Light and compact, high-speed vane type air motor

- Reduction of weight by use of aluminum body

Specifications

Model number	Item	Deceleration ratio	Direction of rotation	At max. output (at 0.5 MPa) Output W	Torque N·m	Rotation speed r/min	Air consumption ℓ/min 〈ANR〉	Stopping torque N·m	Starting torque N·m	Allowable load Radial load N	Thrust load N	Weight F type (flange type) kg	L type (foot type) kg
TAV3＊-10	TAV3S-10＊	—	CW	66.2	0.053	12000	190	0.115	0.069	41.0	40.9	0.30	0.36
	TAV3S-10＊G005	1/5		66.2	0.265	2400	190	0.475	0.284	70.0	73.5	0.30	0.36
	TAV3R-10＊	—	CW/CCW	73.5	0.050	14000	210	0.108	0.065	39.0	32.7	0.30	0.36
	TAV3R-10＊G005	1/5		73.5	0.250	2800	210	0.461	0.277	66.5	65.5	0.30	0.36
TAV3＊-20	TAV3S-20＊	—	CW	147	0.127	11000	340	0.222	0.134	137	104	0.48	0.62
	TAV3S-20＊G005	1/4.83		147	0.624	2250	340	1.07	0.642	233	162	0.48	0.62
	TAV3S-20＊G023	1/23.3		147	2.96	475	340	5.16	3.10	392	198	0.60	0.75
	TAV3R-20＊	—	CW/CCW	132	0.115	11000	350	0.177	0.108	137	99	0.48	0.62
	TAV3R-20＊G005	1/4.83		132	0.562	2250	350	0.852	0.512	233	162	0.48	0.62
	TAV3R-20＊G023	1/23.3		132	2.66	475	350	4.11	2.47	392	198	0.60	0.75
TAV3＊-45	TAV3S-45＊	—	CW	331	0.316	10000	710	0.610	0.366	157	147	0.74	0.89
	TAV3S-45＊G003	1/3.4		331	1.08	2940	710	2.08	1.24	242	236	0.74	0.89
	TAV3S-45＊G005	1/5.56		331	1.76	1800	710	3.38	2.03	284	276	0.74	0.89
	TAV3S-45＊G019	1/18.9		331	5.96	530	710	11.5	6.88	435	423	0.97	1.12
	TAV3S-45＊G031	1/30.9		331	9.73	325	710	18.8	11.3	512	501	0.97	1.12
	TAV3R-45＊	—	CW/CCW	279	0.314	8500	560	0.536	0.322	167	157	0.74	0.89
	TAV3R-45＊G003	1/3.4		279	1.07	2500	560	1.82	1.09	255	236	0.74	0.89
	TAV3R-45＊G005	1/5.56		279	1.75	1530	560	2.98	1.78	294	285	0.74	0.89
	TAV3R-45＊G019	1/18.9		279	5.93	450	560	10.1	6.08	459	432	0.97	1.12
	TAV3R-45＊G031	1/30.9		279	9.71	275	560	16.6	9.90	541	511	0.97	1.12

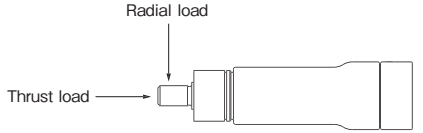
Note) The performance values of air motor obtained when the pressure on the exhaust side is the atmospheric pressure are used.

- Stopping torque: If the load is increased while the air motor is rotating, the rotation speed decreases linearly, and the air motor stops when the torque is balanced with the load torque. This torque is called the stopping torque.

