Innovative Solventless Solutions

USER MANUAL

KWÄD V5

Automatic E-Hydraulic Rosin Press Machine

ACCESS ROSIN® · KWÄD™ · Flow Control Technology™

Logo TM Reg. No. 7,051,799 · Name TM Reg. No. 6,203,574

U.S. Patent Nos. 11,040,510 and 11,511,465 · EU Patent No. 3938197 (App. 20719248.5, 12 March 2020)

Rosin Bag V3.6 / V3.7 — U.S. Patent Pending, App. No. 63/875,878

Powered by Flow Control Technology™ (F.C.T.) V5.4.2

This manual is intended as a complete reference for operators, supervisors, and maintenance personnel of the KWÄD V5. It complements — and does not replace — the controlling Standard Operating Procedure (AR-SOP-KWAD-001) and the manufacturer's safety documentation. Read this manual in full before operating the equipment.

Document Information

Document	KWÄD V5 — User Manual
Document Number	AR-MAN-KWAD-001
Revision	2.2
Effective Date	April 30, 2026
Equipment Model	KWÄD V5 — Automatic E-Hydraulic Rosin Press Machine
U.S. Patents (Press)	Patent 1: No. 11,040,510 | Patent 2: No. 11,511,465
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U.S. Patent Pending (Bag)	Application No. 63/875,878 — Rosin Bag V3.6 / V3.7
Trademarks	Logo Reg. No. 7,051,799 | Name Reg. No. 6,203,574
Control Software	Flow Control Technology™ (F.C.T.) V5.4.2
Frame Lineage	V2 (legacy) → V3 (X-support) → V5 (current production)
Cart Assembly	Heavy-Duty Scissor Lift Table, PN WB988933
Manufacturer	Access Rosin, Inc.
Supersedes	AR-MAN-KWAD-001 Rev 1.x; legacy User Manual for The Rosin Machine V3.x

Contents

1. Introduction

1.1 About Access Rosin and the KWÄD V5

The KWÄD V5 is a closed-loop, programmable solventless extraction system designed by Access Rosin, Inc. The press combines a 100-ton hydraulic cylinder, a dual-zone heated plate assembly, a Kinco K506EA-30AT programmable logic controller (PLC), and the Flow Control Technology™ (F.C.T.) application — currently version 5.4.2 — for recipe execution, monitoring, and calibration. The KWÄD V5 press is protected by U.S. Patent Nos. 11,040,510 and 11,511,465, and EU Patent No. 3938197 (European Patent Application No. 20719248.5, filed 12 March 2020). The Rosin Extraction Bag V3.6 / V3.7 is the subject of a separate, independent U.S. Patent Pending application (Application No. 63/875,878). ACCESS ROSIN® (Logo Reg. No. 7,051,799; Name Reg. No. 6,203,574), KWÄD™, and Flow Control Technology™ are trademarks of Access Rosin, Inc.

1.2 Lineage & Compatibility

The KWÄD V5 follows two earlier production frames — V2 and V3 — that remain in service in the field. All three frames run F.C.T. software and share the recipe-and-stage operating model, the calibration architecture, and the safety interlock logic described in this manual. The frame differences are summarized in §4.2 and matter primarily for cleaning and maintenance access.

1.3 Intended Use

The equipment is intended for industrial solventless extraction by trained personnel in licensed processing facilities. It is not consumer equipment. It must not be modified, used outside its rated specifications, or operated without functioning safety interlocks.

1.4 How to Use This Manual

- Operators should read Sections 1, 2, 5, 6, 7, 8, and 9 in full before independent use.
- Supervisors and maintenance personnel should additionally read Sections 10, 11, and 12.
- Calibration personnel should focus on Sections 5.3 through 5.6 and Section 10.
- Engineering should retain a copy of Section 4 (System Architecture) and Section 13 (Specifications) for reference.

2. Safety

2.1 Safety Symbols Used in this Manual

Symbol	Meaning
DANGER	An imminent hazard that will cause serious injury or death if not avoided.
WARNING	A hazard that could cause serious injury or death if not avoided.
CAUTION	A hazard that could cause minor injury or equipment damage if not avoided.

Symbol	Meaning
NOTE	Additional information important to correct operation.

2.2 Principal Hazards

DANGER — HOT SURFACES

Plates routinely exceed 220 °F (104 °C). Wear heat-resistant gloves at all times near the plate zone. Plates remain hot after the heaters are de-energized.

DANGER — PINCH POINT

The 100-ton cylinder will amputate. Never place fingers, hands, or any tool you are gripping into the pressing zone while the equipment is energized. Use loading tools, not fingers, to position pouches.

WARNING — HIGH-PRESSURE HYDRAULICS

The hydraulic system operates at pressures exceeding 7,500 PSI at the cylinder. A pinhole leak can inject oil under the skin causing a surgical emergency. Never inspect a pressurized line by hand or with a finger; never use a rag against a leak.

WARNING — IPA FLAMMABILITY

≥ 99 % isopropyl alcohol is the approved cleaning agent. IPA is flammable. Apply only to a cloth, never to a hot plate. Allow surfaces to dry fully before re-energizing the heaters. Store IPA in approved containers away from the press.

2.3 Required PPE

- Heat-resistant gloves rated to ≥ 250 °F (121 °C).
- Safety glasses for all personnel within 3 ft (1 m) of the press.
- Closed-toe, slip-resistant footwear.
- Long-sleeve cotton or FR garment; remove jewelry, lanyards, and loose accessories.

2.4 Safety Interlocks

- Two-Hand Cycle Activation — the cycle engages only when the on-screen finger button is held simultaneously with the toggle switch held UP. The toggle DOWN position will not engage the cycle.
- Emergency Stop (GCX1136) — a palm-button E-Stop removes drive power from the hydraulic pump and de-energizes solenoid valves. Test daily.
- Heater Indicator — F.C.T. displays a heater-on indicator on the HOME page; verify before each cycle.
- Pressure Limit — the F.C.T. MAX P.S.I parameter (default 7,500) bounds commanded pressure.

- EDIT Lock — the EDIT button on the Program Summary page indicates recipe lock state. RED = unlocked (no advance permitted); GREEN = locked (cycle may proceed).

3. Receiving, Unboxing & Installation

3.1 At Receipt

- Confirm the packing slip matches the inventory inside the crate.
- Inspect for shipping damage. Photograph and report damage to the carrier and to Access Rosin within 24 hours.
- The integrated cart weighs approximately 900 lb (408 kg).

3.2 Unboxing

1. Disassemble the shipping crate with care to expose the cart.
2. Deactivate the cart's brakes using the red foot pedal at the lower right of the handle.
3. Use a ramp to roll the cart out of the crate. Do not lift or jack the cart while it is being moved — lifting in motion makes it top-heavy and can cause it to tip.
4. Roll the cart to its final workstation.
5. Once positioned, jack the cart 1–2 pumps off the floor with the foot pedal to dampen vibration; then jack to working height.

3.3 Installation Requirements

- Floor area allowing a minimum 3 ft (1 m) clear zone on all sides.
- Cart deck footprint: 20 in × 40 in (51 cm × 102 cm); cart vertical lift range: 15 – 39.3 in.
- Two dedicated 110–120 V circuits, each on its own 20 A breaker — one for the press, one for the BVA hydraulic pump (220–240 V where applicable).
- Properly grounded receptacles.
- Adequate ventilation; ambient temperature 60–85 °F (15–30 °C) recommended.

3.4 Hydraulic Fluid

1. Locate the orange fill cap on the BVA electronic hydraulic pump.
2. Open and add 1 gallon of BVA hydraulic fluid (or as specified on the reservoir label).
3. Check fluid level before every shift; top up before low-level alarm.

3.5 First Power-Up

1. Confirm the main power switch is in the OFF position.
2. Plug the press into its dedicated 110–120 V outlet.
3. Plug the BVA electronic pump into its separate dedicated outlet.
4. Switch the main power ON. F.C.T. will load and display the HOME page. Confirm version V5.4.2 is shown on the Settings / About screen.

5. Confirm temperature, pressure, and indicator readings appear normal before initiating any cycle.

CAUTION — PRE-PRESS USE

The pneumatic / hydraulic pre-press is not a programmed device — it must be monitored by hand while in use. Excessive force will crack or destroy the puck mold. Always observe time and applied force when forming pucks.

4. System Architecture

4.1 Subsystems

Subsystem	Function
Frame & Cart	ASTM A36 welded steel structural frame; black powder-coat matte finish. Mounted on a heavy-duty scissor lift cart (PN WB988933, blue paint finish).
Plate Assembly	Top and bottom heated plates in Aluminum 6061-T651, separated by 0.5 in phenolic insulation plates (top and bottom) for thermal isolation from the structural plates.
Heating	16 cartridge heaters (8 per plate), 80 W each, 6 mm diameter. Total 1,280 W; 640 W per plate.
Hydraulic	100-ton, 2-in stroke single-acting hydraulic cylinder driven by a BVA Hydraulics electric pump (model ZPE30S4L01A-XP for 110 V US / ZPE30S4L01D-XP for 220 V EU) via solenoid-controlled valving. 4–20 mA pressure transducer feedback. See §4.6.
Control	Kinco K506EA-30AT PLC executing F.C.T. recipe ladder logic. 24 V DC control voltage. F.C.T. V5.4.2 application.
HMI	Integrated touchscreen running F.C.T. for navigation, recipe management, calibration, and live monitoring.
Sensors	2 × XTP25N-030-0300F temperature sensors (one per plate); 4–20 mA pressure transducer; cylinder position feedback.
Operator Controls	On-screen finger button for cycle activation, paired with toggle switch ECX1510 held UP for two-hand activation. E-Stop palm button (GCX1136). Rocker switch for power.
Enclosure (V5)	CRS 1008 sheet-metal panels with surface-mount hinged access door. 1/4 in acrylic side viewing panels. Electronic BOM mounted INSIDE the housing.
Discharge	Aluminum 6061-T651 KWÄD nipple at the plate output for directed rosin flow.

