
STUDYING THE INFLUENCE OF FATIGUE CYCLE ON THE DYNAMIC PERFORMANCE OF SELF-ADJUSTING SWING CLAMP CYLINDERS

DUTY CYCLE

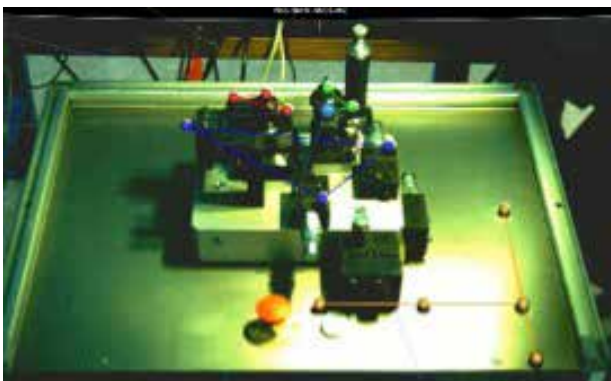
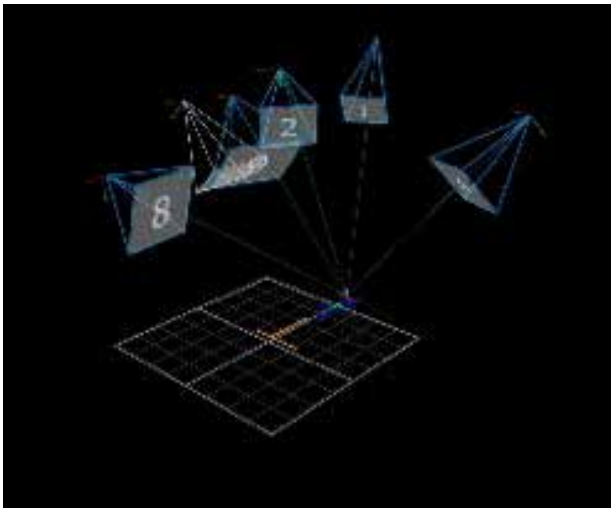
From rest - to rest position	= 8 s
Supply pressure	= 150 bar
Maximum flow rate	= 3 l/1'
Daily load	≈ 9 hours / day
N. of cycles	≈ 4050 c / day ≈ 20250 c / week

100,000-cycle test (2016) - what was tested?

- CE10 - Hydraulic power unit, 3 l/min - 250 bar
- SRA20.OFD - Self-adjusting swing clamp cylinder PATENTED
- SR16FD - Swing clamp cylinder with COMPENSATION SYSTEM
- IRFP16.0 - Work support, single-acting
- VSQM30R Sequence valve (three different sizes)
- VRP3-11M - Pressure reducing valve
- RPS - Hydraulically pilot-operated check valve



MARKERS POSITION & ALIGNMENT



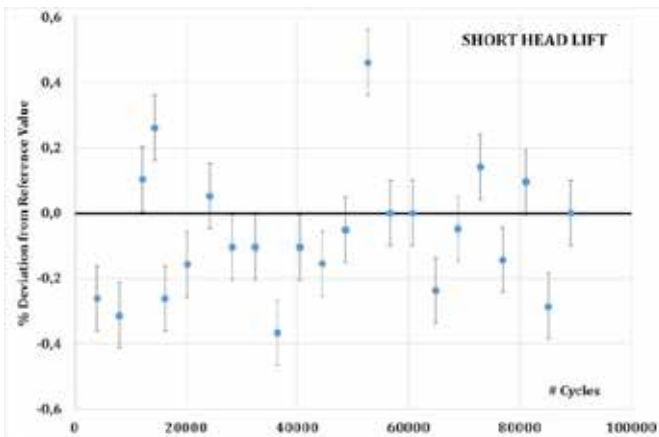
EXPERIMENTAL SET-UP

Mo-Cap System

5 VICON bonita 720c cameras	max 250 Hz, max 3 m distance
1 VIDEO camera	max 100 Hz
Fast-Ethernet Connection & VICON Nexus	
Marker type & dimension	spherical, $\Phi \approx 15$ mm
Accuracy	$\approx 0.5\%$ on measured data



LIFT VARIATION WITH TIME



ROTATION VARIATION WITH TIME

