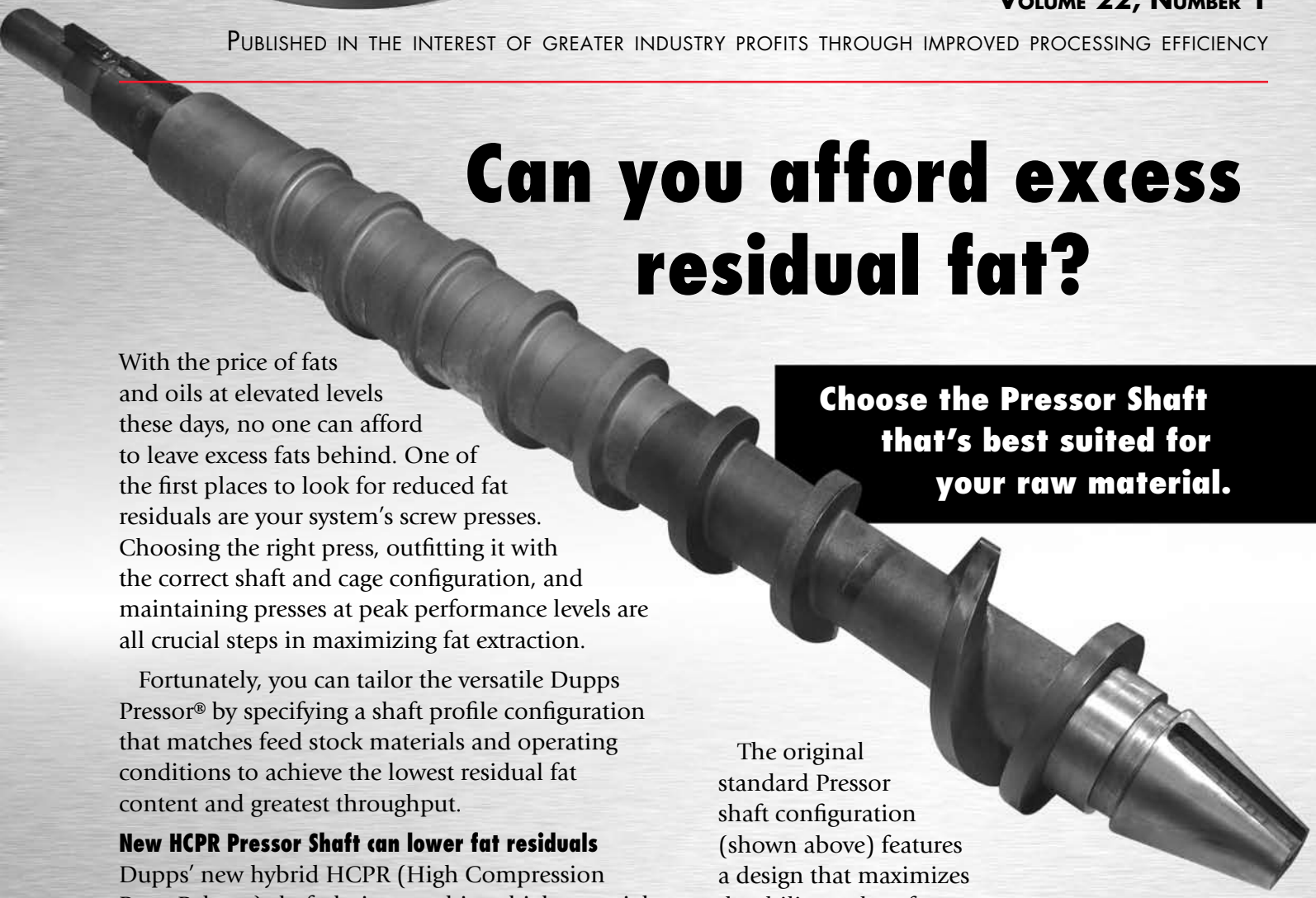
DUPPS UPDATE

Volume 22, Number 1

Published in the interest of greater industry profits through improved processing efficiency

Can you afford excess residual fat?



