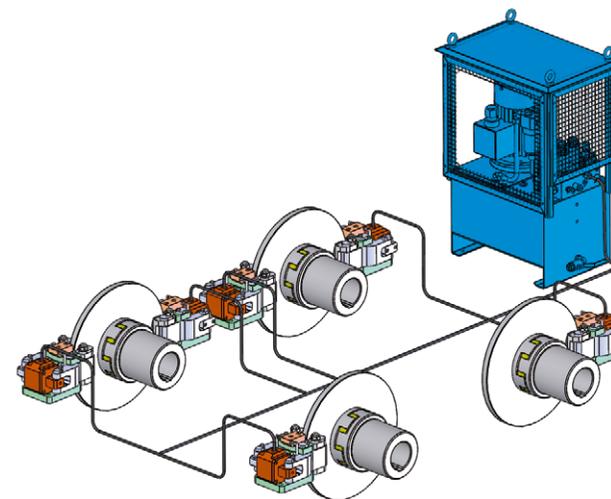


ZHT-1 DISC BRAKE SYSTEM

The ZHT-1 disc brake system consists of a hydraulic aggregate and several ZH-1 brake calipers connected to it. It is mainly used in belt conveyor drive systems. The springs mounted in the calipers cause the calipers to clamp on the brake disc and the supply of pressurised oil from the aggregate causes the calipers to spread apart and allow the brake disc to rotate freely. The use of a single hydraulic aggregate supplying several calipers enables their braking process to be controlled simultaneously. Depending on the version of the aggregate, single-stage fast or smooth braking or 2-stage braking with the possibility of setting the threshold between stages and the possibility of setting (by supplying voltage to the relevant solenoid valve) the starting moment of the 2nd braking stage is possible. The calipers may be equipped with a brake release sensor and a lining wear sensor to indicate when the caliper needs to be adjusted or when the minimum thickness of the friction lining is reached, to indicate when it needs to be replaced. The aggregate can also be equipped with a threshold pressure sensor indicating that the pressure value set on the sensor has been reached or exceeded (which can also be used indirectly as information about the release of the calipers).



ZHT-1 Disc brake system

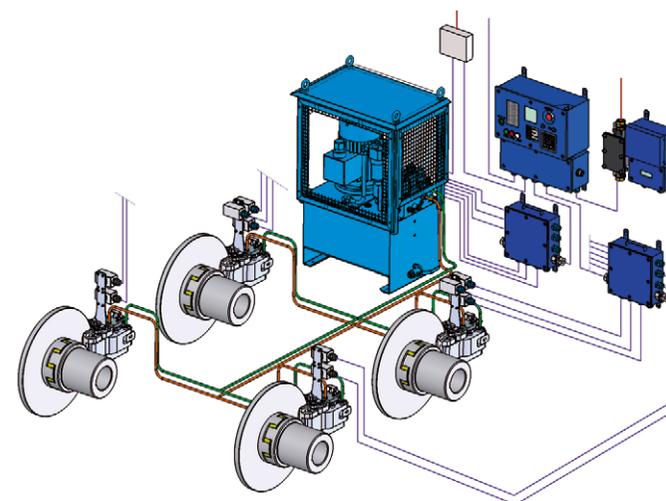
ZHT-3 DISC BRAKE SYSTEM

The ZHT-3 disc brake system consists of a hydraulic aggregate, several ZH-3 brake calipers connected to it and the ATHamulec control system.

This set is designed for braking a conveyor in a specified time (set by the operator in the control system), irrespective of its loading.

The correct operation of the ZHT-3 set is controlled by the ATHamulec control system cooperating with the belt conveyor automation system and it enables the implementation of the braking and brake release process and checks whether the system functions correctly.

The control system reads the current speed of the brake disc from a speed sensor placed on one of the calipers at the moment when braking commences (it is also possible to use the reading of the linear speed of the conveyor belt) and on the basis of the set braking time decides on the appropriate braking stage and controls the operation of the hydraulic distributors, and consequently the value of oil pressure in the calipers, in such a way that the actual braking time equals the set one.



ZHT-3 Disc brake system