

# DSC Series

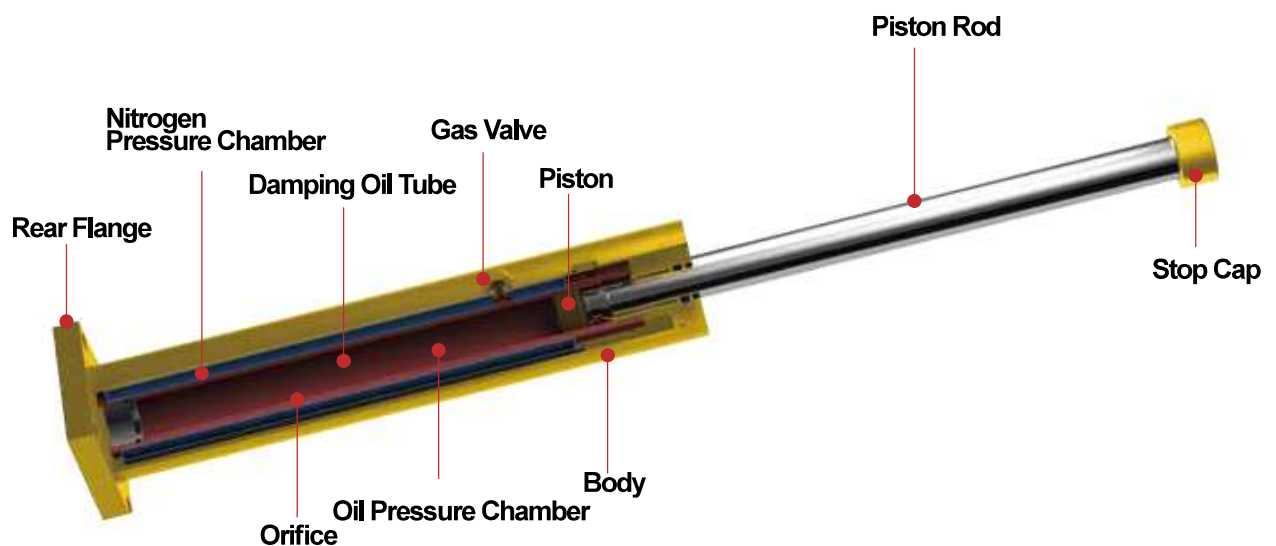
Hydraulic-Gas Complex



# DAMPTAC

Industrial Shock Absorber

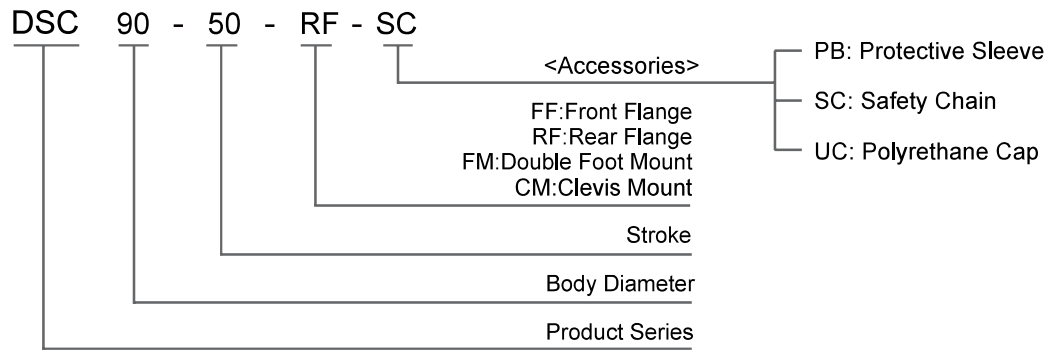
The hydraulic-gas complex DSC series uses the leading new-airbag damping and resetting structure in Germany, which greatly expands the damping capacity (up to 930kJ) and stroke (up to 1500mm). The resetting structure uses high pressure nitrogen instead of mechanical reset spring, which can shorten the length of the shock absorber. When the shock absorber is working, the hydraulic oil flows through the multi throttle hole, produces viscous damping force and transforms the impact energy into heat dissipation. The hydraulic oil from the multi throttle hole compresses the volume of the air bag. After the load is removed, the hydraulic oil is returned to the inner oil chamber under the pressure of the air bag, and the piston rod is reset. The DSC series meets global industrial safety standards, such as OSHA, AISE, CMMA, DIN and FEM. Compared with DTH series, DSC has similar structure and working principle, but due to advanced airbag reset design, the DSC series has a lower peak reacting force and a smoother damping effect, which makes the series applied well in the industries that relate to personal safety like amusement equipment and automated storage.



