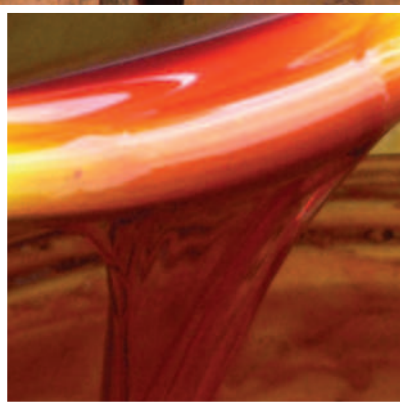
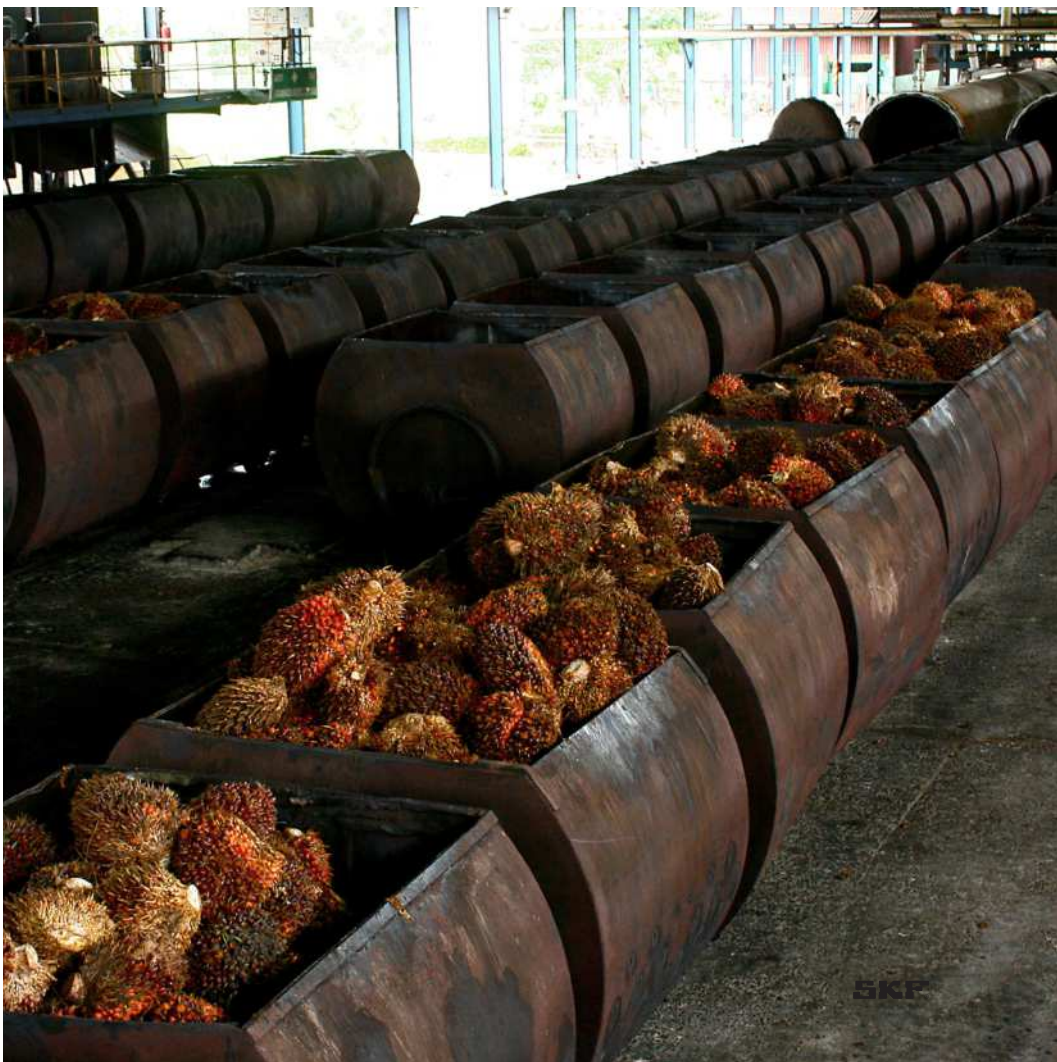
# SKF Palm oil conveyor chains



