,71	0,31	0,03	131,52	90,55	41,16	178,46	121,52	56,84	99,67	43,51	4,21	170	172,5	13,6
M95EN10F 90	44	0,71	0,31	0,03	147,98	101,82	46,35	200,80	136,71	63,99	112,11	49,00	4,70	100	172,5	13,6
M95EN10F 100	40	0,71	0,31	0,03	164,44	113,19	51,45	223,15	151,90	71,05	124,56	54,39	5,29	100	172,5	13,6
M95EN10F 125	32	0,71	0,31	0,03	205,51	141,51	64,29	278,91	189,92	88,79	155,72	68,01	6,57	170	172,5	13,6
M95EN10F 150	27	0,71	0,31	0,03	246,57	169,74	77,22	334,67	227,85	106,62	186,89	81,63	7,94	170	172,5	13,6
M95EN10F 175	23	0,71	0,31	0,03	287,73	198,06	90,06	390,43	265,87	124,36	218,05	95,16	9,21	170	172,5	13,6
M95EN10F 200	20	0,71	0,31	0,03	328,79	226,38	102,90	446,29	303,80	142,10	249,21	108,78	10,49	170	172,5	13,6
M95EN10F 250	16	0,71	0,31	0,03	411,01	282,93	128,67	557,82	379,75	177,67	311,44	136,02	13,13	170	172,5	13,6

Air consum	a 6 bar 25,7 l/sec	a 5 bar 22,1 l/sec	a 4 bar 18,5 l/sec	a 3 bar 14,9 l/sec	a 2 bar 10,4 l/sec

ATTENTION

The M95EN10F air motors cannot be used over limit torque. The figures shown in the green colored area should be considered purely as an indication.

Lubrication:	4-5 gocce/1' continuos operation 9-12 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	1500 N max.
Axial load:	1600 N max.
Operative temperature:	da –20°C a +80°C



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PNEUMATIC EPICYCLOIDAL GEAR MOTORS

HP 2,19 KW 1,6

Performances and dimensions

Series M250EN8F...

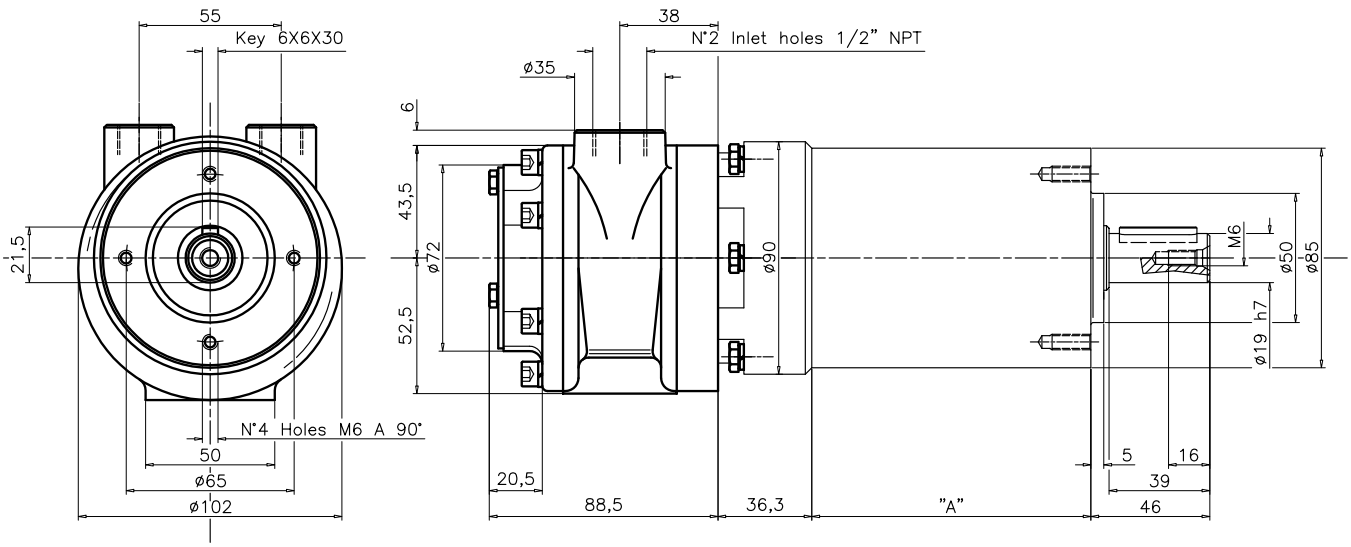
MODEL	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Limit torque (*) Nm	Quote "A" mm	Weight Kg.
		6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar			
M250EN8F 3	1333	2,19	1,39	0,60	11,07	7,15	3,33	15,97	10,78	5,49	11,56	7,35	3,14	40	83,5	10,1
M250EN8F 4	1000	2,19	1,39	0,60	14,80	9,51	4,41	21,27	14,41	7,35	15,39	9,80	4,21	50	83,5	10,1
M250EN8F 5	800	2,19	1,39	0,60	18,42	11,96	5,59	26,66	17,93	9,11	19,21	12,15	5,29	50	83,5	10,1
M250EN8F 7	571	2,19	1,39	0,60	25,87	16,66	7,74	37,24	25,19	12,84	26,85	17,05	7,35	50	83,5	10,1
M250EN8F 10	400	2,19	1,39	0,60	36,95	23,81	11,07	53,21	35,97	18,33	38,42	24,40	10,49	40	83,5	10,1
M250EN8F 12	333	2,08	1,32	0,57	42,04	27,15	12,64	60,66	40,96	20,87	43,81	27,83	11,96	70	108,0	11,8
M250EN8F 15	267	2,08	1,32	0,57	52,63	34,01	15,88	75,85	51,16	26,07	54,78	34,79	14,99	70	108,0	11,8
M250EN8F 20	200	2,08	1,32	0,57	70,07	45,28	21,07	101,14	68,21	34,79	73,01	46,35	19,99	70	108,0	11,8
M250EN8F 25	160	2,08	1,32	0,57	87,61	56,64	26,36	126,42	85,36	43,41	91,24	57,92	24,99	70	108,0	11,8
M250EN8F 30	133	2,08	1,32	0,57	105,15	67,91	31,65	151,70	102,41	52,14	109,47	69,48	29,99	40	108,0	11,8
M250EN8F 35	114	2,08	1,32	0,57	122,70	79,28	36,95	176,99	119,46	60,86	127,69	81,05	34,99	70	108,0	11,8
M250EN8F 40	100	2,08	1,32	0,57	140,24	90,55	42,24	202,27	136,51	69,48	146,02	92,61	39,98	70	108,0	11,8
M250EN8F 50	80	2,08	1,32	0,57	175,32	113,19	52,72	252,84	170,62	86,93	182,48	115,84	49,98	70	108,0	11,8
M250EN8F 70	57	2,08	1,32	0,57	245,39	158,56	73,89	353,98	238,83	121,62	255,49	162,09	69,97	70	108,0	11,8
M250EN8F 80	50	1,97	1,26	0,54	265,68	172,97	79,97	383,18	260,58	131,71	276,56	176,89	75,75	70	132,5	13,6
M250EN8F 90	44	1,97	1,26	0,54	298,80	194,53	89,96	431,10	293,12	148,18	311,15	198,94	85,26	40	132,5	13,6
M250EN8F 100	40	1,97	1,26	0,54	332,02	216,19	99,96	479,02	325,75	164,64	345,65	221,09	94,77	40	132,5	13,6
M250EN8F 125	32	1,97	1,26	0,54	415,03	270,19	124,95	598,68	407,19	205,80	432,08	276,36	118,48	70	132,5	13,6
M250EN8F 150	27	1,97	1,26	0,54	498,04	324,28	149,94	718,44	488,63	246,96	518,52	331,63	142,10	70	132,5	13,6
M250EN8F 175	23	1,97	1,26	0,54	581,04	378,28	174,93	838,19	570,07	288,12	604,95	386,90	165,82	70	132,5	13,6
M250EN8F 200	20	1,97	1,26	0,54	664,15	432,38	199,92	957,95	651,41	329,28	691,39	442,18	189,53	70	132,5	13,6
M250EN8F 250	16	1,97	1,26	0,54	830,16	540,37	249,90	1.197,46	814,28	411,60	864,16	552,72	236,87	70	132,5	13,6

Air consum	a 6 bar 41,6 l/sec	a 5 bar 35,4 l/sec	a 4 bar 29,1 l/sec	a 3 bar 22,9 l/sec	a 2 bar 16,7 l/sec

ATTENTION

The M250EN8F air motors cannot be used over limit torque. The figures shown in the green colored area should be considered purely as an indication.

Lubrication:	4-5 gocce/1' continuos operation 9-12 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	1300 N max.
Axial load:	1400 N max.
Operative temperature:	da –20°C a +80°C



PNEUMATIC EPICYCLOIDAL GEAR MOTORS

HP 2,19 KW 1,6

Series M250EN10F...

Performances and dimensions

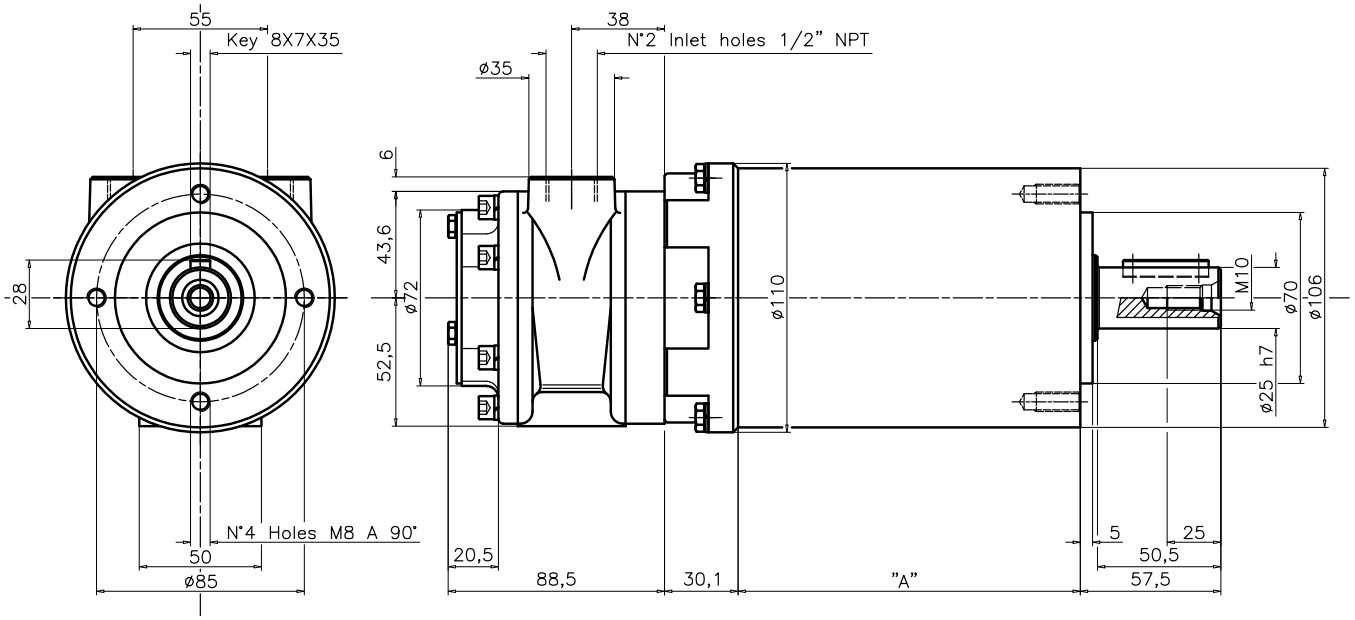
MODEL	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Limit torque (*) Nm	Quote "A" mm	Weight Kg.
		6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar			
M250EN10F 3	1333	2,19	1,39	0,60	11,07	7,15	3,33	15,97	10,78	5,49	11,56	7,35	3,14	100	107,5	10,1
M250EN10F 4	1000	2,19	1,39	0,60	14,80	9,51	4,41	21,27	14,41	7,35	15,39	9,80	4,21	140	107,5	10,1
M250EN10F 5	800	2,19	1,39	0,60	18,42	11,96	5,59	26,66	17,93	9,11	19,21	12,15	5,29	140	107,5	10,1
M250EN10F 7	571	2,19	1,39	0,60	25,87	16,66	7,74	37,24	25,19	12,84	26,85	17,05	7,35	140	107,5	10,1
M250EN10F 10	400	2,19	1,39	0,60	36,95	23,81	11,07	53,21	35,97	18,33	38,42	24,40	10,49	100	107,5	10,1
M250EN10F 12	333	2,08	1,32	0,57	42,04	27,15	12,64	60,66	40,96	20,87	43,81	27,83	11,96	170	140,0	11,8
M250EN10F 15	267	2,08	1,32	0,57	52,63	34,01	15,88	75,85	51,16	26,07	54,78	34,79	14,99	170	140,0	11,8
M250EN10F 20	200	2,08	1,32	0,57	70,07	45,28	21,07	101,14	68,21	34,79	73,01	46,35	19,99	170	140,0	11,8
M250EN10F 25	160	2,08	1,32	0,57	87,61	56,64	26,36	126,42	85,36	43,41	91,24	57,92	24,99	170	140,0	11,8
M250EN10F 30	133	2,08	1,32	0,57	105,15	67,91	31,65	151,70	102,41	52,14	109,47	69,48	29,99	100	140,0	11,8
M250EN10F 35	114	2,08	1,32	0,57	122,70	79,28	36,95	176,99	119,46	60,86	127,69	81,05	34,99	170	140,0	11,8
M250EN10F 40	100	2,08	1,32	0,57	140,24	90,55	42,24	202,27	136,51	69,48	146,02	92,61	39,98	170	140,0	11,8
M250EN10F 50	80	2,08	1,32	0,57	175,32	113,19	52,72	252,84	170,62	86,93	182,48	115,84	49,98	170	140,0	11,8
M250EN10F 70	57	2,08	1,32	0,57	245,39	158,56	73,89	353,98	238,83	121,62	255,49	162,09	69,97	170	140,0	11,8
M250EN10F 80	50	1,97	1,26	0,54	265,68	172,97	79,97	383,18	260,58	131,71	276,56	176,89	75,75	170	172,5	13,6
M250EN10F 90	44	1,97	1,26	0,54	298,80	194,53	89,96	431	293,12	148,18	311,15	198,94	85,26	100	172,5	13,6
M250EN10F 100	40	1,97	1,26	0,54	332,02	216,19	99,96	479	325,75	164,64	345,65	221,09	94,77	100	172,5	13,6
M250EN10F 125	32	1,97	1,26	0,54	415,03	270,19	124,95	598	407,19	205,80	432,08	276,36	118,48	170	172,5	13,6
M250EN10F 150	27	1,97	1,26	0,54	498,04	324,28	149,94	718	488,63	246,96	518,52	331,63	142,10	170	172,5	13,6
M250EN10F 175	23	1,97	1,26	0,54	581,04	378,28	174,93	838	570,07	288,12	604,95	386,90	165,82	170	172,5	13,6
M250EN10F 200	20	1,97	1,26	0,54	664,15	432,38	199,92	957	651,41	329,28	691,39	442,18	189,53	170	172,5	13,6
M250EN10F 250	16	1,97	1,26	0,54	830,16	540,37	249,90	1.197	814,28	411,60	864,16	552,72	236,87	170	172,5	13,6

Air consum	a 6 bar 41,6 l/sec	a 5 bar 35,4 l/sec	a 4 bar 29,1 l/sec	a 3 bar 22,9 l/sec	a 2 bar 16,7 l/sec

ATTENTION

The M250EN10F air motors cannot be used over limit torque. The figures shown in the green colored area should be considered purely as an indication.