## Properties

- Compact size with high energy absorption, and the long stroke up to 1500mm.
  - The DSC series is a custom-made product that requires detailed application parameters. We provide the most suitable products for our customers through professional calculation and precision design to achieve the best damping effect.
  - The design is in line with OSHA, AISE, CMMA standards and DIN, FEM and other safety requirements.
  - Compared with DTH series, DSC has a lower peak reacting force and a smoother damping effect, widely used in the industry of amusement equipment that relate to personal safety.
  - The body uses special anticorrosive epoxy spraying and the piston rod is hard chrome plated. Therefore, the DTH series can be used in high corrosive environments such as outdoor or marine.
  - Wider temperature range, standard type (-10°C ~+80°C), special type (-40°C ~+120°C)
- There are various accessories to meet all kinds of installation and use requirements of customers.

## DSC Series Ordering Information



## DSC Series-Selection and Calculation

Prior to the purchase of DSC series, the detailed application parameters must be provided. DAMPTAC will provide the most suitable product and the global unique code after professional calculation. This code will record the customer's application information and additional requirements.

Parameters required for selection:

### 1. Horizontal Impact

Weight of moving load:  $m$  (kg)

Impact velocity:  $V$  (m/s)

Extra force (if any):  $F$  (N)

Power of motor (if any):  $P$  (kw)

Quantity of shock absorbers:  $n$

Impact times/Hour:  $c$  (1/h)

Additional requirements: temperature, environment, length limits, travel restrictions, etc.

### 2. Free Falling

Weight of moving load:  $m$  (kg)

Height between the load to the shock absorber:  $h$  (m)

Impact velocity:  $v$  (m/s) (choose it or height)

Quantity of shock absorbers:  $n$

Impact times/Hour:  $c$  (1/h)

Additional requirements: temperature, environment, length limits, travel restrictions, etc.

## DSC Series-Mount and Maintenance

### Mount requirements

1. The shock absorber needs to be fixed on the ground or mechanical equipment by flanges. It must be firm and reliable. If it is fixed on the mechanical equipment, the stiffness and strength of the fixed position should not be sloshing or deformed because of the impact. Any form of not fixed well or poor support can easily cause the damage of the shock absorber, and thus can not provide effective protection.

2. When the shock absorber is installed horizontally, ensure that the piston rod's direction is rejoined with the load impact direction. The straight angle must be less than 0.5 degrees (this is very important, the side force will greatly affect the safety and life of the shock absorber), and the impact surface of the load and the shock absorber must be completely perpendicular to the direction of the piston rod; if the stroke is greater than or equal to 300mm, it is recommended to use the installation of the front flange or the double flanges; if the stroke is greater than or equal to 600mm, it is strongly required to use the installation of the double flanges (or an additional fixed bracket by the customer).

3. regularly periodically press the piston rod along its axial direction to see if there is a loss of pressure in the shock absorber. If there is pressure loss, please deal with it as the second point.

4. regularly check if there is oil leakage; if any oil leakage is found, stop using the shock absorber and contact Damptac for further examination.

### Maintenance requirements

1. regularly check if any dirt on the surface of the piston rod and make it clean.

