

SENSITIVE **LIFTING AND LOWERING**

VALVE TYPES

Function	Designation	Data sheet
Proportional throttle valve	DNPPM33	2.6-551
Flow control valve	QNPPM33	2.6-651
All-in-one proportional valve	QSPPU10	TFS
	QSPPM33	2.6-661

FIELD OF APPLICATION

A core task of hydraulics is the lifting and lowering of loads, especially in forklift trucks, but also with lifting platforms, cranes, elevators, winches, etc. For small and medium-sized industrial trucks, such as forklift trucks, lowering is usually controlled via proportional valves in the bypass. For reasons of productivity, the lifting and lowering speed of the fork should be as high as possible without exceeding a maximum safety speed. This is limited by means of load-independent flow controllers. However, a high fork speed requires the appropriate technology for smooth lifting and lowering of the load. Various valves and hydraulic concepts can be used for this purpose. The best choice are the all-in-one proportional 2-way flow control cartridges with pressure compensator and a seat function in the normally closed switching position developed for this purpose.



Proportional throttle valve DNPPM33



Flow control valve QNPPM33



The smaller all-in-one proportional valve QSPPU10



The larger all-in-one proportional valve QSPPM33



HYDRAULIC CONCEPT / DIAGRAM

The all-in-one solution is one of the best ways to control forklift trucks sensitively and load-compensated. The characteristics of this solution are:

- seattight in deenergised state, keeps the fork in stable position
- The oil quantity is sensitively regulated in proportion to the control current
- Due to its construction, the valve keeps the lowering speed constant, independent of the load.

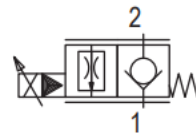
For smaller all-in-one solutions QSPPU10 valves (UNF10 up to 35 l/min) are used, for larger hydraulic systems M33 valves (over 100 l/min) are used.

Because the all-in-one solution combines multiple functions in one valve, the hydraulic diagram is considerably simplified by eliminating load holding and speed limiting valves. This leads to lower costs and a compact system where the bouncing effect can be excluded.

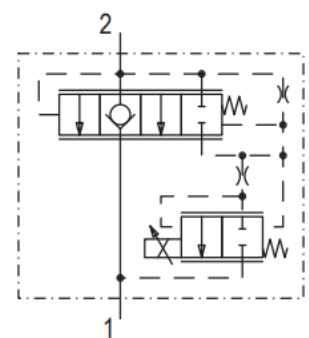
The all-in-one solution is a proven and long-term tested valve type that can be adapted easily to the conditions of a mechanical system. Various amplifier and controller electronics cards from Wandfluh are available for this purpose.

CIRCUIT SYMBOL

simplified



detailed



DIAGRAM