4.2 Frame Revision History

Three frame revisions exist in the field. F.C.T. and recipe behavior is identical across them; the differences are mechanical only and matter primarily for cleaning, accessibility of the electronic BOM, and visibility of the collection cavity.

Frame	Status	Collection Cavity	Electronic BOM Location	Top Reinforcement	Wall / Visibility
V2	Legacy	4 in	Mounted to LEFT and RIGHT of the collection cavity (externally visible).	None.	Sheet-metal.
V3	Legacy	12 in (tall)	Mounted to LEFT and RIGHT of the collection cavity (externally visible).	4 in structural "X" support, TIG-welded across the top of the frame.	Sheet-metal.
V5	Current production	Open cavity (no flanking BOM)	Relocated INSIDE the sheet-metal housing.	"#"-pattern structural weld with 2 in tall vertical supports.	1/4 in acrylic walls for visibility into the cavity.

NOTE — FRAME-AWARE CLEANING

On V2 and V3 frames the electronic BOM is exposed on the left and right sides of the collection cavity. Apply IPA to a cloth and wipe carefully — do not let liquid run onto the electronics. On V5, the BOM is enclosed; clean the acrylic walls in a single direction with an IPA-dampened cloth (acrylic scratches under abrasive contact).

4.3 Bill of Materials (Mechanical, V5)

Summary of the principal mechanical components per the V5 product assembly drawing. Refer to part-level drawings for manufacturing tolerances.

Item	Description	Material / Spec
Bottom plate	Structural plate	ASTM A36 Steel
Mid plate	Structural plate	ASTM A36 Steel
Hex tubes (×4)	Press columns (Center, Right, Left)	ASTM A36 Steel
Bottom phenolic plate	Insulation under heat plate	Phenolic sheet, 0.5 in
Top phenolic plate	Insulation above heat plate	Phenolic sheet, 0.5 in
Bottom heat plate	Heated platen	Aluminum 6061-T651
Top heat plate	Heated platen	Aluminum 6061-T651
Guide plate	Cylinder alignment	ASTM A36 Steel

Item	Description	Material / Spec
Cylinder	Hydraulic ram (CE-marked single-acting; BVA optional BOM, see §4.6)	100-ton, 2-in stroke single-acting
Top plate	Structural cap	ASTM A36 Steel
Cartridge heaters (×16)	Heating	Electric cartridge, 80 W ea., 6 mm Ø
S3 panel cover	Top section cover	Aluminum 6061-T651
Acrylic panels (4)	Side / front viewing (V5 only)	Acrylic sheet, 1/4 in
Sheet-metal box	Enclosure (front, back, top)	CR1008 sheet metal
KWÄD nipple	Rosin discharge	Aluminum 6061-T651
Surface-mount hinge	Door access (V5)	Standard hinge with holes
E-Stop	Emergency stop palm	GCX1136
Toggle switch	Cycle selector (UP engages)	ECX1510
Rocker switch	Power	Standard
HMI	Operator interface running F.C.T.	Kinco HMI panel
Temperature sensors (×2)	Plate temp feedback	XTP25N-030-0300F

4.4 Cart & Lift Table

The press is mounted on a Heavy-Duty Scissor Lift Table, PN WB988933, in Access Rosin blue paint finish. The lift table provides ergonomic working height adjustment and dampens vibration.

Property	Specification
Part Number	WB988933
Deck Size	20 in × 40 in (51 cm × 102 cm)
Minimum Lift Height	15 in (38 cm)
Maximum Lift Height	39.3 in (100 cm)
Lift Mechanism	Foot-pedal hydraulic pump (red pedal = lower)
Mobility	Caster-mounted with foot-pedal brake release
Finish	Blue paint
Approximate Loaded Weight	~ 900 lb (408 kg)

CAUTION — LIFT WHEN STATIONARY

Property	Specification
The cart is rated for ergonomic height adjustment between work positions. Do not raise or lower the cart while the press is in motion or while a cycle is running. Do not move the cart at full extension — lower to a transit height first.	

4.5 Cylinder Position Reference

During a cycle the PLC, under F.C.T. command, drives the hydraulic cylinder through four nominal positions. The plate gap values below are nominal observations from the V5 product drawing and will vary slightly with recipe and cylinder calibration.

Position	Plate Gap (approx.)	When	Operator Sees
Fully Retracted	~1.96 in	Power-up, idle, recipe selection.	HOME page; large plate gap; pump not commanded.
Partial Extension	Set per recipe (calibrated load gap)	After START PRESS; pouch loading on the Load Pouch page.	Plate raised to load gap; operator inserts pouches 0.500 in deep.
Touch Extension	≈ 0.46 in	Stage L (load / pre-heat), low-PSI dwell.	Cycle Running screen; temperature stabilization.
Fully Extended	≈ 0.05 in	Stages 5–6, maximum compression.	Cycle Running screen; high LIVE PRESSURE.

4.6 BVA Hydraulic Power Unit

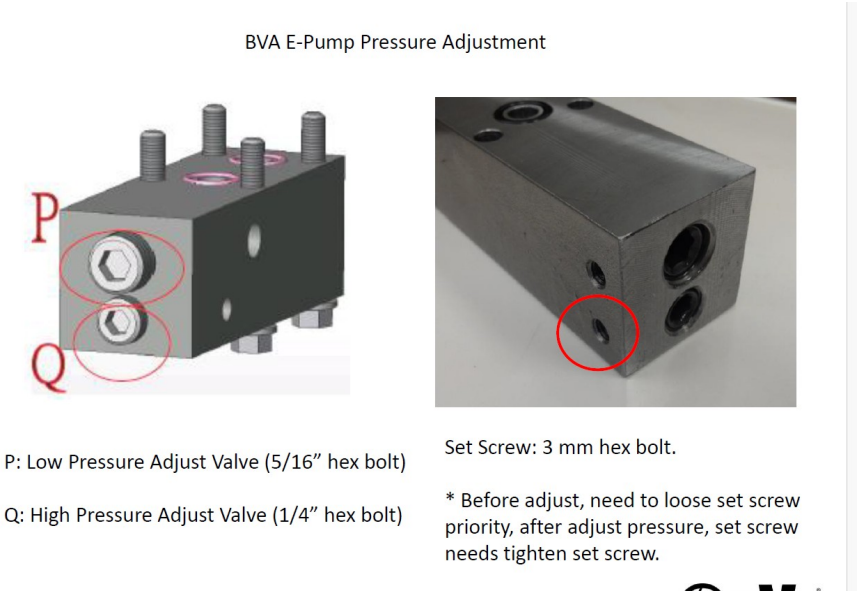
Access Rosin is proud to represent BVA Hydraulics for the KWÄD V5 hydraulic powertrain. The BVA electric pump is the standard, factory-installed pump on every KWÄD V5. The BVA 100-ton 2-in stroke single-acting cylinder is offered as an optional bill-of-materials line item; specify at time of order. When the BVA cylinder is not specified, an equivalent CE-marked 100-ton 2-in stroke single-acting cylinder is installed.

Item	US (Standard)	EU / International
Pump model number	ZPE30S4L01A-XP	ZPE30S4L01D-XP
Mains voltage	110–120 V AC, 60 Hz, 1-phase	220–240 V AC, 50 Hz, 1-phase
Motor	Induction Electric (TEFC), 0.5 HP	Induction Electric (TEFC), 0.5 HP
Flow group	PE30 — 293 in^3/min @ 350 PSI; 18 in^3/min @ 10,000 PSI	PE30 — same as US
Valve / operation	S4L — Solenoid Valve 4W/3P with Locking Plate (Spool Type)	S4L — same as US
Reservoir	1 gallon	1 gallon

Item	US (Standard)	EU / International
Pendant	10-ft motor pendant; pendant button wired at 24 V AC	10-ft motor pendant; pendant button wired at 24 V AC
Sound rating	≤ 80 dBA (meets OSHA)	≤ 80 dBA
Custom suffix	-XP (Access Rosin OEM configuration)	-XP (Access Rosin OEM configuration)

BVA Pump — Pressure Adjustment

The BVA pump valve block carries two pressure-adjust valves and one set screw. Adjustment is reserved for Maintenance and Engineering with documented authorization; tampering with the pressure-adjust valves will move LIVE PRESSURE out of the F.C.T.-calibrated band and require a full pressure recalibration (see §10.1).



Reference adjustment locations on the BVA valve block:

- P — Low Pressure Adjust Valve, 5/16-in hex bolt.
- Q — High Pressure Adjust Valve, 1/4-in hex bolt.
- Set screw — 3 mm hex bolt.