Lubrication:	4-5 gocce/1' continuos operation 9-12 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	1500 N max.
Axial load:	1600 N max.
Operative temperature:	da –20°C a +80°C



TSA TECNOLOGIE SPECIALI APPLICATE

PNEUMATIC EPICYCLOIDAL GEAR MOTORS

HP 3,57 KW 2,6

Performances and dimensions

Series M410EN10F...

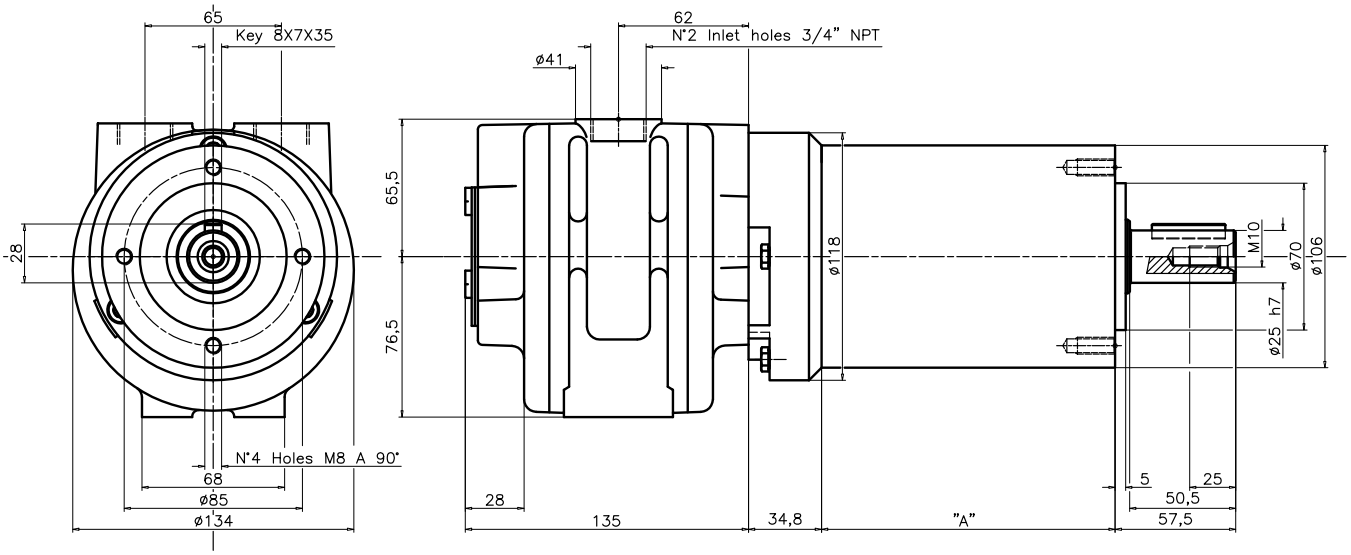
MODEL	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Limit torque (*) Nm	Quote "A" mm	Weight Kg.
		6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar			
M410EN10F 3	1000	3,57	2,31	1,05	20,38	13,33	6,27	32,83	21,85	10,88	25,09	21,60	7,35	100	107,5	14,5
M410EN10F 4	750	3,57	2,31	1,05	27,15	17,74	8,33	43,81	29,11	14,50	33,42	21,60	9,80	140	107,5	14,5
M410EN10F 5	600	3,57	2,31	1,05	34,01	22,25	10,49	54,68	36,46	18,13	41,75	27	12,25	140	107,5	14,5
M410EN10F 7	429	3,57	2,31	1,05	47,53	31,07	14,60	76,64	50,96	25,38	58,51	37	17,15	140	107,5	14,5
M410EN10F 10	300	3,57	2,31	1,05	67,91	44,39	20,87	109,47	72,81	36,26	83,50	54	24,60	100	107,5	14,5
M410EN10F 12	250	3,40	2,20	1,00	77,62	50,76	23,91	125,05	83,30	41,45	95,45	61,75	28,03	170	140,0	16,2
M410EN10F 15	200	3,40	2,20	1,00	97,02	63,50	29,89	156,31	104,08	51,84	119,36	77,22	35,08	170	140,0	16,2
M410EN10F 20	150	3,40	2,20	1,00	129,46	84,57	39,79	208,45	138,77	69,09	159,05	99,75	46,75	170	140,0	16,2
M410EN10F 25	120	3,40	2,20	1,00	161,80	105,74	49,78	260,58	173,46	86,34	198,84	128	58,51	170	140,0	16,2
M410EN10F 30	100	3,40	2,20	1,00	194,14	126,91	59,78	312,62	208,15	103,59	238,63	154,44	70,17	100	140,0	16,2
M410EN10F 35	86	3,40	2,20	1,00	226,48	148,08	69,68	364,76	242,84	120,83	278,42	180	81,93	170	140,0	16,2
M410EN10F 40	75	3,40	2,20	1,00	258,82	169,25	79,67	416,89	277,54	138,18	318,21	205,8	93,59	170	140,0	16,2
M410EN10F 50	60	3,40	2,20	1,00	323,60	211,58	99,57	521,07	346,92	172,68	397,68	257,30	117,01	170	140,0	16,2
M410EN10F 70	43	3,40	2,20	1,00	452,96	296,16	139,36	729,51	485,69	241,77	556,84	360	163,76	170	140,0	16,2
M410EN10F 80	38	3,23	2,09	0,95	491,76	321,54	151,31	792,13	527,24	262,44	604,56	392	177,77	170	172,5	18,0
M410EN10F 90	33	3,23	2,09	0,95	553,31	361,72	170,23	891,11	593,19	295,27	680,12	440	200,02	100	172,5	18,0
M410EN10F 100	30	3,23	2,09	0,95	614,75	402,00	189,14	990	659,05	328,10	755,68	489	222,26	100	172,5	18,0
M410EN10F 125	24	3,23	2,09	0,95	768,42	502,45	236,47	1.237	823,89	410,13	944,62	611	277,83	170	172,5	18,0
M410EN10F 150	20	3,23	2,09	0,95	922,18	602,90	283,71	1.485	988,62	492,06	1.133	733	333,40	170	172,5	18,0
M410EN10F 175	17	3,23	2,09	0,95	1.075	703,44	331,04	1.732	1.153,36	574,08	1.322	855	388,96	170	172,5	18,0
M410EN10F 200	15	3,23	2,09	0,95	1.229	803	378,28	1.980	1.318,20	656,11	1.511	977	444,53	170	172,5	18,0
M410EN10F 250	12	3,23	2,09	0,95	1.536	1.004	472,85	2.475	1.647,67	820,16	1.889	1.222	555,66	170	172,5	18,0

Air consum	a 6 bar 62,2 l/sec	a 5 bar 54,1 l/sec	a 4 bar 46,1 l/sec	a 3 bar 38,0 l/sec	a 2 bar 30,0 l/sec

ATTENTION

The M410EN10F air motors cannot be used over limit torque. The figures shown in the green colored area should be considered purely as an indication.

Lubrication:	5-6 gocce/1' continuos operation 10-12 gocce/1' intermittent operation
Filtration:	Use 64 micron filtration or better
Radial load:	1500 N max.
Axial load:	1600 N max.
Operative temperature:	da –20°C a +80°C



PNEUMATIC EPICYCLOIDAL GEAR MOTORS

HP 2,19 KW 1,6

Series M250E18F...

Performances and dimensions

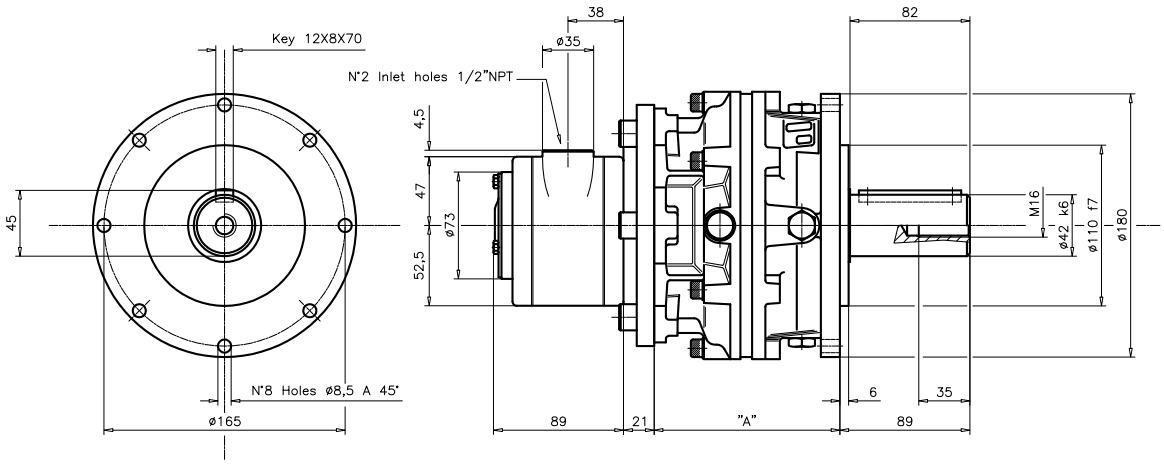
MODEL	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Limit torque (*) Nm	Quote "A" mm	Weight Kg.
		6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar			
M250E18F 3	1185	2,19	1,39	0,60	12	8	3	17,93	12,05	6,17	12,94	8,23	3,53	463	127	21,5
M250E18F 4	911	2,19	1,39	0,60	16	10	4	23	15	8	16	10	4	487	127	21,5
M250E18F 6	667	2,19	1,39	0,60	22	14	6	31	21	11	23	14	6	453	127	21,5
M250E18F 7	577	2,19	1,39	0,60	25	16	7	36	24	12	26	16	7	407	127	21,5
M250E18F 10	381	2,19	1,39	0,60	38	24	11	55	37	19	40	25	11	213	127	21,5
M250E18F 15	270	2,08	1,32	0,57	51	33	15	74	50	25	54	34	14	722	167	25,5
M250E18F 20	198	2,08	1,32	0,57	70	45	21	102	68	35	73	47	20	793	167	25,5
M250E18F 30	131	2,08	1,32	0,57	106	68	31	153	103	53	110	70	30	808	167	25,5
M250E18F 36	111	2,08	1,32	0,57	125	81	37	182	122	62	131	83	35	589	167	25,5
M250E18F 42	96	2,08	1,32	0,57	145	93	43	210	142	72	151	96	41	599	167	25,5
M250E18F 48	83	2,08	1,32	0,57	167	108	50	243	163	84	175	111	48	537	167	25,5
M250E18F 63	63	2,08	1,32	0,57	208	135	62	302	203	104	230	146	62	952	167	25,5
M250E18F 73	55	2,08	1,32	0,57	254	164	75	368	247	127	265	169	72	568	167	25,5
M250E18F 79	51	1,97	1,26	0,54	261	169	78	379	255	131	273	174	75	937	206	29,5
M250E18F 89	45	1,97	1,26	0,54	294	191	87	427	287	147	308	196	84	941	206	29,5
M250E18F 103	39	1,97	1,26	0,54	341	220	101	493	332	170	356	227	97	945	206	29,5
M250E18F 122	33	1,97	1,26	0,54	402	260	120	584	392	201	421	268	115	950	206	29,5
M250E18F 156	26	1,97	1,26	0,54	516	333	153	747	502	258	539	343	147	980	206	29,5
M250E18F 183	22	1,97	1,26	0,54	606	392	180	878	590	303	634	403	173	859	206	29,5
M250E18F 213	19	1,97	1,26	0,54	705	455	209	1.019	686	352	736	469	201	853	206	29,5
M250E18F 250	16	1,97	1,26	0,54	828	535	246	1.195	807	414	865	551	237	627	206	29,5
M250E18F 320	13	1,97	1,26	0,54	1.058	686	316	1.538	1.038	531	1.107	706	303	873	206	29,5
M250E18F 378	11	1,97	1,26	0,54	1.254	810	373	1.813	1.225	627	1.313	833	358	796	206	29,5
M250E18F 505	8	1,97	1,26	0,54	1.675	1.087	499	2.430	1.636	838	1.754	1.117	480	568	206	29,5

Air consum	a 6 bar 41,6 l/sec	a 5 bar 35,4 l/sec	a 4 bar 29,1 l/sec	a 3 bar 22,9 l/sec	a 2 bar 16,7 l/sec

ATTENTION

The M250E18F air motors cannot be used over limit torque. The figures shown in the green colored area should be considered purely as an indication.

Motor lubrication:	4-5 gocce/1' continuos operation 9-12 gocce/1' intermittent operation
Gear motor lubrication:	Horizontal Quote "A": 127mm 0,5 litri 167mm 0,8 litri 206mm 0,9 litri Vertical Quote "A": 127mm 1,0 litri 167mm 1,6 litri 206mm 1,8 litri
Filtration:	Use 64 micron filtration or better
Radial load:	10000 N max.
Axial load:	9000 N max.
Operative temperature:	da –20°C a +80°C



TSA TECNOLOGIE SPECIALI APPLICATE

PNEUMATIC EPICYCLOIDAL GEAR MOTORS

HP 3,57 KW 2,6

Performances and dimensions

Series M410E18F...