# SKF OFFERS A TOTAL SOLUTION



# SKF offers a total solution to the palm oil industry

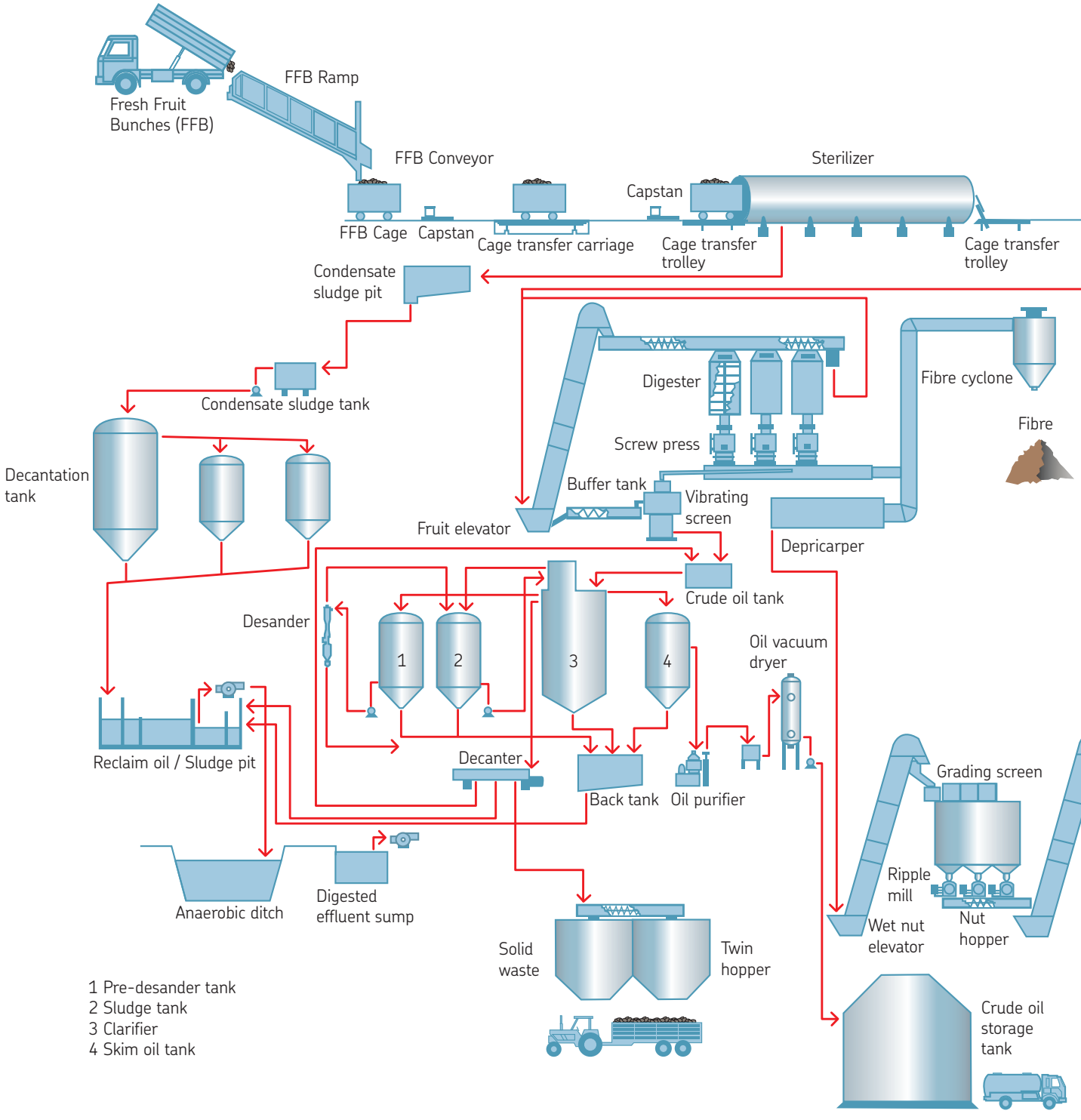
Operating and maintaining a palm oil mill, and keeping it running smoothly and profitably, is a complex challenge. To help you improve rotating equipment performance, we have an extensive range of products and support services, each of which can be customized to meet your specific needs.