PROCEDURE — BVA PUMP PRESSURE ADJUSTMENT

Loosen the 3 mm hex set screw FIRST. The set screw locks the pressure-adjust valves; attempting to turn P or Q with the set screw tightened will damage the valve seat.

Adjust P (Low Pressure, 5/16-in hex) for the low-pressure stage; adjust Q (High Pressure, 1/4-in hex) for the high-pressure stage. Make small, incremental adjustments and verify against an external calibrated pressure gauge.

After the desired LIVE PRESSURE is achieved, RE-TIGHTEN the 3 mm set screw to lock the adjustment.

Run a full F.C.T. Pressure Calibration cycle (§10.1) and update the calibration record. The adjustment is not

complete until both physical adjustment and F.C.T. calibration are documented.

4.7 Component Certifications

The KWÄD V5 is assembled from individually certified components. Original certificates are retained by Access Rosin and are available to the customer on request through the supplied warranty channel. Operators do not need to verify these on the equipment but should be aware that the assembly is constructed from CE-conforming and ISO-audited subcomponents.

Subcomponent	Standard / Certificate	Notes
100-ton, 2-in stroke hydraulic cylinder	CE Certificate of Conformity HHC16901 (15-Jan-2013); Directive 2006/42/EC (Machinery Directive); EN 1494:2000+A1:2008; EN 60204-32:2008; cylinder manufacturer holds ISO 9001:2008 QMS certification (CQC scope: hydraulic press design and manufacture).	When the optional BVA 100-ton cylinder is specified at order, BVA's own certificate of conformity ships with the unit.
BVA electric hydraulic pump (ZPE30S4L01A-XP / ZPE30S4L01D-XP)	BVA standard PE30 series; manufactured to BVA's ISO-certified production process; ≤ 80 dBA; pendant 24 V AC.	Standard hydraulic powertrain on every KWÄD V5.
Solenoid-operated directional control valve	SGS Taiwan EMC Compliance Certificate EM/2005/90020; CE marked under EMC Directive 89/336/EEC (with 92/31/EEC, 93/68/EEC); EN 61000-6-3:2001+A11:2004; CISPR 22:1997+A1:2000+A2:2002 Class B; IEC 61000-4-2 / -4-3 / -4-8.	Component of the BVA pump valve block.
Pump motor (squirrel-cage induction)	TECO EC Declaration of Conformity (DOC.No.FA-7-G-034); EU Low Voltage Directive 2006/95/EC; BS EN 60034 (Rotating Electrical Machines); NEMA MG 1 (Motors and Generators).	TECO motor frame size 56 (BETCSM / BETSSM); supplied as part of the BVA pump assembly.
Cartridge heaters (16 ×, 80 W each)	UL/CE-marked industrial cartridge heaters; 110 V (US) or 220 V (EU) — see §4.8.	Heating banks must be matched to the pump voltage variant.
PLC — Kinco K506EA-30AT	CE marked per EN 61131-2 (Industrial PLC); 24 V DC control supply.	Firmware managed by Engineering under documented change control.
HMI — Kinco panel (F.C.T. host)	CE marked per EN 61000-6-2 / -6-4 (immunity / emissions for industrial environments).	Runs Flow Control Technology™ (F.C.T.) V5.4.2.

4.8 KWÄD V5 — International (EU 220 V) Variant

EU / INTERNATIONAL MODEL — 220 V / 50 Hz

KWÄD V5 units configured for European Union and other 220–240 V / 50 Hz markets ship with the BVA pump

variant ZPE30S4L01D-XP and 220 V cartridge heater banks. Both the pump motor and the heating banks are voltage-matched at the factory; field-swapping a 110 V pump or heaters into a 220 V installation (or vice-versa) is not authorized.

The international variant otherwise carries identical mechanical, control, and software specifications to the US (110 V) model. F.C.T. recipes, calibration ranges, and operator procedures are unchanged.

Subsystem	US (Standard)	EU / International
Mains supply	Two dedicated 110–120 V circuits, 20 A each	Two dedicated 220–240 V circuits at appropriate breaker rating per local electrical code
Pump	BVA ZPE30S4L01A-XP	BVA ZPE30S4L01D-XP
Heater banks	16 × 80 W cartridge heaters, 110 V configuration (1,280 W total)	16 × 80 W cartridge heaters, 220 V configuration (1,280 W total)
Pump motor frequency	60 Hz	50 Hz
PLC, HMI, software	Kinco K506EA-30AT, Kinco HMI, F.C.T. V5.4.2	Identical to US
Cylinder, plates, frame, controls, sensors	Identical between variants	Identical between variants
F.C.T. recipes	Slow & Low / Quick & Warm / Pace & Warm (unchanged)	Slow & Low / Quick & Warm / Pace & Warm (unchanged)
Calibration procedure	Pressure / Temperature per §10	Identical procedure; voltage difference is transparent to F.C.T.

- US-spec equipment shall not be deployed to a 220 V mains supply.
- EU-spec equipment shall not be deployed to a 110 V mains supply.
- A documented voltage-conversion package (replacement pump + replacement heater banks) signed off by Engineering is required for any field re-configuration.
- Mains plug, cordage, and breaker selection shall conform to the destination country's electrical code.

5. F.C.T. Screen Reference

The F.C.T. application is the operator's primary interface. All screens use a consistent visual style: a header strip with the screen title and a HOME or BACK button; a body area with parameters and live values; warning labels (DANGER, WARNING) in their standardized color schemes.

5.1 HOME Page

Element	Function
SETTING (button)	Opens the Settings menu (PID, Pressure Calibration, Temperature Calibration, About / F.C.T. version).

Element	Function
PLATE MOVEMENT (button)	Opens the Plate Movement screen for clearance and jolt timing.
Temperature panel (4 fields)	Displays SET and live TEMP values for top and bottom plates. Heater-on indicator confirms the heater circuit is energized.
P.S.I (live)	Live hydraulic pressure (typically resting near 5).
ON / Light icon	Indicates the press is powered.
START PRESS (large button)	Begins the pre-cycle sequence; calibrates the desired plate gap for safe pouch tolerance, then advances to the Program Summary page.

5.2 Settings Page

Button	Opens
PID CONTROLLER	Per-plate PID tuning, output bounds, scan cycle, and live error metrics.
PRESSURE CALIBRATION	MAX PSI, bandwidth, +PSI cycle increment, and 4–20 mA input scaling.
TEMPERATURE CALIBRATION	Per-plate sensor scaling and live temperature reading verification.
ABOUT / VERSION	F.C.T. version (verify V5.4.2). Cycle Complete Auto-Finish Timer Default (10 s).

5.3 PID Controller Screen

Each plate has its own independent PID loop. The Top Plate parameters appear in the upper half; the Bottom Plate in the lower half, separated by a horizontal divider.

Field	Meaning	Typical Value
TEMPERATURE — ACTUAL	Live process variable (PV) in °F.	Live
TEMPERATURE — SET POINT	Target temperature in °F.	180 – 220
PV LIMIT DIF.	Allowed deviation between PV and setpoint before deviation alarm.	2
KP	Proportional gain.	5.5
TR	Integral time (reset).	150
TD	Derivative time.	0
XOUT H / L	Output upper / lower bounds.	100 / 0
CYCLE	Loop scan cycle (ms).	115

5.4 Pressure Calibration Screen

Field	Meaning	Typical Value
MAX P.S.I	Upper pressure limit; recipe stages cannot exceed this.	7,500
P.S.I BANDWIDTH	Allowed deviation band before deviation alarm.	10
ADD +P.S.I CYCLE RUN	Increment added per +P.S.I press during a cycle.	25
LOW PRESSURE (input)	4 mA scale point.	4000
HIGH PRESSURE (input)	20 mA scale point.	20000
READOUT	Live raw analog counts.	Live
LIVE P.S.I	Engineering-scaled pressure.	Live

5.5 Temperature Calibration Screen

Top plate (top half) and bottom plate (bottom half), each with the same field set:

Field	Meaning	Typical Value
SENSOR VALUE	Raw analog counts from the XTP25N sensor.	Live
INPUT VALUE — LOW	4 mA scale point.	4000
INPUT VALUE — HIGH	20 mA scale point.	20000
OUTPUT VALUE — LOW	0 °F at LOW input.	0
OUTPUT VALUE — HIGH	300 °F at HIGH input.	300
TEMPERATURE READING	Engineering-scaled live temperature.	Live

5.6 Plate Movement Screen

Field	Function	Default
SET HEIGHT CLEARANCE	Resting plate gap.	40
TEST JOLT MOTION TIME	Duration of jolt pulse during test.	22
SET JOLT TIME DEFAULT	Default jolt duration baked into recipes.	22
LOAD BAG PLATE HEIGHT RAISE TIME	Plate raise duration when entering Load Pouch page.	4
PLATE MOVEMENT START PRESS	Initial press dwell before entering Stage L.	5 s

5.7 Program Summary Page (Recipe Editor)

The Program Summary page is the recipe creation, verification, and lock screen. The EDIT button at the bottom is the lock indicator: RED = unlocked (any field may be modified, cycle cannot advance); GREEN = locked (all fields are read-only and the cycle may advance).

