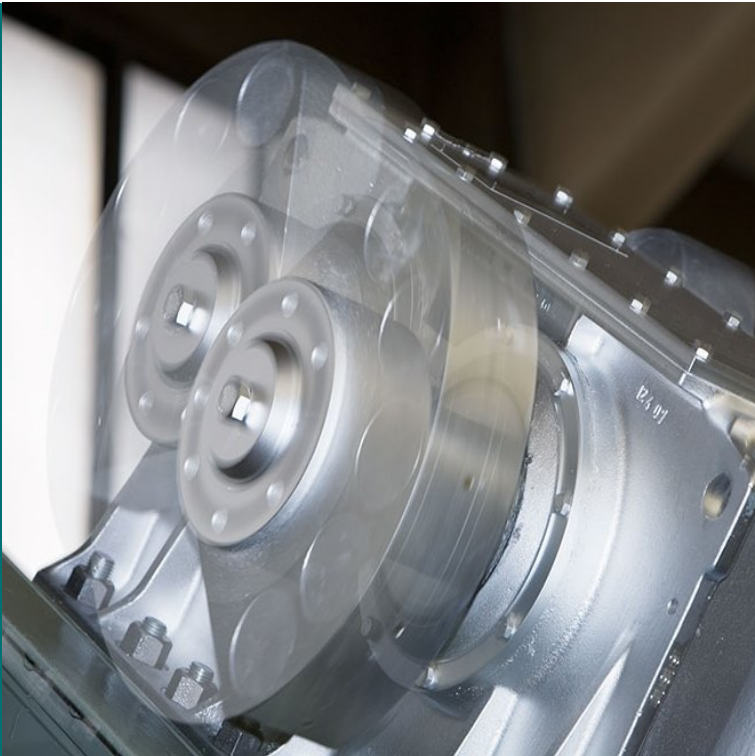


## Directional Force Exciter DF



- **Economic and powerful exciter for high performance**
- **Long service life and extremely calm operation**
- **Minimum maintenance requirements**
- **Optimum, application-orientated graduation of exciters**
- **Low operation noise level**
- **98 % availability**
- **Ideal for use in continuous operation**

### Application

Schenck Process directional force exciters series DF are used to drive vibrating conveyors or vibrating screens with exciting forces from 43 up to 1000 kN per exciter.

Contrary to unbalance motors, directional force exciters have the advantage of well defined force flows and defined mechanical loads in the vibrating machine.

The vibration data are independent of bulk material loads.

### Construction

Roller bearings and gear wheels are accommodated in a cast iron housing and are oil-lubricated (oil immersion lubrication).

Maintenance is limited to an oil change or an oil-level check, respectively, at the prescribed intervals.

The unbalance masses can be changed during shutdown, simply by installing or removing supplementary masses (steel or lead unbalance weights). The exciter is run externally by a standard electric motor via a drive shaft.

For all directional force exciters suitable drive shafts are available.

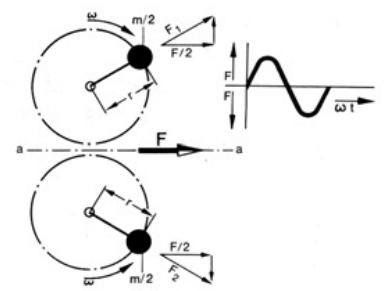
Frequency converters can be used to provide a variable operating speed and force output as well as a braking function for applications that require rapid or controlled shut down: please consult our technical department for application details.

### Functions

The Schenck Process DF directional force exciter generates a force  $F$  with a sine-shaped pattern along line a-a.

