

PRO-SMH

WE INCREASE YOUR PROFIT



INDIGO SLASHER DYEING

PRO-INDIGO

indigo indigo indigo

Indigo Färbearbeitung
Indigo Färbearbeitung

indigo boya makinası

簡單的機器

máquina



German technology

SLASHER DYEING PROCESS

In continuous slasher dyeing and sizing machine, direct warping beams are used, instead of ball warping logs in case of Indigo rope dyeing system. The Slasher Dyeing machine is capable of handling Ne count form 9/s to 30/s (OE and Slub both). At the back end of the slasher dyeing range, the direct warping beams are creeled. The yarns sheet from each beam is pulled over and combined with the yarns from the other beams so that multiple sheets of yarns can be made. In sheet dyeing range, the total No of required ends for a weavers beam are dyed, dried, sized and dried simultaneously. The back direct warping beam contains 380-420 ends, similar to rope, but the ends are distributed evenly over the width of the flanges and the end lay parallel to each other. This continuous slasher dyeing range eliminates a few intermediate processes of the rope dyeing, such as re-beaming, sizing. The yarn sheet from the back beam passes through wash boxes, where it is treated with caustic and subsequently washed with normal water. After squeezing the excess water; the yarn sheet passes through Dye baths and skied for oxidation as in the case of rope dyeing. This develops the indigo coating on the yarn.



SLASHER DYEING PROCESS

After dyeing, the dyed yarn is washed by passing through 3-4 wash boxes and finally squeezed before allowing it to pass through drying cylinders. The dyed yarn then enters into the sow box, where it is sized. Subsequently the yarn sheet is dried. The yarn sheets then pass through a set of stainless steel split rods, which separate them into individual sheets, equivalent to the number of section beams in the creel. After passing through the split rods, the yarn sheets are collected into single sheet and passed through an expansion comb at the head stock, which separates individual yarns. The expansion comb can be adjusted to the desired loom beam width. Slasher dyeing range typically consists of 1-2 wetting vats, 4-8 dye baths and 3-4 rinsing troughs. The immersion and oxidation times lie between 10-20s or 45-60s. The Pre-treatment process in sheet dyeing consists of treatment of the cotton yarn sheet with caustic and wetting agent. Pre-wetting is carried out in order to get proper dyeing of the sheet. Pre-wetting is carried out with a Wetting agent, at room temperature. In some cases, if well penetration of the dye is required, the yarns are treated with strong caustic soda solution followed by hot wash and cold wash treatment prior to dyeing. The pH of the bath is 11.8-12.

CREEL SYSTEM PROMATIC

PRO-SMH offers three different systems for beam warping:

PRO-ANP, PRO-ANV and PRO-AM.

The number of creel positions differs between 12 to 32 warps beams position and the diameter between Ø 1000, 1250 & 1400 mm. The range of working width is between 1600-2400mm.

The start up time for the mobile creel system takes 20-30min whereas the start up time for stationary creels takes 1.5-3.0h.



BEAM SYSTEM

TYPE **PRO-AV**

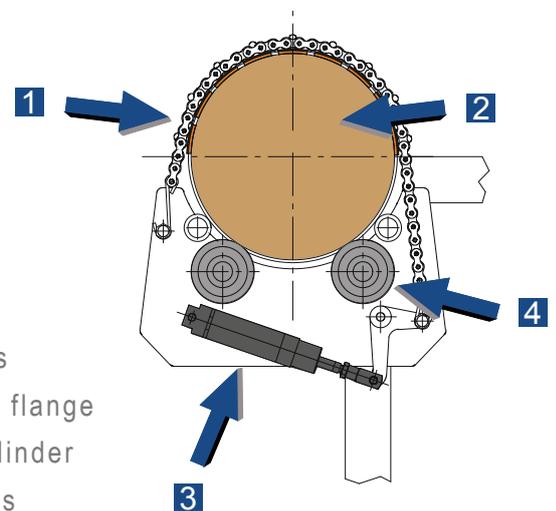
BEAM SYSTEM

TYPE **PRO-ANP**



BEAM SYSTEM

BRAKE



TECHNICAL DATA BEAM SYSTEMS

unwinding frame for	800-1.250 beams
execution	stationary or movable
Beam intake	with or without tap
staple fibre	Ne 6-60
brake	belt or chain brake
voltage range	one sided brake: 60-250N both sided brake: 100-500N

unwinding frame for	1.400 beams
execution	stationary or movable
Beam intake	with tap
staple fibre	Ne 6-60
brake	belt or chain brake
voltage range	one sided brake: 60-250N both sided brake: 100-500N

unwinding frame for	800-1.250 beams
execution	stationary or movable
Beam intake	without tap
staple fibre	Ne 6-60
brake	brake shoes
voltage range	one sided brake: 60-300N both sided brake: 100-600N

