

**KNOWLEDGE BASE**Article Type: **Instructions****Pallet Feeder Rotary Valve Suggested Adjustment Sequence for; Pit Model Machines, and M22HF, M16HF, 1600, M30, M50, M60 Machines****Description:**

Instructions on “How to” properly adjust pallet feeder rotary valve on; Pit Model Machines, M22HF, M16HF, 1600, M30, M50 and M60 Machines a. Reference drawing # D-382.526.12

WARNING

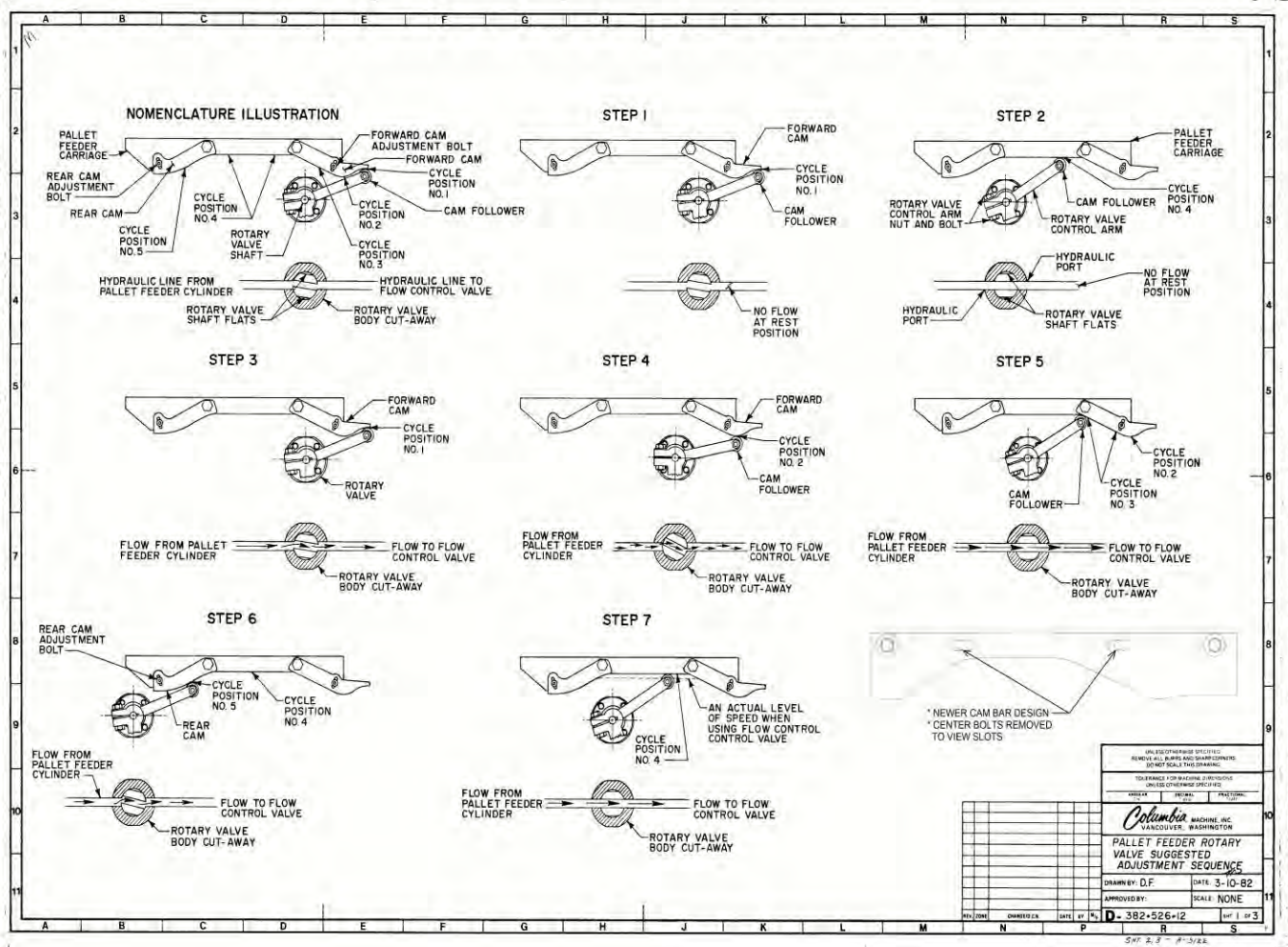
Never work on, clean or service this unit, control panel or any machine or open or remove any protective cover, guard, grate, door, or maintenance panel until the power or energy sources has been turned off, locked out / tagged out, and all moving parts have come to a complete stop and or blocked to prevent movement. Machinery is dangerous - avoid personal injury and or death by following manufacture, Local, and OHSAs safety procedures. Contact Columbia Machine for safety decals, guards, horns and beacons.

PALLET FEEDER ROTARY VALVE SUGGESTED ADJUSTMENT SEQUENCE

**** Before performing any adjustments, read the following instructions so the principals are understood. Then make the adjustments following the instructions step – by – step.

