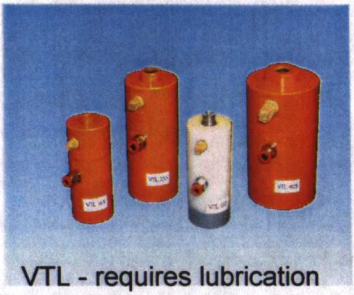
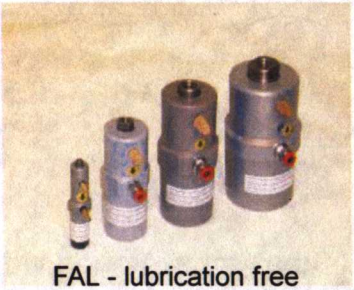
VTL & FAL LINEAR VIBRATORS OPERATOR'S MANUAL



VTL - requires lubrication



FAL - lubrication free

Application

These compact robust range of Linear vibrators are suitable for use in a wide number of applications, to assist in the flow and control of many materials. The following being some of the more common:

Feeders: Natural Frequency Feeders
Particularly good for feeding light materials where large amplitudes are required.

Tables: For packing industry, foundries for core making, up to loads of 1000 Kgs

Screens: Very effective on small screens for materials of low specific gravity, granular materials and powder.

Hoppers: Certain applications where larger materials bridge. Not suitable for sticky or ratholing materials.

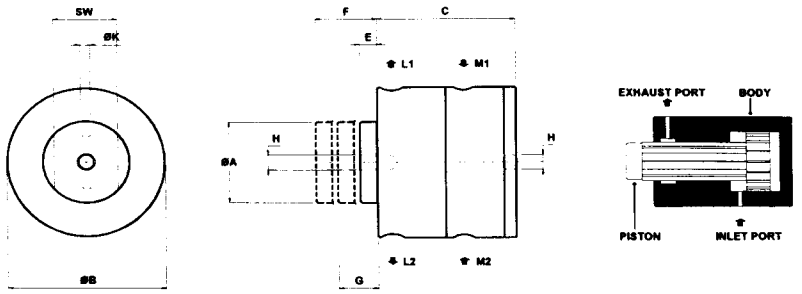
Description

Linear vibrating force is delivered by a noiseless air cushioned piston. Frequency and amplitude can be regulated independently. Either piston or case can be used as a vibration inducer. Using additional masses the vibrator is able to work at low frequencies, down to 15 Hz and to generate large amplitudes. VTL & FAL vibrators combine the advantages of low frequency rotary vibrators (large amplitudes) with those of magnetic vibrators (adjustable amplitudes). Additionally, they have the advantage of being able to select the most suitable frequency to obtain optimum results.

Accessories

Silencers and suitable air inlet fittings are supplied with these vibrators. Please allow us to quote you for other fittings and control equipment.

VTL DATA SHEET



All Steel construction with special hardened surfaces

Dimensions

Model	A	B	C	E	F	G	H	K	L1	L2	M1	M2	SW	Weight Kgs
VTL 155*	16.0	50	114	9	43	15	M10	-	1/8"	-	1/8"	-	13	0.52
VTL 165	165	49	111	5	40	18.5	M10	-	1/8"	-	1/8"	-	14	1.49
VTL 255	25.5	64	140	9	54	27.5	M16	-	1/4"	-	1/4"	-	22	3.19
VTL 405	40.5	84	140	12	57	24	M16	-	1/4"	-	1/4"	-	32	5.47
VTL 555	55.5	115	125	17	54.7	19.8	M20	-	3/8"	-	3/8"	-	46	7.82
VTL 855	85.5	160	122	20	54.7	16.8	M20	12.7	3/8"	3/8"	3/8"	-	-	16.91
VTL 1105	110.5	200	122	22	54.7	14.3	M20	12.7	1/2"	1/2"	3/8"	3/8"	-	25.83