Choose the Pressor Shaft that's best suited for your raw material.

With the price of fats and oils at elevated levels these days, no one can afford to leave excess fats behind. One of the first places to look for reduced fat residuals are your system's screw presses. Choosing the right press, outfitting it with the correct shaft and cage configuration, and maintaining presses at peak performance levels are all crucial steps in maximizing fat extraction.

Fortunately, you can tailor the versatile Dupps Pressor® by specifying a shaft profile configuration that matches feed stock materials and operating conditions to achieve the lowest residual fat content and greatest throughput.

New HCPR Pressor Shaft can lower fat residuals

Dupps' new hybrid HCPR (High Compression Press Release) shaft design combines high material compression with a compression release feature built into the shaft: raw material is brought to full compression through the first half of the press, then partially released before recompressing during the final stage of travel.

In the same way that squeezing a household sponge twice releases more moisture, the HCPR shaft can release more residual fats by eliminating voids in the feed as it travels through the press. Combined with precision-cut barrel bars, the HCPR shaft provides up to 25% lower residual fat in pressed crax for most rendered products.

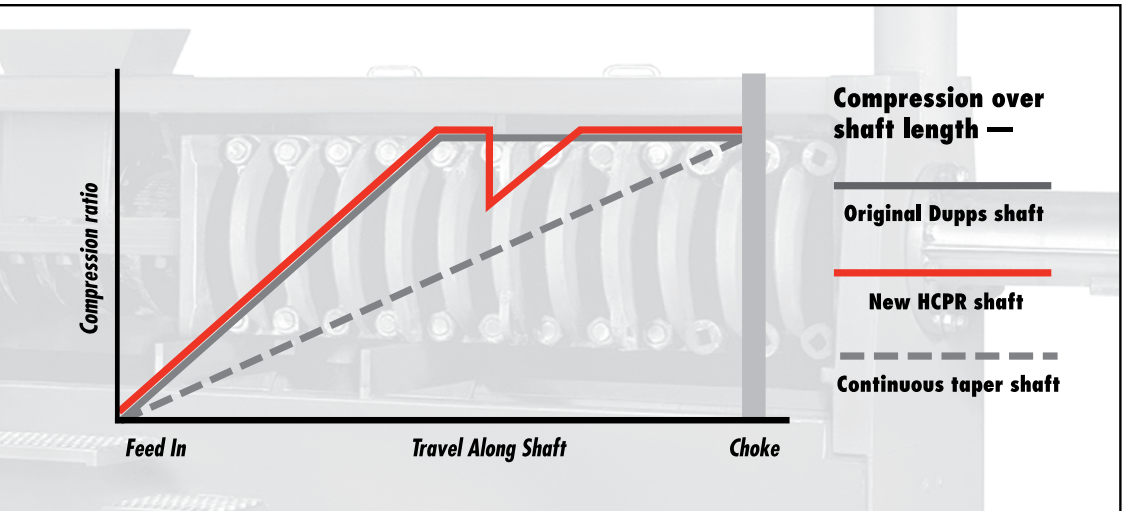
The original standard Pressor shaft configuration (shown above) features a design that maximizes durability and performance over a wide range of applications. This shaft brings raw material to full compression relatively quickly, and holds that compression for the rest of the material's travel. This shaft performs well with a variety of feed stocks and load conditions.

A third configuration, the continuous taper shaft, steadily increases compression through the length of the press, reaching full pressure at the final stage of travel. Tests have shown that this design performs best under full load conditions.

(Continued next page)

Can you afford . . . (continued).

While all three alternative shaft profiles handle feed stock differently as it travels through the press, all of them reach the same pressure at the final choke stage.



Not only can new Dupps Pressors be fitted with the shaft configuration of your choice, in many cases older Pressor models can be retrofitted with a new shaft that better suits current operating requirements.

