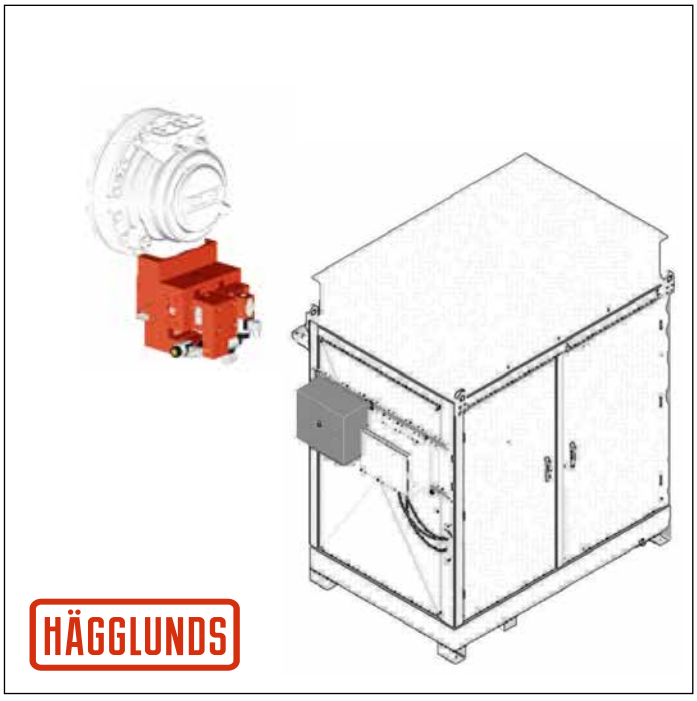
RE 15365/07.2020
Replaces: 05.2019

rexroth
A Bosch Company

Quick Stop Unit
Hägglunds VQCC 800 & Hägglunds QECC



Valid for:

- Valid for Hägglunds motors CA, CB, CBp, CBm
- Maximum flow 800 l/min (211 gpm)

Features

- Very short stop time of the hydraulic drives
- Special application for roll mill application
- Ideal from safety point of view
- Performance level PL d, category 3
- Consists of valve Hägglunds VQCC 800 and control box Hägglunds QECC

Contents

1 Ordering information

To order included parts in quick stop unit (Quick stop valve VQCC 800 and Quick stop electronic control QECC), see respectively data sheets for complete order codes. RE 15370 and RE 15374

2 General information

From a safety point of view regarding quick stop , Hägglunds quick stop functionality consisting of Hägglunds hydraulic motor, quick stop valve VQCC 800 and electrical control unit QECC is an ideal combination.

Due to :

- Low inertia of the hydraulic motor, low weight of rotating parts in motor gives a quick stop
- Easy and simple way of braking due to hydraulic valve blocking oil flow from motor, no need of a mechanical brake
- Direct controlled redundant hydraulic valve by using power supply from redundant electronical control box

Spider not involved in primary braking stage

- Stopping time <150 ms is achievable
- The components are designed according to following safety regulations for rubber and plastic machines

Performance level D and category 3 according to the European standard EN ISO 13849-1:2015 to fulfill EN 1417:2014
- Plastics and rubber machines – Two-roll mills – Safety requirements.

The standard Code of Federal regulations (USA)
Occupational safety and health administraion
29 CFR chapter XVII (July 1. 2011-edition)
§1910.216 that cover mills and calendars in the rubber and plastic industry.

Reliability characteristics MTTFd according to EN ISO 13849
MTTFd = 64 years (VQCC 800 + QECC)

Note!
Hägglunds Quick stop unit does not alone fulfill the requirements for category 3 according to DIN EN 1417.

3 Functional description

The quick stop valve is direct controlled regarding power supply from the QECC control due to safety reasons :

- As quick action as possible
- Redundant functionality

The de-activation signal for the solenoid valves do not have to go through the Spider control system!
The hydraulic quick stop valve is blocking oil flow coming out from the hydraulic motor.
When the quick stop actuator is tripped, the solenoid valves are de–energized and quick stop block is activated. At the same time a signal is sent to Spider which instantly stops the drive and cuts the output current to the pump controls.

1. Quick stop valves to close hydraulic ports on motor and bypass hydraulic pump flow to give a quick stop. Valve coils must be powered (+24VDC) for hydraulic motor to run. The stop cartridge valves include inductive sensors to detect ”closed” position when the solenoid valves are de-energized. The sensors are a part of the reset function of the quick stop control box (QECC).