Field	Function
NAME	Recipe label (e.g., Slow & Low, Quick & Warm, Pace & Warm).
MATERIAL	HASH or FLOWER.
RECIPE	Numeric recipe slot (1, 2, 3, ...).
BAG WEIGHT	Total charge in grams across all bags.
BAG SIZE	Bag dimensions (e.g., 3 × 9, Trapezoid 20).
BAG COUNT	Number of bags (2-Count or 4-Count, balanced).
MICRON SIZE	Filtration size (25 / 32 µm hash; 90 / 110 / 160 µm flower).
TEMPERATURE CONTROL — Top / Bot	Plate setpoints in °F.
Stage parameters L, 1–6	TIME (s), JOLT, P.S.I per stage.
EDIT button (RED / GREEN)	Recipe lock state. RED = editable, no advance. GREEN = locked, cycle may proceed.
RUN	Advance to Temperature Check page (only when EDIT is GREEN).

5.8 Temperature Check Page

After RUN is pressed on the Program Summary, F.C.T. holds at the Temperature Check page until both plates have reached their setpoints. The screen displays live top and bottom plate temperatures and a status indicator. No operator action is required during the wait — the press will advance automatically when both plates are at temperature.

5.9 Load Pouch Page

This is the loading screen. F.C.T. has raised the plates to the calibrated load gap. The operator inserts pouches per §7 and §8.2, then activates the cycle using the on-screen finger button + toggle UP.

Element	Function
Recipe number / weight (header)	Confirms which recipe is staged.
Top / Bottom plate live temperatures	Confirms plates have reached setpoint.
Plate-height arrow indicator	Shows current plate gap.
On-screen finger button	Hand 1 of two-hand activation.

Element	Function
Toggle UP confirmation	Hand 2 of two-hand activation. UP engages, DOWN does not.

5.10 Cycle Running Page

The Cycle Running page is the live cycle display. It shows recipe weight and number, the per-stage TIME / JOLT / P.S.I grid (with the active stage highlighted), plate temperatures, total CYCLE TIME, LIVE PRESSURE, SKIP and +P.S.I action buttons, and a FINISH button that closes the cycle early.

5.11 Cycle Complete Page

On cycle completion F.C.T. displays the FINISH TIME (auto-finish timer, default 10 s), the FINAL 3rd PRESS pressure, and the live P.S.I. The operator may PAUSE to extend the dwell or press-and-hold SET to commit the final pressure, then DONE to return to HOME.

6. Recipe Methods

Three Recipe Methods are approved for production on the KWÄD V5 — Slow & Low, Quick & Warm, and Pace & Warm. A fourth combination, Quick & Low, is documented as contraindicated. Detailed parameter tables for each method are provided in §6.3 – §6.6 below. These tables represent the as-observed parameter sets and shall be cross-referenced against the facility's Recipe Master Register before each shift.

6.1 Recipe Anatomy

- Stage L — Load / pre-heat. Plates close to Touch Extension; the cycle dwells at low PSI to bring the pouch to plate temperature before any meaningful pressure ramp.
- Stages 1–3 — Flow stages. Pressure ramps gradually to mobilize trichome heads and initiate rosin flow toward the discharge.
- Stages 4–6 — Compression stages. Pressure climbs to its maximum to extract residual rosin from the puck. These are the highest-risk stages for slip / blowout.

6.2 Approved Recipe Methods (Summary)

Method	Charge	Plate Temp	Cycle Time	Use Case
Slow & Low	120 g	180 °F	~7 min 30 s	Small-batch processing; +Fresh Press; preserves volatile terpenes.
Quick & Warm	160 g	215 °F	~3 min	High-volume batch; +Micro-Diamonds.
Pace & Warm	200 g	205 °F	~5 min 30 s	Thick-bag processing; jar / slab end product.
Quick & Low — DO NOT USE	—	170 °F	~3 min	Contraindicated. Insufficient thermal mobilization at high

Method	Charge	Plate Temp	Cycle Time	Use Case
				pressure leads to scorching and unstable yield.

6.3 Slow & Low — Small-Batch Processing (Recipe 2)

Use case: small-batch / fresh-press production. Long stage times at moderate temperature preserve volatile terpenes and produce a softer extraction profile. Stage 5 is the longest stage (120 s @ 300 PSI), allowing extended flow at intermediate pressure.

Setpoint	Value
Plate Temperature (Top / Bottom)	180 °F / 180 °F
Charge (Bag Weight)	120 g
Total Cycle Time	~7 min 30 s

Parameter	L	1	2	3	4	5	6
Time (s)	45	45	60	60	60	120	60
Jolt	8	—	—	—	—	—	—
PSI	—	12	50	90	125	300	800

6.4 Quick & Warm — High-Volume / Micro-Diamonds (Recipe 1)

Use case: high-throughput production; this method also encourages diamond formation in the post-press jar. Short stages, hot plates, aggressive Stage 6 maximum (1,100 PSI). Highest-temperature method in the approved set.

Setpoint	Value
Plate Temperature (Top / Bottom)	215 °F / 215 °F
Charge (Bag Weight)	160 g
Total Cycle Time	~3 min

Parameter	L	1	2	3	4	5	6
Time (s)	10	20	30	30	30	30	30
Jolt	5	—	—	—	—	—	—
PSI	—	12	70	140	350	700	1100

6.5 Pace & Warm — Thick-Bag / Jar-Slab (Recipe 3)

Use case: thick bag charges where the puck demands more compression time. Balanced extraction profile producing rosin appropriate for jar or slab end product. Stage 5 dwells at 75 s @ 400 PSI before the Stage 6 maximum at 900 PSI.

Setpoint	Value
Plate Temperature (Top / Bottom)	205 °F / 205 °F
Charge (Bag Weight)	200 g
Total Cycle Time	~5 min 30 s

Parameter	L	1	2	3	4	5	6
Time (s)	10	20	30	60	60	75	45
Jolt	5	—	—	—	—	—	—
PSI	—	12	40	80	125	400	900

6.6 Quick & Low — DO NOT USE (Recipe X)

DO NOT USE

The Quick & Low method (high pressure ramp at 170 °F over a 3-minute cycle) is documented as a non-conforming combination. The resin is not thermally mobilized for the demanded high pressures, leading to scorched product, plate carbonization, and unstable yield.

If observed in a recipe slot, tag the slot, notify the Lead Operator, and substitute Slow & Low (similar batch size) or Quick & Warm (similar timing).

Reference parameter set (DO NOT EXECUTE):

Setpoint	Value
Plate Temperature (Top / Bottom)	170 °F / 170 °F
Charge (Bag Weight)	100 g
Total Cycle Time	~3 min

Parameter	L	1	2	3	4	5	6
Time (s)	10	20	30	30	30	30	30
Jolt	5	—	—	—	—	—	—
PSI	—	12	70	140	350	700	1000

6.7 Temperature Selection Reference

The following compound temperature reference is printed on the official KWÄD quick-reference card and is provided here for recipe development guidance. These are processing-temperature reference points used by Access Rosin to demarcate "first melt", "second melt", and high-temperature extraction zones; they are not absolute scientific melting points and shall not be used as substitutes for analytical data.

Compound	Reference Temp (°F)	Melt Zone
THC-A	110	First Melt
β-Caryophyllene	123	First Melt
β-Sitosterol	137	First Melt
Δ8-THC	175	Second Melt
d-Limonene	175	Second Melt
Apigenin	175	Second Melt
α-Terpineol	212	High-temp
THC-V	214	High-temp
Quercetin	241	High-temp

7. Material & Pouch Preparation

Pouch and bag preparation is the single largest operator-controlled determinant of yield, product quality, and cycle safety. The aim of this section is to make every operator a careful, deliberate pouch-builder. Access Rosin's Rosin Extraction Bag (V3.5 inner / V3.6 outer) and Pyramid Parchment Pouch are co-engineered consumables that together create a controlled, directional rosin flow channel — not just containers.

PATENT-PROTECTED CONSUMABLES

The KWÄD V5 press, the V3.5 Rosin Bag, and the Pyramid Parchment Pouch are protected under U.S. Patent Nos. 11,040,510 and 11,511,465 and EU Patent No. 3938197.

The Rosin Extraction Bag V3.6 / V3.7 — the octagonal outer bag of the patent-pending double-bag system in §7.5 — is the subject of an independent U.S. Patent Pending application, Application No. 63/875,878.

Operators shall not photograph, distribute, or reverse-engineer bag or pouch samples outside Access Rosin's authorized supply chain.

7.1 Approved Bag Geometries

Three rosin bag versions are recognized in this manual. The V3 (legacy) bag and basic rectangular bags remain in service for sample / pre-press evaluation. The V3.5 and V3.6 bags are the current production set and together form the patent-pending double-bag system described in §7.5.

