

PRINCE-40 SOLAR CONCENTRATOR, DO IT YOURSELF (DIY) KIT



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PRINCE-40 Concentrator



Salient features:

1. Available in DIY kit. (Do It Yourself kit). Can be assemble easily with the reference of manual.
2. Reflector is supported by strong fabricated structure and hence dish shape is protected against strong wind, stone or ball hits etc.
3. Tested at RTC. Approved product by MNRE, Govt. of India.
4. 4 sqm aperture area.
5. Patent pending.
6. **Can cook Mid Day Meal for 50 Children in 1 hr.**
7. Manual tracking, easy to operate.
8. Maintenance free system.
9. Available through Channel Partner Scheme of MNRE



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CRS / MPSSS project in M.P. & Chattisgarh

Salient features of the project: Total 42 units were installed.
Project executed for “Residential schools for Tribal children”.

1. First project of this nature in central India, Madhya Pradesh and Chattisgarh region **servng around 2500 children.**
2. Project executed only after demonstration of technology and approval of the same by the cooks. **Initially 2 units were installed for demonstration and further 40 units were added.**
3. All units were installed by local people of MPSSS, women also participated in fixing the solar cooker.
4. Users reported many aspects apart from fuel saving like ‘Freedom from smoke’, ‘Great Taste’, ‘Extra time available for other work’ etc.



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CRS / MPSSS project



“Feedback 1 from Fr. Joseph Porimattam, Director Samaritans addressed to Fr. Mathew of MPSSS“: Dear Father, Greetings from Samaritans! This to inform you that **we have already installed PRINCE-40 solar cookers in four places** viz. Asha Bhavan, Panna, St. Joseph Balabhavan, Panna, Samaritan Hospital , Satna, & Uday Balabhavan, Karimatti. As the result **everywhere it is functioning very well and it is used to cook Chaval and Dhal,** which **reduces the use of Gas** and really they benefit out of it. **Taste of food is great.**



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CRS / MPSSS project in M.P. & Chattisgarh

“Feedback 2 from Fr. Sebi Thottankara, to Fr. Mathew of MPSSS“: **16 nos. PRINCE-40 solar cookers are installed at different schools.** Rice, pourage, Dall, vegetables and boiling eggs are cooked within **50 to 65 minutes** at present. The hostel management and **cooks are happy** because it not only **save time and money but also protect eyes from smoke and fire** to persons who are in the kitchen. Along with the cooking in the solar cooker, **cooks are able do other kitchen work.** Once again we are grateful CRS and MPSSS for your kind support.

“Feedback 3 from Fr. Praful Kujur to Fr. Mathew of MPSSS“: **PRINCE-40 solar cookers are installed at 16 different schools catering to 907 students.** Mr. Oscar Xalxo GVK the administrator visited most of the centers and took feedback about its functioning. **All the Solar Cookers are functioning well and the center in-charges are happy to have this set.** In the beginning they had little problem only because they were not setting according to the sun ray. Now they are happy to receive it and **saving lots of fire wood**, also the extra expenditure has been reduced.



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WOTR (Watershed Organisation TRust) project in Maharashtra



**Salient features of the project:
Total 23 units were installed.**

1. Need based project, executed in Sangamner area of Maharashtra.
2. Project for **Mid-Day-Meal** scheme for schools.
3. Serving approx. 1500 children.
4. Pilot project, likely to be expanded to many schools.



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WOTR (Watershed Organisation TRust) project in Maharashtra



WOTR project of PRINCE-40 Solar Cookers was rated as best project in Social audit with 100% cookers operative after one year.

WOTR wants to extend the project to hundreds of schools under their territory as and when they get funds. 4 cookers are installed in M.P. and 6 more are in piping.