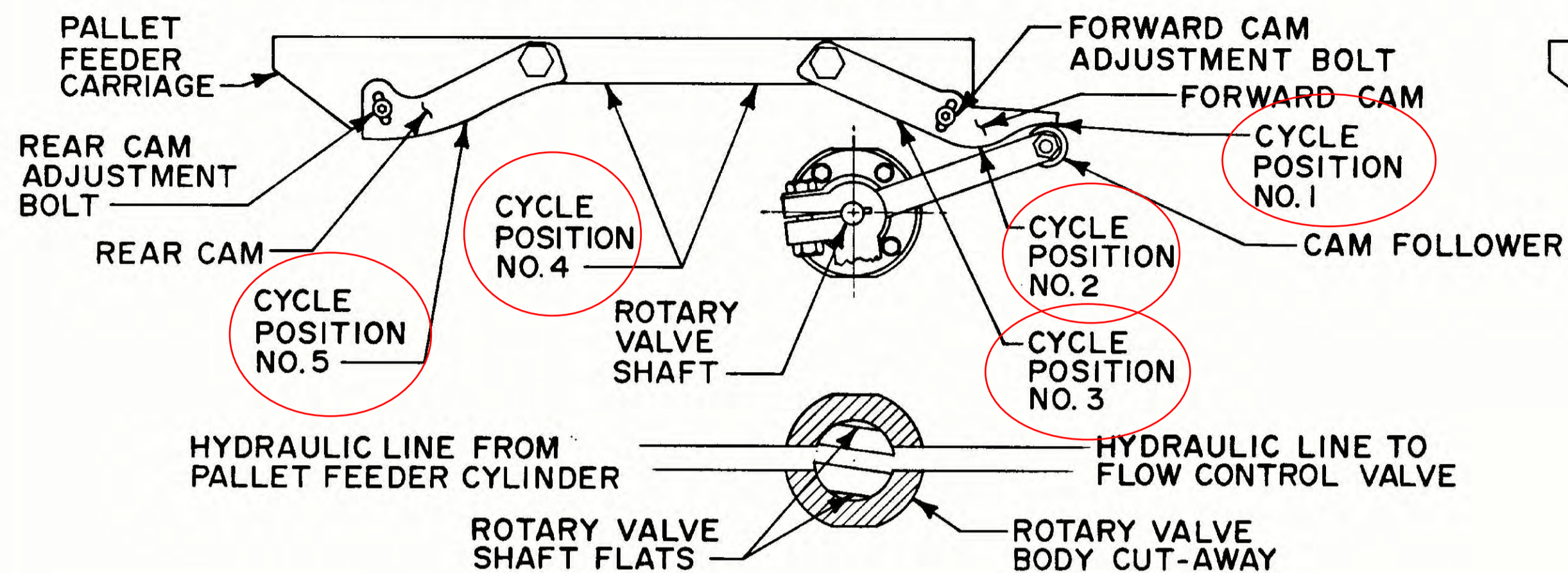
1. Familiarize yourself with components names.
(See nomenclature illustration on the drawing - 382.526.12).
2. Fully open flow control valve by turning the valve stem counter clockwise until it stops. (older machine this is in line and newer machines, this is mounted to the left side bottom)
(Step 1) shows the rotary valve at rear position of the cam system.
3. See (Step 2). Move the pallet feeder carriage forward so the cam follower on the rotary valve control arm is resting on the bump of the forward cam shown in (Step 4).
4. Loosen pinch bolt on rotary valve control arm. Align the rotary valve shaft wrench flats of the shaft so they are parallel with the two hydraulic ports on the rotary valve body. This allows for maximum oil flow through the rotary valve. Retighten pinch bolt on control arm.
5. See (Step 3). Return the pallet feeder carriage to cycle position # 1 in nomenclature illustration. Note the quantity of oil flowing through the rotary valve cut away diagram. The flow of oil is indicated by the size of arrowhead and length of arrow shaft in the cut away below each step. Operate the pallet feeder through a few cycles. Note how hard the empty pallet is contacting the loaded pallet on the pallet table when the cam follower is at cycle position # 2. See (Step 4).
6. If empty pallet contacts loaded pallet harder without damaging your most fragile product, adjust front cam to minimize impact. If empty pallet is hitting loaded pallet too hard and would damage your most fragile product, adjust the front cam down ward on older machines and loosen bolts to slide cam forward or back on newer machines. Once satisfied with the pallet speed and smoothness of operation moving pallets tighten all bolts. Cams are set and shouldn't need any further adjustments.
7. See (Step 5). As the follower moves from cycle position # 2 to cycle position # 3, the speed of the pallet feeder will accelerate until cam follower reaches pallet feeder carriage or the long flat portion between cams, cycle position # 4. NOTE: the increased oil flow from cycle position # 2 to cycle position # 3 in the rotary valve cut-way.