Bag	IP Status	Geometry	Charge	Use
Sample 2 × 4 in (6 in² sq.)	Legacy	Rectangular	7 – 10 g	Sample / pre-press
Half 3 × 6 in (15 in² sq.)	Legacy	Rectangular	14 – 18 g	Half-charge
Standard 3 × 9 in (18 in² sq.)	Legacy	Rectangular	20 – 24 g	Standard production
V3 (old)	Legacy	Hexagonal — 7.5 in × 3.5 in body, 2 in bottom edge, 1.465 + 1.250 in angled corners	20 – 30 g	Legacy V2 / V3 frame production
V3.5 (Trapezoid Inner)	U.S. Patent No. 11,511,465	Trapezoid — 14.5 cm / 5.75 in tall × 18.4 cm / 7.25 in opening; 8.87 cm / 3.5 in body; 7.6 cm / 3 in Side B (bottom). 1 in stitch margin. 2.5 in of bag to fold over.	30 – 80 g hash; 28 g flower (Trapezoid surface area ≈ 19 in²)	Inner bag of double-bag system. Filled and folded; placed inside V3.6.
V3.6 (Octagonal Outer)	U.S. Patent Pending No. 63/875,878	Octagonal — 14.5 cm / 5.75 in tall × 10.52 cm / 4.14 in opening (Side A and Side B). 7.25 in at fold line. 5.08 cm / 2 in middle band (1 in + 1 in stitch panels). 7.6 cm / 3 in folded seam. Side A folds to Stop Point with .500 – .600 in gap to Side B edge.	Empty (outer)	Outer bag of double-bag system. V3.6 folded flaps removed to prevent channel blockage and to add mesh-on-mesh grip preventing slip.
V3.7 (in development)	U.S. Patent Pending No. 63/875,878	TBD — successor geometry to V3.6	TBD	Reserved for forthcoming production release.

7.2 Puck Formation (Flower)

1. Insert a parchment sleeve into the puck mold cavity.
2. Charge 28 g of flower into the mold.
3. Place a second parchment sleeve over the material.
4. Hand-press the male portion of the mold into the cavity.
5. Transfer to the pre-press; compress to a puck thickness of 0.250 in (¼ in). Do not exceed force or duration that would crack the mold.
6. Demold; the puck is now ready for bagging.

7.3 Filling the V3.5 Inner Bag

FILL — NOT WITH HAND

Fill the V3.5 bag using a funnel, scoop, or vacuum-charge tool. Hand contact contaminates the resin and disturbs trichome head integrity. The Access Rosin technical drawings explicitly note FILL ROSIN BAG WITH RESIN ** NOT WITH HAND **.

1. Charge the V3.5 with 30 – 80 g of resin glands (hash) or 28 g of flower puck.
2. Distribute material evenly across the 19 in^2 Trapezoid surface area. Aim for uniform thickness, not aggressive compaction.
3. Pre-compress as preferred — by hand pressure (over the bag exterior), by pre-press at warm-plate temperature, or by vacuum-seal compression. Vacuum-seal ("Clear Tech") allows the higher end of the charge range.

7.4 Folding the V3.5 Inner Bag

The V3.5 has a printed Fold Line (Fold Mark) at 8.87 cm / 3.5 in from the bottom of the bag. Folding at this line evens the resin distribution and produces the seated bag-in-bag geometry the V3.6 outer bag is designed to capture.

1. After filling, fold the V3.5 over at the Fold Line / Fold Mark — the angled (Trapezoid) edge of the flap aligns with the matching angled end of the bag body.
2. Tuck the folded flaps around the body. Press the folded flap flat against the bag body. There shall be minimal residual material between the flap and the body.
3. Inspect the fold — if any material is trapped between flap and body, undo and refill before continuing.

FOLD WITH MATERIAL = SLIP

A bag fold that contains material between the flap and the body will not hold under the Stage 5 / Stage 6 pressure ramp. The flap will lift, the bag will deform, and the material will redistribute inside the pouch.

7.5 Double-Bag System (V3.5 inside V3.6)

The patent-pending double-bag system is the V3.5 inner bag (filled and folded) enclosed inside the V3.6 octagonal outer bag. The V3.6 locks the V3.5 fold in place, preventing the inner bag from opening or slipping during the press, and adds an additional mesh layer that increases mesh-on-mesh contact and acts as additional grip.

1. Insert the filled-and-folded V3.5 fully into the V3.6 outer bag through the V3.6 opening (Side A).
2. Position the V3.5 so that its Side B (Trapezoid wider edge, 3 in) aligns with the V3.6 Side B (3 in folded seam). The wider Side B fits the parchment pouch better at the release point.
3. Fold V3.6 Side A to the Stop Point. Maintain the .500 – .600 in gap from the Stop Point to the Side B edge — this gap is the engineered flow geometry of the bag.
4. Note: V3.6 folded flaps are intentionally removed in the bag's manufactured construction. This design prevents channel blockage at the discharge and provides more mesh-on-mesh contact than the V3 bag.

5. The double-bagged assembly is now ready for insertion into the Pyramid Parchment Pouch (§7.7).

Process objective: the resin liquefies into the mesh under heat at low pressure (Stages L–2), establishing mesh-to-mesh contact, before the pressure ramp at Stages 4–6 drives the liquefied rosin out of the discharge through the engineered flow channel.

7.6 Pyramid Parchment Pouch — Three-Fold Construction

The Pyramid Parchment Pouch is constructed from a rectangle of unbleached parchment paper through a three-step fold sequence. The completed pouch is a flat, kite-shaped envelope with two side wings and an open top into which the bag is inserted; rosin exits through the bottom point. The folds, in sequence:

Fold Line #1 — Diagonal Quarter-Folds

Lay a rectangular parchment sheet flat in landscape orientation. Fold the upper-left and upper-right corners diagonally inward so they meet at the bottom-center. The fold lines run from the upper corners down to the center of the bottom edge, forming an inverted-triangle silhouette inside the original rectangle.

Fold Edge #2 — Side-Wing Folds

Fold each of the two outer wings inward along a vertical fold line. The result is a triangular shape with a central panel flanked by two folded wing edges. The wings are now tucked behind the central panel.

Finish Folds #3 — Final Pyramid

Complete the final folds to close the pouch into its final kite-shape envelope. The completed pouch has an open top through which the rosin bag is inserted, and a single point at the bottom that becomes the discharge / flow port.

1. Inspect the completed pouch — discard any pouch with sharp creases, holes, or prior-press wear marks. Parchment behaves like construction paper; over-handling creates pinhole leaks.

7.7 Loading the Bag into the Pouch

The geometry between the outer edge of the V3.5 / V3.6 bag and the inner fold of the parchment pouch IS the flow channel. The channel is engineered to be of consistent width on both sides, channeling rosin from the full mass surface area down to the single discharge port at the bottom of the pouch.

1. Insert the double-bagged V3.5 / V3.6 assembly into the open top of the parchment pouch.
2. CRITICAL: Push the bag fully to the BACK of the pouch by pinching the front angled corners of the pouch and gently working the bag rearward into position. The bag must seat against the back wall — not float forward.
3. Verify, by visual inspection through the pouch opening, that the flow-channel gap (between bag and pouch wall) is consistent in width on both left and right sides of the bag.
4. The wider Side B of the V3.5 Trapezoid aligns with the parchment pouch flow port at the release point, providing a directed pulled-release toward the pouch exit.
5. Secure the pouch flap. Do NOT over-handle, fold sharply, or flex the pouch repeatedly.

DANGER — BAG BLOWOUT

If the bag is positioned forward in the pouch (rather than back), the flow channel is closed. Under Stage 5 / Stage 6 pressure the resin has nowhere to go and the bag will blow out — releasing pressurized hot rosin into the plate zone and contaminating the pouch, plate, and discharge nipple. This is preventable only at the loading stage.

7.8 Flow Channel Theory

The Access Rosin double-bag + pyramid-pouch system is engineered to produce a directional flow method that supersedes the legacy "waterfall" rectangle-bag approach:

- Mass surface area of the V3.5 bag (≈ 19 in² Trapezoid) maximizes liquid resin contact with the mesh; bag size limits channel cross-section so liquid resin moves at controlled velocity.
- Consistent-width channel between bag and pouch wall produces parallel rosin streams at the discharge.
- Wider Side B of V3.5 aligns with the pouch flow port and biases release toward the exit ("pulled release").
- Mesh-to-mesh contact is established under low-PSI heat (Stages L–2) before the Stage 4–6 pressure ramp.
- The controlled flow rate allows operation at warmer plate temperatures than the legacy waterfall method without losing terpenes — flow speed reduces residence time at the heated plate.
- Directing the flow into a cold (Nitrogen- or argon-charged) jar trap converts off-gassed terpene vapor back to liquid, preserving the terpene profile.
- Validated yield: 75 – 95 % of available resin converted to rosin and collected (Access Rosin internal data).

Process Sequence Summary

1. Fill V3.5 with 30 – 100 g resin glands (NOT WITH HAND).
2. Fold V3.5 at Fold Mark to even out the resin / vacuum pre-compression.
3. Place V3.5 inside V3.6 — "double bag prep" — to lock the fold in place and prevent slipping.
4. Resin liquefies into the mesh under heat and incremental pressure; mesh-to-mesh contact established before high pressure.
5. Liquid rosin flows out of the 1 in port of the pouch into a directional, controlled stream.
6. Stream falls into a cold jar trap; terpene vapor recovers as liquid.
7. Collected yield: 75 – 95 % of original resin mass converted.