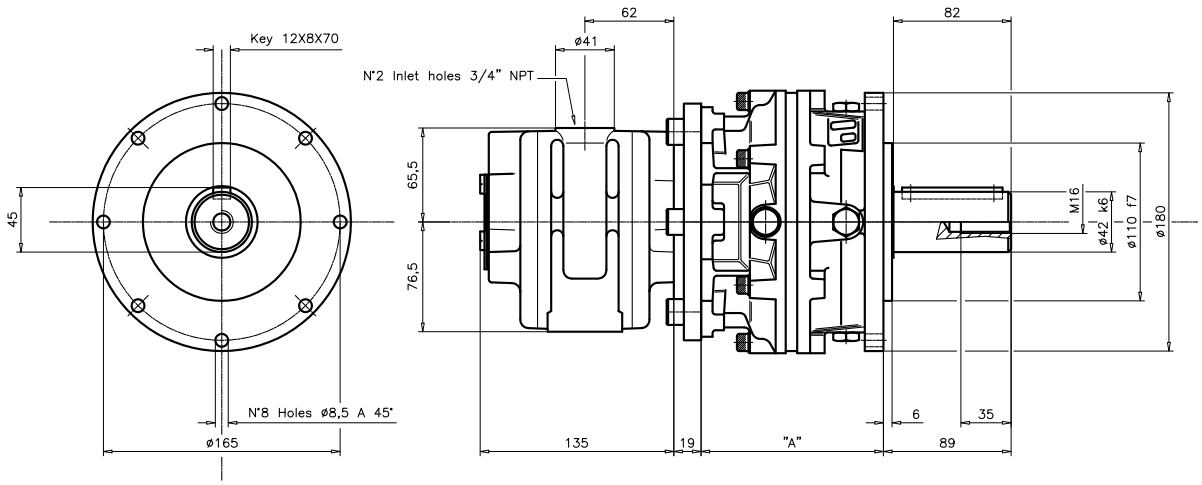
MODEL	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Limit torque (*) Nm	Quote "A" mm	Weight Kg.
		6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar			
M410E18F 3	889	3,57	2,31	1,05	23	15	7	37	25	12	28	18	8	463	127	25,0
M410E18F 4	683	3,57	2,31	1,05	30	20	9	48	32	16	37	24	11	487	127	25,0
M410E18F 6	500	3,57	2,31	1,05	41	27	13	66	44	22	50	32	15	453	127	25,0
M410E18F 7	432	3,57	2,31	1,05	47	31	15	76	51	25	58	38	17	407	127	25,0
M410E18F 10	286	3,57	2,31	1,05	71	47	22	115	77	38	88	57	26	213	127	25,0
M410E18F 15	202	3,40	2,20	1,00	96	63	30	154	103	51	118	76	35	722	167	29,0
M410E18F 20	148	3,40	2,20	1,00	130	85	40	211	140	70	161	104	47	793	167	29,0
M410E18F 30	98	3,40	2,20	1,00	197	128	61	318	211	105	242	157	71	808	167	29,0
M410E18F 36	83	3,40	2,20	1,00	232	152	72	374	249	123	286	185	84	589	167	29,0
M410E18F 42	72	3,40	2,20	1,00	269	175	83	433	288	143	330	214	97	599	167	29,0
M410E18F 48	62	3,40	2,20	1,00	311	203	96	501	333	166	382	247	113	537	167	29,0
M410E18F 63	48	3,40	2,20	1,00	406	266	125	656	436	217	501	323	147	952	167	29,0
M410E18F 73	41	3,40	2,20	1,00	469	308	145	758	504	251	578	374	171	568	167	29,0
M410E18F 79	38	3,23	2,09	0,95	484	317	150	781	519	258	596	386	175	937	206	33,0
M410E18F 89	34	3,23	2,09	0,95	545	357	169	879	585	290	671	434	197	941	206	33,0
M410E18F 103	29	3,23	2,09	0,95	630	413	195	1.019	676	336	776	502	228	945	206	33,0
M410E18F 122	25	3,23	2,09	0,95	744	487	230	1.205	799	397	917	593	270	950	206	33,0
M410E18F 156	19	3,23	2,09	0,95	954	624	295	1.539	1.019	509	1.176	760	345	980	206	33,0
M410E18F 183	16	3,23	2,09	0,95	1.117	733	347	1.803	1.205	597	1.382	893	406	859	206	33,0
M410E18F 213	14	3,23	2,09	0,95	1.303	853	404	2.097	1.401	695	1.607	1.039	471	853	206	33,0
M410E18F 250	12	3,23	2,09	0,95	1.529	1.000	474	2.470	1.646	815	1.882	1.215	554	627	206	33,0
M410E18F 320	9	3,23	2,09	0,95	1.960	1.284	607	3.165	2.107	1.049	2.411	1.558	710	873	206	33,0
M410E18F 378	8	3,23	2,09	0,95	2.313	1.519	717	3.734	2.489	1.235	2.852	1.842	839	796	206	33,0
M410E18F 505	6	3,23	2,09	0,95	3.097	2.029	958	4.998	3.322	1.646	3.812	2.470	1.117	568	206	33,0

Air consum	a 6 bar 62,2 l/sec	a 5 bar 54,1 l/sec	a 4 bar 46,1 l/sec	a 3 bar 38,0 l/sec	a 2 bar 30,0 l/sec

ATTENTION

The M410E18F air motors cannot be used over limit torque. The figures shown in the green colored area should be considered purely as an indication.

Motor lubrication:	5-6 gocce/1' continuos operation 10-12 gocce/1' intermittent operation
Gear motor lubrication:	Horizontal Quote "A": 127mm 0,5 litri 167mm 0,8 litri 206mm 0,9 litri Vertical Quote "A": 127mm 1,0 litri 167mm 1,6 litri 206mm 1,8 litri
Filtration:	Use 64 micron filtration or better
Radial load:	10000 N max.
Axial load:	9000 N max.
Operative temperature:	da –20°C a +80°C



PNEUMATIC EPICYCLOIDAL GEAR MOTORS

HP 5,57 KW 4

Series M620E18F...

Performances and dimensions

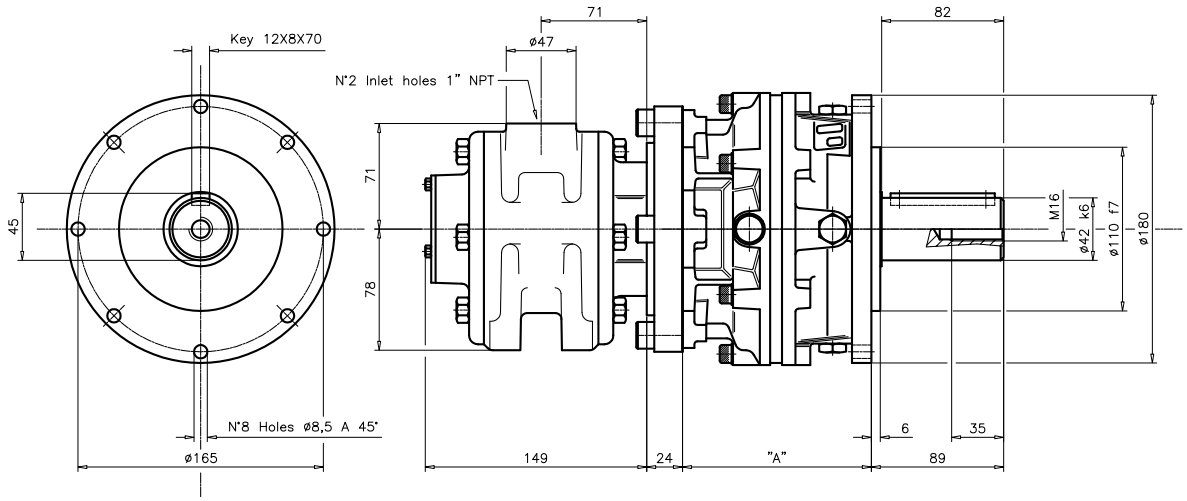
MODEL	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Limit torque (*) Nm	Quote "A" mm	Weight Kg.
		6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar			
M620E18F 3	889	5,57	3,53	1,49	45	30	14	61	42	24	44	28	12	463	127	28,5
M620E18F 4	683	5,57	3,53	1,49	59	39	19	79	55	31	57	36	15	487	127	28,5
M620E18F 6	500	5,57	3,53	1,49	81	53	25	109	75	42	78	50	21	453	127	28,5
M620E18F 7	432	5,57	3,53	1,49	93	61	29	125	87	48	90	57	24	407	127	28,5
M620E18F 10	286	5,57	3,53	1,49	141	93	44	190	131	73	137	87	37	213	127	28,5
M620E18F 15	202	5,29	3,36	1,42	189	124	59	255	176	98	183	117	49	722	167	32,5
M620E18F 20	148	5,29	3,36	1,42	259	170	81	348	241	134	251	159	67	793	167	32,5
M620E18F 30	98	5,29	3,36	1,42	389	256	122	523	363	202	377	239	101	808	167	32,5
M620E18F 36	83	5,29	3,36	1,42	460	302	144	617	428	239	446	282	120	589	167	32,5
M620E18F 42	72	5,29	3,36	1,42	531	349	167	714	495	276	515	326	138	599	167	32,5
M620E18F 48	62	5,29	3,36	1,42	614	404	192	826	572	319	596	377	160	537	167	32,5
M620E18F 63	48	5,29	3,36	1,42	804	528	252	1.078	750	417	780	495	209	952	167	32,5
M620E18F 73	41	5,29	3,36	1,42	930	611	291	1.254	866	483	902	571	242	568	167	32,5
M620E18F 79	38	5,03	3,19	1,35	958	629	300	1.284	893	498	929	589	249	937	206	36,5
M620E18F 89	34	5,03	3,19	1,35	1.078	709	338	1.450	1.009	561	1.049	663	280	941	206	36,5
M620E18F 103	29	5,03	3,19	1,35	1.245	819	391	1.676	1.166	648	1.205	767	324	945	206	36,5
M620E18F 122	25	5,03	3,19	1,35	1.470	967	462	1.980	1.372	765	1.431	906	383	950	206	36,5
M620E18F 156	19	5,03	3,19	1,35	1.891	1.235	592	2.538	1.764	980	1.833	1.156	491	980	206	36,5
M620E18F 183	16	5,03	3,19	1,35	2.215	1.460	695	2.979	2.068	1.156	2.146	1.362	576	859	206	36,5
M620E18F 213	14	5,03	3,19	1,35	2.577	1.695	809	3.469	2.401	1.343	2.499	1.588	670	853	206	36,5
M620E18F 250	12	5,03	3,19	1,35	3.028	1.989	950	4.067	2.822	1.578	2.940	1.862	787	627	206	36,5
M620E18F 320	9	5,03	3,19	1,35	3.881	2.548	1.215	5.214	3.616	2.019	3.763	2.381	1.009	873	206	36,5
M620E18F 378	8	5,03	3,19	1,35	4.586	3.009	1.441	6.164	4.273	2.381	4.449	2.822	1.196	796	206	36,5
M620E18F 505	6	5,03	3,19	1,35	6.125	4.028	1.921	8.242	5.713	3.185	5.949	3.773	1.588	568	206	36,5

Air consum	a 6 bar 101,9 l/sec	a 5 bar 87,6 l/sec	a 4 bar 73,4 l/sec	a 3 bar 59,1 l/sec	a 2 bar 44,9 l/sec

ATTENTION

The M620E18F air motors cannot be used over limit torque. The figures shown in the green colored area should be considered purely as an indication.

Motor lubrication:	6-7 gocce/1' continuos operation 12-15 gocce/1' intermittent operation
Gear motor lubrication:	Horizontal Quote "A": 127mm 0,5 litri 167mm 0,8 litri 206mm 0,9 litri Vertical Quote "A": 127mm 1,0 litri 167mm 1,6 litri 206mm 1,8 litri
Filtration:	Use 64 micron filtration or better
Radial load:	10000 N max.
Axial load:	9000 N max.
Operative temperature:	da –20°C a +80°C



TSA TECNOLOGIE SPECIALI APPLICATE

PNEUMATIC EPICYCLOIDAL GEAR MOTORS

HP 10,1 KW 7,3

Performances and dimensions

Series M1100E18F...

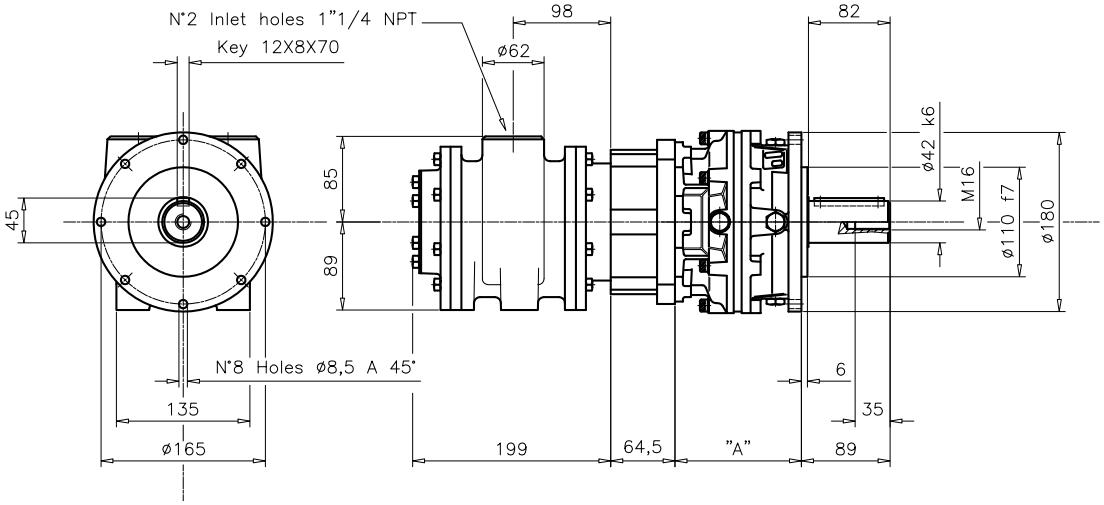
MODEL	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Limit torque (*) Nm	Quote "A" mm	Weight Kg.
		6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar	6 bar	4 bar	2 bar			
M1100E18F 3	711	10,1	6,49	2,87	91	60	29	125	87	49	100	64	28	980	127	42,0
M1100E18F 4	546	10,1	6,49	2,87	119	78	38	164	114	63	129	83	37	463	127	42,0
M1100E18F 6	400	10,1	6,49	2,87	163	107	52	223	155	86	177	114	50	487	127	42,0
M1100E18F 7	346	10,1	6,49	2,87	187	123	60	259	179	100	205	131	58	453	127	42,0
M1100E18F 10	229	10,1	6,49	2,87	284	187	91	391	271	151	310	199	88	407	127	42,0
M1100E18F 15	162	9,59	6,16	2,73	381	251	122	525	364	203	417	268	119	213	167	46,0
M1100E18F 20	119	9,59	6,16	2,73	520	343	166	717	497	277	568	365	162	722	167	46,0
M1100E18F 30	79	9,59	6,16	2,73	783	516	250	1.078	749	417	856	549	243	793	167	46,0
M1100E18F 36	67	9,59	6,16	2,73	925	610	295	1.274	884	493	1.009	649	287	808	167	46,0
M1100E18F 42	58	9,59	6,16	2,73	1.068	706	341	1.470	1.019	570	1.166	751	332	589	167	46,0
M1100E18F 48	50	9,59	6,16	2,73	1.235	815	394	1.705	1.186	659	1.352	867	384	599	167	46,0
M1100E18F 63	38	9,59	6,16	2,73	1.617	1.068	516	2.234	1.548	862	1.764	1.137	503	537	167	46,0
M1100E18F 73	33	9,59	6,16	2,73	1.872	1.235	597	2.577	1.784	1.000	2.048	1.313	582	952	167	46,0
M1100E18F 79	30	9,12	5,85	2,59	1.931	1.274	614	2.656	1.842	1.029	2.107	1.352	600	568	206	50,0
M1100E18F 89	27	9,12	5,85	2,59	2.176	1.431	692	2.989	2.078	1.156	2.372	1.519	675	937	206	50,0
M1100E18F 103	23	9,12	5,85	2,59	2.509	1.656	801	3.459	2.401	1.343	2.744	1.764	780	941	206	50,0
M1100E18F 122	20	9,12	5,85	2,59	2.969	1.960	946	4.087	2.832	1.578	3.234	2.078	922	945	206	50,0
M1100E18F 156	15	9,12	5,85	2,59	3.802	2.509	1.215	5.233	3.636	2.029	4.145	2.666	1.186	950	206	50,0
M1100E18F 183	13	9,12	5,85	2,59	4.459	2.940	1.421	6.154	4.263	2.381	4.871	3.126	1.392	980	206	50,0
M1100E18F 213	11	9,12	5,85	2,59	5.194	3.420	1.656	7.154	4.959	2.764	5.664	3.636	1.617	859	206	50,0
M1100E18F 250	10	9,12	5,85	2,59	6.096	4.018	1.940	8.399	5.821	3.244	6.654	4.273	1.891	853	206	50,0
M1100E18F 320	8	9,12	5,85	2,59	7.811	5.155	2.489	10.760	7.468	4.165	8.526	5.478	2.430	627	206	50,0
M1100E18F 378	6	9,12	5,85	2,59	9.232	6.086	2.940	12.720	8.820	4.920	10.074	6.468	2.871	873	206	50,0
M1100E18F 505	5	9,12	5,85	2,59	12.338	8.134	3.930	17.003	11.789	6.576	13.475	8.653	3.832	796	206	50,0

Air consum	a 6 bar 132,5 l/sec	a 5 bar 116,0 l/sec	a 4 bar 99,5 l/sec	a 3 bar 83,0 l/sec	a 2 bar 66,7 l/sec

ATTENTION

The M1100EN18F air motors cannot be used over limit torque. The figures shown in the green colored area should be considered purely as an indication.