BEAM SYSTEM

TYPE **PRO-ANP**

BEAM SYSTEM

TYPE **PRO-ANV**

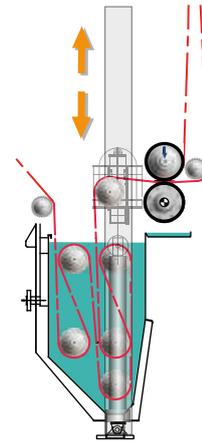
BEAM SYSTEM

TYPE **PRO-AM**

DYE APPLICATION SYSTEMS

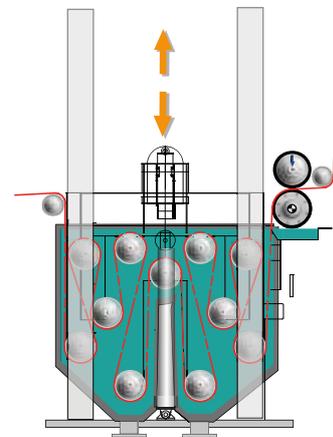
DYEING UNIT

TYPE **PRO-DYE**



DYEING UNIT

TYPE **PRO-POWERDYE**



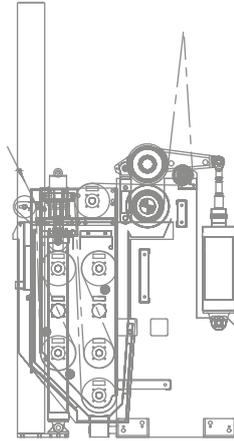
PRO-POWERDYE

- longest dwelling time 11.8m
- integrated roller-lifting device
- easier yarn repairing
- better cleaning and maintenance
- perfect bath circulation with cross-flow system

DYE APPLICATION SYSTEMS

DYEING UNIT

TYPE **PRO-DYE**



working width 1.800-2.200mm

number of bathes 1

fabric content 5,7m

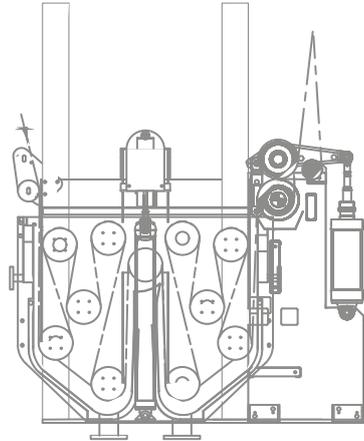
liquor content 150-900l at ww2000mm

circulation 12m³/h

pressure squeezer 10t

DYEING UNIT

TYPE **PRO-POWERDYE**



working width 1.800-2.200mm

number of bathes 1

fabric content 11,6m

liquor content 150-1.950l at ww2000mm

circulation 12m³/h

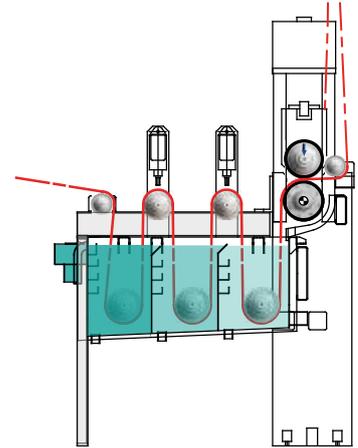
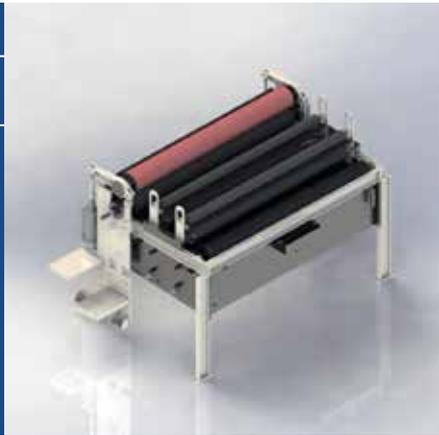
pressure squeezer 10t