7.9 Leak vs. Slip vs. Blowout

Event	Definition	Root Cause
LEAK	Rosin escapes through the parchment pouch wall — through an unsecured pouch flap, a sharp crease, or a pinhole created by	Pouch construction or pouch handling. The parchment behaves like construction paper — flex it once too often and it

Event	Definition	Root Cause
	tampering / over-handling.	cracks.
SLIP	The rosin bag shifts within the pouch, deforming or closing the flow channel. Visible at the discharge as a stream that "pulls back" 1 in or more behind neighboring streams.	Bag positioned forward in pouch at loading; under-temperature for stage; flap with material in the fold; double-bag not assembled.
BLOWOUT	Catastrophic loss of pouch integrity under high pressure when the flow channel is closed and the resin has nowhere to go. Consequence of unmanaged slip.	Slip not corrected; or initial slip so dramatic the bag fails on the next pressure step.

7.10 Plate Balance

PLATE BALANCE

Always press an even number of bags, distributed symmetrically across the plate (2-Count or 4-Count). If an odd quantity is required, install a spent ("dummy") puck on the opposite side to maintain balance. Unbalanced loading reduces yield and accelerates plate wear.

8. Operating the Press

8.1 Recipe Selection in F.C.T.

1. From HOME, press START PRESS. The plates calibrate to the desired plate gap for safe pouch tolerance.
2. Press RUN to enter the Program Summary page.
3. On the Program Summary page, verify the recipe matches the production work order: NAME, MATERIAL, RECIPE number, BAG WEIGHT, BAG SIZE, BAG COUNT, MICRON SIZE, the six stage parameters (TIME, JOLT, P.S.I), and the TEMPERATURE CONTROL setpoints.
4. Confirm the EDIT button is GREEN — recipe locked, cycle progression permitted. If RED, no parameter is locked; cycle cannot advance until EDIT is pressed to GREEN. Operators may modify any parameter while EDIT is RED, with Lead Operator authorization.
5. Press RUN. F.C.T. enters the Temperature Check page and holds until both plates reach setpoint.
6. Once the plates are at temperature, F.C.T. advances to the Load Pouch page.

8.2 Loading Pouches at the Plate

1. Confirm a parchment-lined collection tray or jar is positioned at the discharge nipple.
2. Insert each pouch into the heated plate zone using a tool — never fingers — to a depth of 0.500 in (½ in) into the plates. Pouches sit evenly squared on each side (4-of-4, balanced).
3. Orient each pouch with the parchment FLAPS FACING DOWNWARD. This lifts the resin off the bottom plate until the cycle commits, prevents premature wicking, and improves channeling toward the discharge.

4. Distribute pouches symmetrically (2-Count or 4-Count, balanced).
5. Announce "CLEAR" before activating the cycle.

8.3 Cycle Activation (Two-Hand Interlock)

1. With one hand, press and HOLD the on-screen finger button on the Load Pouch page.
2. With the other hand, hold the toggle switch UP (NOT down).
3. When F.C.T. confirms the cycle has engaged (recipe is active and running), release both controls.
4. F.C.T. proceeds automatically through Stage L and Stages 1–6 according to the recipe.

CRITICAL — TOGGLE UP

The cycle ENGAGES only when the toggle is held UP simultaneously with the on-screen finger button. Holding the toggle DOWN will not engage the cycle. This is the as-built two-hand interlock convention.

8.4 During the Cycle

- Remain within line of sight of the F.C.T. screen for the entire cycle.
- Watch the rosin streams at the discharge. A symmetrical 2-Count or 4-Count load produces parallel streams that advance together.
- Listen for the pump solenoid rhythm — a steady regular pulse indicates active flow regulation.
- Use SKIP and +P.S.I sparingly and only with logging.

8.5 After the Cycle — Collection & Cold Chain

1. On the Cycle Complete screen, confirm the cycle's FINAL 3rd PRESS pressure and FINISH TIME.
2. Don heat-resistant gloves; lift each pouch and pull straight out (no lateral drag).
3. Transfer the pouch to a labeled, parchment-lined collection container.
4. Move collected rosin to a freezer (≤ −20 °C) within 15 minutes of collection.
5. Label every container with strain, recipe number, batch ID, operator initials, and date / time.
6. Press DONE; return to HOME.

9. Recipe Tuning (Acoustic & Visual)

The KWÄD V5 communicates flow state to the trained operator through two channels: the rhythm of the hydraulic pump solenoid (audible) and the relative position of the rosin streams at the discharge (visible). An operator who can read these two signals can tune a recipe to a specific batch of resin and lift yield without compromising quality. Tuning is performed under Lead Operator authorization and logged on the Cycle Log and the Recipe Master Register.

9.1 Acoustic Signal — Pump Solenoid Rhythm

During the flow stages (1, 2, 3 — depending on the resin's quality and the recipe's pressure ramp), F.C.T. holds the commanded pressure by pulsing the hydraulic pump solenoid. While resin is actively flowing — i.e., the pouch volume is decreasing as rosin escapes — the solenoid pulses at a steady, regular

rhythm to maintain pressure against a moving target. When flow has substantially completed, the volume stops decreasing, the system sees less work, and the solenoid pulse rhythm becomes irregular: a clear "break" or "gap" in the pulsing appears.

Diagnosis

- A break / gap in the pump solenoid pulse during Stage 1, 2, or 3 indicates that the resin has finished flowing for that stage.

Correction

- Decrease the time of that stage in the recipe — or, in the running cycle, press SKIP to advance to the next stage and remove the remaining time.
- Net effect: the recipe is tuned to the actual flow profile of that resin. Subsequent batches of the same material will use the shorter recipe.

9.2 Visual Signal — Stream Pull-Back

On a balanced 2-Count or 4-Count load, the discharge produces multiple parallel rosin streams that, with well-prepared pouches, advance together. If one stream visibly "pulls back" 1 in (≈ 25 mm) or more behind the others, the bag in that pouch has likely SLIPPED — the temperature was too low for the flow demand of the stage immediately prior to the slip.

Diagnosis

- One stream lagging ≥ 1 in behind the others = a slip in that pouch.
- Two or more streams pulling back = a systemic temperature / time issue across the recipe.

Corrections (apply in order, one at a time)

- Correction 1 — Increase the plate temperature setpoint for that recipe by 5 – 10 °F.
- Correction 2 — Add 5 – 15 s to the stage that preceded the slip (giving the resin more time to mobilize before the next pressure step).
- Correction 3 — In combination with the above, slightly reduce the PSI of the high-pressure stages. A higher-quality resin that has been given more thermal mobilization does not need maximum compression and the softer ramp protects against blowout.

> **NOTE — TUNE ONE VARIABLE AT A TIME**
> Change one variable at a time and run a confirmation batch. Changing time, temperature, and PSI all at once leaves the operator unable to attribute the change in output to any one variable.

9.3 Logging Tuning Changes

- Every change shall be authorized by the Lead Operator at the time it is made.
- Every change shall be recorded on the Cycle Log: the observed signal (acoustic break in Stage X / visual pull-back of N inches at Stage Y) and the parameter change made.
- Every change that becomes a permanent recipe modification shall be signed into the Recipe Master Register before the next shift.

10. Calibration Procedures

10.1 Pressure Calibration

Settings → Pressure Calibration. The pressure transducer is a 4–20 mA analog device. F.C.T. scales the raw signal between LOW PRESSURE (4000 = 4 mA) and HIGH PRESSURE (20000 = 20 mA).

1. With the cylinder fully retracted and zero load applied, record the READOUT value. Confirm LIVE P.S.I displays approximately 0 – 5.
2. Apply a known reference pressure using a calibrated hand pump or master gauge.
3. Adjust the LOW / HIGH input fields so LIVE P.S.I matches the reference within ± 1 % of full scale (FS = MAX P.S.I, typically 7,500).
4. Set BANDWIDTH (default 10) and ADD +P.S.I CYCLE RUN (default 25) per the approved master.
5. Sign and date the calibration record.

10.2 Temperature Calibration

Settings → Temperature Calibration. Each plate has SENSOR VALUE, INPUT VALUE pair (LOW = 4000, HIGH = 20000), and OUTPUT VALUE pair (0 °F / 300 °F). The TEMPERATURE READING is the engineering-scaled live value.

1. Place a calibrated reference probe in firm contact with the plate face.
2. Energize the plate to a known setpoint (e.g., 200 °F); allow ≥ 5 minutes to stabilize.
3. Compare TEMPERATURE READING to the reference; adjust OUTPUT VALUE LOW / HIGH so the displayed value matches within ± 2 °F.
4. Repeat for the opposing plate. Both plates shall track within ± 3 °F across the operating range.
5. Sign and date the calibration record.

10.3 PID Tuning

Engineering only. Each plate has its own KP / TR / TD. Typical observed values: KP = 5.5, TR = 150, TD = 0, XOUT H/L = 100/0, CYCLE = 115. These are facility-and-plate-specific; do not transfer values between machines without verification.

10.4 Plate Movement

Plate Movement screen. SET HEIGHT CLEARANCE = resting plate gap. TEST JOLT MOTION TIME / SET JOLT TIME DEFAULT = jolt-pulse duration (default 22). LOAD BAG PLATE HEIGHT RAISE TIME = plate raise duration on entering Load Pouch (default 4). Changes require Lead Operator sign-off.