Motor lubrication:	8-10 gocce/1' continuos operation 14-16 gocce/1' intermittent operation
Gear motor lubrication:	Horizontal Quote "A": 127mm 0,5 litri 167mm 0,8 litri 206mm 0,9 litri Vertical Quote "A": 127mm 1,0 litri 167mm 1,6 litri 206mm 1,8 litri
Filtration:	Use 64 micron filtration or better
Radial load:	10000 N max.
Axial load:	9000 N max.
Operative temperature:	da –20°C a +80°C



PNEUMATIC EPICYCLOIDAL GEAR MOTORS

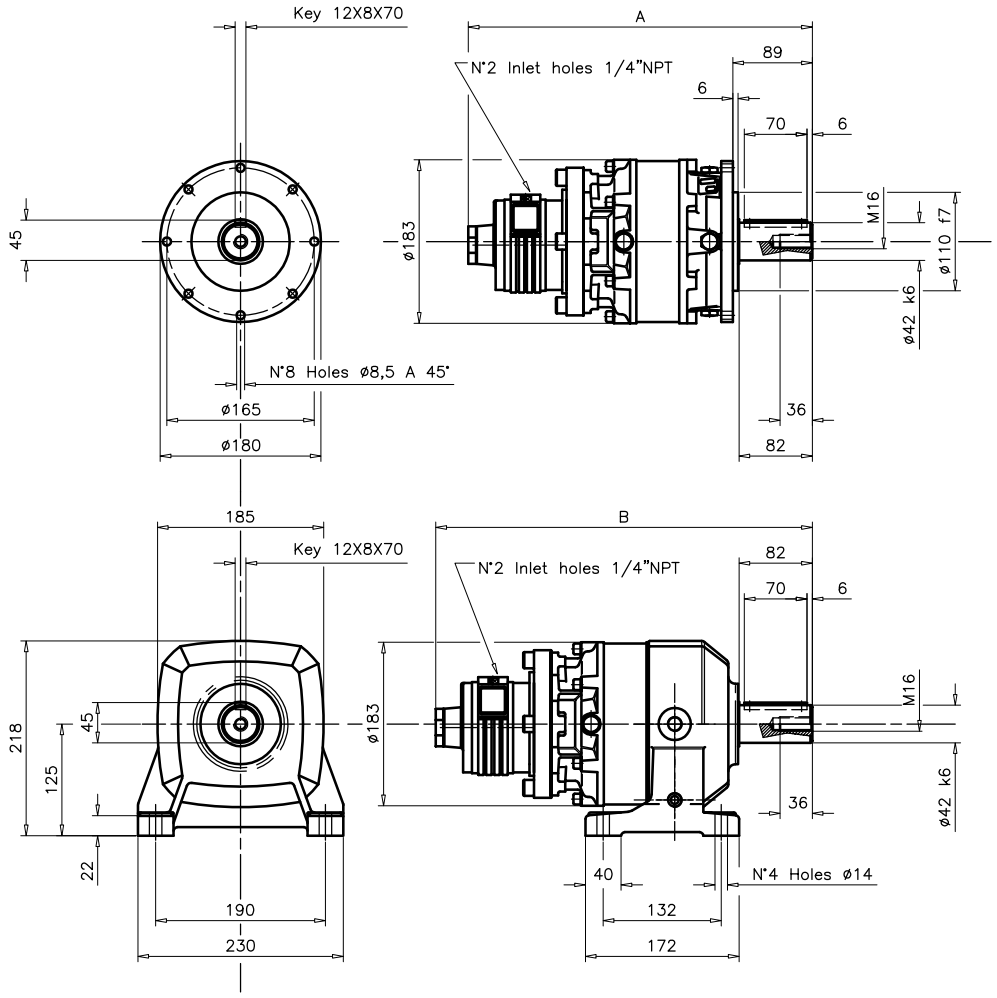
HP 1,3 KW 0,95

15 Series

Performances and dimensions

MODEL		Power Hp		Speed at max power r/min	Torque Nm	Air consum	Weight flangeded	Weight on base	The flange maximum dimension	The maximum dimension on base
									"A"	"B"
flangeded	on base	HP	KW	Speed r/min	Nm	m / min	Kg.	Kg.	mm	mm
15F001	15B001	1,3	.95	900	15	2	15	22	345	382
15F002	15B002	1,3	.95	700	20	2	15	22	345	382
15F003	15B003	1,3	.95	500	30	2	15	22	345	382
15F006	15B006	1,3	.95	300	50	2	15	22	345	382
15F012	15B012	1,2	.88	200	70	2	19	26	385	422
15F013	15B013	1,2	.88	150	90	2	19	26	385	422
15F024	15B024	1,2	.88	100	140	2	19	26	385	422
15F034	15B034	1,2	.88	70	190	2	19	26	385	422
15F036	15B036	1,2	.88	50	270	2	19	26	385	422
15F124	15B124	1,2	.88	30	460	2	22	29	425	462
15F126	15B126	1,2	.88	20	690	2	22	29	425	462
15F136	15B136	1,2	.88	15	930	2	22	29	425	462

Motor lubrication:	4-5 gocce/1' continuos operation 9-12 gocce/1' intermittent operation	Filtration:	Use 64 micron filtration or better
		Radial load:	10000 N max.
Gear motor lubrication:	Horizontal 0,8 litri Vertical 2,5 litri	Axial load:	9000 N max.
		Operative temperature:	da –20°C a +80°C



TSA TECNOLOGIE SPECIALI APPLICATE

PNEUMATIC EPICYCLOIDAL GEAR MOTORS

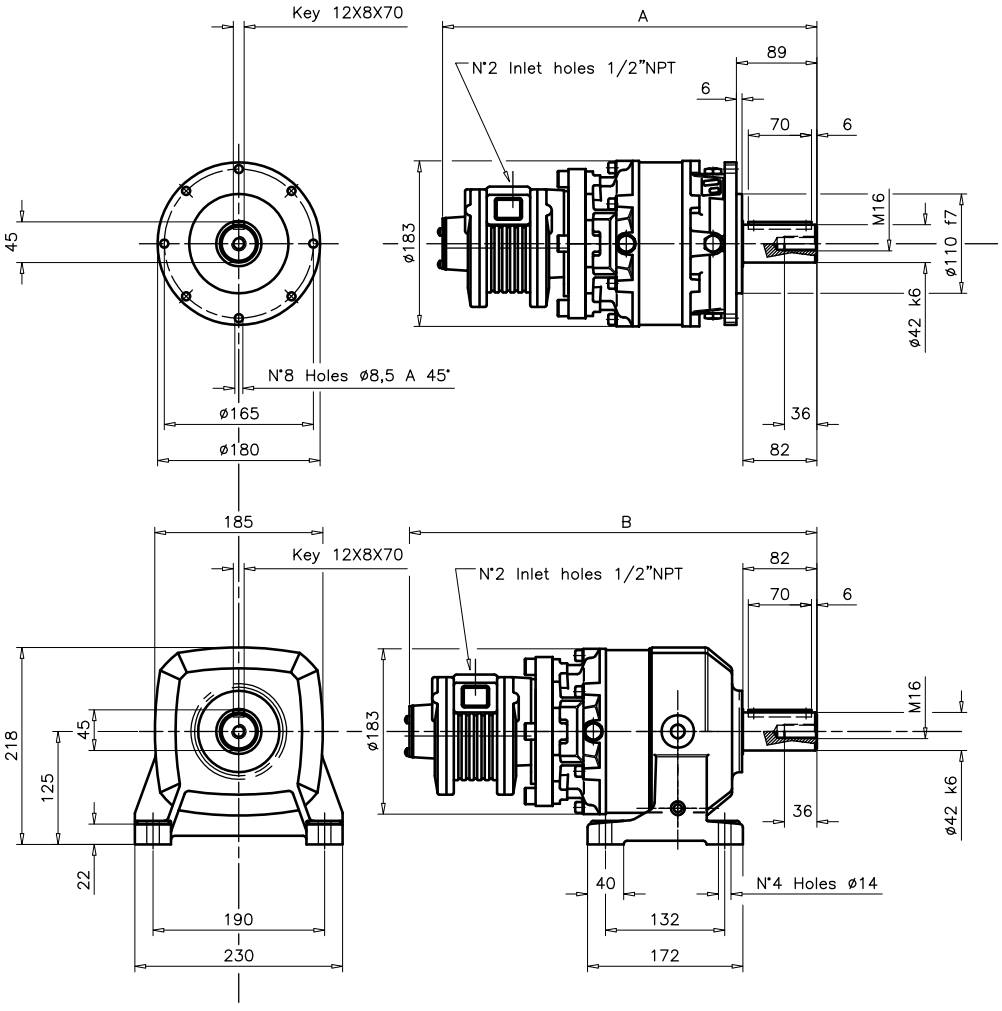
HP 3,6 KW 2,7

Performances and dimensions

40 Series

MODEL		Power Hp		Speed at max power r/min	Torque Nm	Air consum	Weight flangeded	Weight on base	The flange maximum dimension	The maximum dimension on base
									"A"	"B"
flangeded	on base	HP	KW	Speed r/min	Nm	m / min	Kg.	Kg.	mm	mm
40F001	40B001	3,6	2,7	900	45	3,7	20	27	380	417
40F002	40B002	3,6	2,7	700	60	3,7	20	27	380	417
40F003	40B003	3,6	2,7	500	85	3,7	20	27	380	417
40F006	40B006	3,6	2,7	300	140	3,7	20	27	380	417
40F012	40B012	3,5	2,6	200	200	3,7	24	31	420	457
40F013	40B013	3,5	2,6	150	270	3,7	24	31	420	457
40F024	40B024	3,5	2,6	100	400	3,7	24	31	420	457
40F034	40B034	3,5	2,6	70	580	3,7	24	31	420	457
40F036	40B036	3,5	2,6	50	800	3,7	24	31	420	457

Motor lubrication:	8-10 gocce/1' continuos operation 14-16 gocce/1' intermittent operation	Filtration:	Use 64 micron filtration or better
		Radial load:	10000 N max.
Gear motor lubrication:	Horizontal 0,8 litri	Axial load:	9000 N max.
	Vertical 2,5 litri	Operative temperature:	da –20°C a +80°C



PNEUMATIC EPICYCLOIDAL GEAR MOTORS

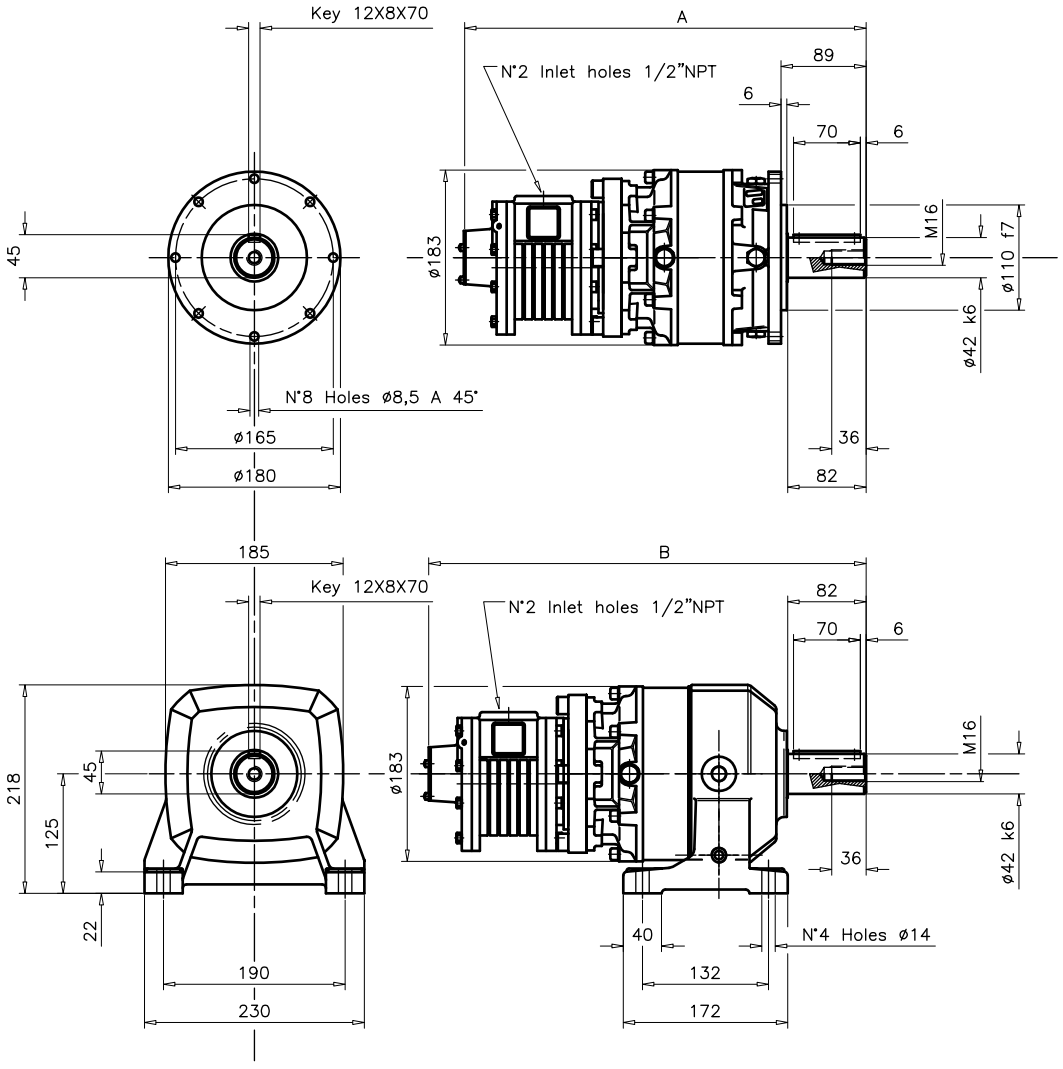
HP 4,5 KW 3,3

50 Series

Performances and dimensions

MODEL		Power Hp		Speed at max power r/min	Torque Nm	Air consum	Weight flangeded	Weight on base	The flange maximum dimension	The maximum dimension on base
									"A"	"B"
flangeded	on base	HP	KW	Speed r/min	Nm	m / min	Kg.	Kg.	mm	mm
50F001	50B001	4,5	3,3	750	70	4,5	24	31	420	457
50F002	50B002	4,5	3,3	580	90	4,5	24	31	420	457
50F003	50B003	4,5	3,3	415	125	4,5	24	31	420	457
50F006	50B006	4,5	3,3	250	210	4,5	28	36	460	497
50F012	50B012	4,3	3,2	170	300	4,5	28	36	460	497
50F013	50B013	4,3	3,2	120	420	4,5	28	36	460	497
50F024	50B024	4,3	3,2	80	620	4,5	28	36	460	497
50F034	50B034	4,3	3,2	60	830	4,5	28	36	460	497

Motor lubrication:	8-10 gocce/1' continuos operation 14-16 gocce/1' intermittent operation	Filtration:	Use 64 micron filtration or better
		Radial load:	10000 N max.
Gear motor lubrication:	Horizontal 0,8 litri	Axial load:	9000 N max.
	Vertical 2,5 litri	Operative temperature:	da –20°C a +80°C

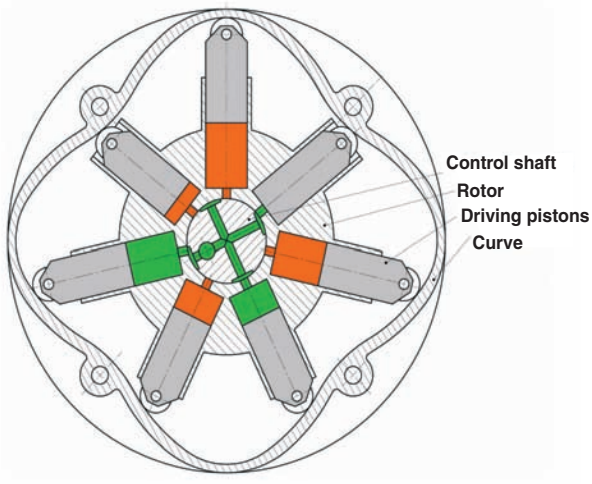


TSA TECNOLOGIE SPECIALI APPLICATE

COMPACT PISTON PNEUMATIC MOTORS

With respect to traditional pneumatic vane motors, the MP004, MP015 and MP025 Series of compact piston pneumatic motors offer the following technical advantages: low number of revolutions and high torque, low consumption, very low noise output, durability, reversibility, compactness, and non lubricated functioning.
All the motors have the possibility of having the cases in plastic and the shaft in stainless steel, and of being coalesced in series among themselves or with the use of specific reduction gear.