8. See (Step 6). The empty pallet is supposed to move as rapidly as possible but still stop smoothly on the center of the pallet table. If the empty pallet is not reaching the proper location, then move the rear cam upward on older style and slide backward on newer machines. If the empty pallet is going past the proper stopping point, lower the rear cam on older style and slide forward on newer machines. Once satisfied with the empty pallet positioning on the pallet table, tighten rear cam bolts.
9. With the cams set you will not need to adjust them again unless you start producing a more fragile product line or you are adjusting for normal wear.
10. All further pallet feeder speed adjustments will be made using the flow control valves mentioned in (Step 2). For the sturdy products like Bricks, Pavers and Stepping Stones. The pallet feeder speed is now all set. For more fragile products like chimney liners, slump block and lightweight building block, a slower speed is necessary through the cycle position # 4. This will reduce the pallet feeder speed between the front and rear cams, start turning the flow control valve stem clockwise until the desired speed is achieved. See (Step 7) on drawing 382.526.12. The dashed line running from the forward cam to the rear cam indicates what the oil flow is if the rotary valve has adjusted. But this flow was accomplished by adjusting the flow control valve. This adjustment does not affect the speed at cycle position # 4 and only the last portion of the cycle position # 3 and the start of cycle position # 5. Adjusting the flow control valve is the easiest, least time consuming and provides more consistent pallet feeder speed from one product to the next.
11. If you do use different pallet feeder speeds for different products, keep a log book of the flow control setting based on turns of the adjusting screw for each product type. These counts should start from the fully open position each time. When changing to a different product open the flow control wide open and then turn adjustment screw to desired setting for that product. Using this method there will be fewer chances for errors.

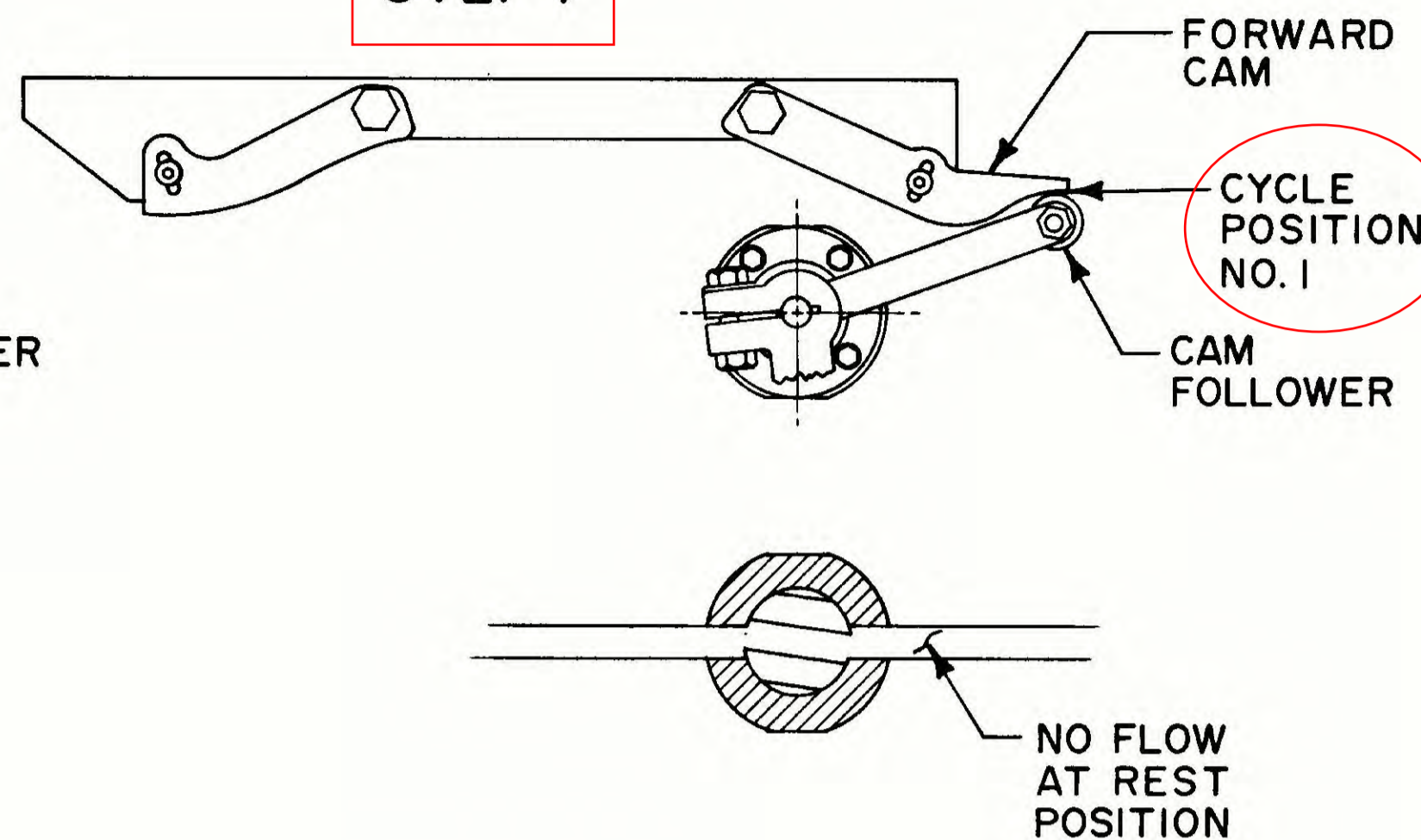


(See next page for full size drawing)

