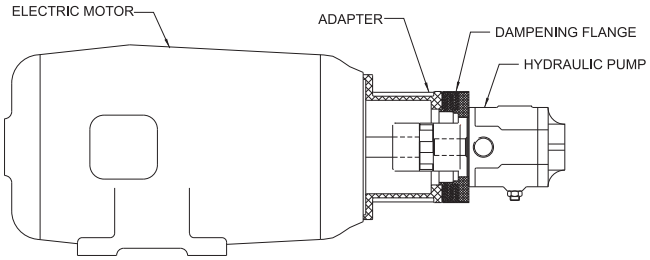
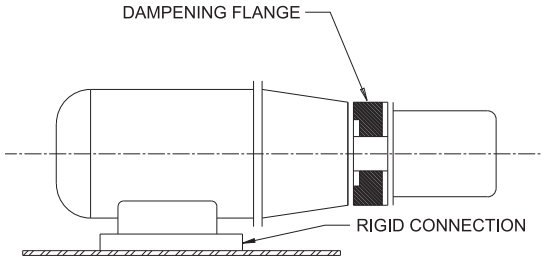
DAMPENING OF STRUCTURE BORNE NOISE



Due to substantial investigations and measurements in practical operation, the following approximate values can be presumed:

1. **Pump motor adapter with dampening flange: 3 to 6 dB(A)**
2. **Dampening bar VSM: 3 to 4 dB(A)**
3. **Pump motor adapter with dampening flange and dampening bar VSM: 6 to 8 dB(A)**

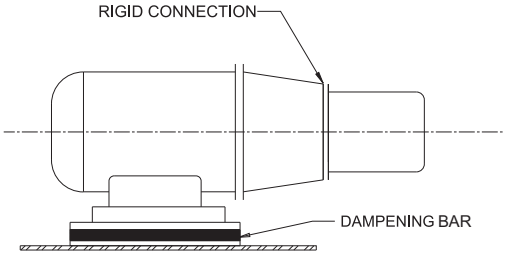
The maximum values can be achieved when it is possible to reduce the resonances in the power unit with the aid of a dampening element, these resonances might arise, because the main exiting frequency of the hydraulic pump corresponds to the natural frequency of machine parts with large surfaces.



DAMPENING FLANGE

The flexible dampening flange renders possible and efficient structure-borne noise separation directly at the hydraulic pump.

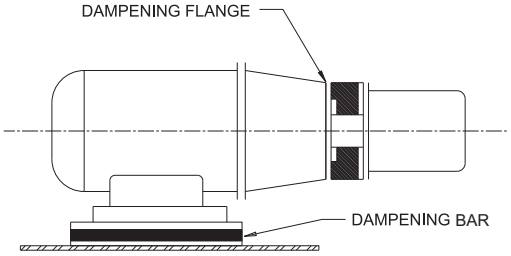
Average expected reduction of airborne noise
3 - 6 dB(A)



DAMPENING BAR

The flexible dampening bar prevents the transmission of structure-borne noise between pump/motor and aggregate.

Average expected reduction of airborne noise
3 - 4 dB(A)



DAMPENING FLANGE
and
DAMPENING BAR

Both dampening flanges and dampening bars render possible and optimum of structure-borne noise dampening of pump and motor.

Average expected reduction of airborne noise
3 - 4 dB(A)

Dimensions and specifications are subject to change without notice. Not all items are Made-To-Stock, contact us for availability.

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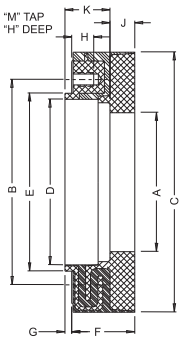
NOISE & VIBRATION DAMPENING DEVICES

ABOUT THE DAMPENING FLANGE

- Locked vulcanized design - not bolted together
- High weight loading possible (with multiple pumps)
- Excellent dampening properties
- Excellent resistance against ozone and oil
- Integral sealing lip - no additional sealing required
- Fully machined to most SAE 2 & 4 bolt and ISO 2 & 4 bolt mounting flanges
- Easily bolts to LDI Dampening Flange Adapter
- Can be mounted horizontally or vertically
- Furnished as complete assembly only



Dimensional Data

Dampening Flange	A Min	A Max	B	C	D	E	F	G	H	J	K	M	Max Clpg. O.D.
D150	USA4F17 32mm	SAE A 80mm	4.803 122mm	5.827 148mm	3.268 83mm	3.937 100mm	1.772 45mm	.236 6mm	.590 15mm	.629 16mm	1.377 35mm	M8	3.000
D190	SAE A 32mm	SAE B 112mm	5.906 150mm	7.480 190mm	4.567 116mm	5.119 130mm	1.772 45mm	.236 6mm	.590 15mm	.709 18mm	1.299 33mm	M10	4.375
D230	SAE B 100mm	SAE C 140mm	7.677 195mm	9.212 234mm	5.354 136mm	6.299 160mm	2.322 59mm	.236 6mm	.709 18mm	.906 23mm	1.653 42mm	M12	5.125
D260	SAE B 100mm	SAE D 160mm	8.268 210mm	10.394 264mm	6.142 156mm	7.087 180mm	2.322 59mm	.236 6mm	.787 20mm	.906 23mm	1.653 42mm	M16	6.000

NOTE: Special pump and metric flanges also available - Consult factory.

