



## Food Processor-cum-Juicer Mixer Grinder Assistant on Duty in the Kitchen

For many households, especially in urban locations, the food processor-cum-juicer mixer grinder has become an integral part of the cooking function, especially in the pre-cooking stage. The range of services it renders is precious: from dough making (for chapatti/breads), chopping of vegetables (onion, garlic, ginger) and mincing of meat or hard fibrous vegetables like yam (jimmikand), to shredding of coconut and carrot, slicing of fruits and vegetables, and juice extraction from citrus and non-citrus fruits, and so on. Here, *Consumer Voice* checks up the various brands of food processors to assess how equal they are to various efficiency and safety parameters.

Imagine the morning rush hour unfolding minute by precious minute in a typical urban home, and you know exactly how the food processor would find its place there. There need no longer be a harried role-juggling adult feeling

trapped between the urgency of kneading a bowl of adamant wheat flour into uniformly soft dough and the unavailability of attending to a grouchy/hungry junior family member. The not-quite-humble food processor has arrived in the kitchen, and to what relief!

## COMPARATIVE TEST

Food processors (FP) are generally available and sold as one unit along with juicers, mixer and grinders (JMG), and thus are a complete kitchen machine to carry out multi-purpose functions. Yet, even more important than its versatility is perhaps its effectiveness as a time-saving device for the cook on the run – and it saves time while maintaining the uniformity that only a designed-to-precision machine can. At the end of the day, it does beat the human hand's tools – knives and scrubbers/slicers/cutters – fair and square. One gets the drift.

### Test backdrop

Since there was no specific Indian Standard particularly for food processors with regard to performance, *Consumer Voice* primarily followed the Indian Standard (IS: 4250) on food mixer grinder and juice extraction, having additionally developed test methods and parameters as per the main existing functions. The latter were also based on the guidelines and instructions as explained in the manuals of the food processors. Overall, about 40 test parameters emerged—certainly a mammoth task for the test lab but the stringency was unavoidable.

### Which brands?

Rank	Brand	Model	Rated Wattage	Retail price/ MRP (Rs)
1	Morphy Richards	SELECT 500	500	6350/6495
2	Bajaj	PX80F (platini)	600	5550/8040
3	Inalsa	Maxie DX	600	5050/6795
3	Prestige	champion	600	6100/7295
3	Sunflame	-	600	4450/6990
3	Glen	GL4051	600	4650/6490
4	Philips	HL1659	750	7600/8595
4	Usha Lexus	FP2663	600	4200/6195
5	Kenstar	KFC60W2M-FEP	600	5350/5995
5	Maharaja Whiteline	FPMW300	600	4200/6195

All the brands have given a one-year warranty.

Based on a market survey conducted in five metro cities (Delhi, Bangalore, Mumbai, Kolkata and Chennai), the regular selling brands and models were selected for comparative testing. It must be mentioned here that one popular brand, Panasonic, could not be included due to non-availability even with the major distributors in various places.

### TEST PARAMETERS

#### Operational/Performance Tests

**Dough making:** In this test, a uniform and smooth dough is prepared by mixing a fixed quantity of wheat flour and water in the kneading attachment as provided. The FP is operated till a uniform dough is obtained.

The scores have been assigned based on the optimum uniformity and time taken.

**Chopping of onion:** Here, 300gm onions (with one onion cut into 4 pieces) have been taken for chopping. The FP is operated at pulse position and operating time is kept up to 20 seconds. The final output is analyzed for uniform chopping and uneven pieces, if any.

**Mincing of meat/vegetable:** In this test, jimmikand (yam fruit, 500gm) has been taken for mincing (substituted for meat). The FP is operated at pulse position and the final output is checked for uniform size of pieces. Any uneven piece is observed and the output accordingly rated.

**Shredding or grating of coconut:** In this test, grating/shredding of hard/dry food articles is used for making very small and uniform pieces for further processing. The output as shredded material is checked for very small and uniform pieces, and observed for any uneven piece.

**Shredding of carrot:** The shredding of carrot is carried out to make halwa (a sweet preparation, especially during the winter seasons). There are other vegetable and fruit articles that are also grated for extracting juice or for using as it is. The period of operation is measured as the time. The output is checked for uniform shredding and then observed and rated.