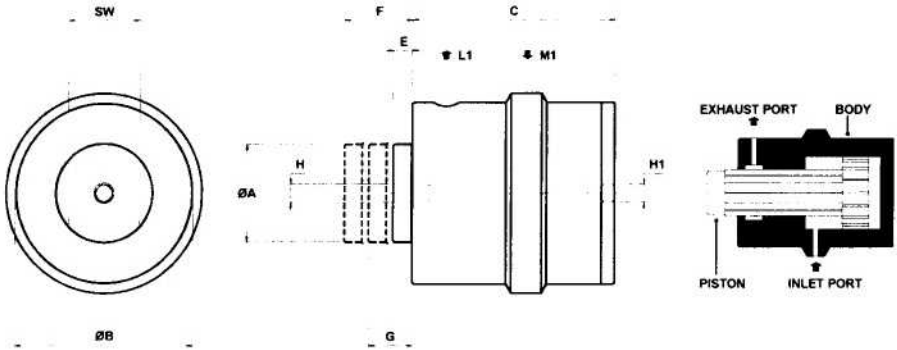
Performance Data

Model	Frequency VPM	Force N		Air Consumption litre/min
	max.	min.	max.	max.
VTL 155*	2600	39	110	90
VTL 165	2600	39	185	75
VTL 255	1900	90	720	200
VTL 405	1900	220	1450	408
VTL 555	2400	510	2640	755
VTL 855	2500	845	7740	924
VTL 1105	2900	1760	5980	960

NOTE VTL 155 has plastic body, aluminium endcap and stainless steel piston

Noise Level Max. 80 dB(A) at 6 Bar using a good proprietary silencer, even less at lower pressures.

Operating Temperature +5° C to 150° C (except VTL155 - +5° C to 100° C)



Hard Anodised Aluminium Body and Stainless Steel Piston

Dimensions

Model	A	B	C	E	F	G	H	H1	L1	L2	M1	M2	SW	Weight Kgs
FAL 8	8	20	91	5	32	24	M5	M6	M5	-	M5	-	7	0.1
FAL 18	18	48	117	8	41	32	M10	M10	1/8"	-	1/8"	-	14	0.75
FAL 25	25	60	140	8	48	38	M16	M16	1/4"	-	1/4"	-	22	1.5
FAL 35	35	78	140	14	51	41	M16	M16	1/4"	-	1/4"	-	27	2.6

Performance Data

Model	Frequency VPM	Force N		Air Consumption litre/min
	max.	min.	max.	max.
FAL 8	3400	12	42	30
FAL 18	2250	60	205	60
FAL 25	2020	120	530	155
FAL 35	2010	205	655	350

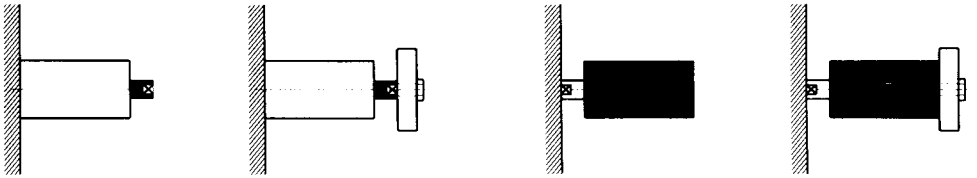
Noise Level Max. 80 dB(A) at 6 Bar using a good proprietary silencer, even less at lower pressures.

Operating Temperature + 5° C to 150° C

except VTL 155 - + 0°C to 100° C (plastic body)

The table overleaf shows the performance data of our VTL range of vibrators, fixing either the piston or the body to the equipment. The end freely moving generates the oscillating force which can be increased by adding weights.

FIXED BODY - MOVING PISTON ONLY or + WEIGHT (S) **FIXED PISTON** - MOVING BODY ONLY or + WEIGHT (S)



WEIGHT OF PISTON AND BODY				ADDITIONAL WEIGHTS			
Type	Piston	Body kgs	Total Weight kgs	Part No.	Size dia.x lg mm	Hole dia,. mm	Wt kgs
VTL 155	0.15	0.38	0.53	SM 16-1	50 x 20	10.5	0.29
VTL 165	0.16	1.34	1.49	SM 16-2	50 x 65	10.5	0.48
VTL 255	0.49	2.68	3.17				
VTL 405	1.32	4.15	5.47	SM 25-1	50 x 20	16.5	0.29
VTL 555	2.11	7.21	9.32	SM 25-2	65 x 20	16.5	0.48
VTL 855	5.26	11.74	17.00	SM 25-3	100 x 20	16.5	1.20
VTL 1105	9.50	18.50	28.00	SM 25-4	100 x 60	16.5	3.60
				SM 85-1	100 x 20	20.5	1.20
				SM 85-2	100 x 60	20.5	3.60
				SM 85-3	200 x 50	20.5	12.50
				SM 85-4	200 x 100	20.5	25.00
				SM 85-5	200 x 150	20.5	37.00