FUNCTIONING PRINCIPAL



COMPACT PISTON PNEUMATIC MOTORS

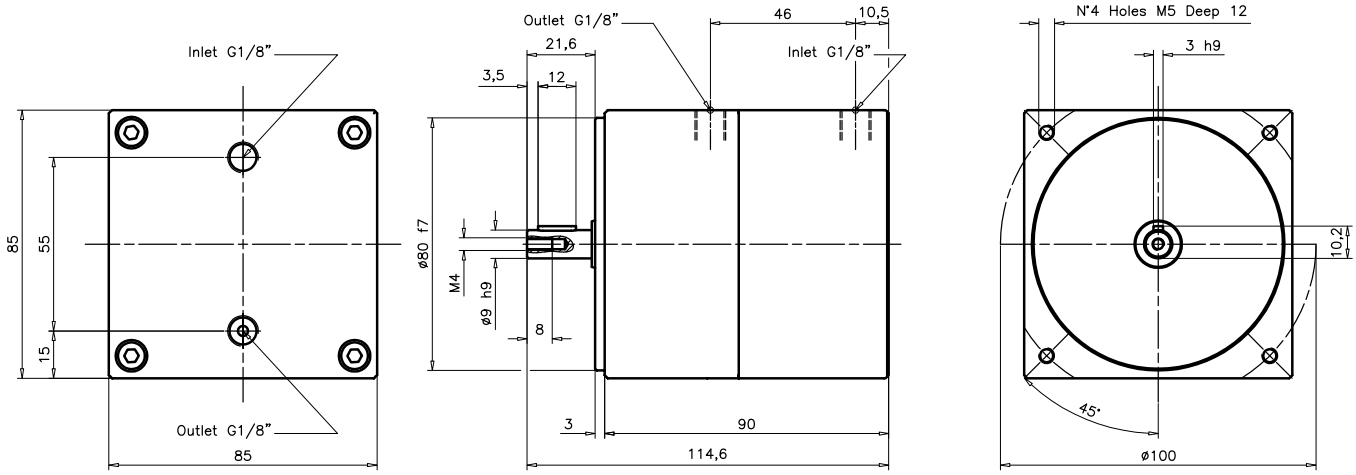
HP 0,15 KW 0,115

MP004 Series

Performances and dimensions

MODEL		Free speed r/min	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Weight Kg.
				7 bar	5 bar	3 bar	7 bar	5 bar	3 bar	7 bar	5 bar	3 bar	7 bar	5 bar	3 bar	
MP004R	MP004L	800	400	0,13	0,08	0,03	1,2	0,7	0,,4	2,8	2	1	1,5	0,9	0,5	2,1
		Consumption air to the maximum l/sec power														
		7 Bar			5 Bar			3 Bar								
		3			2,1			1,3								

ATTENTION To use the motor max. 800 r/min at max power.



R: CLOCKWISE ROTATION

L: ANTICLOCKWISE ROTATION

COMPACT PISTON PNEUMATIC MOTORS

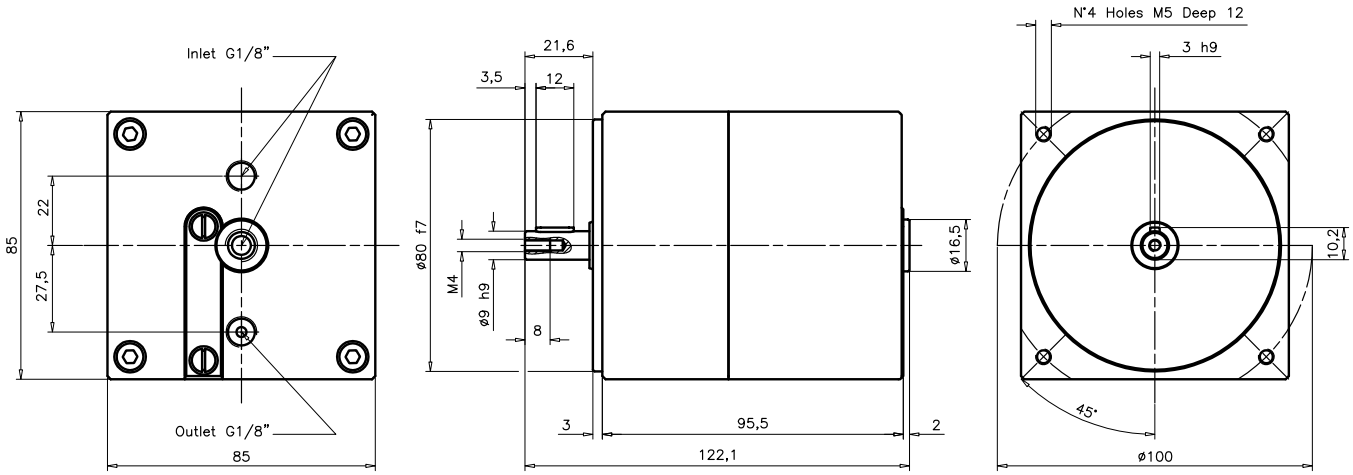
HP 0,15 KW 0,11

Performances and dimensions

MP004 Series REVERSIBLE

MODEL	Free speed r/min	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Weight Kg.
			7 bar	5 bar	3 bar	7 bar	5 bar	3 bar	7 bar	5 bar	3 bar	7 bar	5 bar	3 bar	
MP004	800	400	0,13	0,08	0,03	1,2	0,7	0,,4	2,8	2	1	1,5	0,9	0,5	2,1
	Consumption air to the maximum l/sec power														
	7 Bar			5 Bar			3 Bar								
	3			2,1			1,3								

ATTENTION To use the motor max. 800 r/min at max power.



COMPACT PISTON PNEUMATIC MOTORS

HP 0,21 KW 0,16

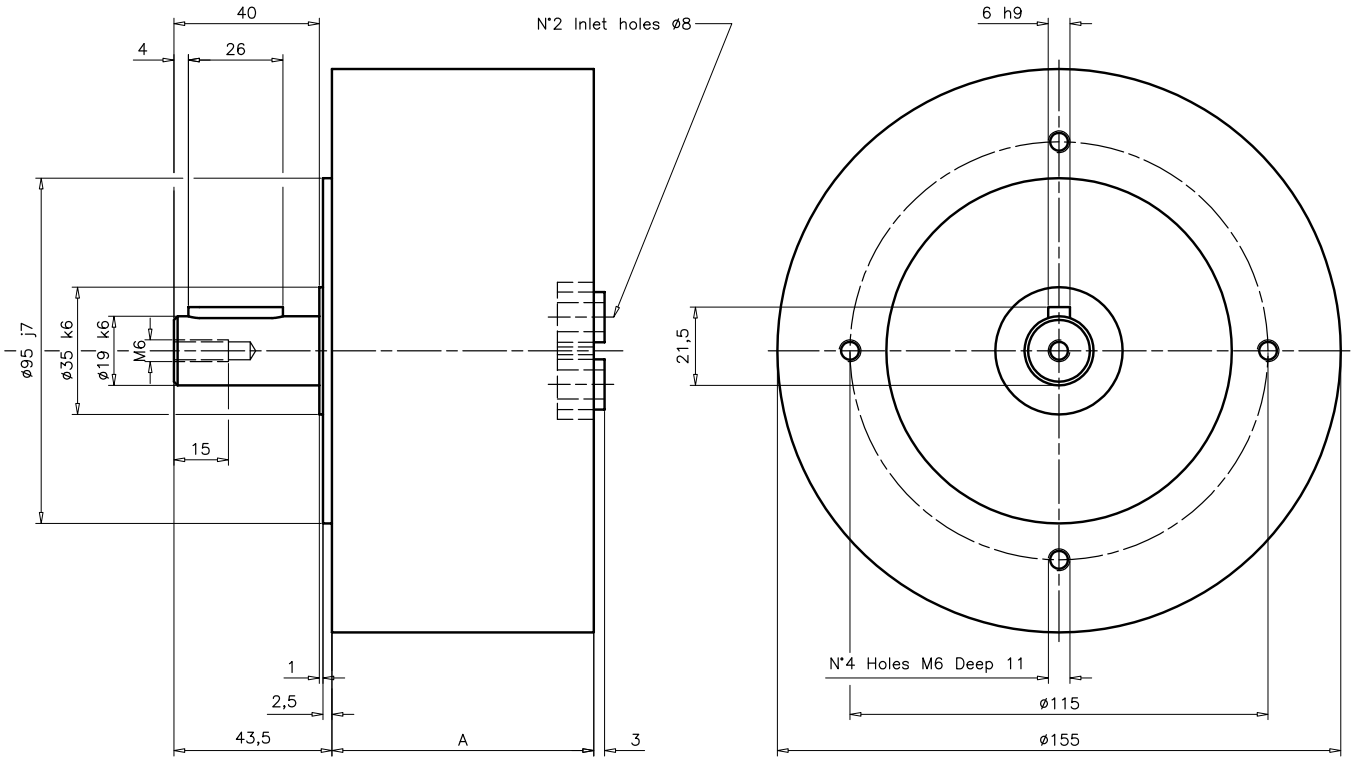
MP015 Series

Performances and dimensions

MODEL	Free speed r/min	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Quote "A" mm	
			8 bar	6 bar	4 bar	8 bar	6 bar	4 bar	8 bar	6 bar	4 bar	8 bar	6 bar	4 bar		
MP015 / 1	440	200	0,21	0,14	0,08	15	11	7	15	11	7	8	5,5	3	72	4
MP015 / 2	440	200	0,40	0,25	0,14	34	22	13	34	22	13	17	11	6	102	8
MP015 / 3	440	200	0,53	0,36	0,20	44	31	18	44	31	18	23	16	9	132	12

Consumption air to the maximum l/sec power		
8 Bar	6 Bar	4 Bar
3,2	2,2	1,6
6,25	4,8	3,2
9,7	7	4,8

ATTENTION To use the motor max. 800 r/min at max power.



	A
1 STADIO	72
2 STADI	102
3 STADI	132

COMPACT PISTON PNEUMATIC MOTORS

HP 0,25 KW 0,18

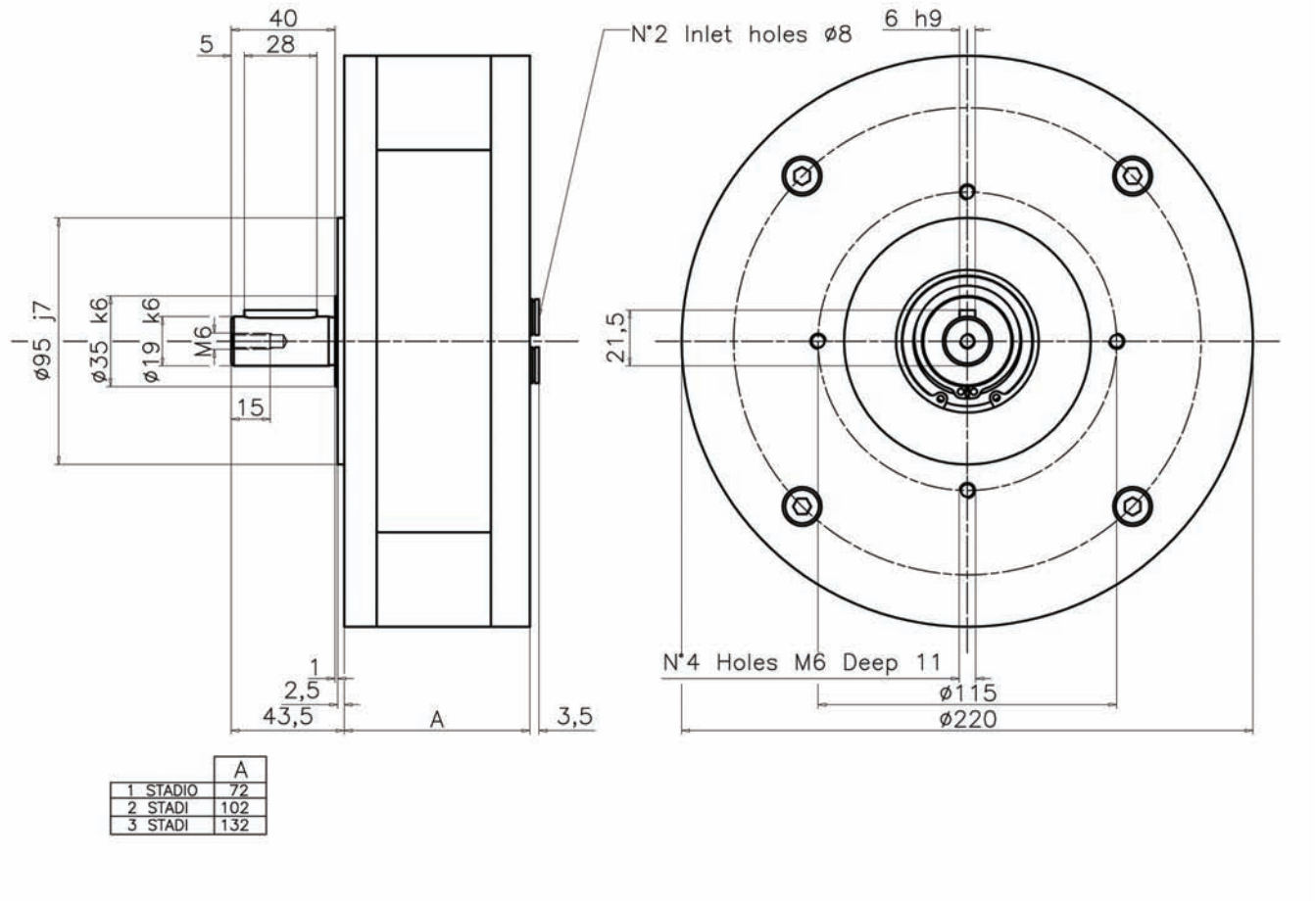
MP025 Series

Performances and dimensions

MODEL	Free speed r/min	Speed at max power r/min	Power Hp			Min. starting torque Nm			Torque Nm			Torque max. power Nm			Quote "A" mm	Weight Kg.
			8 bar	6 bar	4 bar	8 bar	6 bar	4 bar	8 bar	6 bar	4 bar	8 bar	6 bar	4 bar		
MP025 / 1	340	170	0,25	0.17	0,11	25	18	12	25	18	12	11	9	5	72	5,8
MP025 / 2	340	170	0,49	0,35	0,21	52	35	24	52	35	24	22	17	11	102	11
MP025 / 3	340	170	0,62	0,42	0,27	78	54	36	78	54	36	35	24	16	132	17

Consumption air to the maximum l/sec power		
8 Bar	6 Bar	4 Bar
5	3,8	2,5
10	7,2	5
15	11	7,2

ATTENTION To use the motor max. 800 r/min at max power.