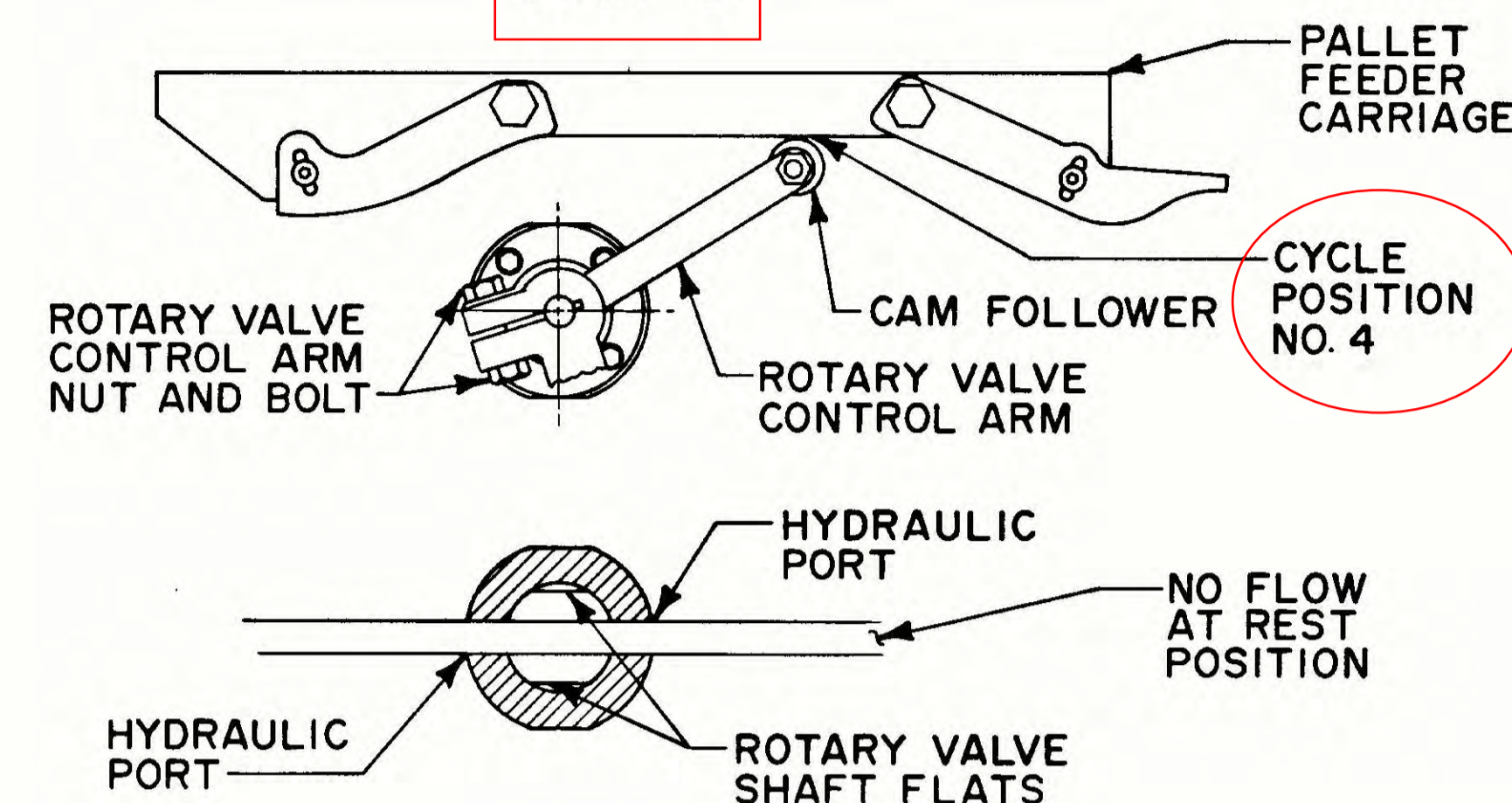
NOMENCLATURE ILLUSTRATION



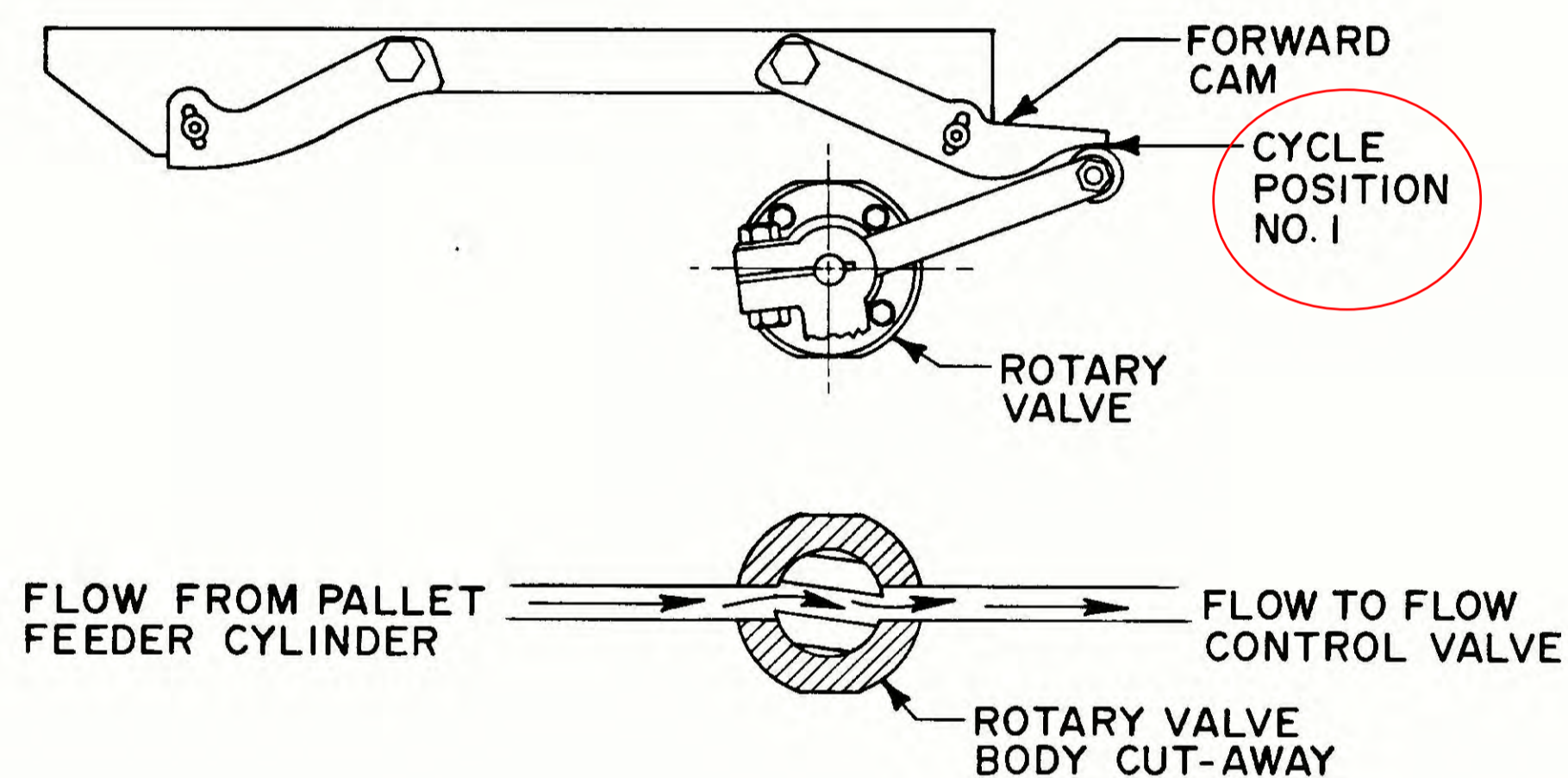
STEP 1



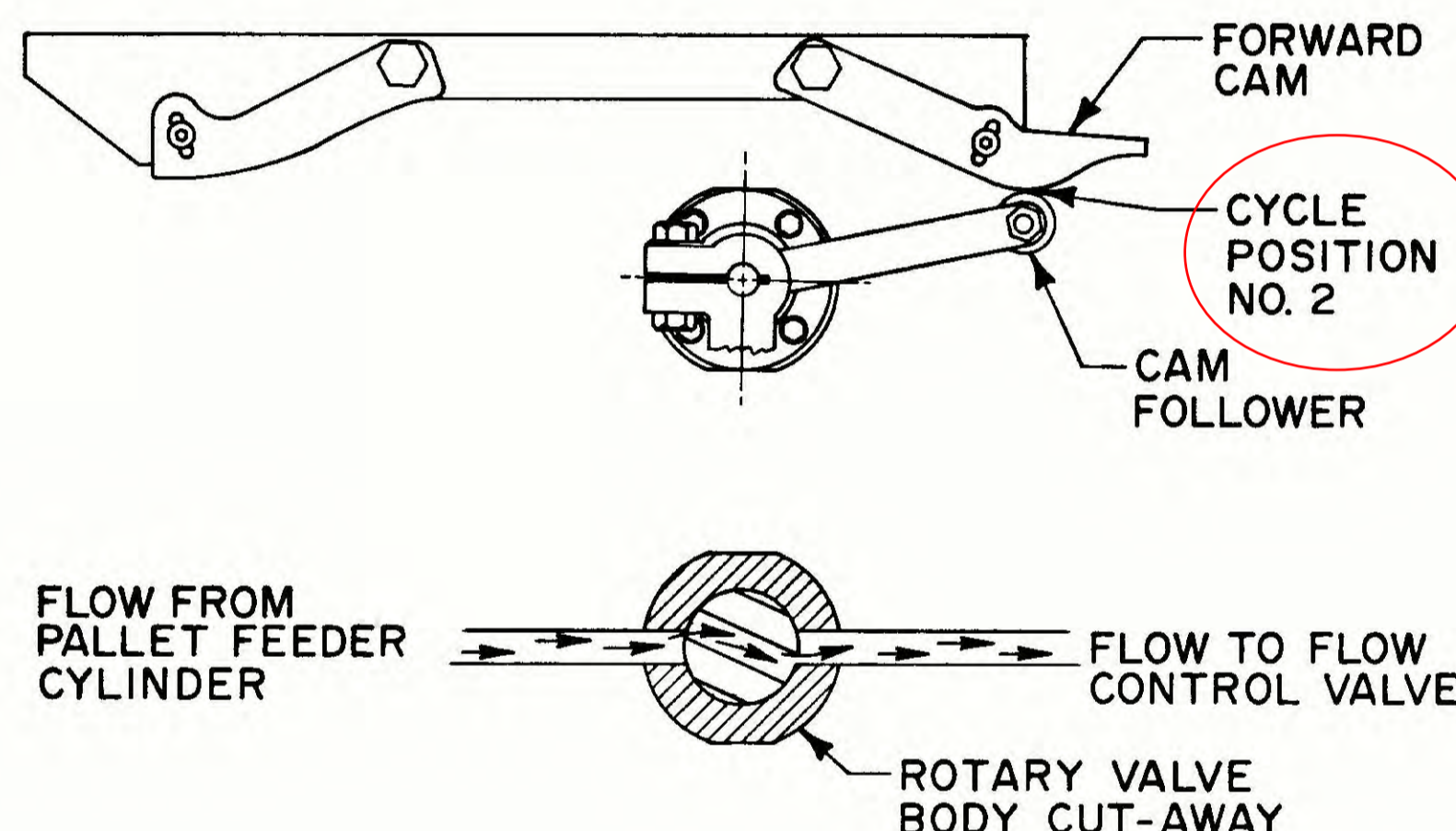