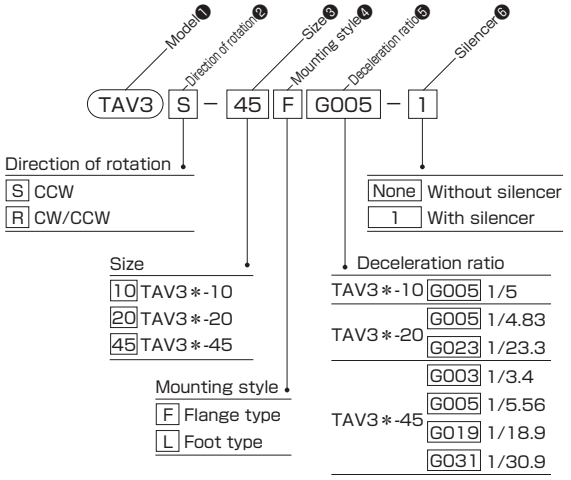
Common conditions

- Working fluid : Air
- Rated pressure : 0.5 MPa
- Working pressure range : 0.3 to 0.7 MPa
- Ambient temperature : −10 to +70℃ (Use in unfrozen state)
- Lubricant : Internal grease: DAPHNE EPONEX EP-No.1 (IDEMITSU)
  Air line lubrication: JIS K2213 Class 1 (non-additive turbine oil ISO VG32) or its equivalent
  It is necessary to lubricate the motor with an air lubricator.
- Continuous operation : When using the motor continuously without suspension, use it at 70% or less of the rotation speed at max. output.
- Recommended rotation speed range: (0.3 to 1)×rotation speed at max. output

Allowable axial load



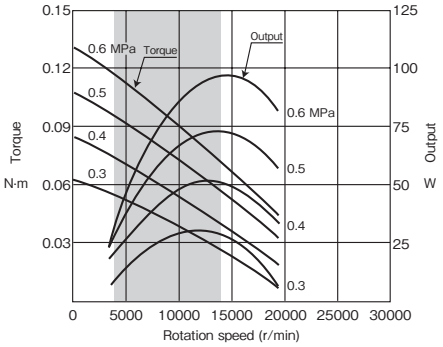
●How to order



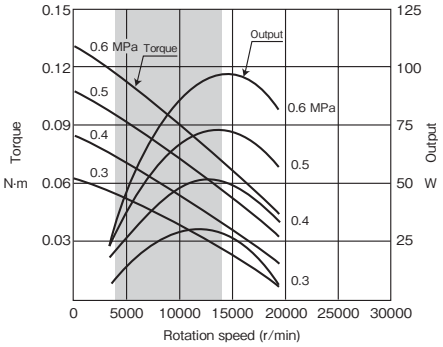
Performance Curves (at deceleration ratio of 1:1)

Recommended rotation speed range

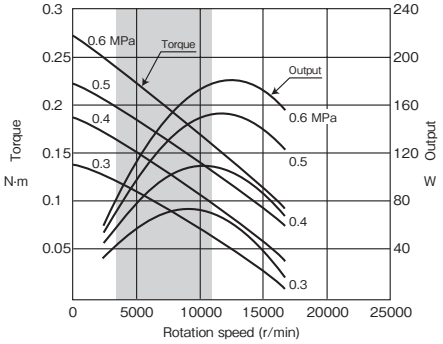
TAV3S-10



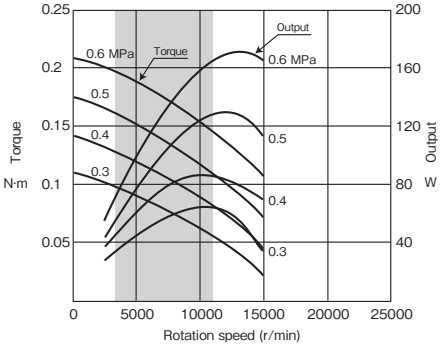
TAV3R-10



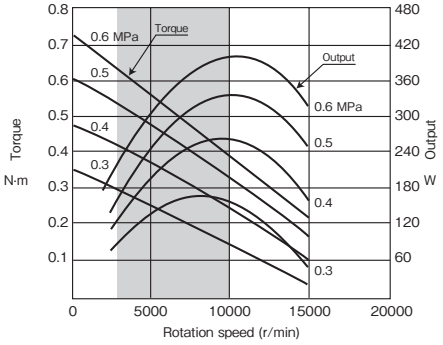
TAV3S-20



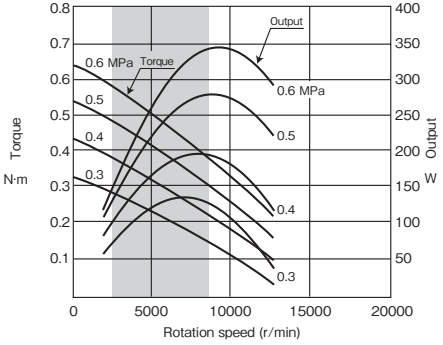
TAV3R-20



TAV3S-45



TAV3R-45



CAD/DATA
TAV3/TTAV3010 is available.