WASHING UNITS

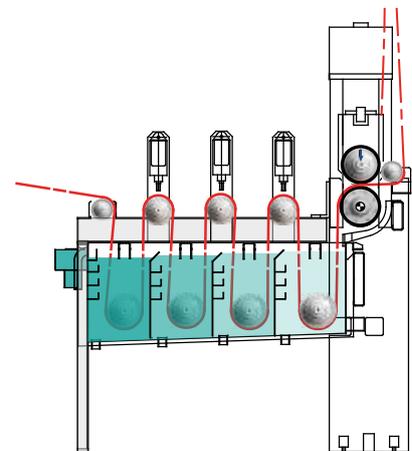
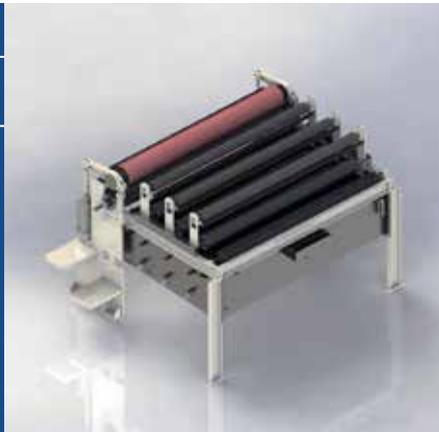
WASHING UNIT

TYPE **PRO-OPTIWASH-3**



WASHING UNIT

TYPE **PRO-OPTIWASH-4**



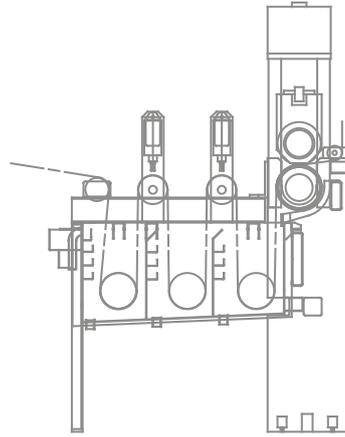
PRO-OPTIWASH

- superior washing performance with counter flow
- circulation system for chemical treatment
- up to 35% reduction in water consumption
- available with 3 or 4 bathes

WASHING UNITS

WASHING UNIT

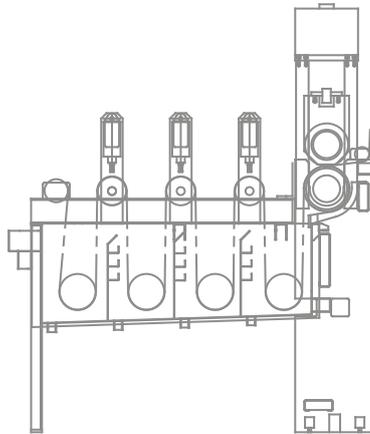
TYPE **PRO-OPTIWASH-3**



working width	1.800-2.200mm
number of bathes	3
fabric content	6,3m
liquor content	800l at ww2000mm
circulation	12m ³ /h
pressure main squeezer	10t

WASHING UNIT

TYPE **PRO-OPTIWASH-4**



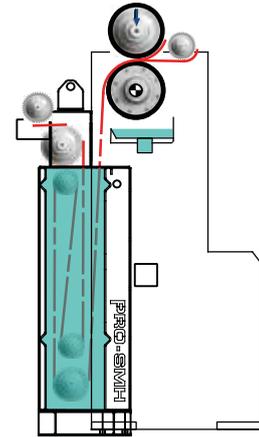
working width	1.800-2.200mm
number of bathes	4
fabric content	8.4m
liquor content	1.200l at ww2000mm
circulation	12m ³ /h
pressure main squeezer	10t