Best Buy  
Morphy  
Richards

Value for Money  
Sunflame



### Key Findings

- ❖ In terms of overall test performance, Morphy Richards (89 per cent) topped the ranking, followed by Bajaj (88 per cent) and Inalsa, Prestige, Sunflame and Glen (87 per cent).
- ❖ Key performance tests include those for dough making, juice extraction, chopping, mincing and slicing. Morphy Richards, Bajaj and Sunflame occupy the top three spots. Maharaja Whiteline and Inalsa end up at the bottom, though by small margins.
- ❖ Sunflame is the 'value for money' brand.
- ❖ Morphy Richards and Inalsa are energy-efficient among all the brands.
- ❖ All the tested brands pass the safety, electrical and mechanical tests.

**Slicing of cucumber and carrot:** Slicing of vegetables and fruits is a daily necessity and the domestic food processor will be of practical value only if it performs this task efficiently on a regular basis. Hence, the

**Rating on Operational/Performance Tests of FP-cum-JMG**

Parameter- sand Score %	Dough making	Chopping of Onion	Mincing of Meat/ Veg.	Shredding/ Grating Cucumber and Carrot		Slicing : Cucumber and Carrot		Juice Extraction: Citrus and Non- Citrus Fruits		Grinding of Coffee I, II and III Sieves	Idli Batter Sieve and Egg Whisking	Sub- Total 38%
	5	3	4	6	6	5	7	3	5			
Brand												
Morphy Richards	5.00	2.7	3.2	2.55	2.7	1.25	2.0	3.5	3.15	2.17	4.79	34.01
Bajaj	4.25	2.85	3.8	1.8	2.85	2.37	2.0	2.97	3.15	2.39	4.79	33.22
Sunflame	4.50	2.85	3.2	1.8	2.1	2.5	2.37	3.15	3.15	2.42	4.94	32.98
Glen	4.50	2.7	3.0	1.8	2.1	2.0	2.0	3.32	3.32	2.65	4.96	32.35
Philips	4.75	3.0	3.8	2.85	3.0	2.37	2.37	1.75	1.05	2.25	4.77	31.96
Prestige	4.25	2.7	3.2	2.4	2.7	2.5	2.5	2.45	1.57	2.45	4.89	31.61
Kenstar	4.50	2.7	3.6	1.8	2.7	1.75	1.25	2.80	2.97	2.47	4.66	31.20
Usha Lexus	4.50	2.4	3.2	2.4	2.1	1.5	1.50	2.97	3.15	2.38	4.91	31.01
Inalsa	4.25	2.7	2.4	1.8	1.8	2.0	2.0	2.97	3.15	2.47	4.84	30.38
Maharaja Whiteline	4.25	2.7	3.8	1.8	2.7	1.0	1.0	3.32	2.10	3.56	4.86	30.06

## COMPARATIVE TEST

commonly used vegetables cucumber and carrot – also used to stir up a vegetable/fruit salad – are chosen for this test. Rating has been given based on the observation of output material as sliced and uniform pieces.

**Citrus fruits:** One of the important operational tests is conducted for extraction of juice from citrus and non-citrus fruits as well as vegetables. In this case, citrus (oranges) and non-citrus (apples) fruits are chosen and operated as per the guidelines of the manual. Output as clear and uniform liquid as juice is judged for rating. The observation as reported is mainly for smooth and uniform/homogeneous juice.

The details of the test results are given in the table 'Rating on Operational/Performance Tests of FP-cum-

### Quality and Safety Tests

**Input power:** The input power at normal operating temperature shall not deviate from the rated power input by more than +15 per cent.

Input Power As Consumption: Rated Deviation Consumption Weightage		
Brand	Consumption, Watts	
	Consumption	Rated
Morphy Richards	477	500
Inalsa	474	600
Prestige	509	600
Maharaja Whiteline	521	600
Bajaj	535	600
Kenstar	539	600
Usha Lexus	435	600
Glen	565	600
Philips	601	750
Sunflame	636	600

All the brands have been subjected to various safety tests namely protection against electric shock, starting, electrical insulation and leakage current at operating temperature, moisture resistance, spillage, humidity treatment, insulation resistance and electric strength (after humidity treatment), high voltage and endurance. All the brands pass the tests satisfactorily, meeting the Indian Standards requirement.

JMG'. Morphy Richards has scored maximum in citrus juice test (500gm of oranges), with Philips bringing up the tail-end. In non-citrus test (300gm of apples), Inalsa scored the highest and Prestige the lowest.

**Grinding of coffee:** As per IS, the recommended quantity of roasted coffee beans is taken for grinding and filtered in the three sieves of different microns. The material retained on each of the first two sieves shall not be more than 20 per cent of the weight obtained at the end of the test. The material passing through the third sieve shall not be less than 30 per cent of the same weight.

**Idli batter sieve test:** This test indicates uniform performance in making a batter of rice and black gram. This requires grinding and mixing of the material in water to make a uniform, smooth and homogeneous batter for further cooking.