Pressors are offered in variety of sizes to accommodate capacity requirements from 2,000 to 9,500 pounds per hour of pressed crax. They're designed to effectively handle a wide range of feed stocks, while still providing the highest possible energy efficiency. The largest Pressor features a 13" shaft that increases capacity and improves feed capability of soft, difficult to press materials. Midsize models today offer significantly more throughput compared to older presses of the same frame size. The smallest Pressor, a 7" model, is ideal for smaller plants requiring up to 3,000 pounds of pressed crax per hour.

A good time to check to see if you're operating with the most efficient shaft configuration is during machine service. Which brings up another important aspect of press performance, proper maintenance and repair. Shaft flights in particular are susceptible to wear, and can dramatically reduce performance. Dupps' Tuff-Cast® flights are made with a patented bi-metallic process that results in substantially harder and longer-lived wear surfaces. Virtually free of porosity and inclusions, Tuff-Cast outer surfaces help increase shaft life far beyond any other screw press flight. Field testing has proven that Tuff-Cast flights out-perform Stellite surfaced flights in every operating condition.

To make sure you're extracting the most from your screw presses, contact your Dupps representative today by calling (937) 855-6555, or visiting www.dupps.com.

Tips on boosting Pressor performance

Here are some important steps every press operator should take to make sure they are maximizing product yield with the highest efficiency.

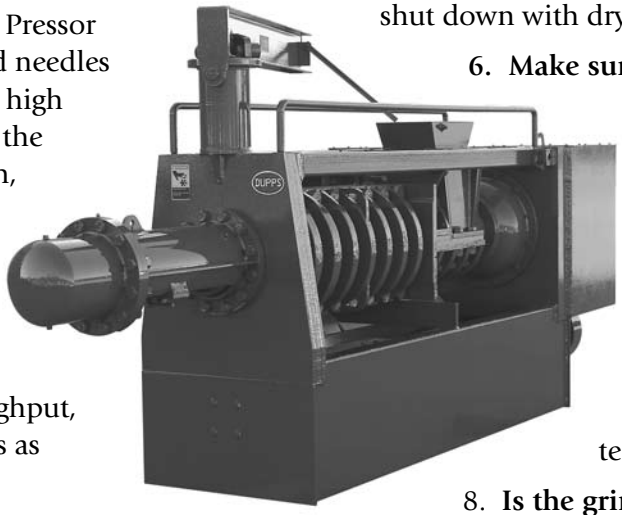
1. **Are the knife bars worn?** As the clearance increases between the lead edge of the flight and the knife bar, two things occur: the pressure point is reduced and the mixing action decreases. Both can result in high residuals. You can solve this problem by replacing just the knife bars approximately every 500 hours.

2. **If your Pressor has a choke, is the choke and choke head in good operating condition?** Does the operator ever have to change the pressure settings on the choke? A Pressor's motor load should determine choke positioning: Pressors extract fat more efficiently at high motor loads, but only to a point—ideally, the choke backs off just before the load becomes too high and cuts off the motor.

3. **Have your cage shim spacing analyzed for the optimum spacing for your specific product**. Chances are, it can be improved.

4. Is the set ammeter operating? Does it normally operate in the "comfort" zone, and does the operator have the ability to change it during operation?

A dual set-point ammeter on the control panel monitors the load on the Pressor motor. The ammeter's black needle indicates the percentage of full load of the Pressor motor; the two adjustable red needles indicate the low (choke) and high (feed conveyor) set points. If the motor load becomes too high, the ammeter reduces the load by controlling the choke and feed conveyor.



Adjust the ammeter set points before starting the Pressor. For maximum throughput, adjust the ammeter set points as follows:

- Low set-point — 95% of full load.
- High set point — approximately 105% of full load.
- Local conditions and experience can result in slightly different set-points.