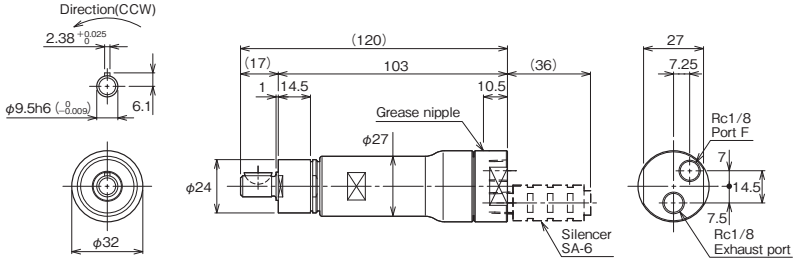
TAV3∗-10

Basic style

TAV3S-10 [Mounting style] – [Silencer]

TAV3S-10 [Mounting style] G005 – [Silencer]

[Deceleration ratio]

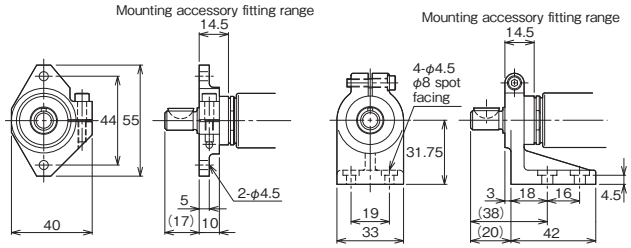


Flange type

TAV3 [Direction of rotation] -10F [Deceleration ratio] – [Silencer]

Foot type

TAV3 [Direction of rotation] -10L [Deceleration ratio] – [Silencer]

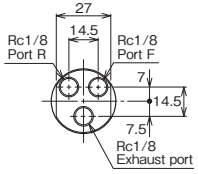


Note) Fit the mounting accessory in the indicated mounting accessory fitting range.

●Tighten the hex. socket head cap screws to a torque of 1 to 1.6 N·m.

Normal and reverse

TAV3R-10 [Mounting style] [Deceleration ratio] – [Silencer]



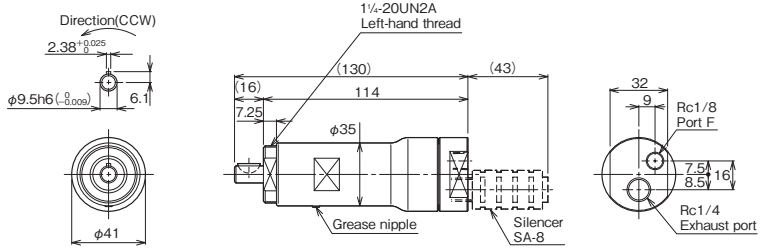
●When supplying
Port F: Counterclockwise
Port R: Clockwise

TAV3/TTAV3020 CAD/DATA is available.

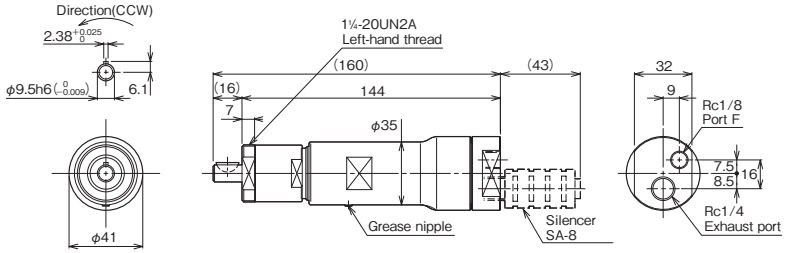
TAV3∗-20

Basic style

TAV3S-20 [Mounting style] – [Silencer]
TAV3S-20 [Mounting style] G005 – [Silencer]
[Deceleration ratio]

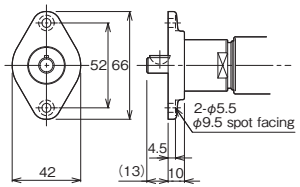


TAV3S-20 [Mounting style] G023 – [Silencer]
[Deceleration ratio]