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MUST SEE Videos:

PRINCE-40 solar cooker video in Marathi by WOTR Excellent video, must watch

<http://www.youtube.com/watch?v=F5KT2Vk2Hjk&feature=youtu.be>

Same video English translation

<http://www.youtube.com/watch?v=9L7li8k0hxA&feature=plcp>

Same Video TELUGU translation

http://youtu.be/p30wpu_Ql0k

PRINCE-40 in action, used with pressure cooker of 25 liters capacity. See video at
http://youtu.be/c_MLsJ9OILQ



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Experimenting with PRINCE-40 Concentrators Beyond Cooking



Autoclaving at Govt. Medical College Dhule

PRINCE-40 concentrator was used at PHCs for autoclaving surgical as well as biomedical waste. Project done in association with 'Government Medical College Dhule' Project won 1st Award for medical research at state level event. Also reputed Elsevier journal published the research paper.

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Other interesting projects with PRINCE-40 Concentrators



PRINCE-40 concentrators along with PRINCE-15 concentrators were used in world's first ever "Solar Trek" where these solar cookers were used by a team of Netherlands in High altitude of Nepal and all food during trek was cooked on these solar cookers.

PRINCE-40 Concentrator: Autoclaving test

Shri.Bhausahab Hire

GOVERNMENT MEDICAL COLLEGE DHULE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the following tests for Autoclaving application were conducted on

“PRINCE - 40 SOLAR CONCENTRATOR”

- 1). Preparation of dehydrated culture media.
- 2). Decontamination and sterilization of bacterial cultures in the laboratory.
- 3). Sterility Checking of prepared media using biological spore strip and chemical spore strip in portable autoclave.

In the campus of “BHAUSAHEB HIRE GOVT. MEDICAL COLLEGE DHULE .Tests were conducted during 07.01.2010 to 25.01.2010. This **“PRINCE -40 CONCENTRATOR”** is developed by


Prof.AJAY CHANDAK

All the test results are satisfactory. This **“PRINCE - 40 SOLAR CONCENTRATOR”** is recommended for Autoclaving application


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Intellectual Property Rights

PRINCE design of solar concentrators have has won Innovation Award at event “Innovation 2010”.

Designs and products are protected by patents and unauthorized manufacturing, copying without consent of inventor is strictly prohibited and is liable for prosecution.

At present agreements for ‘Patent Rights’ are shared with following manufacturers. More manufacturers will be added in near future.

- a. Essential Equipments, Dhule.**
- b. Span Sources, Pune.**
- c. Eternal Solutions, Dhule.**
- d. Excellent Renewables Pvt. Ltd. Valsad.**
- e. MSA Renewtech Foundation, Vadodara.**



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Cooking speed

- PRINCE-40 cooks 5 kg of rice or Potatoes in one hour. This is good enough for 50 children in Mid Day Meal Scheme. With 2 hours of usage this concentrator can feed 40-50 adults for full meal (Rice, Dhal & Vegetables). Saving observed was 550 gms of LPG per hour.
- Food can be independently cooked in open pots or in pressure cookers. Alternatively all food, “Rice, Dhal and Vegetables” can be combined in one pressure cooker in different pots.



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Pricing

| Item | MNRE Cost | Subsidy, | Nett billing cost after subsidy |
|-----------|-----------|----------|---------------------------------|
| PRINCE-40 | 40000 | 8400 | 31600 |

- MNRE cost is on lower side and projects with high volumes can only be executed with this cost.
- Cost does not include cooking vessels. Cost of 25 liter pressure cooker is Rs. 7500 and for 35 liter capacity pressure cooker it is Rs. 11500.
- For Mid-Day-Meals; cooking with pressure cookers is strongly recommended. Open pot cooking if followed requires stirring every 5 minutes and opening of pot loses steam increasing cooking time.



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Probable Beneficiaries

- Rural Schools for Mid-Day-Meal Schemes.
- Rural and Tribal residential schools.
- Rural PHCs (Public Health Centers): At PHCs the unit can be used for Autoclaving (surgicals used for deliveries and also for sterilisation of biomedical waste). Same unit can be used for cooking for the patients and their relatives. People going to PHCs are normally very poor and they collect firewood locally and cook something on three stone fire. Such solar cooker can be offered to them as cooking device.
- Charitable organisations: Installations at “Old Age Homes”, “Schools for disabled and special children”, “Orphanages”, “Free/concessional food centers for poor” etc.



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Thank You.

Dr. Ajay Chandak.

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