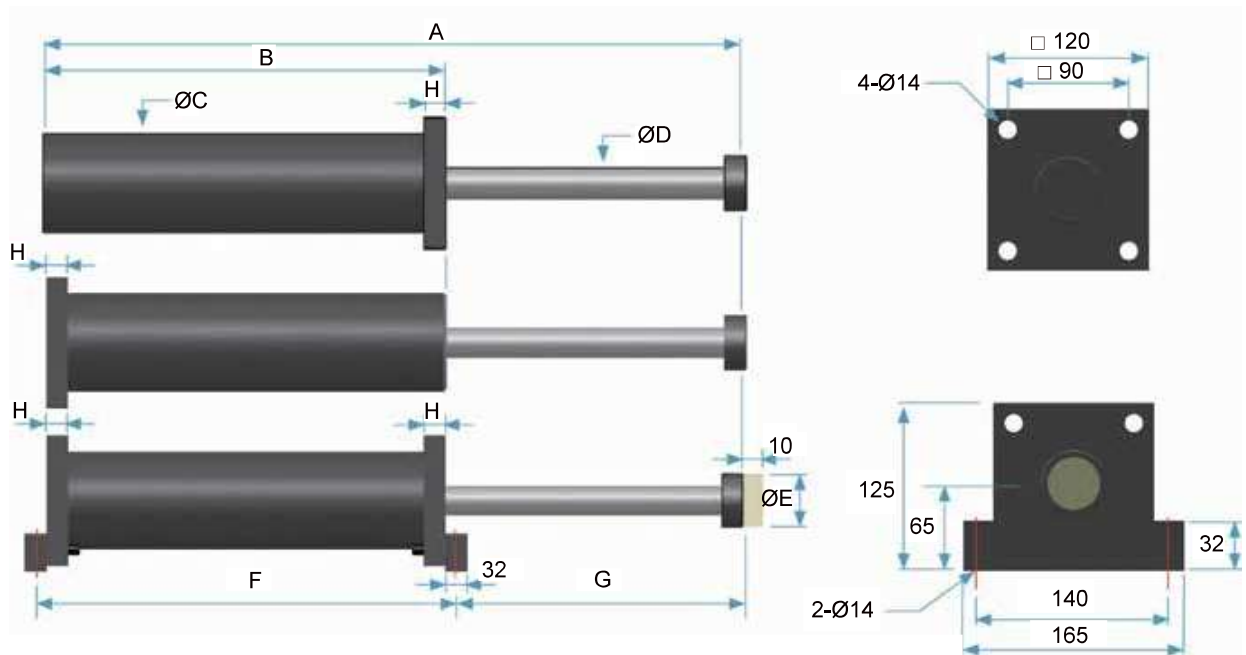
2. regularly check if the piston rod is fully extended; if not, there may be a loss of pressure. Please contact Damptac for further examination. If the customer needs to supplement the pressure, please confirm with Damptac.

3. regularly periodically press the piston rod along its axial direction to see if there is a loss of pressure in the shock absorber. If there is pressure loss, please deal with it as the second point.

4. regularly check if there is oil leakage; if any oil leakage is found, stop using the shock absorber and contact Damptac for further examination.

