

Processing Plan for 400 Birds Per Hour



As you begin planning your processing operation, obtain the advice of your local inspector. Requirements vary from one geographic area to another. By obtaining the blessing of your local inspector, you can often save time and expense. Local extension personnel can also be a good source of knowledge.

A summary of personnel required is shown in Exhibit 1. You will need about 3 people to kill, scald, and pick. You will need about 12 people to eviscerate and pack. Exhibit 2 shows the approximate location of these 15 people.

KILL

When killing the bird, it is best to cut the carotid artery, not the windpipe. This allows the bird to more easily bleed and minimizes shock. A properly bled bird will have little or no blood around the bone or joint. If you use an electric stunner and blood appears in the joints, the bird has been stunned too hard. Turn the setting lower. Do not cut the head off as the bird is bled. This will result in an undesirable appearance. The head should be removed during the evisceration process. Estimate bleeding time at about 1 minute and 15 seconds.

SCALD AND PICK

After birds are bled, they should be scalded then picked as soon as they can be loaded into your scald. SCALD AND PICK WITHOUT DELAY. The scald is the key to a good pick. When analyzing damaged birds, please note. If bird shows a bruise, the bruise happened before the bird was killed or during death shudder. A bled bird will not bruise. The darker the bruise the older the injury. If a broken bone has blood around it, the breakage occurred while the bird was alive. The darker the blood, the older the injury. Pick only long enough to pull feathers. Extending pick risks skin tearage. Excessive skin tearage in the breast and inner thigh are signs scald is too hot or long. Fatty tissue under skin should not liquefy. If fat breakdown occurs, scald is too hot.

Recommended Scald Capacities are:

Model No.		Length of Scald	Birds Scalded At One Time
BM60 (Galvanized)	Broilers	1 minute	9
	Pheasants	1 minute	9
	Turkey Hens	1 minute	3
	Turkey Toms	1 minute	3
	Quail	30 seconds	15-20
	Duck	1 minute	9
Scald Temperatures:		Broilers	145° F (63° C)
	Quail	127° F (53° C)	
	Duck	150° F (66° C)	

CAPACITIES ARE NOT GUARANTEED

All capacities indicated for individual machines or for complete systems are approximate. The ability to achieve the capacities indicated depends on many factors including but not limited to labor force experience, plant layout, whether or not equipment is operated under continuous production and size of the birds. Capacities indicated generally assume a 2.5 pound (1.1 kilogram) broiler. Birds larger than that will reduce capacity.

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Recommended Pick Capacities are:

Model No.		Length of Pick	Birds Picked At One Time
BP30SS	Broilers	30 seconds	10
	Pheasants	30 seconds	10
	Turkey Hens	30 seconds	3-4
	Turkey Toms	30 seconds	2
	Quail	15 seconds	20-30
	Duck	30 seconds	10
QBP23	Broilers	30 seconds	6
	Pheasants	30 seconds	6
	Quail	15 seconds	20-25
	Duck	30 seconds	4

When processing pheasant and turkeys, hand strip heavy wing and tail feathers ("flight feathers") before picking. Water fowl are a difficult species to pick--whether they are dry picked (no scald) or if they are scalded and picked.

Use only model SS48SS Scalders and Model SP38SS Pickers for larger turkey operations. Our smaller picker and scalders can be used if you are processing a few turkeys. If when picking, it is apparent that the birds are not sufficiently scalded, we recommend a longer scald, not a higher temperature.

Consider placing a sturdy step or platform between your scalders and pickers. This can improve productivity by making it easier to move birds between the two machines.

Make sure your Model BM60 Scalders are properly vented and that the vent is open. Without venting, heat builds up under the scalders and can cause equipment damage. Also, efficiency will be reduced resulting in higher gas consumption.

With practice, you can achieve a yellow skin if desired. A bird has two skins. The outer yellow skin is usually loosened in the scald. However, if you drop the scald temperature to 127° F (53° C), the outer yellow skin will remain in place. Scald for the same length of time, just drop the temperature.

There are markets for feet. Should you elect to market them, you can get them in presentable condition. Scald the feet twice (1 minute each time) and pick once for 30 seconds. The skin should be removed and you should have a marketable item.

