

# Wanner Engineering Dampening Washers: Their Purpose and When They Are Required

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Dampening washers are used in most synchronous designed Hydra-Cell Pro Pumps; the 20, 03, 04, 10, 25, 35 and 66 models.

This brief article explains the purpose of the dampening washer and provides a chart confirming each model where a dampening washer is required.

## Valve Plate

The valve plate is the part of the pump in which the check valves are installed and the check valves are required to enforce the flow path from inlet-to-outlet of the pump. The check valve assemblies are installed into the "valve pockets", cylindrically shaped channels, two per pumping chamber.

## Location

The dampening washers are located at the underside of the check valve seats.

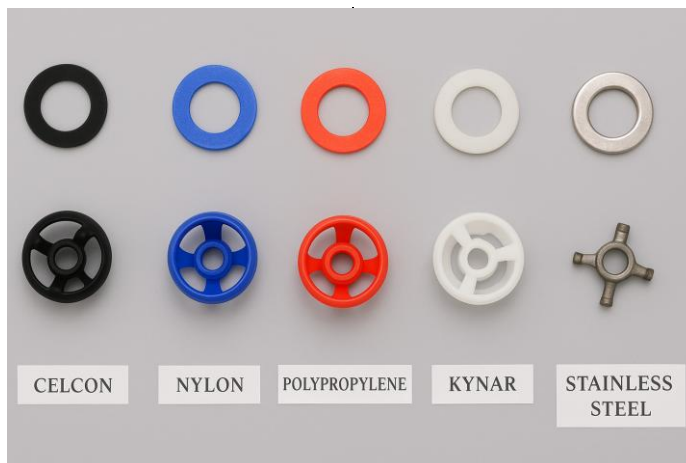
## Material

The material of the dampening washer usually matches the check valve spring retainer from a material compatibility perspective. Although non-alloy dampening washers are interchangeable, stainless steel dampening washers are used exclusively with stainless steel check valve spring retainers.

## Purpose

Dampening washers ensure proper check valve spring tension and the reason why some pump models require them and others do not is due to the valve plate thickness compared to the corresponding height of the check valve assembly (retainer + spring + tetra seal + valve disc + valve seat).

Some non-alloy valve plates are thicker than their alloy



versions and thus dampening washers are used to account for the difference in thickness to maintain the same compression of the check valve spring.

## Pump Models Which Require Dampening Washers

F/G 20 pumps require dampening washers for the outlet check valve and for all non-alloy inlet check valve spring retainers.

D/M/G 03 pumps require dampening washers.

D/G 04 pumps do not need dampening washers. The current 04 check valve seats are thicker, negating the need for dampening washers which the older 04 pumps required and thus you can retrofit those older pumps without needing to re-use the old dampening washers.

D/G 10 pumps require dampening washers for non-alloy valve plates.

D/G 12, 15 & 17 pumps are only supplied with alloy valve plates and do not require dampening washers.

D/G 25 pumps only require dampening washers for non-alloy valve plates; older models did use dampening washers for cast iron and stainless-steel valve plates and if you have an older model which uses them, then you would continue to use dampening washers.

D/G 35 and 66 pumps require dampening washers.

## Related Articles:

- [Description of wetted components in Hydra-Cell Pumps](#)
- [Check valve wear insights](#)

PUMP MODEL	REQUIRES DAMPENING WASHERS			COMMENTS
	Y = Yes	N = No	M = Maybe	
F/G 20		M		Not required for the inlet side when the spring retainer is an alloy material
D/M/G 03		Y		
D/G 04		N		No longer required for the older pumps that used them
D/G 10		M		Required for non-alloy valve plates
D/G 12, 15 & 17		N		
D/G 25		M		Required for non-alloy valve plates and for older pump designs which have a thicker valve plate
D/G 35		Y		
D/G 66		Y		