WASHING UNITS

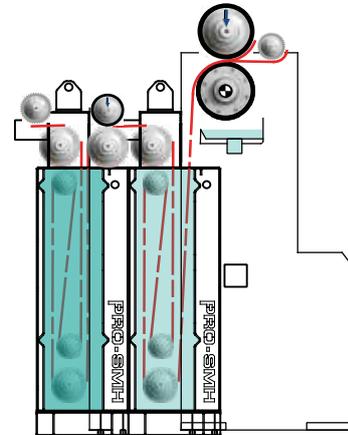
WASHING UNIT

TYPE **PRO-SONIC-1**



WASHING UNIT

TYPE **PRO-SONIC-2**



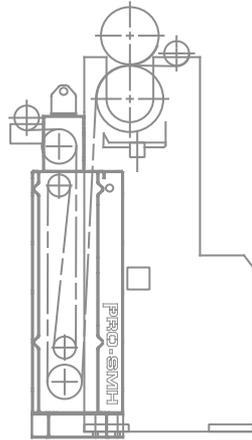
PRO-SONIC

- superior washing effect by means of ultrasonic
- space saving construction
- available with 1 or 2 bathes

WASHING UNITS

WASHING UNIT

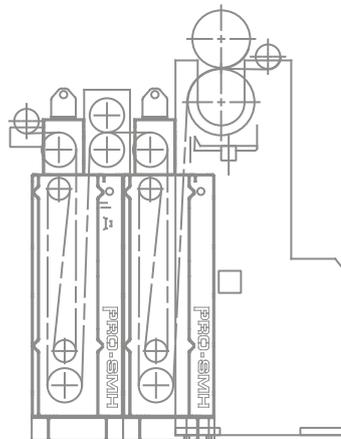
TYPE **PRO-SONIC-1**



working width	1.800-2.200mm
number of bathes	1
fabric content	4,7m
liquor content	486l at ww2000mm
pressure main squeezer	10t

WASHING UNIT

TYPE **PRO-SONIC-2**



working width	1.800-2.200mm
number of bathes	2
fabric content	9,8m
liquor content	972l at ww2000mm
pressure main squeezer	10t



OXIDATION CONCEPTS

OXIDATION

TYPE **PS-AIR-31**

- conventional oxidation via air passage
- total length of 31m
- warp guiding via riffel roller
- smooth warp guiding



OXIDATION

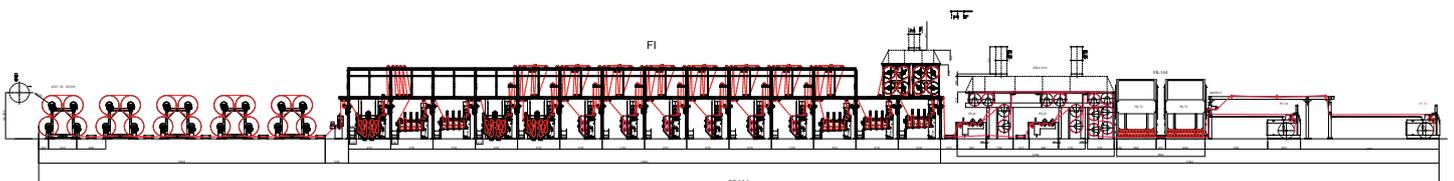
TYPE **PS-FO**

- fast oxidation with hot airflow
- increased dyestuff pick-up
- total length of 24m
- less yarn waste and better tone uniformity of the warp sheet

OXIDATION

TYPE **PS-STEAM**

- steam chamber for reactive dye process
- also usable as air passage
- total length of 35m or 45m



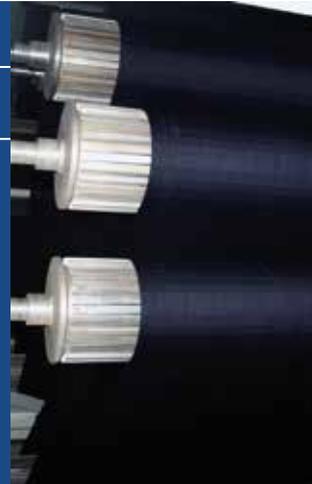
WARP GUIDING FLUTED ROLLER

To prevent a drift off of the warps and to prevent therefore unequal dye faults, it is quite necessary to guide the warps in that way, that the single warps will not overlap on each other.

Due to that fact, PRO-SMH uses without exception stainless steel fluted guide rollers. These special guide rollers ensure an absolute even fabric guidance without drift off or overlap of the warps. At the same time, the single warps are opened and become smooth.