STEP 2



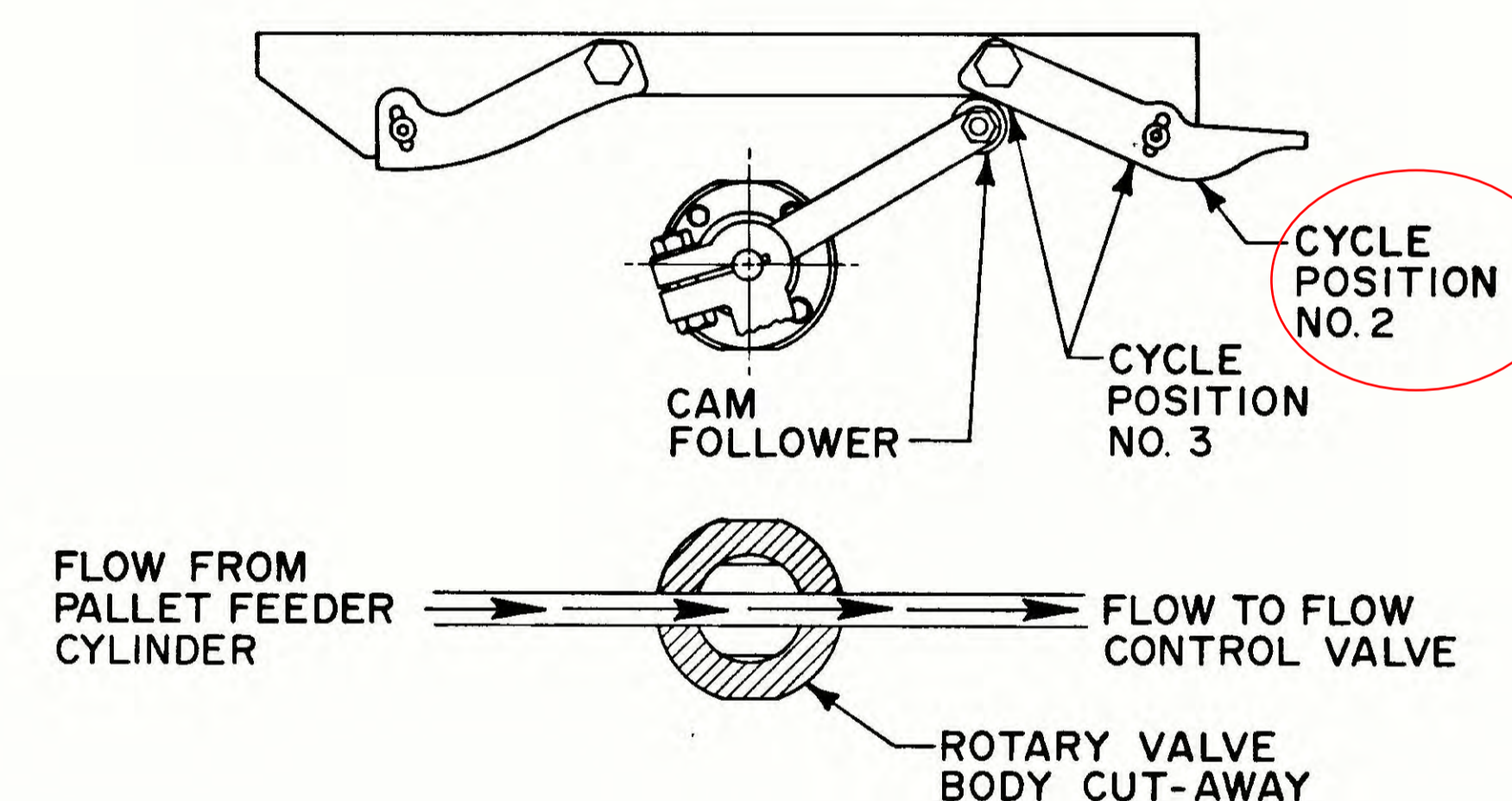
STEP 3



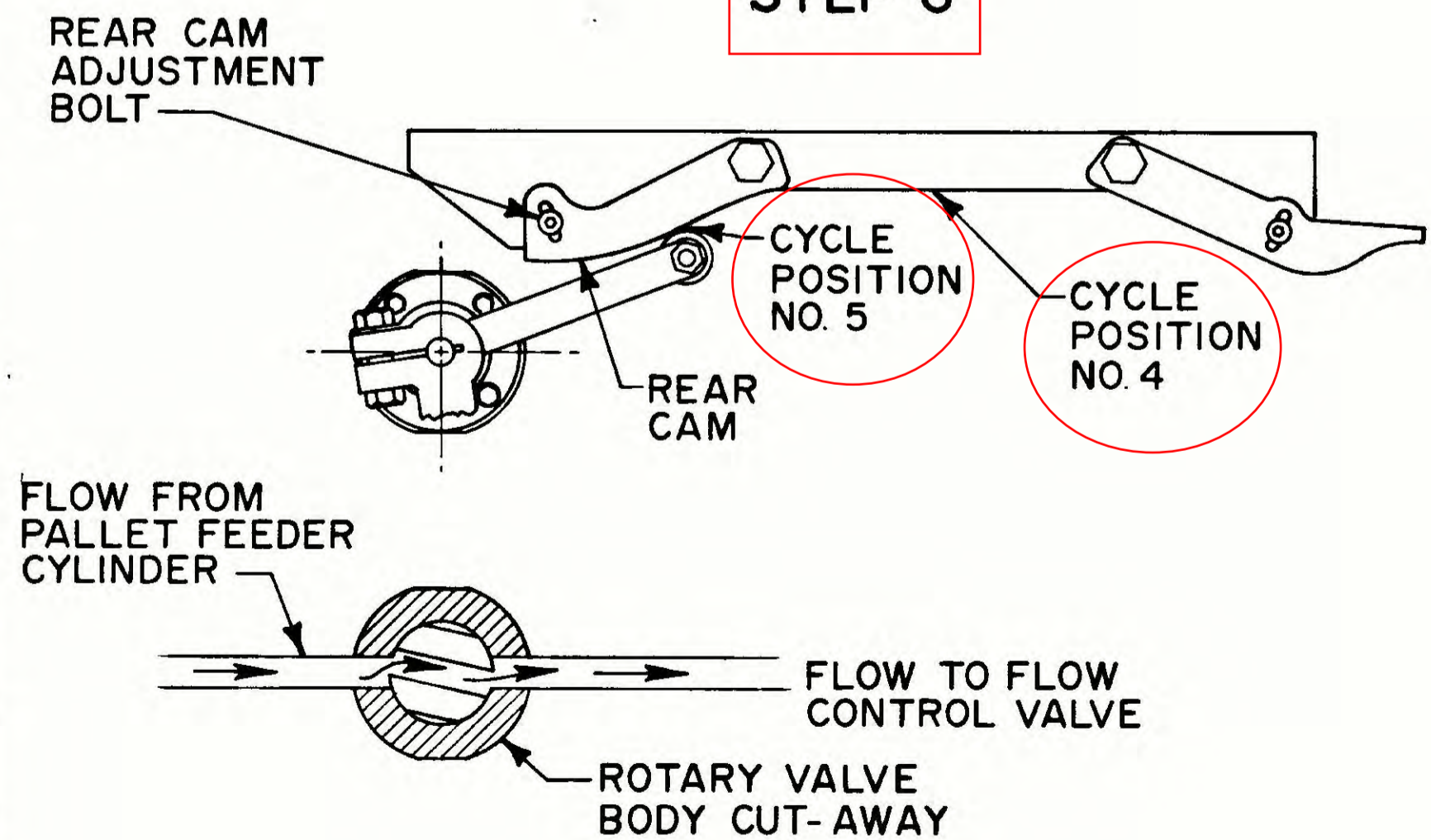
STEP 4



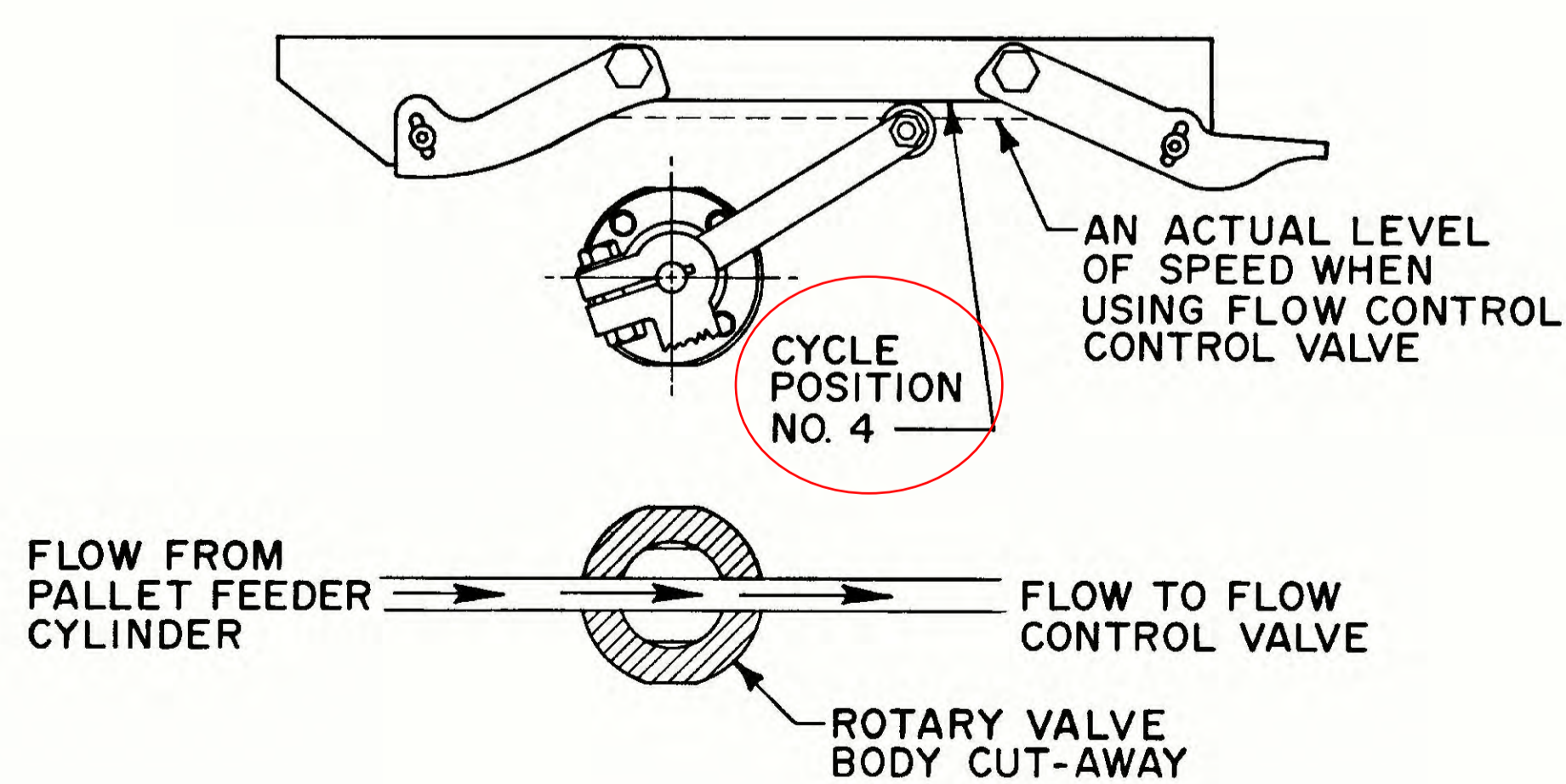
STEP 5



STEP 6



STEP 7



* NEWER CAM BAR DESIGN
* CENTER BOLTS REMOVED TO VIEW SLOTS

UNLESS OTHERWISE SPECIFIED
REMOVE ALL BURRS AND SHARP CORNERS
DO NOT SCALE THIS DRAWING

TOLERANCE FOR MACHINE DIMENSIONS
UNLESS OTHERWISE SPECIFIED

ANGULAR	DECIMAL	FRACTIONAL
± .01°	± .010	± 1/32"

Columbia MACHINE, INC.
VANCOUVER, WASHINGTON

PALLET FEEDER ROTARY VALVE SUGGESTED ADJUSTMENT SEQUENCE

DRAWN BY: D.F. DATE: 3-10-82

APPROVED BY: SCALE: NONE

D-382-526-12 SHT 1 OF 3

REV.	ZONE	CHANGE/D.C.N.	DATE	BY	M/E