11. Maintenance & Cleaning

APPROVED CLEANING AGENT — IPA ≥ 99 % ONLY

The KWÄD V5 plates and product-contact surfaces shall be cleaned with isopropyl alcohol (IPA) at ≥ 99 %

concentration only. No other chemical cleaning agent is required, authorized, or approved.
Do NOT use water, water-blended solutions, citrus solvents, acetone, ammoniated cleaners, abrasive pads, or scouring powders.
IPA shall be applied to a clean, lint-free cloth — never sprayed directly on the equipment.

11.1 Between-Run Cleaning

- Wipe plates and discharge nipple with a clean, lint-free cloth lightly dampened with ≥ 99 % IPA, while plates are warm but cool enough to handle safely with heat gloves.
- Inspect plates for residue carbonization; remove with a non-abrasive food-grade plastic or wood scraper.
- Clean the discharge nipple by reaching up from below — do not reach between the plates.

11.2 End-of-Shift Cleaning

- Wipe plates, plate edges, and the discharge nipple with a fresh ≥ 99 % IPA-dampened cloth.
- Wipe cart deck, scissor lift handle, and visible structural members.
- Empty and replace the parchment lining of the collection tray.
- V5 only: inspect acrylic side panels; if cloudy, wipe IPA-dampened cloth in a single direction.
- V2 / V3 frames: do NOT allow IPA to run down onto the externally mounted electronic BOM.

11.3 Maintenance Schedule

Frequency	Task	Responsible
Daily (start of shift)	E-Stop function test; two-hand interlock test; visual hose & fitting inspection; plate condition check; F.C.T. verification (V5.4.2); cart stability check.	Operator
Daily (end of shift)	Plate cleaning (≥ 99 % IPA); IPA wipe of cart deck; collection tray reset.	Operator
Weekly	Inspect electrical enclosure terminations for tightness; confirm hydraulic fluid level; inspect cylinder rod; lubricate scissor lift pivot points.	Maintenance
Monthly	Calibrate temperature sensors; calibrate pressure transducer; inspect heating elements (16 × 80 W cartridges); inspect solenoid valve operation; inspect E-Stop / toggle.	Calibration / Maintenance
Quarterly	Full PID loop verification; replace hydraulic fluid filter; inspect pump coupling; document plate flatness; inspect phenolic insulation plates for cracking.	Maintenance
Annually	Full hydraulic fluid change; full re-tune of PID loops; safety relay inspection; cylinder seal inspection; review of all calibration certificates; review of F.C.T. version status.	Engineering / Maintenance

12. Troubleshooting

12.1 Temperature

Symptom	Probable Cause	Action
One plate not heating	Failed cartridge heater or relay	Check element continuity; replace defective cartridge.
Uneven heat (cold zone)	Single failed cartridge in the bank of 8	Identify cold zone with reference probe; replace cartridge.
Temperature overshoot > 5 °F	PID drift; TD too low	Re-tune (Engineering).
TEMPERATURE READING reads 0	Thermocouple disconnected / failed	Inspect TC junction; replace XTP25N if open.
Top vs. bottom plates > 5 °F apart	Differential thermal load or sensor drift	Recalibrate per §10.2; verify cartridge banks.
Plate slow to reach setpoint	Phenolic insulation degraded; multiple cartridge failure	Inspect phenolic plates and cartridge resistance.
Pulsing temperature output	TD too high; thermocouple noise	Engineering review; shield TC cable run.

12.2 Pressure & Hydraulics

Symptom	Probable Cause	Action
No pressure rise	Pump not energized; reservoir low; valve fault	Verify pump power; top off fluid; inspect solenoid.
Pump motor hums but no pressure	Cavitation from low reservoir; air in line	Top off fluid; bleed system.
Pump motor will not start	Tripped breaker; thermal overload; failed contactor	Reset breaker; allow pump to cool; inspect contactor.
Pressure spikes / oscillation	Solenoid sticking; air in line	Inspect / replace solenoid; bleed system.
Low or drifting pressure under load	Internal cylinder leak; hose leak	Inspect for visible leaks; isolation test; replace seals.
LIVE P.S.I non-zero at rest	Transducer zero offset	Recalibrate per §10.1.
Cylinder slow to retract	Return circuit restriction; valve fault	Inspect return solenoid; check hose for kinking.
Cylinder will not extend fully (Stage 6)	MAX P.S.I limit reached; mechanical stop	Verify MAX P.S.I; inspect plate for foreign object.
Hydraulic fluid milky	Water ingress to reservoir	Drain and replace fluid; inspect cap

Symptom	Probable Cause	Action
		and breather.

12.3 F.C.T. / PLC / Electrical

Symptom	Probable Cause	Action
F.C.T. dark or unresponsive	24 V control supply fault	Verify 24 V at PLC; check fuse.
F.C.T. frozen	Touchscreen comms fault	Power-cycle the press; if persistent, replace HMI cable.
Cycle will not engage	E-Stop latched; toggle held DOWN; finger button + toggle not simultaneous	Reset E-Stop (GCX1136); confirm toggle UP and on-screen finger button held simultaneously.
EDIT button RED — cycle won't advance	Recipe not locked	Press EDIT to GREEN before pressing RUN.
Stage parameters revert after edit	SAVE not pressed before RUN	Re-enter values; press SAVE before RUN.
Recipe not retained on power cycle	PLC retentive memory fault	Engineering review; reload program.
Branch breaker trips on power-up	Inrush from heater + pump on shared circuit	Verify dedicated 20 A circuits.
Toggle switch (ECX1510) intermittent	Worn contacts	Replace toggle assembly.
E-Stop will not reset	Latched fault; mechanical defect	Inspect E-Stop housing; replace if mechanical.
F.C.T. shows unexpected version	Software updated without change control	Stop work; notify Engineering; verify against approved version (V5.4.2).

12.4 Process & Quality (Pouch Behavior)

Symptom	Probable Cause	Action
One stream pulls back ≥ 1 in	SLIP — temp too low at stage prior; bag forward in pouch at loading	+5–10 °F or +5–15 s prior stage; verify pouch loading §7.7.
Pouch leak (rosin escaping wall)	Pouch flap not secured; sharp crease; pinhole from over-handling	Strike E-Stop; replace pouch; inspect parchment QC.
Bag blowout	Slip uncorrected; bag forward in pouch closed flow channel	Strike E-Stop; clean per §11; review pouch loading §7.7 with operator.
Acoustic break in Stage 1–3	Flow finished before stage time elapsed	SKIP or trim time per §9.1.

Symptom	Probable Cause	Action
Low yield (under-extraction)	Stage L too short; temperature too low	Increase Stage L by 10–20 s; +5 °F.
Dark / scorched product	Temperature too high or stage time too long	Reduce setpoint; reduce Stage 6; consider Pace & Warm vs. Quick & Warm.
Inconsistent press to press	Plate balance / pouch placement inconsistency	Verify even bag count, symmetric placement, balanced dummy.
Trichome heads visible in spent bag	Under-extraction (low temp / short time)	Increase Stage L dwell; verify temp at setpoint.
Loss of terpene aroma	Over-temperature or over-press	Move from Quick & Warm to Slow & Low; reduce Stage 6 dwell.
Cloudy / amber rosin	Long total dwell at high temperature	Shorten Stage 6; reduce setpoint.
Plate sticking residue	Inadequate IPA cleaning	Wipe with ≥ 99 % IPA; do not substitute other cleaners.

12.5 Cart & Mechanical

Symptom	Probable Cause	Action
Cart will not lift	Air in scissor-lift hydraulic; stuck check valve	Bleed cart hydraulic per cart manual; consult Maintenance.
Cart drifts down under load	Internal cart-cylinder leak	Tag out; replace cart per WB988933 service info.
Cart wobble or tipping concern	Casters loose; uneven floor	Re-engage caster brakes; relocate to level surface.
Press loose on cart deck	Mounting fasteners loosened	Tighten mounting; inspect deck threads.
Surface-mount hinge binding (V5)	Debris / lack of lubrication	Clean with IPA cloth; light hinge lubricant.

13. Specifications

Property	Value
Model	KWÄD V5 (current production); US (110 V) and EU (220 V) variants
U.S. Patents (Press)	Patent 1: 11,040,510 | Patent 2: 11,511,465
EU Patent (Press)	EP 3938197 (App. 20719248.5; 12 March 2020)

