# Integrated coarse pre-treatment - IHP

Integrated coarse pre-treatment (IHP) comprises of a steel container with a set of devices placed inside that extracts screenings and grit from waste water.

The unit can be used in waste water treatment plants with smaller flow rate where it can substitute a sequence of devices such as screen, screenings press, grit chamber and grit separator installed into concrete canals or tanks. Putting all of these devices in a single container saves built-up area, costs of construction and time of realisation. Therefore IHP is most suitable for re-construction works of WWTPs.

| ***Specification*** | | |
|---|---|---|
| **Rate of flow Q:** | 25; 30; 40; 50; 75; 100; 125; 150; 175; 200 l.s-1 | |
| **Supplementary water for washing of screenings:** | 0,8 $l.s^{-1}$ at 0,5 MPa – in intervals | |
| **Slot width:** | 3 - 6 mm | |
| **Power inputs:** | self-cleaning screen - SCC | 0,12÷0,25kW; 400V |
| | screenings press - LSP | 1,5 kW; 400V |
| | electromagnetic valves | 2x 34VA; 230V |
| | separator and screw conveyor | 2× 1,1÷1,5 kW; 400V |
| | collection of fats | 350W; 230V |
| | transport of fats | 0,55kW; 400V |
| | heating (option) | 3,5÷6 kW; 230V |
| **Operating conditions:** | *indoor* – in a building<br>*outdoor* – up to –20° C with heating unit | |
| **Operating cycle:** | the frequency and time of operation of individual devices can be adjusted by a control switchboard | |
| **Dimensions:** | L = 4800 ÷ 9100, B = 550 ÷ 1000,<br>V = 3200 ÷ 4000 mm according to device size | |
| **Material:** | mainly stainless steel; plastics; rubber | |
| *Other parameter ranges need to be consulted with the manufacturer.* | | |

Product identification: **IHP Q** [$ls^{-1}$]

ISO 9001

**IHP Design:**

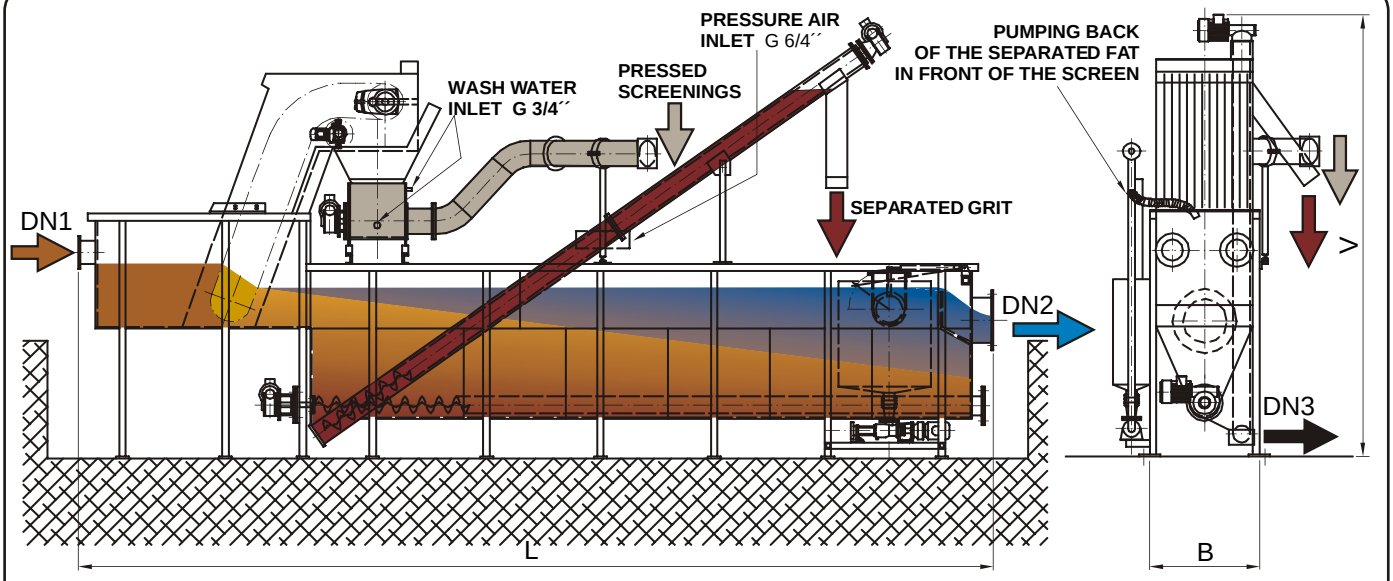
- *above-ground* design with inlet and outlet branch that needs waste water to be pumped
- *partially embedded* (sewerage level); placed in concrete pit

**Fittings:**

*basic* - grit chamber, self-cleaning screen, screw press for screenings with washing, feeding screw, screw conveyor, control switchboard

*optional* - collection and transport of fats

- aeration of grit chamber (without air source)
- additional covering with heating unit (for outdoor use)




**DN1 - WASTE WATER INLET** DN2 - **PRE-TREATED WATER OUTLET** **DN3 - DISCHARGE BRANCH**

**Dimensions L, B, V depend on the device size**

**Operation:**

The waste water flows through the inlet branch and then the self-cleaning screen into the longitudinal grit chamber. There the grit is separated and goes down the inclined walls to the bottom where a shaftless screw is installed. The grit is transported in intervals to a cistern from which it is further transported by screw conveyor to a container.

The area of grit chamber can be aerated so that the separation of grit from organic particles and ballast materials is more effective. Flowing small particles of indissoluble substances and fats can be either entrapped by a downflow baffle when floating on water level or they go past an overflow into the outlet branch. Entrapped substances and fats are collected by an inclinable trough and transported to a fat accumulation tank. They are then pumped back in front of the self-cleaning screen.

The whole process is fully automatic and controlled by a scheduled programme with a level based control. The switchboard also enables manual operation which is suitable when visually inspecting the quantity of fats entrapped by downflow baffle.

The device is driven by electric gearboxes, fats are pumped by a displacement pump.

To achieve an optimum incorporation of the equipment in the technological section of waste water treatment plants, *FONTANA R* offers consultations and technical support as a free customer service.

**Fontana R, s.r.o.** – Příkop 4, 602 00 BRNO, CZECH REPUBLIC
tel.: +420 545 215 932; +420 545 175 851; +420 545 175 854; tel./fax: +420 545 215 933
**http://www.fontanar.cz/**; e-mail: fontanar@fontanar.cz