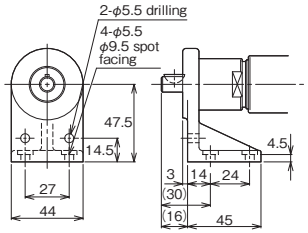
Flange type

TAV3 [Direction of rotation] -20F [Deceleration ratio] – [Silencer]



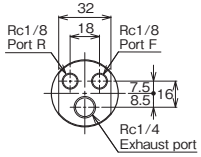
Foot type

TAV3 [Direction of rotation] -20L [Deceleration ratio] – [Silencer]



Normal and reverse

TAV3R-20 [Mounting style] [Deceleration ratio] – [Silencer]



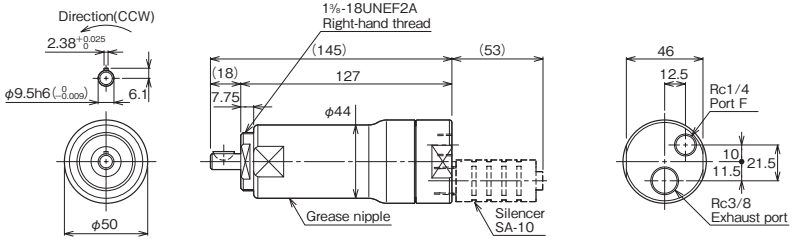
● When supplying
Port F: Counterclockwise
Port R: Clockwise

TAV3/TTAV3045 CAD/DATA is available.

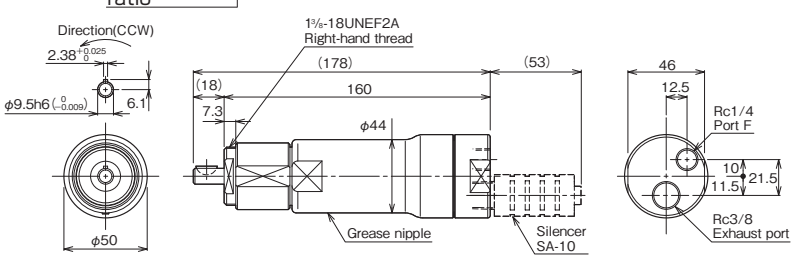
TAV3∗-45

Basic style

TAV3S-45 [Mounting style] – [Silencer]
TAV3S-45 [Mounting style] G003 – [Silencer]
TAV3S-45 [Mounting style] G003 – [Silencer]
[Deceleration ratio]



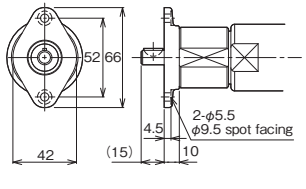
TAV3S-45 [Mounting style] G019 – [Silencer]
TAV3S-45 [Mounting style] G031 – [Silencer]
[Deceleration ratio]



Note) When a mounting accessory is fitted, the port position may be different from that shown in this drawing.

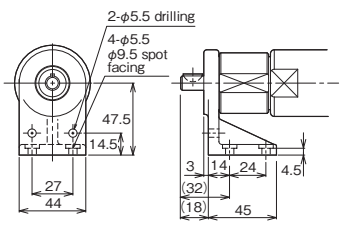
Flange type

TAV3 [Direction of rotation] -45F [Deceleration ratio] – [Silencer]



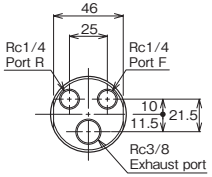
Foot type

TAV3 [Direction of rotation] -45L [Deceleration ratio] – [Silencer]



Normal and reverse

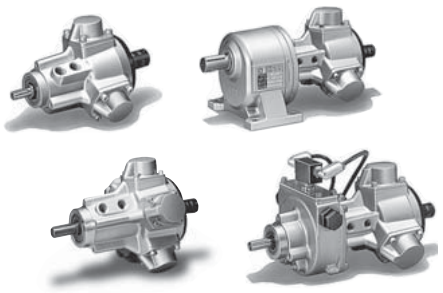
TAV3R-45 [Mounting style] [Deceleration ratio] – [Silencer]



● When supplying
Port F: Counterclockwise
Port R: Clockwise

Air motor with free mounting direction because of grease-mounted system

- Mounting direction is free with grease-mounted system. (The fluid lubrication with air lubricator is necessary.)
- A built-in balancer mechanism, Operate with less vibration.