- ❖ The mixture of rice and black gram shall be smooth and frothy, and no lumps shall be detected.
- ❖ The material retained by the 1.40mm sieve shall not be more than 10 per cent of the mass of rice originally taken.
- ❖ The material retained by the 1.00mm sieve shall not be more than 15 per cent of the mass of rice originally taken.
- ❖ The material retained by the 0.50mm sieve shall not be more than 70 per cent of the mass of rice originally taken.

**Whisking egg white:** Coming to whisking of egg white, all the tested brands have been found to be quite satisfactory, meeting the IS requirement. In this test, the material shall remain in the bowl when inverted for five seconds.

### Instruction manual

The domestic food mixer shall be accompanied by an instructions booklet containing various information so that the users can use the appliance in the most convenient and user-friendly manner. Here, Philips and Usha Lexus have provided the most satisfactory information, followed by Glen.

### To sum up

In view of the rigorous comparative testing of over 40 parameters conducted on all the brands of food processor-cum-juicer mixer grinder, all have passed the tests satisfactorily meeting the guidelines and the Indian Standard for JMG. All receive the go-ahead

in terms of the safety, electrical and mechanical tests. All the brands have been found to be robust in construction as well as their assemblies and attachments. As for the workmanship and finish, Philips has a unique shape and design particularly for hands-free operation and thus been rated very well.

In terms of key performance – namely dough making, juice extraction, chopping, mincing and slicing – Morphy Richards has performed on the top, followed by Bajaj and Sunflame. Maharaja Whiteline, Inalsa and Usha Lexus are at the bottom, though by small margins. In terms of overall test performance, Morphy Richards (89 per cent) topped the ranking, followed by Bajaj (88 per cent) and Inalsa, Prestige, Sunflame and Glen (87 per cent). Sunflame is the value-for-money brand. Morphy Richards and Inalsa are energy-efficient among all the brands, being rated at 500 watts and 600 watts, respectively. Philips is rated for 750 watts, which is the maximum among all the brands.



**Capacity of Various Jars of FP-cum-JMG in litre/gram**

Brand	Food Processor		Liquidizer		Grinding		Chutney		Total Score out of 3
	Capacity (litre)	Wt. %	Capacity (litre)	Wt. %	Capacity (litre)	Wt. %	Capacity (litre)	Wt. %	
Usha Lexus	2.0	100	1.5	100	1.0	100	400 ml	100	3.0
Bajaj	1.5	75	1.5	100	1.0	100	0.4	100	2.75
Prestige	15	75	1.5	100	1000	100	300 ml	75	2.63
Morphy Richards	1.5	75	1.2	80	750gm	85	100	25	2.11
Inalsa	1.0	50	1.5	100	1.0	100	400	100	2.5
Philips	1.0	50	1.5	100	1.0	100	400 ml	100	2.5
Sunflame	1.0	50	1.5	100	1.0	100	400 ml	100	2.5
Maharaja Whiteline	300–800 ml	45	1.5	100	1.0	100	300 ml	75	2.33
Glen	1.0	50	1.0	66.6	800ml/400	80	400/200	100	2.06
Kenstar	1.25	62	1.25	83.3	1.0	100	NP*	-	1.95

\*Not provided

All the brands have been verified for the net weight of the attachments to check for durability. Philips emerges top in these measurements and for the main unit as well, followed by Bajaj and Inalsa.

## COMPARATIVE TEST

### It's a Time Saver

To state the obvious, the food processor has taken off much of the drudgery from meal-cooking times. The one who slogs it out in the kitchen on a regular basis is keenly aware that the most cumbersome part is the preparation of the various ingredients. **Manu Tyagi** spoke to a few kitchen regulars to find out how much of a practical help has the food processor been.

'My food processor has been in my kitchen for nearly 15 years now,' says 47-year-old housewife Suman Dhawan, claiming somewhat dramatically of her Braun food processor, 'with this machine by my side, I don't find cooking anything much of a challenge.' She should know. Every morning the lady has to prepare breakfast and lunchboxes for five family members. She assures us that the food processor makes a superior wheat dough compared to her output, and that too in about half a minute (or, as she puts it, in about the time one would take to drink a glass of water!).

Grating any number of carrots to make halwa is another convenience. A smart mom can even grate something that the kids do not care much for and have it disappear into their favourite parathas. Mrs Dhawan here routinely does this trick with bottle gourds, which her children never used to eat earlier. And despite the frequent usage, maintenance has not been an issue. While cleaning the processor is hardly a chore, she does suggest that it be cleaned immediately after being used so that the food matter does not dry off on the blades and then become adamant about being rubbed off.