	A
1 STADIO	72
2 STADI	102
3 STADI	132

RADIAL PISTON PNEUMATIC MOTORS

The MP series of radial piston air motors offers a wide variety of accessories such as floor fixing, breaks, reduction gears and command valve.
These four or five oil bath cylinder motors develop a greater power with respect to others of the same size and are often used for heavy applications, sometimes coalesced with reduction gears and breaks.

The advantages obtained with the use of radial piston air motors are countless:

- Infinite velocities and variable torques obtained with a simple pressure regulator or tap.
- Safety from accidents.
- They may be used under stress for an indefinite amount of time without being damaged.
- Instant starts, stops and inversions.
- Resistant to dirt and humidity.
- Designed to last.
- Adapt for use with natural gas.
- Designed for the assembly of: floor flanges, breaks and reduction gears.

RADIAL PISTON PNEUMATIC MOTORS

HP 2,3 KW 1,6

MP165 Series

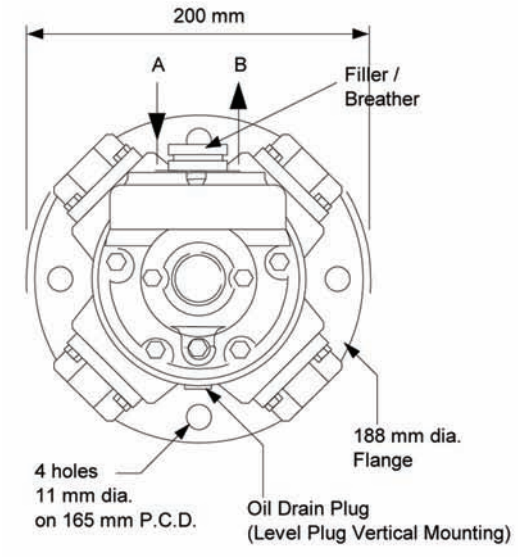
Performances and dimensions

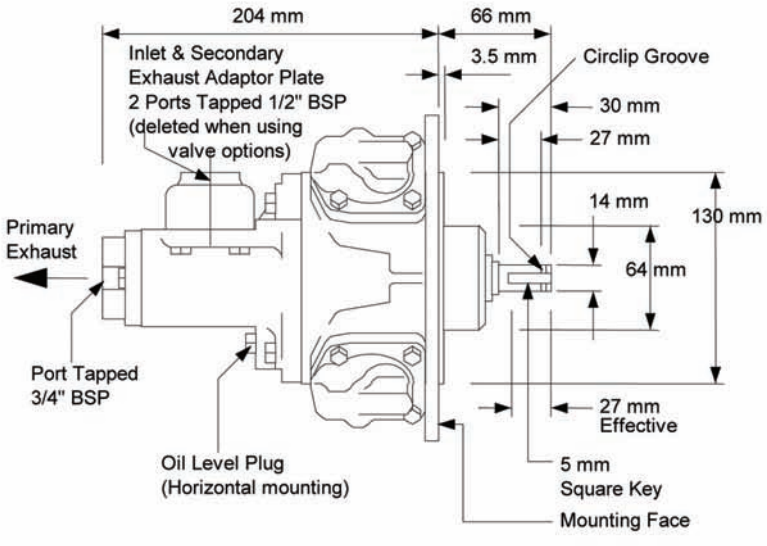
	8 bar			7 bar			6 bar			5 bar			4 bar			3 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	8,82	13,72	12,74	7,84	11,76	10,78	5,88	9,80	8,82	4,90	7,84	6,86	3,92	5,88	5,88	2,94	3,92	3,92
Free speed r/min	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec
2400	2,3	6,86	36	1,9	5,88	32	1,5	3,92	27	1,0	2,94	23	0,6	1,96	18	0,2	0,98	14
2200	2,3	6,86	34	1,9	5,88	29	1,5	4,90	25	1,1	2,94	21	0,7	1,96	17	0,3	0,98	13
2000	2,2	7,84	31	1,8	6,86	27	1,5	4,90	23	1,1	3,92	19	0,7	1,96	15	0,3	0,98	12
1800	2,1	7,84	28	1,8	6,86	24	1,4	5,88	21	1,1	3,92	18	0,7	2,94	14	0,3	0,98	11
1600	2,0	8,82	25	1,7	6,86	22	1,3	5,88	19	1,0	4,90	16	0,7	2,94	13	0,4	1,96	10
1400	1,8	8,82	22	1,5	7,84	20	1,3	5,88	17	1,0	4,90	14	0,7	2,94	11	0,4	1,96	9
1200	1,7	9,80	20	1,4	7,84	17	1,1	6,86	15	0,9	4,90	12	0,6	3,92	10	0,4	1,96	8
1000	1,4	9,80	17	1,2	8,82	15	1,0	6,86	13	0,8	5,88	11	0,6	3,92	9	0,3	1,96	6
800	1,2	10,78	14	1,0	8,82	12	0,8	7,84	11	0,7	5,88	9	0,5	3,92	7	0,3	2,94	5
600	0,9	10,78	11	0,8	9,80	10	0,7	7,84	8	0,5	5,88	7	0,4	4,90	6	0,3	2,94	4
400	0,7	11,76	8	0,6	9,80	7	0,5	7,84	6	0,4	6,86	5	0,3	4,90	4	0,2	2,94	3

Available versions

MP165F	flangeded
MP165FV	flangeded with control
MP165P	on base
MP165PV	on base with control
MP165BR	motor with pneumatic brake BR110

Lubrication:	3-4 gocce/1' continuos operation 6-10 gocce/1' intermittent operation Horizontal 75 ml Vertical 150 ml.
Filtration:	Use 64 micron filtration or better
Radial load:	445 N max.
Moment of inertia:	0,01 g.m
Operative temperature:	da –20°C a +80°C
Weight (version MP165):	Kg.13





RADIAL PISTON PNEUMATIC MOTORS

HP 4,7 KW 3,4

MP400 Series

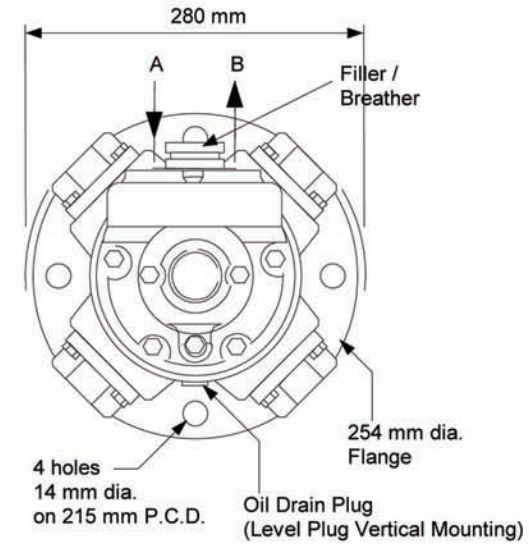
Performances and dimensions

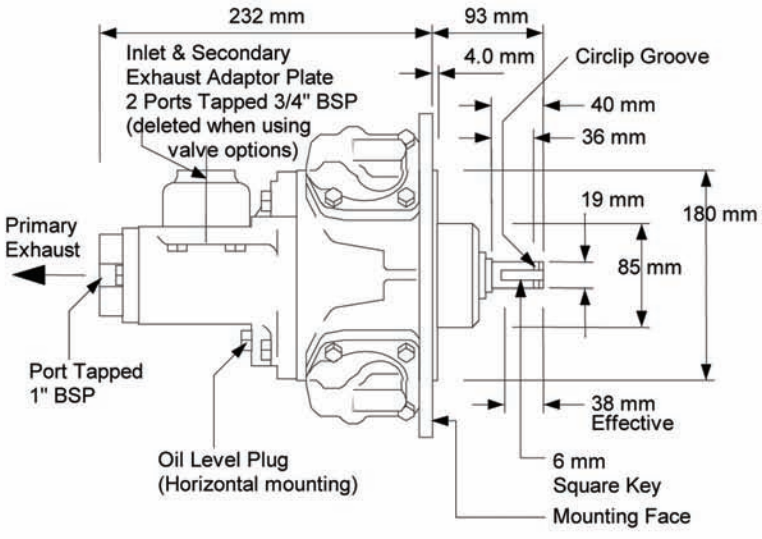
	8 bar			7 bar			6 bar			5 bar			4 bar			3 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	26,46	49,98	36,26	23,52	43,12	31,36	19,60	37,24	26,46	15,68	30,38	21,56	12,74	23,52	16,66	8,82	17,64	10,78
Free speed r/min	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec
2400	4,7	13,72	110	4,0	11,76	96	3,2	9,80	83	2,5	6,86	69	1,7	4,90	56	1,0	2,94	42
2200	4,9	15,68	102	4,1	12,74	90	3,4	10,78	77	2,6	8,82	64	1,9	5,88	52	1,1	3,92	39
2000	5,0	17,64	95	4,2	14,70	83	3,5	11,76	71	2,7	9,80	59	2,0	6,86	47	1,2	3,92	36
1800	5,0	19,60	87	4,2	16,66	76	3,5	13,72	65	2,8	10,78	54	2,0	7,84	43	1,3	4,90	33
1600	4,9	21,56	79	4,1	18,62	69	3,4	14,70	59	2,7	11,76	49	2,0	8,82	39	1,3	5,88	29
1400	4,6	23,52	71	4,0	19,60	62	3,3	16,66	53	2,6	12,74	44	1,9	9,80	35	1,3	5,88	26
1200	4,3	25,48	64	3,7	21,56	56	3,1	17,64	47	2,4	14,70	39	1,8	10,78	31	1,2	6,86	23
1000	3,9	27,44	56	3,3	23,52	49	2,8	19,60	41	2,2	15,68	34	1,7	11,76	27	1,1	7,84	20
800	3,3	29,40	48	2,8	24,50	42	2,4	20,58	36	1,9	16,66	29	1,4	12,74	23	1,0	8,82	17
600	2,6	30,38	40	2,3	26,46	35	1,9	22,54	30	1,5	17,64	24	1,1	13,72	19	0,8	8,82	14
400	1,9	32,34	33	1,6	28,42	28	1,3	23,52	24	1,1	18,62	19	0,8	14,70	15	0,6	9,80	10

Available versions

MP400F	flangeded
MP400FV	flangeded with control
MP400P	on base
MP400PV	on base with control
MP400BR	motor with pneumatic brake BR210

Lubrication:	3-4 gocce/1' continuos operation 6-10 gocce/1' intermittent operation Horizontal 330 ml Vertical 450 ml.
Filtration:	Use 64 micron filtration or better
Radial load:	890 N max.
Moment of inertia:	0,56 g.m
Operative temperature:	da –20°C a +80°C
Weight (version MP400):	Kg.26





HP 8,3 KW 6,1

MP850 Series

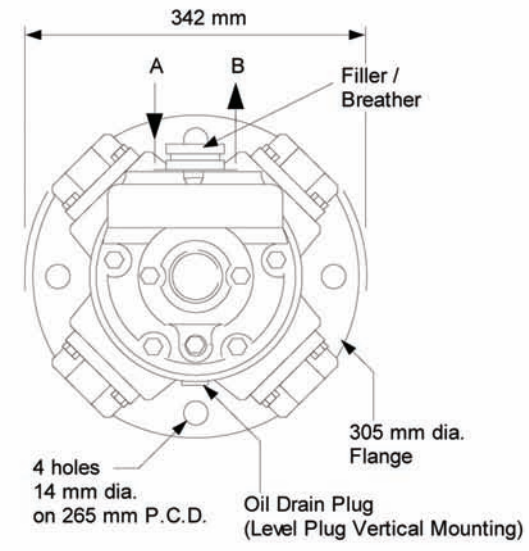
Performances and dimensions

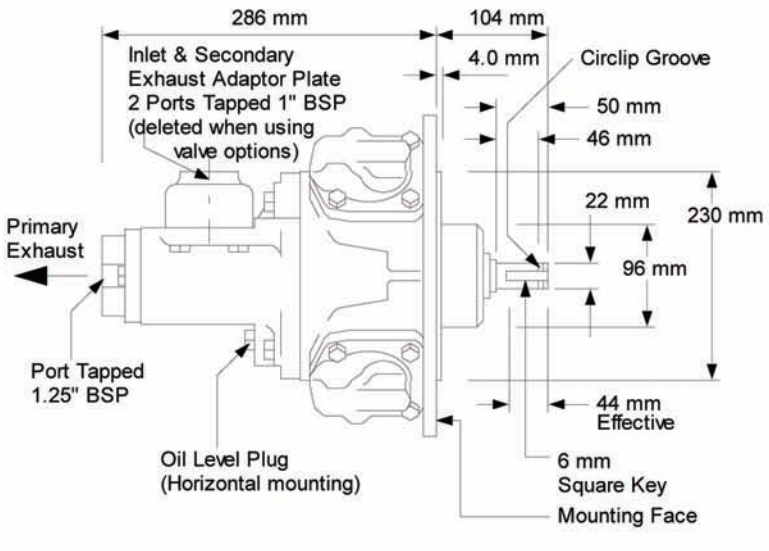
	8 bar			7 bar			6 bar			5 bar			4 bar			3 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	47,04	86,24	73,50	40,18	75,46	63,70	34,30	64,68	52,92	28,42	53,90	43,12	22,54	43,12	32,34	16,66	32,34	22,54
Free speed r/min	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec	Power HP	Torque at max power Nm	Consum l/sec
2400	8,3	24,50	193	7,1	20,58	169	5,9	17,64	144	4,8	13,72	120	3,6	10,78	96	2,5	6,86	71
2200	9,3	29,40	178	8,0	25,48	156	6,7	21,56	133	5,4	17,64	111	4,2	13,72	89	2,9	8,82	66
2000	10,1	35,28	164	8,7	30,38	143	7,4	25,48	122	6,0	21,56	102	4,7	16,66	81	3,4	11,76	60
1800	10,6	41,16	149	9,1	35,28	131	7,7	30,38	111	6,2	24,50	92	4,8	18,62	74	3,4	12,74	55
1600	10,6	46,06	135	9,1	40,18	118	7,7	33,32	100	6,2	27,44	83	4,8	20,58	66	3,4	14,70	49
1400	10,2	50,96	120	8,8	44,10	105	7,4	37,24	89	6,0	30,38	74	4,6	22,54	59	3,1	15,68	43
1200	9,6	55,86	105	8,3	48,02	92	6,9	40,18	78	5,6	32,34	65	4,2	24,50	52	2,9	16,66	38
1000	8,7	60,76	91	7,4	51,94	79	6,2	44,10	67	5,0	35,28	56	3,8	26,46	44	2,6	18,62	32
800	7,4	64,68	76	6,3	55,86	66	5,3	47,04	56	4,3	37,24	47	3,3	28,42	37	2,2	19,60	27
600	5,8	67,62	61	4,9	57,82	54	4,1	48,02	45	3,3	39,20	37	2,5	29,40	29	1,7	20,58	21
400	4,0	69,58	47	3,4	59,78	41	2,9	49,98	34	2,3	40,18	28	1,7	30,38	22	1,2	20,58	16

Available versions

MP850F	flangeded
MP850FV	flangeded with control
MP850P	on base
MP850PV	on base with control
MP850BR	motor with pneumatic brake BR310

Lubrication:	3-4 gocce/1' continuos operation 6-10 gocce/1' intermittent operation Horizontal 350 ml Vertical 600 ml.
Filtration:	Use 64 micron filtration or better
Radial load:	1330 N max.
Moment of inertia:	1,8 g.m
Operative temperature:	da –20°C a +80°C
Weight (version MP850):	Kg.48