Property	Value
U.S. Patent Pending (Bag)	App. No. 63/875,878 — Rosin Bag V3.6 / V3.7 (independent IP)
Trademarks	Logo Reg. No. 7,051,799 | Name Reg. No. 6,203,574
Manufacturer	Access Rosin, Inc.
Control Software	Flow Control Technology™ (F.C.T.) V5.4.2
PLC	Kinco K506EA-30AT
Hydraulic Cylinder	100-ton, 2-in stroke single-acting; CE-marked equivalent ships standard. BVA 100-ton 2-in stroke single-acting cylinder optional BOM (specify at order).
Hydraulic Pump (US)	BVA Hydraulics ZPE30S4L01A-XP — 110–120 V / 60 Hz, 1-phase, 0.5 HP TEFC, S4L valve, 1-gallon reservoir, 24 V AC pendant
Hydraulic Pump (EU)	BVA Hydraulics ZPE30S4L01D-XP — 220–240 V / 50 Hz, 1-phase, 0.5 HP TEFC, S4L valve, 1-gallon reservoir, 24 V AC pendant
Maximum Pressure (commanded)	7,500 PSI (default MAX P.S.I)
Heating Capacity (US)	16 × 80 W cartridge heaters, 110 V (1,280 W total; 640 W per plate)
Heating Capacity (EU)	16 × 80 W cartridge heaters, 220 V (1,280 W total; 640 W per plate)
Plate Material	Aluminum 6061-T651
Plate Insulation	Phenolic, 0.5 in
Frame	ASTM A36 welded steel; black powder-coat matte
Enclosure	CRS 1008 sheet metal; 1/4 in acrylic side panels (V5)
Temperature Range	Ambient to 300 °F (149 °C)
Temperature Sensors	2 × XTP25N-030-0300F
Pressure Transducer	4–20 mA
Cart	Heavy-Duty Scissor Lift Table, PN WB988933
Cart Deck	20 in × 40 in (51 cm × 102 cm)
Cart Lift Range	15 – 39.3 in (38 – 100 cm)
Press Body Dimensions (approx.)	33.7 in tall × 16–19 in wide × 15–22 in deep
Loaded Weight (press + cart)	~ 900 lb (408 kg)
Power — Press (US)	Two dedicated 110–120 V circuits, 20 A each
Power — Press (EU)	Two dedicated 220–240 V circuits per local electrical code
Component Certifications	Cylinder: CE Cert HHC16901 (2006/42/EC; EN 1494; EN 60204-32);

Property	Value
	manufacturer ISO 9001:2008. Valve: SGS EMC EM/2005/90020 (89/336/EEC). Motor: TECO EC DOC.No.FA-7-G-034 (2006/95/EC; EN 60034; NEMA MG 1). PLC/HMI: CE marked per EN 61131-2 / EN 61000-6-2/-6-4.

14. Intellectual Property Notice

The KWÄD V5 Automatic E-Hydraulic Rosin Press Machine, the Pyramid Parchment Pouch, and the Rosin Extraction Bag system described in this manual are protected intellectual property of Access Rosin, Inc. and its successors. The marks ACCESS ROSIN®, KWÄD™, and Flow Control Technology™ are trademarks of Access Rosin, Inc. Operators, supervisors, and maintenance personnel shall recognize and protect this IP in the course of their duties: do not photograph, reverse-engineer, distribute drawings, or share specifications outside Access Rosin's authorized supply chain and licensed-facility scope without written authorization.

14.1 Patents — Granted

Reference	Number	Applies To
U.S. Patent No. 1	11,040,510	KWÄD Press / system fundamentals
U.S. Patent No. 2	11,511,465	KWÄD Press / Pyramid Parchment Pouch / V3.5 bag
EU Patent	EP 3938197	European jurisdiction equivalent
European Patent Application	20719248.5	Filed 12 March 2020 (priority date)

14.2 Patent Pending — Independent Bag IP

U.S. PATENT PENDING — APPLICATION No. 63/875,878

The Rosin Extraction Bag V3.6 / V3.7 (octagonal outer bag of the patent-pending double-bag system described in §7.5) is the subject of a separate, independent U.S. Patent Pending application (Application No. 63/875,878), filed by Access Rosin, Inc. as a standalone protection from the press patents.

The double-bag system — V3.5 inside V3.6 — is part of the same patent-pending IP family.

Reproduction or distribution of V3.6 / V3.7 bag samples, drawings, or specifications outside Access Rosin's authorized supply chain is prohibited.

14.3 Trademarks

Mark	Type	Registration
ACCESS ROSIN® (logo)	Logo / device mark	U.S. Reg. No. 7,051,799
ACCESS ROSIN® (name)	Word mark	U.S. Reg. No. 6,203,574

Mark	Type	Registration
KWÄD™	Product trademark (claimed)	Common-law / TM-pending
Flow Control Technology™ (F.C.T.)	Software trademark (claimed)	Common-law / TM-pending

14.4 Use of Marks

- First reference of ACCESS ROSIN in any external-facing document shall include the ® symbol.
- First reference of KWÄD or Flow Control Technology in any external-facing document shall include the ™ symbol.
- Patent and trademark notices shall appear on the cover and Document Information of every controlled document derived from or referencing this manual.
- Suspected infringement, counterfeit consumables, or unauthorized reproduction shall be reported immediately to Access Rosin support and to the facility's Compliance Officer for legal review.

15. Warranty & Support

15.1 Warranty

Refer to the Access Rosin commercial agreement and warranty terms supplied with the equipment. Field-replaceable consumables (heaters, seals, fittings, bags, pouches) and operator-induced damage are not covered under standard warranty. Component-level certifications (CE, ISO, EMC, EC) are documented in §4.7 and originals are retained on file at Access Rosin.

15.2 Warranty Returns — RMA Process

Warranty returns for the BVA hydraulic pump and other covered subcomponents flow through SFA Companies (Kansas City, MO), the authorized warranty processor. The KWÄD V5 press itself, the Pyramid Parchment Pouch, and the Rosin Bag (V3.5 / V3.6 / V3.7) are warranted directly by Access Rosin and do not flow through SFA.

DO NOT REPLACE OR DESTROY EQUIPMENT BEFORE RMA

Per the SFA Return Warranty Request Form (REV 02152010), do not replace, destroy, or ship any equipment until you have received instructions and a Return Material Authorization (RMA) number from SFA Companies. Returns shipped without an RMA number on the outside of the carton may be refused.

Required Information

- Date of the warranty request and the SFA Customer Number (issued at original purchase).
- Company name, contact name, address, phone, and email.
- A copy of the Resale Invoice.
- Model number(s) and quantity for each item being returned.

- Serial number(s) for each item — required. SFA may refuse warranty claims with missing or incomplete serial numbers.
- Date of purchase by the end user, per item.
- A clear description of the defect for each item.

Return Procedure

1. Complete the SFA Return Warranty Request Form (REV 02152010) with the information above. Attach the Resale Invoice.
2. Email the completed form to customerservice@sfacompanies.com.
3. Wait for SFA Companies to issue an RMA number and shipping instructions. DO NOT ship before this is received.
4. Mark the RMA number CLEARLY on the outside of the return carton AND on all accompanying paperwork.
5. Use ONLY the carrier specified by SFA in the return instructions — freight from any other carrier may be refused and returned to sender.
6. Ship to: SFA Companies — Warranty Returns, 10939 North Pomona Avenue, Kansas City, MO 64153.
7. The customer is responsible for return shipping charges. SFA may require equipment to be returned WHOLE for testing prior to issuing warranty credit.
8. Returned material must arrive within 90 days of RMA approval, or the RMA is void.
9. Warranty credit may be denied if SFA determines the defect was caused by customer abuse, misuse, or neglect, or if no defect is found. If the unit is found to be in good working order, it is returned to the customer at the customer's expense.

RMA Contacts

- SFA Parts and Warranty: 816-891-6390.
- SFA Customer Service email: customerservice@sfacompanies.com.
- Access Rosin support — for Access Rosin–warranted items (press, pouches, bags, F.C.T. software): use the channels supplied in the commercial agreement.

15.3 Support

For technical support, parts orders, and software (F.C.T.) update notifications, contact Access Rosin support through the channels supplied in the commercial agreement. Always have the press serial number, frame revision (V2 / V3 / V5), F.C.T. version, and a description of the symptom available before contacting support.

15.4 Document Distribution

This manual is a controlled document. Verify the revision number on the cover before use. Authorized recipients may print and post copies at the equipment; replace any posted copy when a new revision is issued.

15.5 Revision History

Rev	Date	Summary
1.0	Pre-release	Initial release (legacy V3.x lineage).
1.1	Pre-release	Added Recipe Methods; cleaning to ≥ 99 % IPA only; cart provisions; cylinder positions; bag geometry.
2.0	Pre-release	Renamed to KWÄD V5 (current production); software identified as F.C.T. V5.4.2 (V3.2 HMI Series designation removed); frame lineage (V2 / V3 / V5); comprehensive material & pouch preparation methodology; operator recipe tuning by acoustic and visual feedback; clarified two-hand activation (toggle UP); Access Rosin and F.C.T. branding.
2.1	Pre-release	Expanded §7 Material & Pouch Preparation: V3.5 Trapezoid (inner) and V3.6 Octagonal (outer) bag specifications; patent-pending double-bag system; three-step Pyramid Parchment Pouch construction; flow channel theory. Added §14 Intellectual Property Notice with full patent and trademark portfolio.
2.2	April 30, 2026	Added §4.6 BVA Hydraulic Power Unit with model numbers ZPE30S4L01A-XP (US) and ZPE30S4L01D-XP (EU), including BVA E-Pump pressure adjustment procedure and reference image. Added §4.7 Component Certifications: cylinder CE Cert HHC16901 (2006/42/EC); cylinder manufacturer ISO 9001:2008; SGS Taiwan EMC Compliance for the directional control valve; TECO EC Declaration of Conformity for the pump motor (2006/95/EC; EN 60034; NEMA MG 1). Added §4.8 KWÄD V5 — International (EU 220 V) Variant explaining 220 V heater and pump matching. Expanded §13 Specifications. Expanded §15 Warranty & Support with the full SFA RMA Process (RMA required, ship-to address, 90-day window, customer return shipping responsibility). Cylinder manufacturer name intentionally not referenced; equivalent CE-marked cylinder is the default install when the optional BVA cylinder is not specified at order. Effective date set.