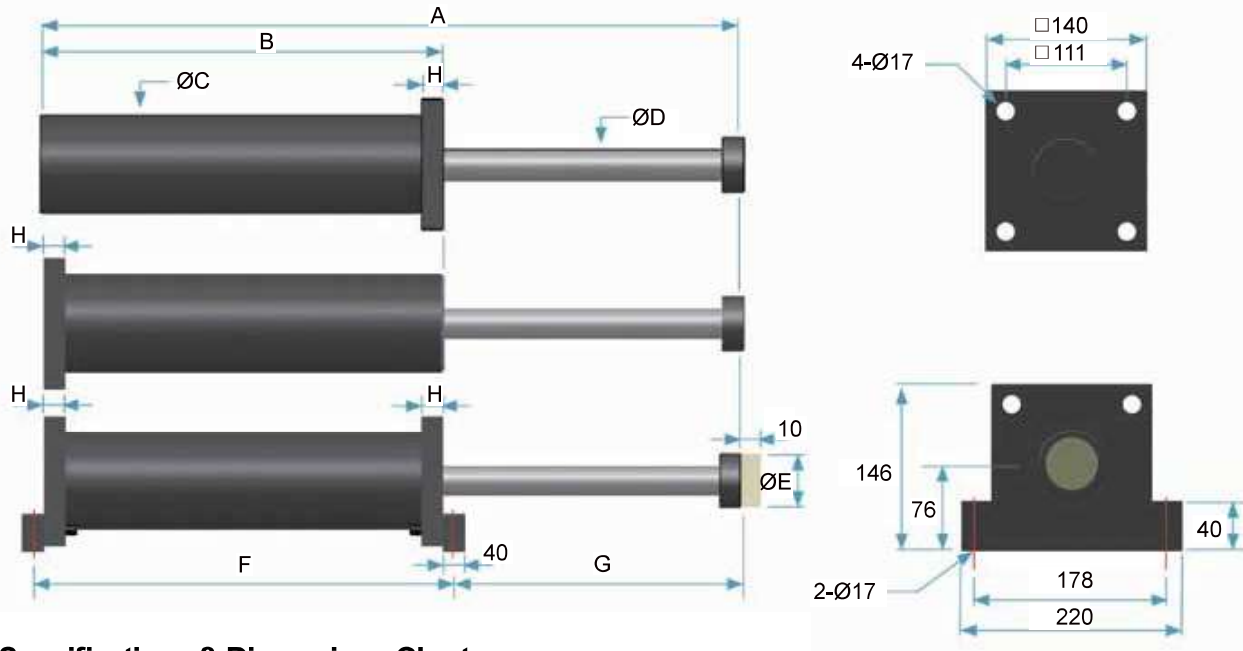
5. regularly check if the installation is still reliable and firm when the shock absorber is frequently used. (for example, check if the bolts of the flange are loose)

6. regularly check if the angle between the direction of the piston rod and the load impact has become larger (not more than 0.5 degrees).