RADIAL PISTON PNEUMATIC MOTORS

HP 17,1 KW 12,5

MP1450 Series

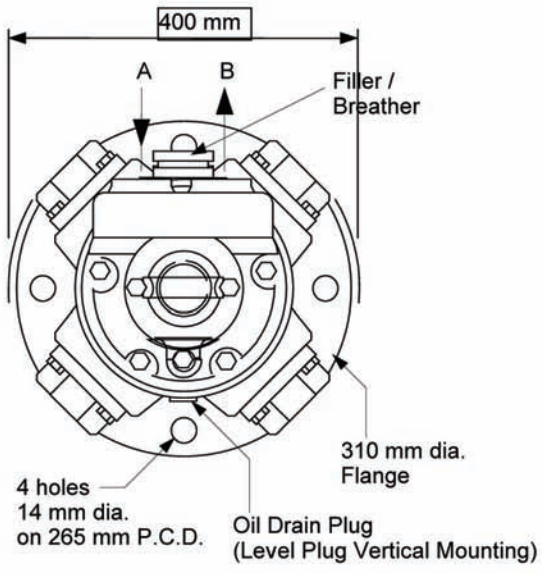
Performances and dimensions

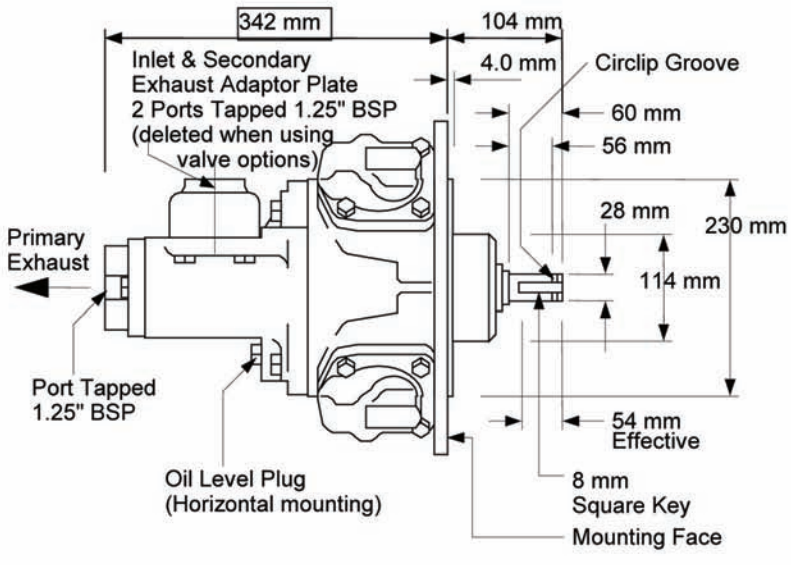
	8 bar			7 bar			6 bar			5 bar			4 bar			3 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	96,04	181,30	148,96	83,30	158,76	128,38	72,52	136,22	107,80	59,78	112,70	86,24	48,02	91,14	65,66	36,26	67,62	45,08
Free speed r/min	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec
2000	17,1	59,78	311	14,7	51,94	271	12,2	43,12	231	9,7	34,30	191	7,3	25,48	151	4,8	16,66	111
1800	18,1	70,56	283	15,6	60,76	246	13,1	50,96	210	10,6	41,16	173	8,0	31,36	137	5,5	21,56	100
1600	18,5	81,34	255	15,9	69,58	222	13,4	58,80	189	10,9	48,02	156	8,3	36,26	123	5,8	25,48	90
1400	18,2	91,14	226	15,8	79,38	197	13,3	66,64	168	10,8	53,90	138	8,3	42,14	109	5,9	29,40	79
1200	17,4	101,92	198	15,1	88,20	172	12,7	74,48	146	10,3	60,76	121	7,9	46,06	95	5,6	32,34	69
1000	15,6	109,76	170	13,6	95,06	148	11,6	81,34	125	9,5	66,64	103	7,5	52,92	81	5,4	38,22	58
800	13,5	118,58	142	11,7	102,90	123	9,9	87,22	104	8,1	71,54	85	6,3	54,88	66	4,5	39,20	48
600	10,8	126,42	113	9,4	109,76	98	7,9	92,12	83	6,4	75,46	68	5,0	57,82	52	3,5	41,16	37
400	7,7	134,26	85	6,6	116,62	73	5,6	98,00	62	4,5	79,38	50	3,5	61,74	38	2,5	43,12	27
200	4,0	141,12	57	3,5	121,52	49	2,9	102,90	41	2,4	83,30	32	1,8	63,70	24	1,3	44,10	16

Available versions

MP1450F	flangeded
MP1450FV	flangeded with control
MP1450P	on base
MP1450PV	on base with control
MP1450BR	motor with pneumatic brake BR410

Lubrication:	3-4 gocce/1' continuos operation 6-10 gocce/1' intermittent operation Horizontal 500 ml Vertical 940 ml.
Filtration:	Use 64 micron filtration or better
Radial load:	1330 N max.
Moment of inertia:	4,1 g.m
Operative temperature:	da –20°C a +80°C
Weight (version MP1450):	Kg.62





TSA TECNOLOGIE SPECIALI APPLICATE

RADIAL PISTON PNEUMATIC MOTORS

HP 26,8 KW 19,7

MP2250 Series

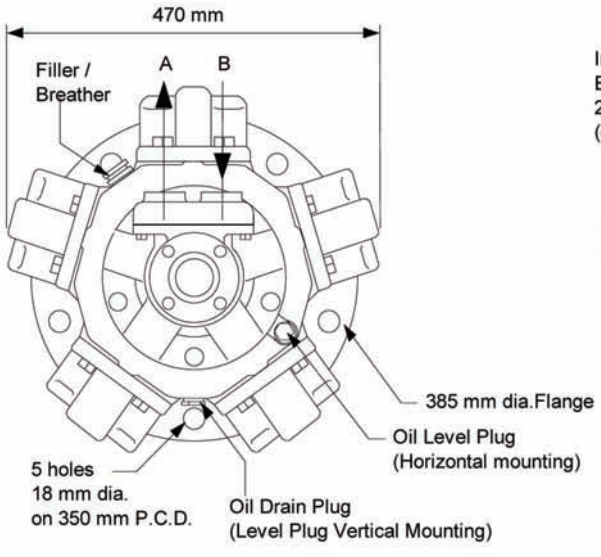
Performances and dimensions

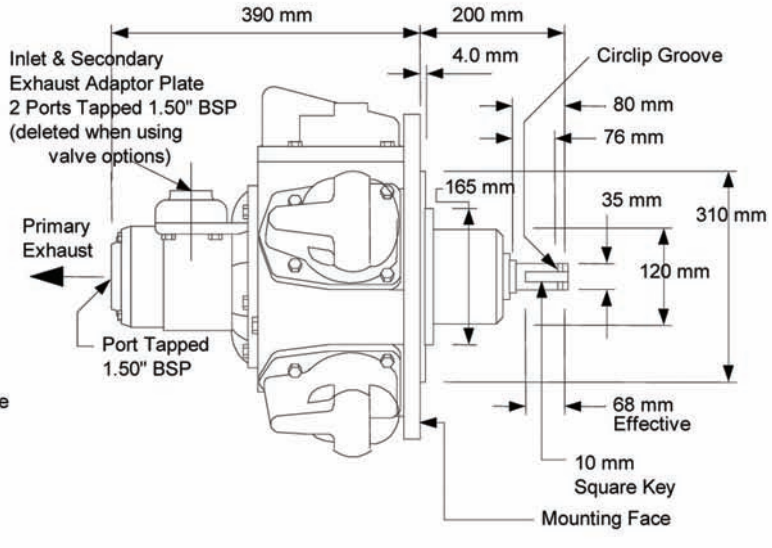
	8 bar			7 bar			6 bar			5 bar			4 bar			3 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	223,44	343,98	312,62	195,02	300,86	270,48	166,60	257,74	228,34	138,18	214,62	187,18	109,76	171,50	145,04	81,34	127,40	102,90
Free speed r/min	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec
1500	26,8	125,44	463	22,7	106,82	410	18,7	87,22	358	14,7	68,60	305	10,6	49,98	253	6,5	30,38	200
1300	29,5	159,74	407	25,2	136,22	361	20,9	112,70	315	16,6	89,18	268	12,2	65,66	222	7,9	43,12	176
1100	30,3	193,06	351	25,9	165,62	311	21,6	138,18	271	17,3	110,74	232	13,0	82,32	192	8,6	54,88	152
900	29,1	226,38	295	25,0	195,02	262	20,9	162,68	228	16,8	131,32	195	12,7	98,98	161	8,6	67,62	128
700	25,7	257,74	239	22,1	221,48	212	18,6	186,20	185	15,0	150,92	158	11,5	115,64	131	7,9	79,38	104
500	20,1	282,24	183	17,3	243,04	162	14,6	204,82	142	11,8	165,62	121	9,1	127,40	101	6,3	89,18	80
300	12,8	299,88	127	11,1	258,72	113	9,3	218,54	99	7,6	177,38	84	5,8	136,22	70	4,1	95,06	56
100	4,4	309,68	71	3,8	267,54	63	3,2	225,40	55	2,6	184,24	48	2,0	142,10	40	1,4	100,94	32

Available versions

MP2250F	flangeded
MP2250FV	flangeded with control
MP2250P	on base
MP2250PV	on base with control
MP2250BR	motor with pneumatic brake BR510

Lubrication:	3-4 gocce/1' continuos operation 6-10 gocce/1' intermittent operation Horizontal 1,1 l Vertical 2,1 l
Filtration:	Use 64 micron filtration or better
Radial load:	6500 N max.
Moment of inertia:	14 g.m
Operative temperature:	da –20°C a +80°C
Weight (version MP2250):	Kg.115





RADIAL PISTON PNEUMATIC MOTORS

HP 24,9 KW 18,3

MP3000 Series

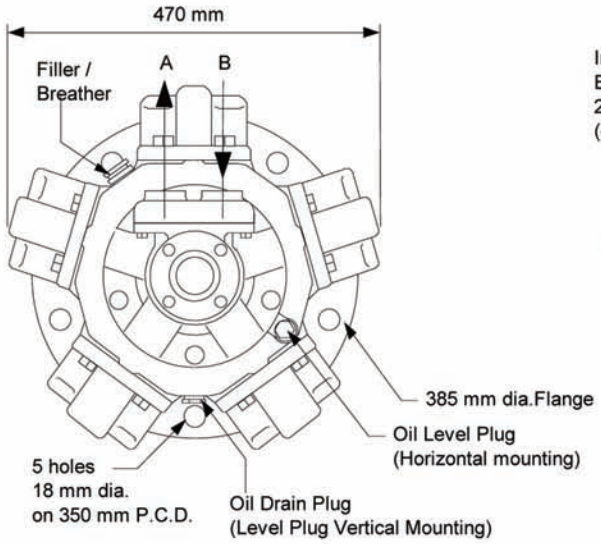
Performances and dimensions

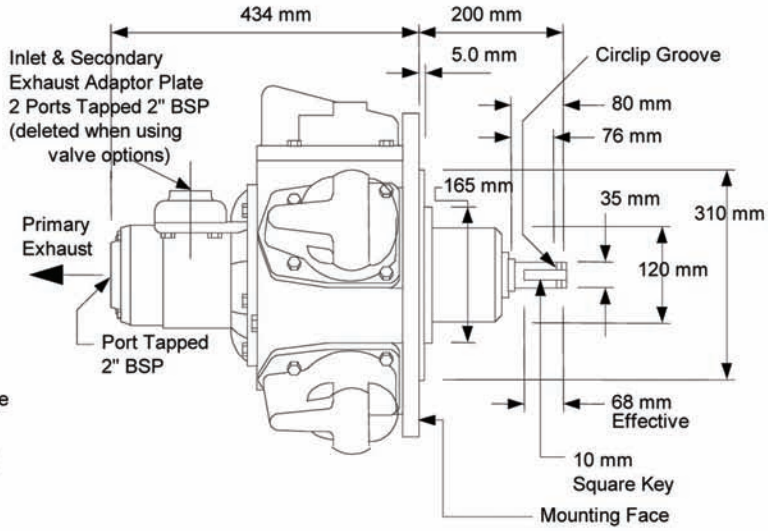
	6 bar			5 bar			4 bar			3 bar		
	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm	Min. starting torque Nm	Max. starting torque Nm	Torque Nm
	161,70	246,96	235,20	135,24	205,80	192,08	104,86	161,70	147,98	77,42	117,60	104,86
Free speed r/min	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec	Power HP	Torque at max. power Nm	Consum l/sec
2000	24,9	87,22	510	19,5	68,60	430	14,1	49,00	350	8,7	30,38	270
1800	27,9	108,78	467	21,9	85,26	393	16,0	62,72	320	10,1	39,20	247
1600	29,3	128,38	423	23,2	101,92	357	17,1	74,48	290	10,9	48,02	223
1400	29,5	147,98	380	23,5	117,60	320	17,4	87,22	260	11,3	56,84	200
1200	28,3	165,62	337	22,8	133,28	283	17,4	101,92	230	11,9	69,58	176
1000	25,7	180,32	293	20,8	146,02	246	16,0	112,70	199	11,2	78,40	153
800	22,1	194,04	250	18,1	158,76	210	14,0	122,50	169	9,9	87,22	129
600	17,8	208,74	206	14,6	170,52	173	11,3	132,30	139	8,0	94,08	106
400	12,4	217,56	163	10,2	178,36	136	7,9	139,16	109	5,7	99,96	82
200	6,5	226,38	120	5,3	185,22	99	4,1	144,06	79	2,9	102,90	59

Available versions

MP3000F	flangeded
MP3000FV	flangeded with control
MP3000P	on base
MP3000PV	on base with control
MP3000BR	motor with pneumatic brake BR610

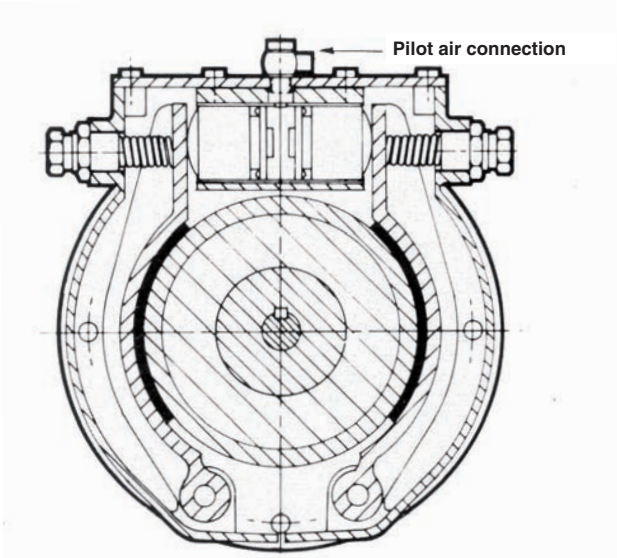
Lubrication:	3-4 gocce/1' continuos operation 6-10 gocce/1' intermittent operation Horizontal 1,1 l Vertical 2,1 l
Filtration:	Use 64 micron filtration or better
Radial load:	6500 N max.
Moment of inertia:	14 g.m
Operative temperature:	da –20°C a +80°C
Weight (version MP3000):	Kg.125