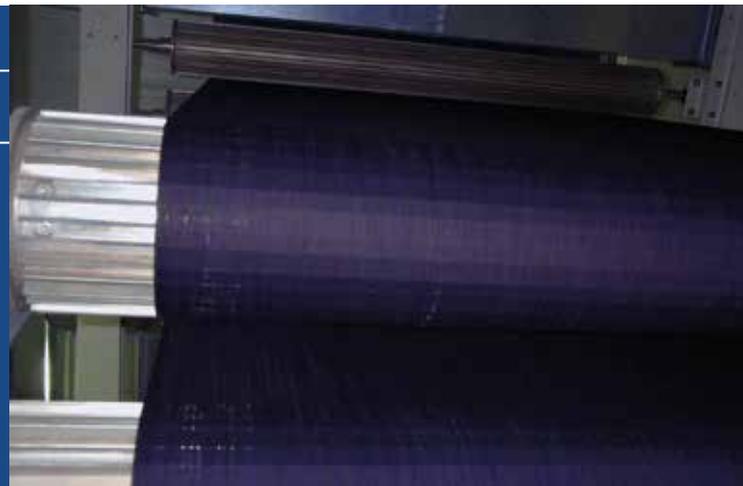
GUIDE ROLLER SYSTEM

TYPE **PRO-WG**



GUIDE ROLLER SYSTEM

TYPE **PRO-WG**



DYEING & CHEMICAL DOSING SYSTEM

The computer-controlled dyestuff & chemical dosing system for dyestuffs and chemicals is the heart of the Indigo-Dyeing-Range. Indigo vat, hydrosulphite and caustic soda are continuously added according to the calculated quantity indications and depending on the machine speed. Colour unlevelness owing to fluctuations in the bath concentration does no longer occur. Owing to the high circulation rate of the dye liquor in 2 circuits, local bath concentration differences are avoided. The metering control stores the required

DYEING DOSING SYSTEM

TYPE **PRO-DDS**



DYEING DOSING SYSTEM

TYPE **PRO-DDS**



CHEMICAL DOSING SYSTEM

TYPE **PRO-HDS**



a high level of process reliability and reproducibility. The dye liquor is metered continuously by a special variable-frequency controlled pump by means of precise intermediated batching. The intervals depend on the desired indigo concentration which is determined by the warp pass and liquor loss in the dyeing machine.

DRIVE AND CONTROL SYSTEM

The drive & control system is one of the most important key factors in slasher- ranges. PRO-SMH therefore uses all motors and inverters from LENZE company/GER, PLC from SIEMENS/GER.

All important parameters like temperatures, production speed, tension, etc. are shown on the 19" SIEMENS Touchscreen.

Beside that, we also offer our customers the service to extend or upgrade all older SMH Indigo Dyeing-ranges.