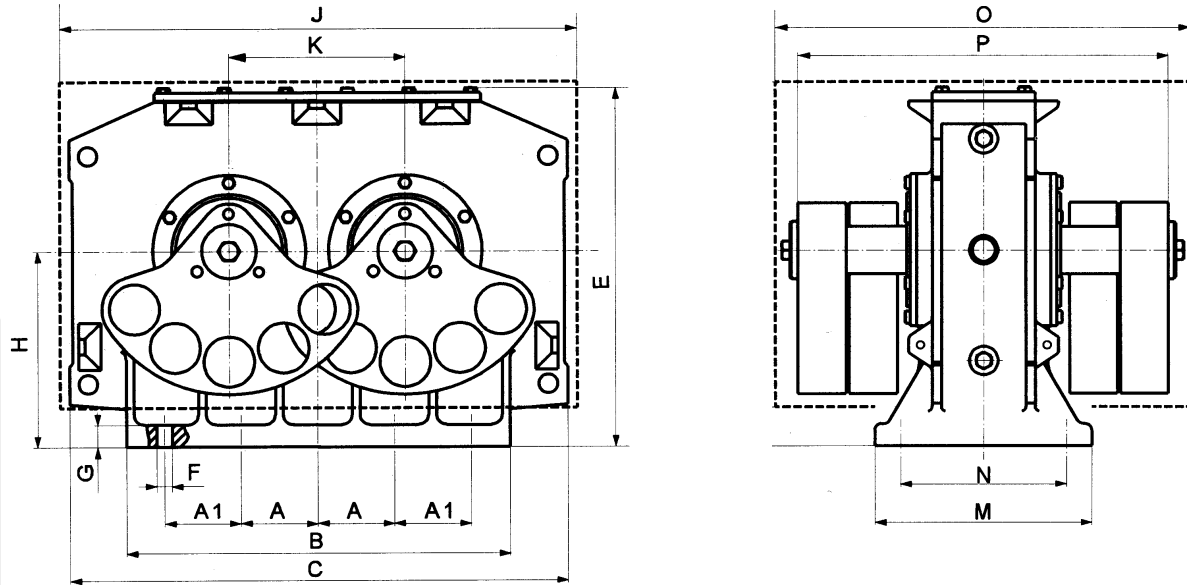
The exciter is equipped with two shafts and unbalance masses. The unbalance masses are synchronized by a built-in gear drive, rotating both at the same speed in opposite directions.

The components of the centrifugal forces  $F_1$  and  $F_2$  working along line a-a add to the resulting force  $F$ . The force components perpendicular to that direction cancel each other.



Dimensions [mm]	DF 100S	DF 200S	DF 300S	DF 401S	DF 401V	DF 404S	DF 404V	DF 501S
<b>A</b>	2x125	1x75	4x120	4x120	4x120	4x120	4x120	5x120
<b>A1</b>	-	115	-	-	-	-	-	-
<b>B</b>	380	435	600	600	600	600	600	730
<b>C</b>	515	636	690	780	780	780	780	830
<b>E</b>	435	437	537	568	568	568	568	580
<b>F</b>	Ø 31	Ø 25	Ø 31	Ø 25	Ø 25	Ø 25	Ø 25	Ø 31
<b>G</b>	18	18	18	34	34	34	34	23
<b>H</b>	250	250	310	310	310	310	310	315
<b>J</b>	536	646	701	786	786	786	786	819
<b>K</b>	190	230	250	275	275	275	275	300
<b>M</b>	320	320	340	340	340	340	340	380
<b>N</b>	240	260	260	260	260	260	260	300
<b>O</b>	486	550	576	650	780	764	764	900
<b>P</b>	434	494	522	580	708	632	632	883
<b>R</b>	439	456	543	560	560	560	560	579
<b>S</b>	46	44	84	63	63	63	63	46
<b>Bolt Size</b>	M30	M24	M30	M24	M24	M24	M24	M30
<b>Bolt Grade</b>	Metric Course Thread bolt, AS1110 PC 8.8, 830 MPa Ultimate Tensile Strength, minimum; length depends on specific use							

Dimensions [mm]	DF 504S	DF 504V	DF 601S	DF 601V	DF 604S <sup>1)</sup>	DF 604V <sup>1)</sup>	DF 614S <sup>1)</sup>	DF 614V <sup>1)</sup>	DF 704S
<b>A</b>	5x120	5x120	4x120	4x120	4x120	4x120	4x120	4x120	6x130
<b>A1</b>	-	-	150	150	150	150	150	150	-
<b>B</b>	730	730	910	910	910	910	910	910	940
<b>C</b>	830	830	1040	1040	1040	1040	1040	1040	1390
<b>E</b>	580	580	660	675	660	675	660	675	763
<b>F</b>	Ø 31	Ø 31	Ø 31	Ø 31	Ø 31	Ø 31	Ø 31	Ø 31	Ø 37
<b>G</b>	23	23	25	25	25	25	25	25	40
<b>H</b>	315	315	370	370	370	370	370	370	432
<b>J</b>	819	819	1032	1032	1032	1032	1032	1450	1450
<b>K</b>	300	300	376	376	376	376	376	376	460
<b>M</b>	380	380	470	470	470	470	470	470	500
<b>N</b>	300	300	390	390	390	390	390	390	400
<b>O</b>	995	995	1068	1068	1214	1214	1214	1214	1214
<b>P</b>	906	906	934	998	1064	1064	1064	1064	1064
<b>R</b>	579	579	696	696	696	696	696	696	860
<b>S</b>	46	46	16	16	16	16	16	16	30
<b>Bolt Size</b>	M30	M30	M30	M30	M30	M30	M30	M30	M36
<b>Bolt Grade</b>	Metric Course Thread bolt, AS1110 PC 8.8, 830 MPa Ultimate Tensile Strength, minimum; length depends on specific use								