5. Make sure your Pressor doesn't run for extended periods of time without any feed. Pressors wear out prematurely if run with low or no feed. In fact, a Pressor runs best when operating at its maximum capacity—any wear on the flights and the cage bars will be more even and consistent. When running significantly below maximum, or worse, when empty, all of the components wear unevenly, which in turn will lower a Pressor's efficiency. Also, always make sure Pressors are properly cleaned at shut down with dry material, then emptied.

6. Make sure there is a water supply hooked into the Pressor feed to assist in lubrication during high amp situations.

7. Is the temperature of the material kept as hot as possible? Keep your Pressor as close as possible to their cooking or heating source to boost material temperature—closer is better.

8. **Is the grind of the raw material as small and consistent as possible; or, are you using your Pressor as a grinder as well as a press?** Chunks of material that are too large may not be properly cooked; when that happens the Pressor's flights crush the oversize material, greatly increasing wear on the Pressor and lowering its throughput. Make sure your Precrushor and Grindor are doing their jobs to properly reduce material size in preparation for cooking and pressing.

Winter tune-up for air-cooled condensers

It may be warm weather now, but before you know it, colder weather will be here. Before winter arrives, you'll want to consider a tune-up for your air-cooled condenser—a properly running condenser is critical to maintaining good odor control and optimal system operation. Use the following checklist as a guide to tune up your air-cooled condenser.

1. Safety first! Always shut down and lock out power to the condenser before performing any maintenance or cleaning procedures.

2. Here's an important step just before cold winter temperatures: If your system operates with a variable pitch condenser fan, verify that the pitch of the fan blades are adjusted to the proper setting for winter operation. If the pitch was changed for summer operation, reset the pitch to winter settings following the manufacturer's instructions. Check the fan blade for damage.

3. Check the fan drives for proper operation, specifically:

- Condition and tension of drive belts.
- Level and condition of gearbox and bearing lubricants.

(Continued next page)

Air cooled condenser winter tune-up (con't)

4. Check the condition of the condenser tubes, looking in particular for split tubes, tubes that have pulled out of the header, damaged or dirty tube fins, and tubes internally blocked by rendered product.

- Split tubes should be plugged off at both the inlet and outlet header plates using tapered plugs. Contact the condenser manufacturer for specific instructions on plugging off tubes.
- Tubes that have pulled out of the header should be re-installed in the header, if possible. Tubes that cannot be re-installed should be plugged off at both the inlet and outlet header plates using tapered plugs. Contact the condenser manufacturer for specific instructions on plugging off tubes.
- Debris that collects in the tube fins and damaged fins impede airflow and, over time, can cause a significant loss of condensing capacity. (See the procedure following for a recommended tube fin cleaning procedure.) Excessively damaged fins should be repaired following the manufacturer's instructions.
- Blocked tubes should be cleaned using high pressure water or other suitable cleaning methods.

To clean the condenser tube fins, the following procedure may be used.

1. Cover fan drive motors and drives with suitable waterproof material.

2. Normal dust and dirt can be removed by running low pressure water over the top of the tube bundle.

3. Excessive deposits of dirt and fat, especially those on the bottom layer of fins, may require

loosening with a stiff bristle brush. Note that wire brushes are not recommended as they may damage the fins.

4. Fat or other non-soluble matter may require the use of detergent or other degreasing agent. Be sure that whatever you use is compatible with the tube and fin materials (fins are normally aluminum).

5. Care must be taken when using any type of pressure washer to avoid damage to the fins. Be sure to aim the water or steam flow straight down (or up) at the fins, at a 90° angle to the tube surface, so as not to bend or damage the fins.

If you have other questions about condenser maintenance, or any other system service concerns, please contact Larry Tully at (937) 855-6555.

DUPPS
Won't Let You Down

Germantown, Ohio, U.S.A.
Phone: 937/855-6555 • Fax: 937/855-6554 • E-mail: info@dupps.com

Visit **www.dupps.com** to find in-depth descriptions of the world's leading protein recycling systems, equipment and service.

8818 Printed in U.S.A.