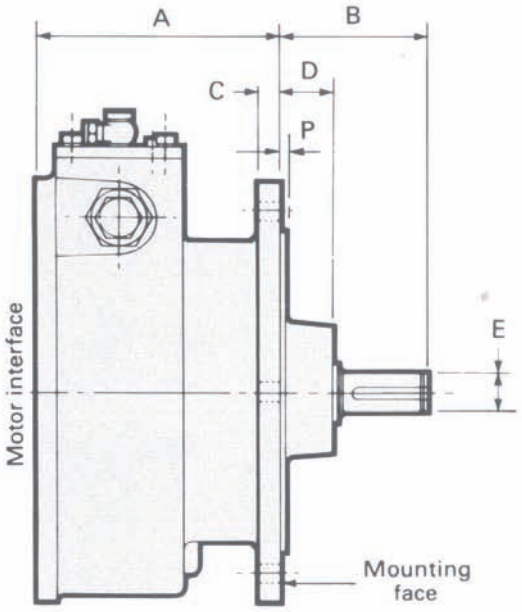


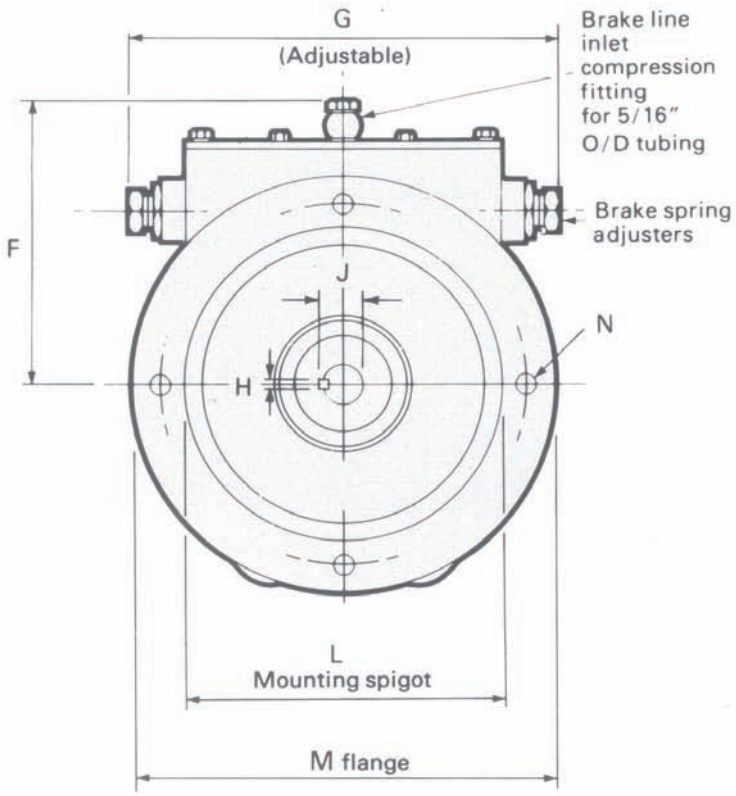
BR Series

The BR series breaks have been designed to be assembled together with radial piston pneumatic motors.
As can be seen by the sectional drawing, the normally closed break is made up of two springs that press the break shoes towards the central hub. These break shoes are released by a cylinder with the use of air pressure.
The break's torsion torque can vary with the use of two of the spring's lateral regulators. It is usually regulated such that a pilot pressure of 4.1 bar can free it completely. Pressures below 4.1 bar will progressively reduce the breaking capability.
Despite the fact that the breaks are pre-set, on site adjustments may be necessary for different individual applications.
These types of breaks cannot be used for dynamic applications.



Series BR...





MODELS	A	B	C	D	E	F	G	P	H	J	L	M	HOLES OF ASSEMBLY			
													No.	Ø	P.C.D.	MAX SCREW
BR110	100	66	8	30	14,01 14,00	126	210	3,6	5,00 4,97	16,00 15,87	130,00 129,94	188	4	11	165	28
BR210	115	93	11	46	19,01 18,99	129	235	4,0	6,00 5,97	21,50 21,27	180,00 179,94	254	4	14	215	25
BR310	140	104	15	46	22,01 21,99	160	270	4,0	6,00 5,97	24,50 24,27	230,00 229,93	305	4	14	265	35
BR410	175	104	16	37	28,01 28,00	206	340	4,0	8,00 7,94	31,01 30,71	230,00 229,93	305	4	14	265	40
BR510	172	96	16	16	35,02 35,00	268	450	5,1	10,00 9,96	38,00 37,71	310,00 309,92	385	5	18	350	35
BR610	172	96	16	16	35,02 35,00	268	450	5,1	10,00 9,96	38,00 37,71	310,00 309,92	385	5	18	350	35

The epicycloidal gear boxes employed in gear motors are able to guarantee an excellent weight/force ratio, performance, reduced encumbrance space with respect to torque, sturdiness and durability. Together with years of experience of the best manufactures of reduction gears, **T.S.A.** guarantees a wide variety of pneumatic epicycloidal gear motors.
This section has only the tables with reduction ratios and performances as many configurations may be obtained: combinations with coaxial or orthogonal reduction gears, floor fixed coaxial, reduction gear with breaks, etc.. Hence, please contact our technical office for dimensional drawings of the products. You will receive advice for the best product to fit your needs.

RADIAL PISTON PNEUMATIC GEAR MOTORS

HP 1,5 KW 1,1

Series MP165E...

Performances and dimensions

MODELS		Speed at max power r/min 6 bar	Power		Torque at max. power Nm	Air consum	Weight flangeded	Weight on base
flangeded	On base	Speed r/min	KW	HP	Nm	l/sec	Kg.	Kg.
MP165E18F 3	MP165E18P 3	591	1,1	1,5	17	25	26	30
MP165E18F 4	MP165E18P 4	455	1,1	1,5	22	25	26	30
MP165E18F 7	MP165E18P 7	288	1,1	1,5	34	25	26	30
MP165E18F 10	MP165E18P 10	190	1,1	1,5	52	25	26	30
MP165E18F 14	MP165E18P 14	134	1,1	1,5	74	25	30	31,5
MP165E18F 22	MP165E18F 22	85	1,1	1,5	117	25	30	31,5
MP165E18F 31	MP165E18P 31	65	1,1	1,5	152	25	30	31,5
MP165E18F 65	MP165E18P 65	30	1,1	1,5	325	25	34	33
MP165E18F 80	MP165E18P 80	25	1,1	1,5	396	25	34	33

Available versions

MP165E18F	flangeded
MP165E18FV	flangeded with control
MP165E18P	on base
MP165E18PV	on base with control

OIL LUBRICATION OF PISTON PNEUMATIC MOTOR:

330 ml Horizontal, 450 ml. Vertical.

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

FILTERING AND LUBRICATION OF AIR NETWORK:

Use a filter of 64 microns or better.

Select a lubricator with relation to the requested capacity.

Inject the oil in the connections before starting up the motor.

Lubrication: 3-4 drops /min. in continuous use.

6-10 drops /min. in intermittent use.

TEMPERATURE IN USE:

from -20°c to + 80°c.

RADIAL PISTON PNEUMATIC GEAR MOTORS

HP 3,8 KW 2,8

Performances and dimensions

Series MP400E...

MODELS		Speed at max power r/min 6 bar	Power		Torque at max. power Nm	Air consum	Weight flangeded	Weight on base
flangeded	on base	Speed r/min	KW	HP	Nm	l/sec	Kg.	Kg.
MP400E18F 3	MP400E18P 3	562	2,8	3,8	44	76	39	43
MP400E18F 4	MP400E18P 4	432	2,8	3,8	57	76	39	43
MP400E18F 7	MP400E18P 7	273	2,8	3,8	90	76	39	43
MP400E22F 10	MP400E22P 10	180	2,8	3,8	136	76	56	69,5
MP400E22F 14	MP400E22P 14	128	2,8	3,8	192	76	56	69,5
MP400E22F 22	MP400E22F 22	80	2,8	3,8	304	76	56	69,5
MP400E22F 31	MP400E22P 31	61	2,8	3,8	396	76	56	69,5
MP400E22F 61	MP400E22P 61	31	2,8	3,8	796	76	64	71
MP400E22F 80	MP400E22P 80	24	2,8	3,8	1000	76	75	85

Available versions

MP400E18F	flangeded
MP400E18FV	flangeded with control
MP400E18P	on base
MP400E18PV	on base with control

OIL LUBRICATION OF PISTON PNEUMATIC MOTOR:

330 ml Horizontal, 450 ml. Vertical.

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

FILTERING AND LUBRICATION OF AIR NETWORK:

Use a filter of 64 microns or better.

Select a lubricator with relation to the requested capacity.

Inject the oil in the connections before starting up the motor.

Lubrication: 3-4 drops /min. in continuous use.

6-10 drops /min. in intermittent use.

TEMPERATURE IN USE:

from -20°c to + 80°c.

RADIAL PISTON PNEUMATIC GEAR MOTORS

HP 8,2 KW 6,1

Series MP850E...

Performances and dimensions

MODELS		Speed at max power r/min 6 bar	Power		Torque at max. power Nm	Air consum	Weight flangeded	Weight on base
flangeded	on base	Speed r/min	KW	HP	Nm	l/sec	Kg.	Kg.
MP850E18F 3	MP850E18P 3	532	6,1	8,2	104	131	61	65
MP850E18F 4	MP850E18P 4	410	6,1	8,2	136	131	61	65
MP850E18F 7	MP850E18P 7	259	6,1	8,2	208	131	61	65
MP850E22F 10	MP850E22P 10	171	6,1	8,2	312	131	78	91,5
MP850E22F 14	MP850E22P 14	133	6,1	8,2	405	131	78	91,5
MP850E22F 20	MP850E22F 20	85	6,1	8,2	630	131	78	91,5
MP850E22F 31	MP850E22P 31	59	6,1	8,2	930	131	96	102
MP850E28F 56	MP850E28P 56	33	6,1	8,2	1600	131	126	134
MP850E32F 85	MP850E32P 85	20	6,1	8,2	2600	131	164	188

Available versions

MP850E18F	flangeded
MP850E18FV	flangeded with control
MP850E18P	on base
MP850E18PV	on base with control

OIL LUBRICATION OF PISTON PNEUMATIC MOTOR:

330 ml Horizontal, 450 ml. Vertical.

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

FILTERING AND LUBRICATION OF AIR NETWORK:

Use a filter of 64 microns or better.

Select a lubricator with relation to the requested capacity.

Inject the oil in the connections before starting up the motor.

Lubrication: 3-4 drops /min. in continuous use.

6-10 drops /min. in intermittent use.

TEMPERATURE IN USE:

from -20°c to + 80°c.

RADIAL PISTON PNEUMATIC GEAR MOTORS

HP 14,1 KW 10,5

Performances and dimensions

Series MP1450E...

MODELS		Speed at max power r/min 6 bar	Power		Torque at max. power Nm	Air consum	Weight flangeded	Weight on base
flangeded	on base	Speed r/min	KW	HP	Nm	l/sec	Kg.	Kg.
MP1450E22F3	MP1450E22P3	519	10,5	14,1	180	190		
MP1450E22F4	MP1450E22P4	387	10,5	14,1	240	190		
MP1450E22F7	MP1450E22P7	220	10,5	14,1	435	190		
MP1450E22F10	MP1450E22P10	148	10,5	14,1	646	190		
MP1450E22F14	MP1450E22P14	110	10,5	14,1	867	190		
MP1450E22F17	MP1450E22P17	94	10	13,4	1020	190		
MP1450E32F20	MP1450E32P20	76	10	13,4	1260	190		
MP1450E32F25	MP1450E32P25	65	10	13,4	1468	190		
MP1450E32F36	MP1450E32P36	43	10	13,4	2196	190		
MP1450E27F70	MP1450E27P70	22	10	13,4	4200	190		

Available versions

MP1450E22F	flangeded
MP1450E22FV	flangeded with control
MP1450E22P	on base
MP1450E22PV	on base with control

OIL LUBRICATION OF PISTON PNEUMATIC MOTOR:

330 ml Horizontal, 450 ml. Vertical.

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

FILTERING AND LUBRICATION OF AIR NETWORK:

Use a filter of 64 microns or better.

Select a lubricator with relation to the requested capacity.

Inject the oil in the connections before starting up the motor.

Lubrication: 3-4 drops /min. in continuous use.

6-10 drops /min. in intermittent use.

TEMPERATURE IN USE:

from -20°C to + 80°C.

RADIAL PISTON PNEUMATIC GEAR MOTORS

HP 21,9 KW 16,3

Series MP2250E...

Performances and dimensions

MODELS		Speed at max power r/min 6 bar	Power		Torque at max. power Nm	Air consum	Weight flangeded	Weight on base
flangeded	on base	Speed r/min	KW	HP	Nm	l/sec	Kg.	Kg.
MP2250E22F3	MP2250E22P3	328	16,3	21,9	455	320	151	
MP2250E22F4	MP2250E22P4	278	16,3	21,9	536	320	151	
MP2250E32F8	MP2250E32P8	132	16,3	21,9	1130	320	215	
MP2250E27F22	MP2250E27P22	52	15,5	20,7	2850	320	238	
MP2250E34F31	MP2250E34P31	37	15,5	20,7	3900	320	305	
MP2250E34F36	MP2250E34P36	32	15,5	20,7	4680	320	305	

Available versions

MP2250E22F	flangeded
MP2250E22FV	flangeded with control
MP2250E22P	on base
MP2250E22PV	on base with control

OIL LUBRICATION OF PISTON PNEUMATIC MOTOR:

330 ml Horizontal, 450 ml. Vertical.

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

FILTERING AND LUBRICATION OF AIR NETWORK:

Use a filter of 64 microns or better.

Select a lubricator with relation to the requested capacity.

Inject the oil in the connections before starting up the motor.

Lubrication: 3-4 drops /min. in continuous use.

6-10 drops /min. in intermittent use.

TEMPERATURE IN USE:

from -20°c to + 80°c.

RADIAL PISTON PNEUMATIC GEAR MOTORS

HP 21,9 KW 16,3

Performances and dimensions

Series MP3000E...

MODELS		Speed at max power r/min 6 bar	Power		Torque at max. power Nm	Air consum	Weight flangeded	Weight on base
flangeded	on base	Speed r/min	KW	HP	Nm	l/sec	Kg.	Kg.
MP3000E22F3	MP3000E22P3	328	16,3	21,9	455	320	161	
MP3000E22F4	MP3000E22P4	278	16,3	21,9	536	320	161	
MP3000E32F8	MP3000E32P8	132	16,3	21,9	1130	320	225	
MP3000E27F22	MP3000E27P22	52	15,5	20,7	2850	320	248	
MP3000E34F31	MP3000E34P31	37	15,5	20,7	3900	320	315	
MP3000E34F36	MP3000E34P36	32	15,5	20,7	4680	320	315	

Available versions

MP3000E22F	flangeded
MP3000E22FV	flangeded with control
MP3000E22P	on base
MP3000E22PV	on base with control

OIL LUBRICATION OF PISTON PNEUMATIC MOTOR:

330 ml Horizontal, 450 ml. Vertical.

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

FILTERING AND LUBRICATION OF AIR NETWORK:

Use a filter of 64 microns or better.

Select a lubricator with relation to the requested capacity.

Inject the oil in the connections before starting up the motor.

Lubrication: 3-4 drops /min. in continuous use.

6-10 drops /min. in intermittent use.

TEMPERATURE IN USE:

from -20°c to + 80°c.

Other Pruducts

PNEUMATIC PANEL

Pneumatic control panels are made by **T.S.A.** in collaboration with clients in a wide range of sectors.
For further details consult our technical office.

MULTIPLE SCREWDRIVERS

Multiple screwdrivers for the assembly of mechanical parts are carried out according to client's needs.
These tools can be inserted on assembly lines or manually managed by the operator.
For further details consult our technical office.

ARTICULATED ARMS

T.S.A.'s articulated arms have been designed and manufactured to neutralize the reaction torque generated by tools (screwdrivers, tapping tools, drills etc.) when it is not possible or practical to neutralize the torque with other systems such as reaction bars.
For further details, please contact us for the specific catalogue.

SPECIAL PRODUCTS

T.S.A. produces, upon client request, special machines, products modified with respect to standard models, or according to client's design.
For further details consult our technical office.

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