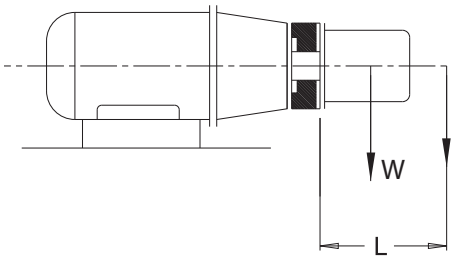
SELECTING A DAMPENING FLANGE

The first step in selecting a dampening flange is to insure that the torque required by your pump does not exceed the maximum rating of the dampening flange. The torque required by the pump is determined by the pump displacement and maximum operating pressure. This information is typically available from the pump Manufacturer's Website. Once this maximum torque is known, it cannot exceed the nominal torque rating of the dampening flange in the chart below. The maximum torque in the chart below is what the pump will require at start up but generally, this is not an issue. If in doubt, compare the motor torque at stall with the maximum torque in the chart. As long as the motor torque at stall is less than the maximum value in the chart, there should be no issues.

Dampening Flange Torque Ratings

Load Types	Dampening Flange D150	D190	D230	D260
Nominal Torque Rating (lb in)	638	4425	7080	9956
Maximum Torque Rating (lb in)	2213	13275	21240	29869

DAMPENING FLANGE FOR A HORIZONTAL INSTALLATION



To select the proper dampening flange for your application, you will need to know the weight of your pump and the distance from the mounting flange to the location of the pump weight (center of gravity). This information is available from the pump Manufacturer.

If the location of the center of gravity is not known, a reasonable approximation can be determined by assuming it is 2/3 the total length of the pump from the mounting flange.

The maximum pump weight for each of the dampening flanges is given in the chart at the top of the following page. Also in the chart is the maximum distance from the mounting flange that the maximum pump weight can be located at. As the distance to the center of gravity of the pump goes beyond the maximum distance in the chart, the allowable weight of the pump decreases. Note that even if the distance to the center of gravity of the pump is LESS than shown in the chart, the maximum weight of the pump cannot exceed that shown in the chart.

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DAMPENING FLANGE FOR A HORIZONTAL INSTALLATION (CONT'D)

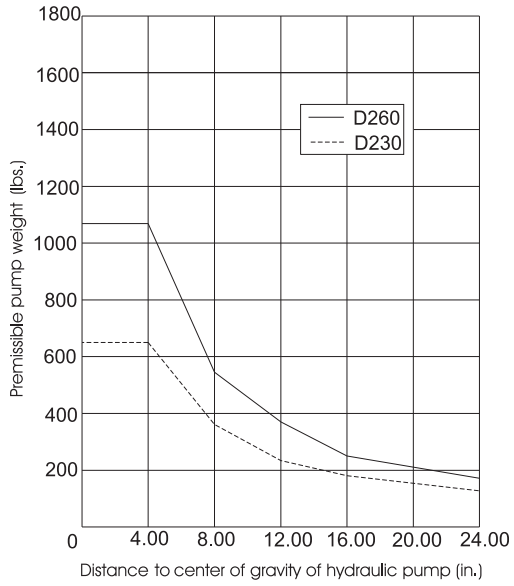
Also shown in the below chart is the maximum movement (weight multiplied by distance) that each of the dampening flanges is rated for. The chart at the top of the following page will quickly narrow down the choices of acceptable dampening flanges.

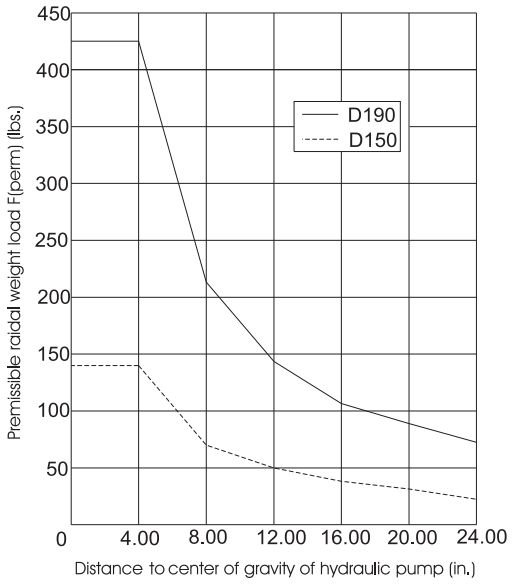
Maximum Pump Weight of Dampening Flanges for a Working Temperature of 140°F (60°C)				
	D150	D190	D230	D260
Distance to Pump Center of Gravity (in)	4.00	4.00	4.00	8.00
Pump Weight (lbs)	145	405	675	510
Maximum Moment (in-lbs)	580	1620	2700	4080

For other center distances L_X the permissible load may be calculated

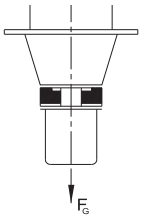
If you choose to calculate whether or not your pump is acceptable for the dampening flange you have selected, simply take the weight of the pump and multiply it by the distance from the mounting flange to the pump's center of gravity (a moment) and compare it to the maximum moment listed in the chart. If your calculated moment does not exceed the moment in the chart, you have selected an appropriate dampening flange.

An alternate method of confirming your selection would be to use the appropriate graph below once you've tentatively selected a dampening flange. To do so, simply locate the curve on the graphs for your flange selection. Next, on the vertical access, locate the weight of your pump and make a horizontal line. From where your horizontal line intersects the curve for your flange, drawn a vertical line all the way to the bottom axis which is the maximum distance from the dampening flange that pump weight can be applied. Compare the distance to the center of gravity of your pump to that value. As long as the distance to the center of gravity of your pump is LESS than the distance shown where your vertical line meets the horizontal axis, your pump selection is valid.





DAMPENING FLANGE FOR A VERTICAL INSTALLATION



If you are specifying a vertical system, you will need to know only the weight of your pump. You then compare it to the maximum allowable weight in the chart below.

Dampening Flange for Vertical Installation Information				
	Dampening Flange			
	D150	D190	D230	D260
Maximum Pump Weight (lb)	225	238	540	861

You are now ready to order your dampening flange from LDI Industries.