Recommended Data Inputs for Accurate Pump Analysis

1. Pump & Well Specifications

- Pump size and type (e.g., 1.75" × 24" RHAC)
- Pump setting depth
- Tubing size and ID
- Casing size
- Plunger and barrel dimensions
- Pump clearance and type (metal-to-metal, soft-packed)

2. Fluid Properties

- Produced fluid level (actual vs. pump intake depth)
- Oil, water, and gas cut (PVT properties)
- Fluid specific gravity
- Viscosity
- Bottom-hole temperature and pressure
- Free gas estimate at pump intake

3. Equipment & Operational Data

- Pump stroke rate (SPM)
- Motor type and speed (VSD or fixed)
- Gearbox efficiency and size
- Counterbalance weight & position
- Wellhead pressure
- Pump spacing and anchor use

4. Historical Performance Data

- Previous dynacards and trends
- Fluid level surveys over time
- Well test or production data (BPD, gas rates)
- Maintenance logs (tagging, gas lock, stuck plunger incidents)

5. Sensor-Related Enhancements

- High-frequency dynacard samples (1000+ points per stroke)
- Accurate synchronization between surface and downhole cards

- Downhole sensor pressure data (e.g., pump intake pressure)

6. External Analysis Support

- Pump Intake Diagnostic (PID) software outputs
- Fluid level shots (e.g., echometer)
- SCADA or RTU trend data

Summary Table

Data Type	Why It Helps
Pump & Well Specs	Enables correct sizing, spacing, and load context
Fluid Properties	Improves fillage, efficiency, and gas lock analysis
Operational Data	Essential for torque, load balance, PRHP accuracy
Historical Dynacards	Allows trend/decline and problem diagnosis
Sensor Enhancements	Sharper card shape interpretation