

GLÖTZL Baumeßtechnik

SURVEYING POINTS HYDRAULIC PACKER SYSTEM

Type: HKM . . .
Art. No.: 90.60

Special Convergence Bolts HKM with Hydraulic Metal Packer Anchor ND 38

The special convergence bolts with hydraulic metal packer anchor are particularly constructed for an application in tunnels, in mining as well as for projects where standing out convergence bolts are disturbing. They are also planned for the case where anchoring points - caused by surface changes - must be placed in a definite depth of the project.

A special application range is the mining as particularly in sole as well as in butt joint ranges standing out convergence bolts are disturbing the operation works.

A further problem are the subsequent profiling works, where conventional convergence bolts have to be removed and new measuring points have to be established after the works.

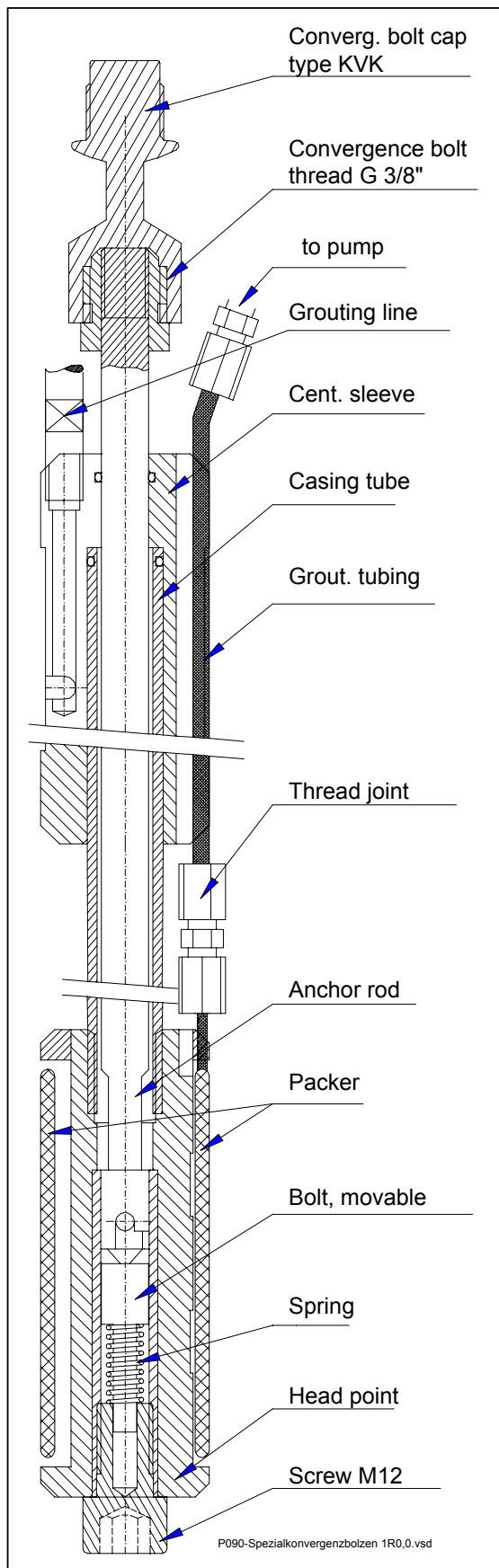
With the hydraulic metal packer convergence bolts the anchoring is done in the required depth of the borehole. The convergence bolt itself can be removed by a byjonet lock mechanism whereby it can be took off after each measurement, if necessary.

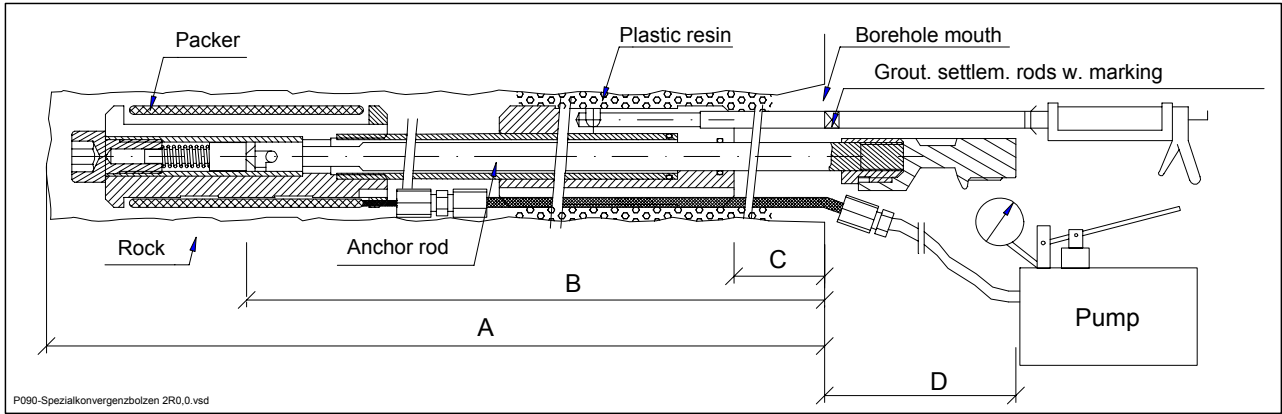
A further advantage is that in a convergence measuring cross section - after settlement of the measuring equipment - the anchor rod can be removed and thus only a small quantity of anchor rods is required for the measurement application.