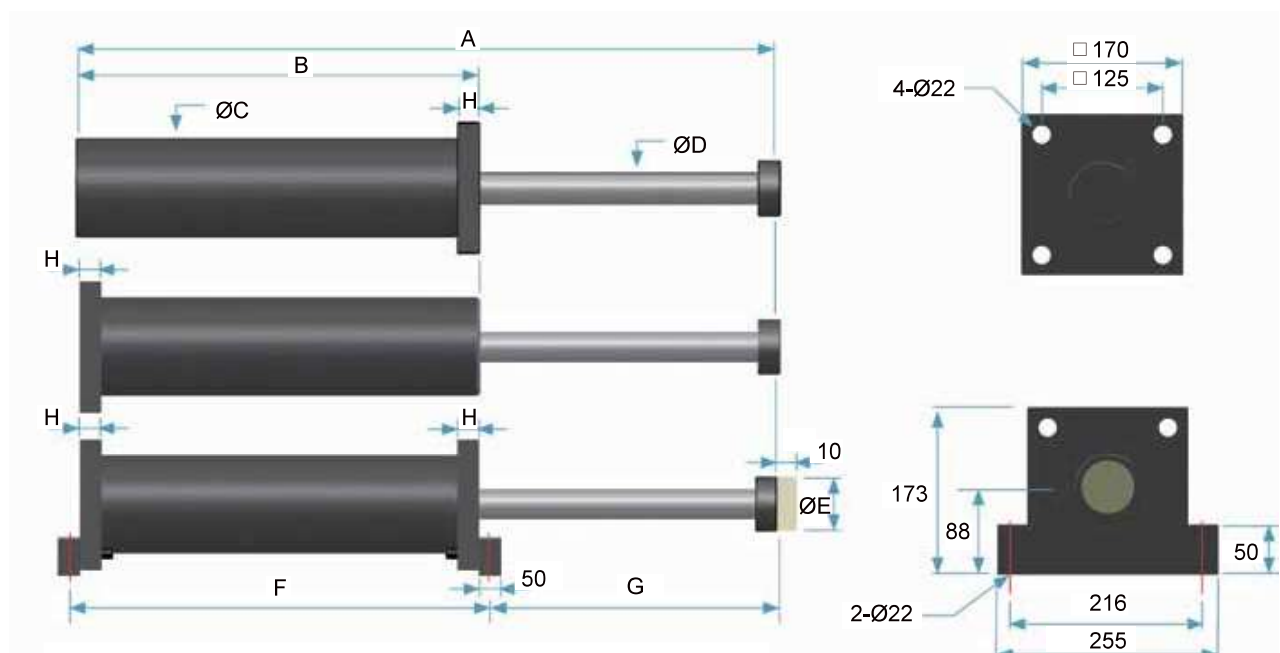
## Specifications & Dimensions Chart

Type	Stroke (mm)	Max. Energy /Cycle (kJ)	Max. Damping Force (kN)	Max.Side Angle (°)	Dimensions (Unit: mm)							
					A	B	C	D	E	F	G	H
DSC 90-50	50	3	80	2	310	208	90	30	50	240	86	20
-100	100	6	80	2	410	258	90	30	50	290	136	20
-150	150	9	80	2	510	308	90	30	50	340	186	20
-200	200	12	80	2	613	360	90	30	50	392	237	20
-250	250	16	80	1	715	411	90	30	50	443	288	20
-300	300	19	80	1	817	462	90	30	50	494	339	20
-350	350	22	80	1	918	512	90	30	50	544	390	20
-400	400	25	80	0.5	1,019	563	90	30	50	595	440	20
-450	450	28	80	0.5	1,121	614	90	30	50	646	491	20
-500	500	32	80	0.5	1,223	665	90	30	50	697	542	20
-600	600	38	80	0.5	1,427	767	90	30	50	799	644	20
-700	700	44	80	0.5	1,692	868	90	30	50	900	742	20
-800	800	51	80	0.5	1830	968	90	30	50	1,000	842	20



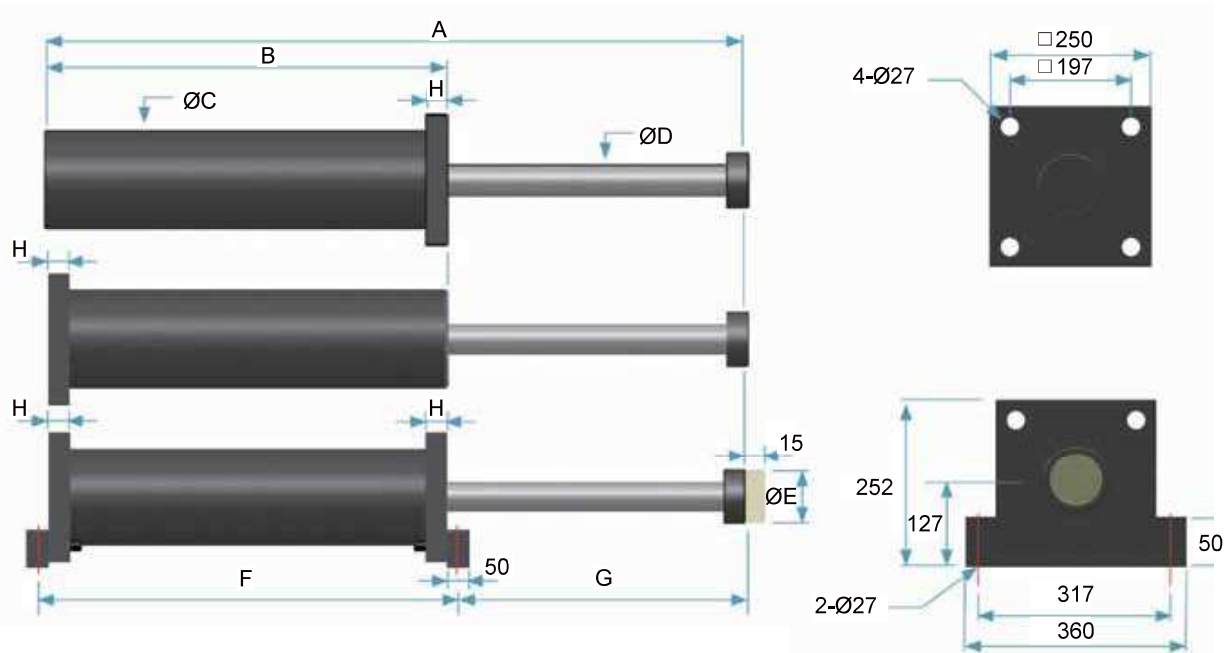
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DSC 110-50	50	4	120	2	370	230	110	40	60	270	120	25
-100	100	9	120	2	480	280	110	40	60	340	170	25
-150	150	14	120	2	553	339	110	40	60	379	194	25
-200	200	19	120	2	655	390	110	40	60	430	245	25
-250	250	24	120	1	757	441	110	40	60	481	296	25
-300	300	28	120	1	859	492	110	40	60	532	347	25
-350	350	33	120	1	960	543	110	40	60	583	397	25
-400	400	38	120	0.5	1,062	594	110	40	60	634	448	25
-450	450	43	120	0.5	1,164	645	110	40	60	485	499	25
-500	500	48	120	0.5	1,265	695	110	40	60	735	550	25
-600	600	57	120	0.5	1,469	797	110	40	60	837	652	25
-700	700	67	120	0.5	1,672	899	110	40	60	939	753	25
-800	800	76	120	0.5	1,953	1,079	110	40	60	1,119	854	25
-900	900	72	100	0.5	2,151	1,179	110	40	60	1,219	952	25
-1000	1,000	72	90	0.5	2,351	1,279	110	40	60	1,319	1,052	25
-1200	1,200	64	67	0.5	2,751	1,479	110	40	60	1,519	1,252	25
-1400	1,400	60	54	0.3	3,171	1,689	110	40	60	1,729	1,462	25