EVISCERATE

The following operating plan is recommended. These recommendations may or may not fit your operation.

One worker can remove the feet and cut the oil gland. This should be done before birds are eviscerated. Position a barrel or cart near the eviscerating table to collect feet.

The second employee cuts neck skin and pulls crop.

One worker can open tail, pull vent, draw entrails. When drawing entrails, contamination can result if the operation is improperly performed. Care must be taken to pull out the intestines without tearing them. Separate giblet mass at this time and discard offal.

One person can separate the heart, liver and gizzard. Carefully pinch the gall off the liver or cut it off with the heart and liver shears. The gall may cause contamination and discoloration if broken. You can remove the sack around the heart with your fingers. If regulations require the tubes that go into the heart be trimmed, use shears to trim.

Use one employee to trim, split and wash gizzards. Use shears for trimming (a hacksaw blade also works well to split open gizzards).

One worker can peel gizzards and help take giblets to the point where they will be chilled. This worker will not be busy all the time. However, it is difficult to combine this operation with another.

Use one worker to remove lungs and wash cavity. The next worker can remove the heads, cut necks, wash carcasses and drop into chill tank.

CHILL

Consult a refrigeration or ice machine manufacturer or other expert about chilling your birds. This can be a capital intensive part of your operation. Purchase equipment that can be serviced in your locale. Purchasing an ice bin allows you to run your ice machine 24 hours a day. Other options for consideration include placing ice storage inside of a cooler or placing an ice machine on top of a small cooler. In other words, there are several creative possibilities for adding the cooling capability you need.

Chilling is necessary to reduce pathogen development. Chilling by itself will not reduce pathogens. Birds need to be thoroughly washed as well. Birds need to be chilled to below 40°F (4°C), i.e. 35 – 37°F (2–3°C) within 4 hours of death. Maintenance of the bird at this temperature can give shelf life of 7–10 days. The inside of the carcass should be chilled to this temperature. In operations of the size and type we sell, some variation of ice is usually used. Cubed, diced, flaked or shaved ice works better than large ice chunks. The amount of ice depends on the ratio of ice to water and also depends on the temperature of the room where chilling is performed. For chilling, estimate 1.5 pounds to 1.75 pounds (.7–.8kg) of ice per bird. This is where the water in your chill tank is about 35°F (2°C) and where room temperature is 68–77°F (20–25°C). To maintain birds in a cooler, estimate 10–15 pounds of ice (4.5–6.8kg) in a tray of say 20 birds.

Using Brower's chill pump Model No. CTAP60 (or CTAP50) will help your ice go further. Don't overload your chill tanks. Capacities are approximately:

<u>Model No.</u>		
PP430	75–100	Chickens
PP412	50–75	Chickens
PP433	20–30	Chickens

You will probably need two workers to ice, make boxes, pack boxes, weigh and stack or load. A foreman should handle one of these positions as packing twenty boxes of birds per hour is not a full-time job for one person. Be sure to train one of these people and make them responsible for assuring birds are properly chilled.

You will need two wheel trucks for moving coops and ice boxes. You may want to purchase small tables to facilitate your operation after you have had some experience.

We also recommend our electric stunner to reduce death shudder and carcass damage. To keep your stainless looking bright, mineral oil is excellent for cleanup.

EXHIBIT 1

LABOR REQUIREMENTS TO PROCESS 400 BIRDS PER HOUR USING SKILLED LABOR

1. Hang and bleed	2 - person
2. Scald	1 - person
3. Picker	1 - person
4. Remove feet, cut oil gland	1 - person
5. Cut neck skin and pull crop	1 - person
6. Open tail, remove vent, draw entrails, and separate giblet mass	1 - person
7. Trim heart & liver	1 - person
8. Trim, open and wash gizzards	1 - person
9. Peel gizzards, tend to giblets/chill tanks	1 - person
10. Remove lungs, wash cavity	1 - person
11. Remove heads, cut necks and wash carcasses	1 - person
12. Package birds, general labor	2 - people
	TOTAL 14 - people