Subsequent profiling works can be carried out without problems, as e.g. for milling of the joint supporting element and casing tube are manufactured of PVC and also can partly be milled without difficulties. Normally, the position of the supporting sleeve is scheduled in a corresponding depth for such measures.

Technical Data

Borehole diameter:	38 ±2 mm
Material head point/anchor:	1.4571/1.4305 (stainless steel)
Material casing tube:	PVC tube
Casing tube diameter:	Ø _A 16 mm, Ø _i 12 mm
Material centering sleeve:	PVC
Packer material:	Copper (Cu)
Packer length:	≈ 80 mm
Total length packer element:	100 mm
Total length centering sleeve:	100 mm
Convergence bolt connection thread:	G 3/8"





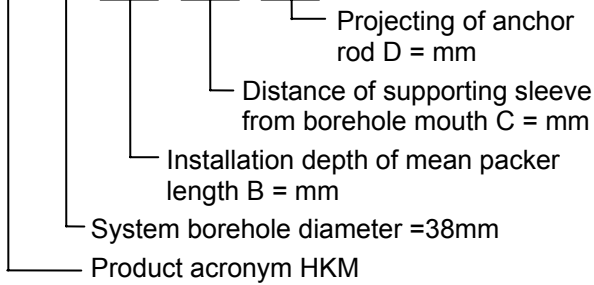
(A) Borehole depth A = measure B + 70 mm
 (B) Installation depth of mean packer length

(C) Distance of supporting sleeve from borehole mouth
 (D) Projecting of anchor rod at joint

90.60 Surveying points hydr. packer system type HKM 38/B.../C.../D... (mm)

Example for ordering:

90.60.38 / BBB / CCC / DDD



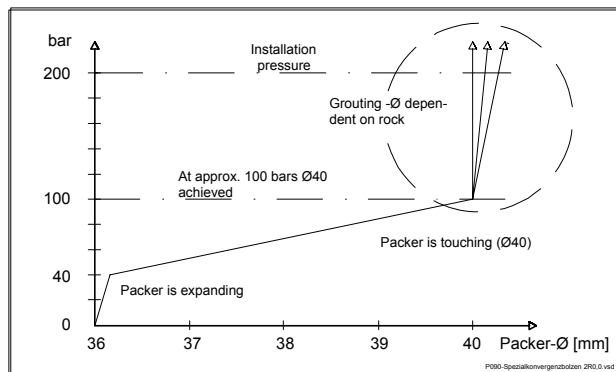
General

The hydraulic convergence bolts with packer **ND 38** are delivered completely assembled. Before placing into the borehole, the packer must be pushed together with casing tube and the centering sleeve. To ensure a cohesion, the injection tubing must be secured with adhesive tape to the centering sleeve. By means of a grouting line with marking plugged at the centering sleeve, the packer can completely be placed in the assigned depth. In principle, the unit inclusive anchor rod has to be placed into the borehole till grouting of the packer. By the test pressure of 300 bars, the copper packer is pressed to the surface of the head point and is adjusting to it.

Accessories

- 90.01.20.10** Convergence meas. bolt cap for attachment to the connection thread with ball bearing slewing ring, thread G 3/8" with measuring connection
- 90.01.20.15** Attachment ball with inner thread G 3/8" for suspension of a levelling batten with suspension fork, ball Ø 30 mm
- 90.30.60.01** Hand pump **SPH** with water container (15 l) for grouting (up to 300 bars) of anchor systems with necessary connections

Diagram for packer grouting



Installation and Removal of Anchor Rod

After grouting of the hydraulic anchor, the anchor rod can be removed, if required. Removal of the anchor rod is done in such a way that the rod is first pressed against the spring and then the rod is turned to the left till connection. Now the anchor rod can be pulled out from the packer. In order to arrest the anchor rod in the packer, it has to be turned till the locking peg can be inserted into its guidance. Now the anchor rod is first pressed against the spring load till connection and then turned by 90° in clockwise direction. The spring is relieved and the anchor rod is now locked in the locking piece.

In case of larger borehole tolerances, we recommend to grout the supporting sleeve with plastic resin over the grouting-settlement rods to achieve a better contact to the rock.