● Standard ● With brake ● With decelerator

Specifications

Model number	Model	Deceleration ratio	At max. output (at 0.5 MPa) Output W	Torque N·m	Rotation speed r/min	Air consumption ℓ/min ⟨ANR⟩	Stopping torque N·m	Starting torque N·m	Brake torque N·m	Allowable axial load Radial load kN	Thrust load kN	Weight Basic style kg	Flange type kg	Foot type kg
*	Standard	1/1	73.5	0.637	1100		1.18	0.686		0.098	0.059	1.45	1.5	2.1
TAM4-010	*G005	With decelerator	1/5	66.2	2.84	220	200	4.90	2.94	—	0.245	0.147	—	4.0	3.5
TAM4-010	*G010	With decelerator	1/10	66.2	5.69	110	200	9.81	5.88	—	0.539	0.245	—	4.0	3.5
TAM4-010	*G015	With decelerator	1/15	66.2	8.53	73.3	200	15.7	8.83	—	0.785	0.343	—	4.0	3.5
TAM4-010	*G020	With decelerator	1/20	66.2	11.5	55	200	20.6	11.8	—	1.08	0.441	—	4.0	3.5
*	Standard	1/1	125	1.37	900		2.94	1.96	—	0.137	0.098	2.5	2.6	3.4
*B	With brake	1/1	125	1.37	900		2.94	1.96	3.24	0.137	0.098	4.3	4.4	5.2
**G005	With decelerator/ With brake and decelerator	1/5	110	5.88	180	260	12.7	8.83	14.7	0.392	0.245	—	6.7 (8.0)	6.2 (8.5)
**G010	With decelerator/ With brake and decelerator	1/10	110	11.8	90	260	26.5	17.7	29.4	0.785	0.343	—	6.7 (8.0)	6.2 (8.5)
**G015	With decelerator/ With brake and decelerator	1/15	110	17.7	60	260	39.2	26.5	44.1	1.08	0.539	—	6.7 (8.0)	6.2 (8.5)
**G020	With decelerator/ With brake and decelerator	1/20	110	23.5	45	260	53.0	35.3	58.8	1.37	0.686	—	6.7 (8.0)	6.2 (8.5)
**G030	With decelerator/ With brake and decelerator	1/30	110	35.3	30	260	78.5	53.0	88.3	2.16	1.13	—	8.7 (10.0)	8.2 (10.5)
TAM4-015 **G040	With decelerator/ With brake and decelerator	1/40	110	47.1	22.5	260	106	70.6	118	2.26	1.23	—	8.7 (10.0)	8.2 (10.5)
**G050	With decelerator/ With brake and decelerator	1/50	110	58.8	18	260	132	79.4	147	2.35	1.32	—	8.7 (10.0)	8.2 (10.5)
**G060	With decelerator/ With brake and decelerator	1/60	110	70.6	15	260	157	106	177	2.45	1.37	—	8.7 (10.0)	8.2 (10.5)
**G080	With decelerator/ With brake and decelerator	1/80	110	93.2	11.2	260	206	139	235	2.55	1.47	—	8.7 (10.0)	8.2 (10.5)
**G100	With decelerator/ With brake and decelerator	1/100	103	118	9	260	250	175	283	4.61	2.26	—	11.7 (13.0)	11.2 (13.5)
**G120	With decelerator/ With brake and decelerator	1/120	103	137	7.5	260	300	206	339	4.71	2.55	—	11.7 (13.0)	11.2 (13.5)
**G160	With decelerator/ With brake and decelerator	1/160	103	176	5.6	260	373	261	453	5.00	2.84	—	11.7 (13.0)	11.2 (13.5)
**G200	With decelerator/ With brake and decelerator	1/200	103	233	4.5	260	500	350	567	5.10	3.14	—	11.7 (13.0)	11.2 (13.5)

The parenthesized values are the weights of the type with brake and decelerator.

Notes) ● For TAM4-010 Series air motors with a deceleration ratio of more than 1/20, contact us.
● The above specifications are performance values at an ambient temperature of 20℃. If the ambient temperature lowers, the rotation speed reduces due to change in grease viscosity.
● The table shows the performance values of the air motors obtained when the pressure on the exhaust side is the atmospheric pressure.