### Directional force exciter

Exciter Type	Speed <sup>1)</sup> [min <sup>-1</sup> ]		Working Moment [kg•cm]		Static Moment <sup>2)</sup> [kg•cm]		max. Force Output <sup>2)</sup> [kN]	Motor Power [kW <sup>3)</sup> ]	Mass with plug weights <sup>4)</sup> [kg]	Plug weight material	Order No.
	min.	max.	min.	max.	min.	max.					
DF 100S	650	1000	416	904	208	452	50	3	265	Steel	S000239.06
DF 200S	650	1000	624	1402	312	701	77	4	310	Steel	S000240.06
DF 300S	650	1000	968	2072	484	1036	114	5,5	460	Steel	S000216.06
DF 401S	650	1000	1680	3248	840	1624	178	7,5	490	Steel	S000012.06
DF 401V	650	750	2400	4632	1200	2316	143	7,5	520	Steel	S000013.06
DF 404S	650	1000	2033	3930	1016	1965	215	11	515	Steel	on request
DF 404V	650	900	2033	4764	1016	2382	215	11	546	Lead	on request
DF 501S	650	1000	2816	5600	1408	2800	307	15	880	Steel	S000235.06
DF 504S	650	1000	3584	7128	1792	3564	388	18,5	915	Steel	V055700.B01
DF 504V	650	900	3584	8684	1792	4342	388	18,5	976	Lead	V064328.B01
DF 601S	650	1000	4592	9000	2296	4500	493	22	1270	Steel	S000233.06
DF 601V	650	750	7184	15200	3592	7600	467	30	1490	Steel	S000234.06
DF 604S	650	1000	7832	16570	3916	8285	575	30	1550	Steel	V056400.B01
DF 604V	650	750	7832	20076	3916	10038	575	37	1675	Lead	V063722.B01
DF 614S	650	1000	7832	16570	3916	8285	575	30	1590	Steel	V659344.B01
DF 614V	650	750	7832	20076	3916	10038	575	37	1715	Lead	on request
DF 704S	650	1000	14528	27302	7264	13651	1000	45	2650	Steel	V555672.B01

- 1) DF 614 Exciters offer significantly increased bearing capacity and potentially much longer service life: they can be used as a direct replacement for DF 604 Exciters.
- 2) Allowable Maximum Force may limit Static Moment/Speed combinations.
- 3) Standard Values at operating voltage, Torque in the 0 ... 300 min<sup>-1</sup> range must be at least double but maximum 2.8 times the full load torque.
- 4) Nominal, including transport restraint for DF 300S and higher, gross packed mass may be greater than stated value.

**Protective box for directional force exciters**

Type	Single Drive		Twin Drive	
	Weight [kg]	Order No.	Weight [kg]	Order No.
DF 100S	13	X794990.01	26	X794998.01
DF 200S	18	S000011.01	36	S000011.02
DF 300S	19	X794985.01	38	X794995.01
DF 401S	29	X794986.01	59	X794987.01
DF 401V	29	X794996.01	59	X794997.01
DF 404S/V	-	on request	-	on request
DF 501S	34	S000010.01	66	S000010.02
DF 504S/V	35	V057068.B01	70	V057068.B02
DF 601S/V	63	X794751.01	118	X794752.01
DF 604S/V	-	on request	-	on request
DF 614S/V	-	on request	-	on request
DR 704S	-	on request	-	on request

Details for triple drive available on request.

**Option**

Drive Shaft see BV-D2324

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