PERFORMANCE DETAILS FOR VTL LINEAR VIBRATORS 5

Model	Weight of moving part Kg.		Air consumption l / min 2Bar	4Bar	6Bar	Frequency cycles / min 2Bar	4Bar	6Bar	Force N 2Bar	4Bar	6Bar
VTL 155	0.15	Piston	18	40	85	1820	2380	2700	40	72	96
	0.44	Piston + SM16-1	17	33	67	1030	1270	1430	55	88	112
	0.63	Piston + SM16-2	16	30	60	870	1075	1260	52	82	113
	1.11	Piston + 2x SM16-2	15	28	57	660	850	950	45	76	94
	1.59	Piston + 3x SM16-2	14	26	54	540	670	780	40	64	90
VTL 165	0.16	Piston	17	37	70	1900	2450	2700	43	76	96
	0.45	Piston + SM16-1	12	29	57	1070	1370	1570	59	106	160
	0.64	Piston + SM16-2	11	27	50	900	1180	1350	63	127	163
	1.12	Piston + 2x SM16-2	10	25	46	730	950	1100	61	124	171
	1.34	Body	9	23	43	670	850	990	49	109	178
	2.78	Body + 3x SM16-2	8	20	32	400	625	700	31	94	189
VTL 255	0.49	Piston	56	109	180	1585	1670	2200	82	214	398
	0.97	Piston + SM25-2	50	92	144	1010	1130	1460	123	266	561
	1.69	Piston + SM25-3	48	87	132	900	980	1200	222	279	600
	2.89	Piston + 2x SM25-3	45	75	120	640	740	920	216	280	617
	2.68	Body	42	68	104	615	640	795	301	326	596
	5.08	Body + 2x SM25-3	38	64	98	420	550	710	121	340	597
	6.76	Body + 1x SM25-4 1x SM25-2	35	60	90	375	505	640	115	357	678
VTL 405	1.32	Piston	80	240	390	1400	1700	2000	206	343	657
	2.52	Piston + SM25-3	70	180	360	980	1180	1480	255	520	785
	4.16	Body	65	155	315	750	920	1050	334	647	893
	4.92	Piston + SM25-4	60	150	300	740	870	996	334	785	1177
	7.75	Body + SM25-4	52	142	290	600	730	880	363	824	1315
	11.35	Body + 2x SM25-4	50	125	285	520	660	790	451	863	1403
VTL 555	2.11	Piston	140	419	717	1600	1970	2500	451	961	1305
	2.52	Piston + SM85-1	133	328	706	1200	1475	1900	550	1069	1619
	4.15	Body	120	319	492	880	1150	1460	834	1324	2433
	10.81	Body + SM85-2	105	273	450	690	930	1120	893	1619	2531
	14.61	Piston + SM85-3	91	250	428	600	735	925	834	1638	2933
	27.11	Piston + SM85-4	88	218	412	464	556	885	628	1579	2521
VTL 855	5.26	Piston	301	635	900	1800	2280	2650	706	1137	1530
	8.86	Piston + SM85-2	217	515	880	1250	1680	1800	1030	1864	2129
	11.74	Body	210	500	865	985	1260	1560	1177	2256	3198
	17.76	Piston + SM85-3	175	400	740	890	1080	1300	1727	2747	3698
	30.36	Piston + SM85-4	165	385	620	720	840	960	2845	4611	5258
	42.26	Piston + SM85-5	160	380	615	625	770	840	4316	6229	7407
	61.24	Body + SM85-3 + SM85-5	-	380	615	-	720	810	-	6278	7632
VTL 1105	9.50	Piston	345	740	920	2130	2625	3000	1550	2619	2737
	13.10	Piston + SM85-2	340	710	890	1700	2150	2500	1864	3159	4513
	18.50	Body	330	680	880	1330	1680	2050	1687	3551	4807
	34.50	Piston + SM85-4	285	610	870	950	1200	1400	1844	3276	4836
	43.50	Body + SM85-4	270	590	870	790	1050	1280	1991	4199	5631
	46.50	Piston + SM85-5	270	590	860	770	960	1250	1952	3551	5690
	55.50	Body + SM85-5	260	570	840	720	890	1000	1982	3924	4964
	66.10	Body + 230dia.x 200	250	550	780	700	770	870	2904	4758	5788