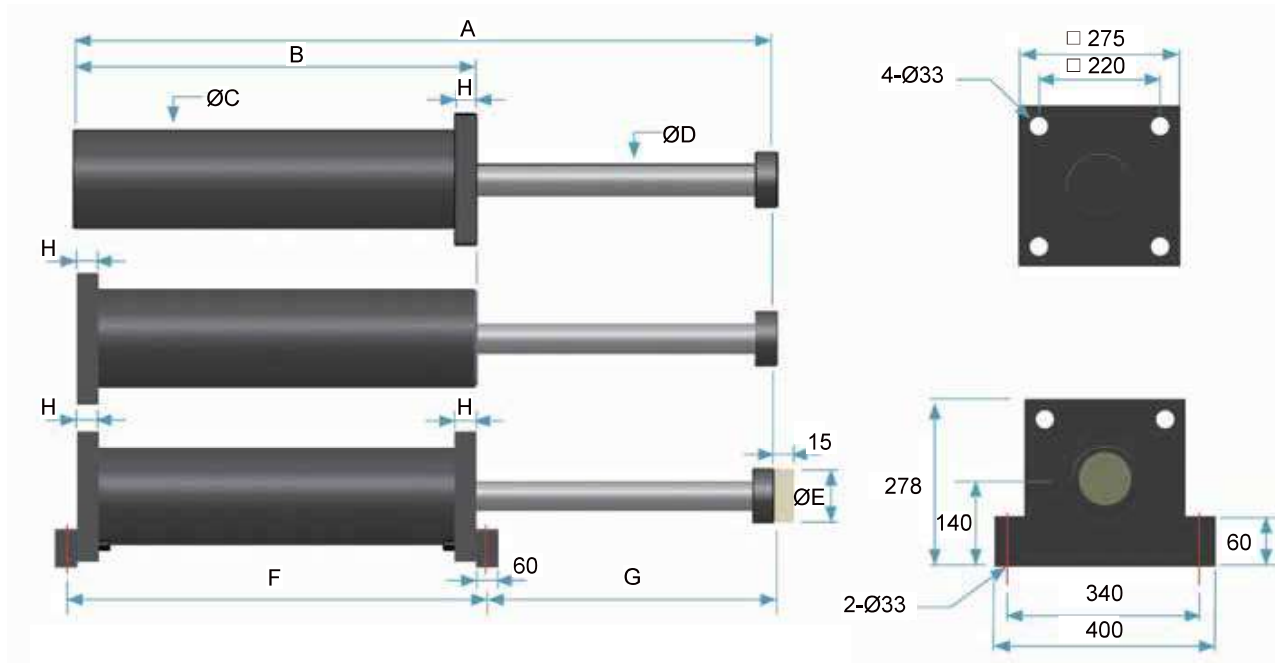
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DSC130-50	50	9.6	240	2	336	203	130	45	70	253	108	25
-75	75	14.4	240	1.5	387	229	130	45	70	279	133	25
-125	125	24	240	1.5	489	280	130	45	70	330	184	25
-200	200	38.4	240	1.5	640	355	130	45	70	405	260	25
-250	250	48	240	0.5	742	406	130	45	70	456	311	25
-300	300	57.6	240	0.5	844	457	130	45	70	507	362	25
-350	350	67.2	240	0.5	995	558	130	45	70	608	412	25
-400	400	76.8	240	0.5	1,097	609	130	45	70	659	463	25
-450	450	86.4	240	0.5	1,199	660	130	45	70	710	514	25
-500	500	94	235	0.5	1,301	711	130	45	70	761	565	25
-600	600	112.8	235	0.5	1,504	812	130	45	70	862	667	25
-700	700	136.9	230	0.5	1,707	914	130	45	70	964	768	25
-800	800	134	195	0.5	1,910	1,015	130	45	70	1,065	870	25
-900	900	134	134	0.5	2,156	1,164	130	45	70	1,214	967	25
-1000	1,000	134	134	0.5	2,356	1,264	130	45	70	1,314	1,067	25
-1200	1,200	134	134	0.5	2,756	1,464	130	45	70	1,514	1,267	25
-1400	1,400	134	134	0.3	3,156	1,664	130	45	70	1,714	1,467	25
-1500	1,500	130	130	0.3	3,384	1,778	130	45	70	1,828	1,581	25