Even in the case of a nuclear family like Radhika's, the food processor is a blessing. She herself is an office-goer and likes to make sure that the kids, her husband and she not only have a hearty breakfast but also get to take their preferred dishes to school and work. While this would have seemed like a tall order in another time and place, she claims that the food processor carries out most of the tasks most efficiently and quickly. In other words, there is no real hurry anymore.



**COMPARATIVE PERFORMANCE RATINGS OF FOOD PROCESSORS**

Brand Test Parameters	Weight- Age (%)	Morphy Richards	Bajaj	Inalsa	Prestige	Sunflame	Glen	Philips	Usha Lexus	Kenstar	Maharaja Whiteline
		Select 500	Px80f- Platini	Maxie Dx	Champion	Fp	GI 4051	Hl1659	Fp2663	Kfc60w2m- Fep	Fpmw300
Retail price/MRP, Rs		6350/6495	5550/8040	5050/6795	6100/7295	4450/6990	4650/6490	7600/8595	4200/6195	5350/5995	4200/6195
<b>OPERATIONAL/ PERFORMANCE TESTS</b>	<b>(38)</b>										
Dough making	5	34.01	33.22	30.38	31.61	32.98	32.35	31.96	31.01	31.20	30.06
Chopping of onion	3	5.00	4.25	4.25	4.25	4.50	4.50	4.75	4.50	4.50	4.25
Mincing of vegetables	4	2.7	2.85	2.7	2.7	2.85	2.7	3.0	2.4	2.7	2.7
Shredding of coconut & carrot	6	3.2	3.8	2.4	3.2	3.2	3.0	3.8	3.2	3.6	3.8
Slicing of cucumber & carrot	5	5.25	4.65	3.6	5.1	3.9	3.9	5.85	4.5	4.5	4.5
Juice extract: citrus & non-citrus fruits	7	4.25	4.37	4.0	5.0	4.87	4.0	4.74	3.0	3.0	2.0
		6.65	6.12	6.12	4.02	6.3	6.64	2.8	6.12	5.77	5.42
Whisking white egg	2	2	2	2	2	2	2	2	2	2	2
Grinding coffee	3	2.17	2.39	2.47	2.45	2.42	2.65	2.25	2.38	2.47	2.53
Idli batter	3	2.79	2.79	2.84	2.89	2.94	2.96	2.77	2.91	2.66	2.86
<b>SAFETY TESTS</b>	<b>(21)</b>										
Earthing & protection against electric shock	2	18.45	19.24	20.80	19.56	20.22	19	18.73	18.34	19.72	20.12
Endurance & starting	5	2	2	2	2	2	2	2	2	2	2
Temperature rise	6	5	5	5	5	5	5	5	5	5	5
Temp. withstand of bowls	1	4.0	4.42	5.8	5.02	5.69	4.09	4.26	3.9	5.14	5.14
Controls, strength for assembly	2	1	1	1	1	1	1	1	1	1	1
Insulation resistance & elect. strength & leakage current	3	2	2	2	2	2	2	2	2	2	2
Stability, mech. hazards & strength	2	2.45	2.82	3	2.54	2.53	2.91	2.47	2.44	2.58	2.98
<b>QUALITY &amp; GENERAL TESTS</b>	<b>(41)</b>										
Input power	6	2	2	2	2	2	2	2	2	2	2
Noise level	3	36.10	35.65	36.12	35.70	33.37	35.21	35.36	36.49	34.34	34.70
Convenience & ease of use	5	5.68	5.14	5.37	5.22	4.50	5.06	4.98	5.14	5.14	5.19
Construction quality	8	2.62	2.46	2.69	2.64	2.71	2.34	2.65	2.05	2.22	2.53
Components	4	4.6	4.6	4.2	4.75	4.6	4.25	4.85	4.5	4.35	4.4
Weight & capacity of attachments	5	7.81	7.89	7.94	7.82	7.97	7.89	7.89	7.86	7.89	7.89
Packing, marking & instruction manual	10	4	4	4	4	4	4	4	4	4	4
		3.69	4.46	4.02	4.27	3.99	3.75	4.29	4.64	3.54	3.79
<b>Overall score (%) rounded off</b>	<b>100</b>	7.7	7.1	7.9	7.0	5.6	7.92	6.7	8.3	7.2	6.9
		89	88	87	87	87	87	86	86	85	85

Rating: >90: Very good\*\*\*\*\*, 71–90: Good\*\*\*\*\*, 51–70: Fair\*\*\*\*, 31–50: Poor\*\*, <30: Very poor