INSTALLATION

Mounting the vibrator

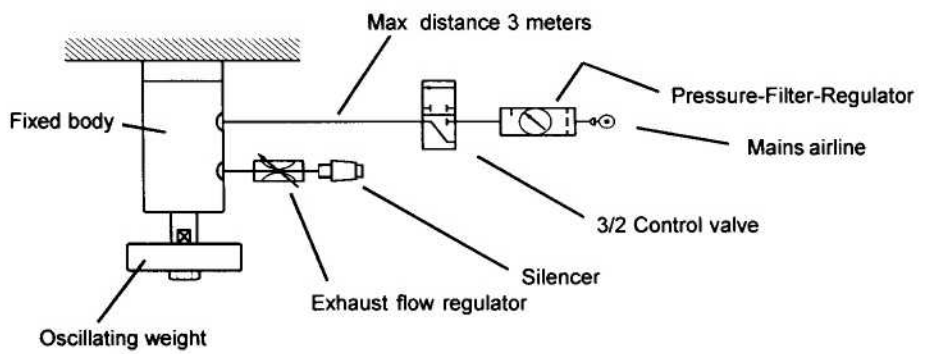
The VTL & FAL vibrators can be mounted with either the piston or the housing free to oscillate as shown in tables in this leaflet. The various ratios of 'force to frequency', achieved by adding extra weights, makes these vibrators uniquely versatile.
Heavier weight oscillating, higher force, lower frequency and lower amplitude
Lighter weight oscillating, lower force, higher frequency and higher amplitude.
Ensure fixing bolts are tightened against vibration and it is recommended that 'Loctite' or similar is used on the threads.
Ensure the vibrator has room to oscillate freely. Guard if neccessary for safety.

Air connection

The VTL vibrators must be connected to the air supply via Pressure, Filter, Lub. unit.
The FAL vibrators must be connected to the air supply via Pressure, Filter unit.
(although lubrication free, using lubrication would extend the life even longer)
VTL & FAL vibrators operate at pressures up to 6 Bar max.

All vibrators are supplied with suitably sized 'Push-in' fittings and silencers.
It is essentual that max. hose length to control valve is 3 meters for optimum performance and of suitable size.

NOTE When the air inlet connection is moving i.e. with housing oscillating, and the amplitude is high, a more secure hose fitting and clamp is recommended.



Adjusting the air pressure varies the vibrator's frequency and therefore the force, keeping the amplitude almost constant.
Adjusting the exhaust flow regulates the amplitude, keeping the frequency constant.

Maintenance **Ensure air supply is off when disconnecting hoses**

- Maintenance starts with the Filter and/or Lubricator.
- On VTL check the lubricator is dispensing the correct amount of oil, from 2 - 4 drops per minute according to size, also that the oil reservoir is kept topped up.
- On VTL & FAL ensure the filter is regularly drained and filter medium washed out or changed periodically.
- Both the VTL or FAL require the fixing bolts of the vibrator and weights to be checked for tightness at regular intervals according to the length of time they are used.
- No internal maintenance is required unless contaminated air has been used over a period. Then the following applies:
- VTL vibrators can be cleaned, if not too contaminated, by running with clean lubricated air at 6 Bar for a short time, otherwise it should be carefully dismantled and the surfaces cleaned with an oily cloth.
  This should also be done if they are not used for long periods or put in store.
- FAL vibrators should be carefully dismantled and the surfaces cleaned and lightly greased with

NOTE **On no account should any abrasive mediums be used to clean the internal surfaces of VTL or FAL vibrators.**

SPARES

The VTL has only 3 working parts, manufactured in steel with special hardened surfaces, i.e. body, piston and endcap.
The pistons are individually precision ground to suit the bodies, therefore these are not available seperately as spares.

The FAL also has 3 working parts but is manufactured from hard anodised aluminium and stainless steel.
These are available as spares and should be ordered quoting the model number and the part required i.e. Body, Piston or Endcap
Make sure when ordering a spare that the part it fits is not also damaged and requires replacement