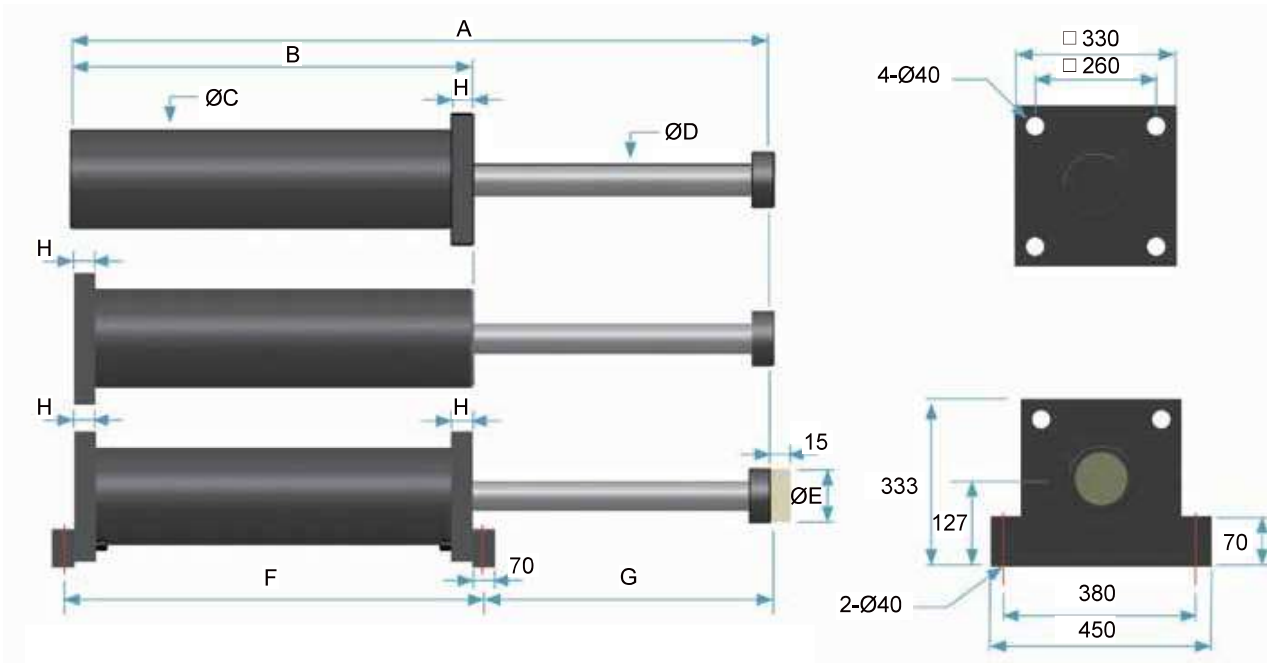
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DSC200-50	50	15.5	360	2	430	294	200	65	100	344	111	40
-100	100	31	360	1.5	532	345	200	65	100	395	162	40
-150	150	46.5	360	1.5	632	395	200	65	100	445	212	40
-200	200	62	360	0.5	735	447	200	65	100	497	263	40
-250	250	77.5	360	0.5	836	498	200	65	100	547	314	40
-300	300	93	360	0.5	1,032	642	200	65	100	692	365	40
-400	400	124	360	0.5	1,234	743	200	65	100	793	466	40
-500	500	155	360	0.5	1,438	845	200	65	100	895	568	40
-600	600	186	360	0.5	1,642	947	200	65	100	997	670	40
-700	700	217	360	0.5	1,844	1,048	200	65	100	1,098	771	40
-800	800	248	360	0.5	2,048	1,150	200	65	100	1,200	873	40
-900	900	279	360	0.5	2,252	1,252	200	65	100	1,302	975	40
-1000	1,000	250	300	0.5	2,454	1,353	200	65	100	1,403	1,076	40
-1200	1,200	212	212	0.5	2,854	1,553	200	65	100	1,603	1,276	40