DRIVE & CONTROL SYSTEM

TYPE **PRO-DC**



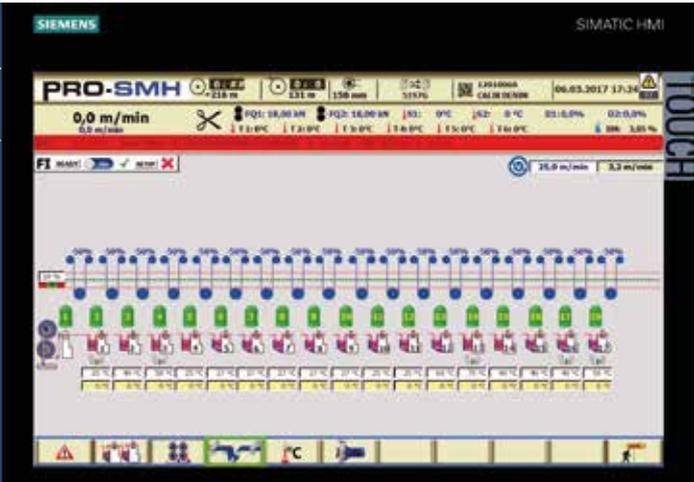
DRIVE & CONTROL SYSTEM

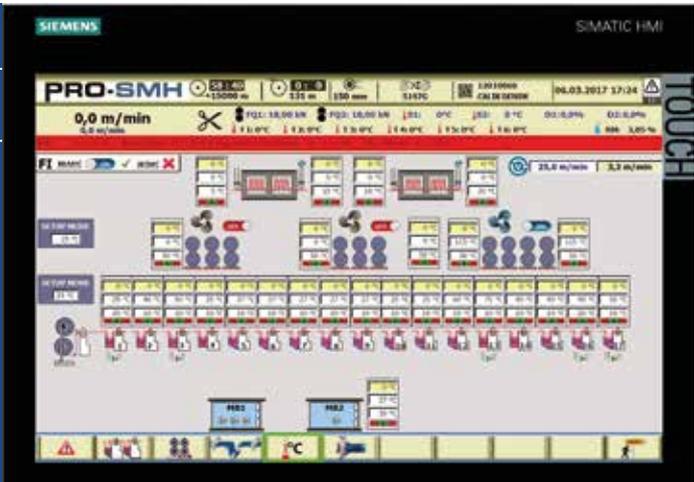
TYPE **PRO-DC**

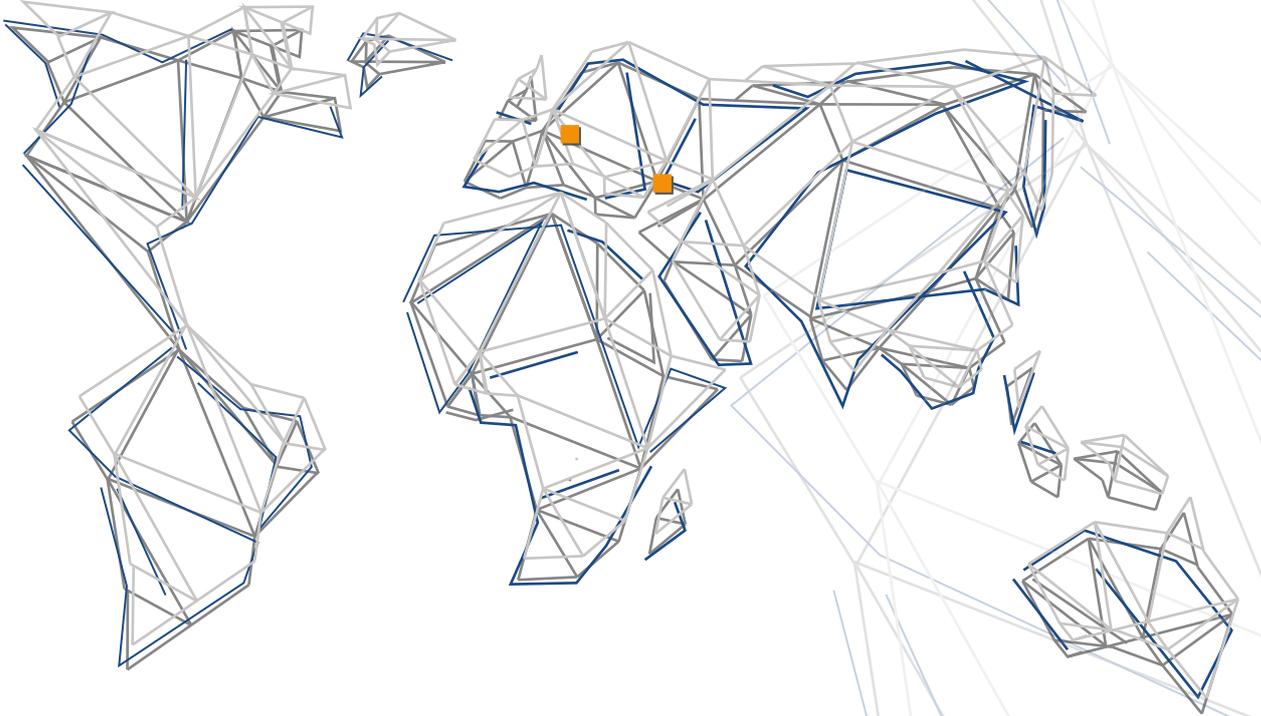


DRIVE AND CONTROL SYSTEM

- upgrade of all S5 based PLC & control systems to S7
- addition and commissioning of dye boxes to existing SMH Indigo-Dyeing-Ranges
- addition of new PLC system, HMI
- converting of all FI dye box tension control system to dancer system
- upgrade of LENZE drive system to latest technology
- supply of all mechanical & electrical spare parts

DRIVE & CONTROL SYSTEM	
TYPE PRO-DC	

DRIVE & CONTROL SYSTEM	
TYPE PRO-DC	



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