2. Safety relay and extension module with tested and certified functions. Controls the power to activate Quick stop valve coils.
3. Safety relay, with tested and certified functions, for inductive sensors of the stop cartridge valves. Included in the reset circuit.
4. 2-channel actuator input for machine quick stop. Normally closed circuits to open for stop.
Reset to acknowledge the stop.
5. Relay to activate the solenoids valves of the Quick stop valves at drive start. Activated by control system.
6. Supply to give power (+24VDC) to the Quick stop valve coils via safety relay.
7. Spider control system for control and monitoring of hydraulic drive unit. Contains logic sequence for quick stop, electric motor starter interlock and control of drive start interlock relay.
8. Electric motor starter for hydraulic Drive unit.
9. Hydraulic Drive unit to give hydraulic flow to hydraulic motors.
10. Hydraulic motors for rotation of machine shafts.

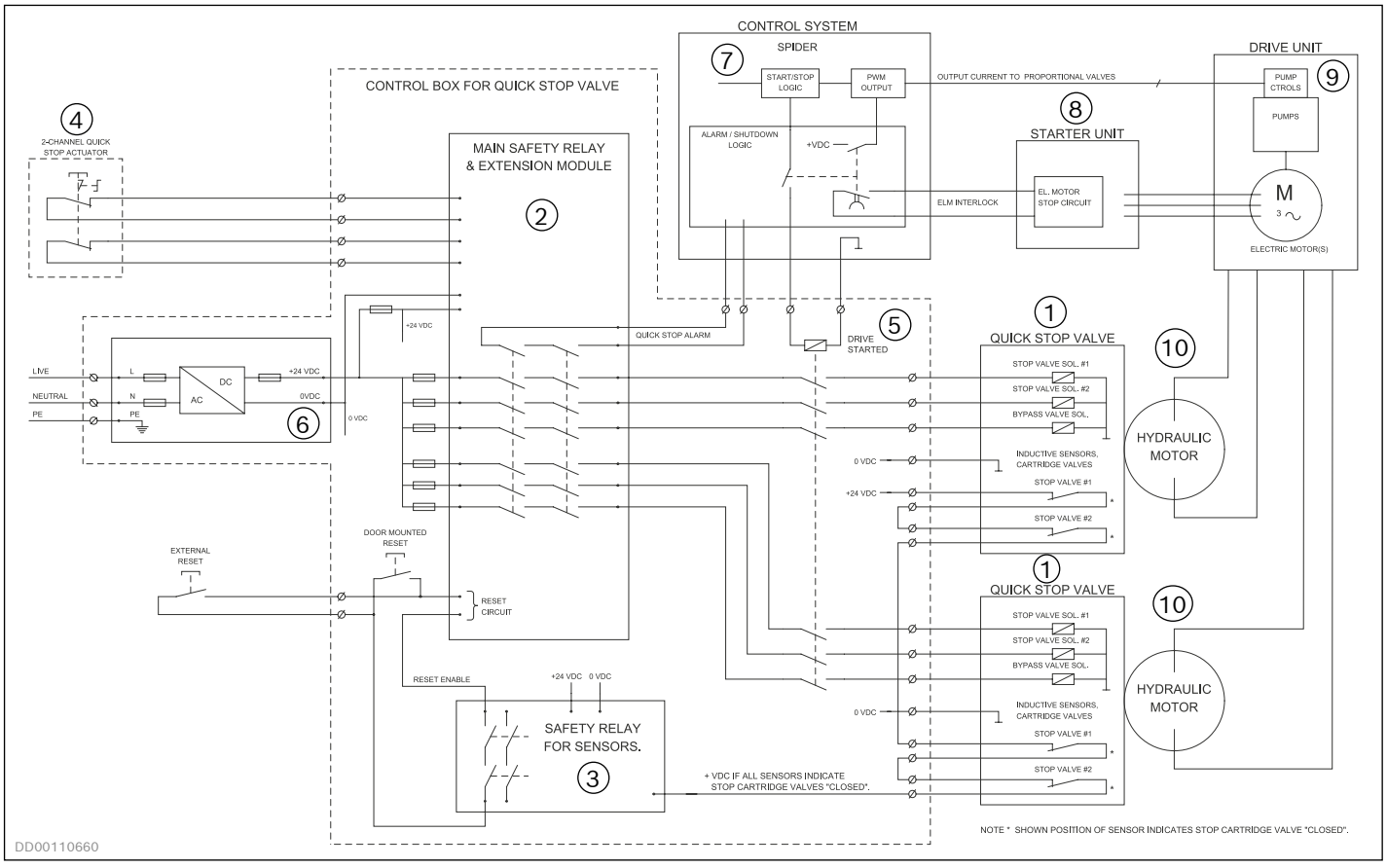


Fig. 1: Block diagram, quick stop unit

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