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DSC215-100	100	46	552	1.5	591	375	215	80	125	435	186	40
-150	150	69	552	1.5	693	426	215	80	125	486	237	40
-200	200	92	552	0.5	795	477	215	80	125	537	288	40
-250	250	115	552	0.5	895	527	215	80	125	587	338	40
-300	300	138	552	0.5	997	578	215	80	125	638	389	40
-400	400	185	552	0.5	1,201	680	215	80	125	740	491	40
-500	500	231	552	0.5	1,504	882	215	80	125	942	592	40
-600	600	277	552	0.5	1,708	984	215	80	125	1,044	694	40
-700	700	325	552	0.5	1,910	1,085	215	80	125	1,145	795	40
-800	800	370	552	0.5	2,114	1,187	215	80	125	1,247	897	40
-1000	1,000	460	552	0.5	2,520	1,390	215	80	125	1,450	1,100	40
-1200	1,200	410	410	0.5	2,920	1,590	215	80	125	1,650	1,300	40



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					A	B	C	D	E	F	G	H
DSC275-100	100	75	900	1.5	637	391	275	100	160	461	211	50
-150	150	112	900	1.5	737	441	275	100	160	511	261	50
-200	200	150	900	0.5	839	492	275	100	160	562	312	50
-250	250	190	900	0.5	941	543	275	100	160	613	363	50
-300	300	220	900	0.5	1,043	594	275	100	160	664	414	50
-400	400	300	900	0.5	1,246	696	275	100	160	766	515	50
-500	500	380	900	0.5	1,450	798	275	100	160	868	617	50
-600	600	455	900	0.5	1,769	1,015	275	100	160	1,085	719	50
-750	750	568	900	0.5	2,073	1,167	275	100	160	1,237	871	50
-900	900	680	900	0.5	2,379	1,320	275	100	160	1,390	1,024	50
-1050	1,050	795	900	0.5	2,683	1,472	275	100	160	1,542	1,176	50
-1200	1,200	800	800	0.5	2,989	1,625	275	100	160	1,695	1,329	50