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Commission hydraulic props: pressure setup, alarms, relief

Commission hydraulic props with an interactive checklist: calibrate pressure, set alarms, verify relief. Commentable and export as PDF/Excel. Easily auditable.

Project:	
Date:	
Filled by:	

Pre-Start Safety and Identification	
1	Confirm permits, lockout/tagout, and current P&ID;/schematic are available at the work front; verify isolation points.
2	Verify prop IDs, HPU nameplate, and hose tags match drawings; rated working pressure ≥ specified operating pressure; attach photos of plates/tags.
3	Inspect hoses, fittings, and quick-couplers for cuts, bulges, corrosion, or damaged threads; acceptance: no defects; record batch/lot numbers and photos.
4	Confirm hydraulic fluid type and cleanliness; use portable particle counter; acceptance: within project cleanliness target; attach counter screenshot.

Instrumentation and Calibration	
5	Confirm analogue gauges and digital transducers have valid calibration certificates (≤ 12 months); record serial numbers and attach certificates.
6	Calibrate pressure transducers with a deadweight tester; acceptance: ±0.5% of full scale; record as-found and as-left curves.
7	Zero gauges/transducers at vented condition; acceptance: reading within ±5 kPa of zero; attach photo of zeroed display.
8	Synchronise data logger/controller time to site standard; acceptance: within ±1 min; attach time-sync screenshot.

Pressure Setup and Ramp-Up	
9	Set provisional relief above operating setpoint by +10% (per project); record operating setpoint and provisional relief in MPa.
10	Bleed air at high points using bleed valves until bubble-free stream observed; acceptance: no foam; attach photo of clear fluid.
11	Ramp pressure in 10% increments to operating pressure; hold 2 min at each step; acceptance: stability within ±2% of step value; record readings.
12	Inspect for leakage during holds; acceptance: no visible weeping or drips (0 mL/min); attach close-up photos of joints.
13	Monitor oil temperature; acceptance: 20–40 °C during testing or per project; record temperature versus pressure.

Alarm Configuration and Testing	
14	Program high-pressure alarm (e.g., 95% of relief setpoint); acceptance: trip within ±2% of setpoint; attach alarm log screenshot.
15	Program low-pressure alarm per project operating band; acceptance: trip within ±2% of setpoint; record setpoint in MPa.
16	Simulate sensor fault by disconnecting signal; acceptance: fault alarm within ≤ 2 s; attach video or photo evidence.
17	Verify audible/visual beacons and remote notification (SMS/SCADA) activate; attach beacon photo and notification screenshot.
18	Test emergency stop: pump stops and vent path opens; acceptance: pressure decays to ≤ 20 kPa within 60 s; attach decay trend.

Relief Verification and Recovery	
19	Measure relief valve crack/set pressure via test port using calibrated hand pump and gauge; acceptance: within ±3% of specified setpoint; upload test curve.
20	Confirm full-flow return path to tank is unobstructed; acceptance: steady discharge, no chatter; attach hose routing photos.
21	Simulate controlled overpressure to open relief under supervision; acceptance: peak limited at setpoint, no component distress; record peak MPa and duration.
22	Operate manual bleed/vent valves; acceptance: residual pressure ≤ 20 kPa; tag valves; attach photos of tags and gauge.

Recordkeeping and Handover	
23	Time-stamp all readings with operator ID and location; acceptance: no blanks; export raw data file and attach.
24	Attach calibration certificates, alarm screenshots, photos/videos to checklist; acceptance: files linked to corresponding steps.
25	Record as-left operating and relief setpoints; secure controls (password/seal); note seal numbers; attach photo evidence.
26	Brief operators on relief procedure and alarms; collect digital signatures; acceptance: signed attendance and competency acknowledgment.
27	Apply QR code label linking exported record to the prop/HPU; attach photo of installed label.

Comments:

Filled by:

Signature:

Introduction	How to use this checklist
Commission hydraulic props demands precise pressure calibration, alarm setpoint validation, and reliable relief verification for safe startup. This hydraulic prop commissioning checklist focuses on HPU setup, instrumentation calibration, controlled ramp-up, and relief procedure testing, avoiding any structural design decisions. By standardising pre-commissioning tasks, you reduce startup shocks, prevent over-pressurisation, and capture proof that the system can hold and relieve pressure as intended. The scope includes gauge and transducer calibration, accumulator and fluid checks, alarm configuration, pressure ramp methods, and documented relief procedures per approved project specifications and authority requirements. It excludes prop sizing, structural capacity checks, supplier selection, and civil interface design. Expected outcomes are a stable operating pressure window, functional alarms, verified pressure relief and isolation, and a complete, auditable record. Use this interactive, commentable checklist on site: tick steps, attach photos, log readings, and export your record to PDF/Excel with a project QR code for quick verification.	1. Preparation: assemble calibrated gauges, deadweight tester, portable particle counter, test manifold, hand pump, infrared thermometer, PPE (gloves, eye protection), current P&ID;, and project specifications. Verify isolation/LOTO and establish a safe test area with spill containment. 2. Start interactive mode: create a new session, confirm project/asset IDs, and synchronise device time. Tick steps as completed, enter pressure/temperature readings in SI units, and add comments to capture context or deviations. 3. Capture evidence: attach photos of gauges, tags, and relief test setups; upload calibration certificates and alarm screenshots. Use the app to time-stamp readings and link files to their specific steps. 4. Export and share: generate an export as PDF/Excel, include signatures and embedded media links. Share with stakeholders and upload to the project document control system. 5. Sign-off and archive: collect digital signatures from the commissioner and client representative, lock as-left setpoints, apply QR authentication, and archive the checklist with the asset’s QR code label for future retrieval.