Specifications

Model number	Model	Deceleration ratio	At max. output (at 0.5 MPa) Output W	Torque N·m	Rotation speed r/min	Air consumption ℓ/min ⟨ANR⟩	Stopping torque N·m	Starting torque N·m	Brake torque N·m	Allowable axial load Radial load kN	Thrust load kN	Weight Basic style kg	Flange type kg	Foot type kg
*	Standard	1/1	228	2.94	750	400	5.88	4.71	—	0.196	0.137	4.6	4.8	6.4
*B	With brake	1/1	228	2.94	750	400	5.88	4.71	6.47	0.196	0.137	7.6	7.8	9.4
**G005	With decelerator/ With brake and decelerator	1/5	199	12.7	150	400	26.5	20.6	29.4	0.490	0.294	—	10.5 (13.5)	10.0 (13.0)
**G010	With decelerator/ With brake and decelerator	1/10	199	26.5	75	400	53.0	41.2	58.8	0.981	0.441	—	10.5 (13.5)	10.0 (13.0)
**G015	With decelerator/ With brake and decelerator	1/15	199	39.2	50	400	79.4	61.8	88.3	1.37	0.637	—	10.5 (13.5)	10.0 (13.0)
**G020	With decelerator/ With brake and decelerator	1/20	199	53.0	37.5	400	106	82.4	118	1.77	0.834	—	10.5 (13.5)	10.0 (13.0)
**G030	With decelerator/ With brake and decelerator	1/30	199	78.5	25	400	159	124	177	3.97	1.42	—	14.0 (17.0)	13.5 (16.5)
TAM4-030 **G040	With decelerator/ With brake and decelerator	1/40	199	106	18.7	400	212	165	235	4.17	1.57	—	14.0 (17.0)	13.5 (16.5)
**G050	With decelerator/ With brake and decelerator	1/50	199	132	15	400	265	206	294	4.32	1.67	—	14.0 (17.0)	13.5 (16.5)
**G060	With decelerator/ With brake and decelerator	1/60	199	157	12.5	400	318	247	353	4.41	1.81	—	14.0 (17.0)	13.5 (16.5)
**G080	With decelerator/ With brake and decelerator	1/80	199	203	9.3	400	402	314	471	4.51	1.96	—	14.0 (17.0)	13.5 (16.5)
**G100	With decelerator/ With brake and decelerator	1/100	191	250	7.5	400	490	392	549	6.47	2.55	—	20.5 (24.5)	20.0 (24.0)
**G120	With decelerator/ With brake and decelerator	1/120	191	300	6.2	400	598	471	657	6.62	2.75	—	20.5 (24.5)	20.0 (24.0)
**G160	With decelerator/ With brake and decelerator	1/160	191	396	4.6	400	785	628	873	6.91	2.94	—	20.5 (24.5)	20.0 (24.0)
**G200	With decelerator/ With brake and decelerator	1/200	191	500	3.7	400	981	785	1100	7.06	3.14	—	20.5 (24.5)	20.0 (24.0)

The parenthesized values are the weights of the models with brake and decelerator.

Notes) ● The above specifications are performance values at an ambient temperature of 20℃. If the ambient temperature lowers, the rotation speed reduces due to change in grease viscosity.
● The table shows the performance values of the air motors obtained when the pressure on the exhaust side is the atmospheric pressure.

Common conditions

- Working fluid : Air
- Rated pressure : 0.5 MPa
- Working pressure range : 0.2 to 0.6 MPa
- Lubrication : JIS K2213 Class 1 (non-additive turbine oil ISO VG32) or its equivalent
- Ambient temperature : −10 to +70℃ (No freezing)
- Paint color : Metallic silver gray
- Lubricant : Internal grease−Air motor body: DAPHNE EPONEX EP-No.1 (IDEMITSU), grease for high load
- Continuous operation : When using the motor continuously without suspension, use it at 80% or less of the rotation speed at max. output.
- Recommended rotation speed range: (0.2 to 1)×rotation speed at max. output

Allowable axial load

The allowable axial load shown in the above specification table shows the allowable value of the following load.