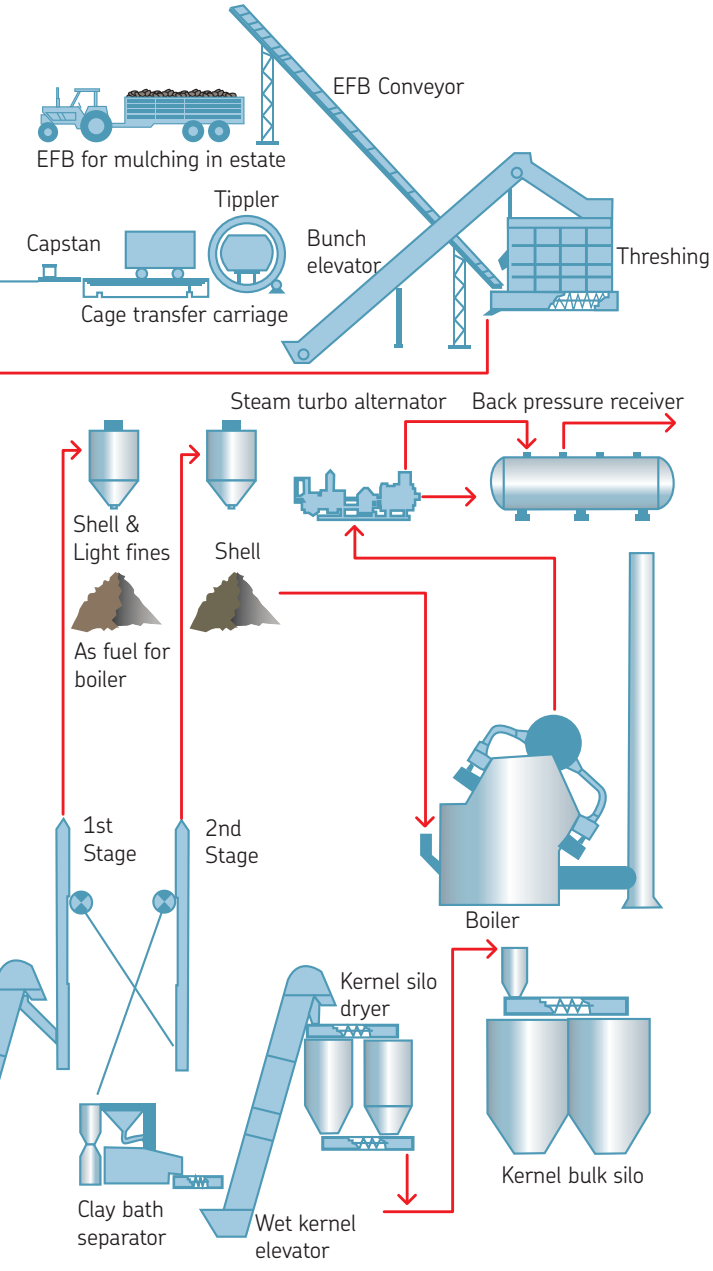
A choice of bearings, seals and lubricants is also available, offering you the full spectrum of products from a single source.

All these components have been used extensively to boost machine efficiency in palm oil applications, backed by expert advice. Proven quality products leads to greater reliability, reduced maintenance and a faster return on investment. This contributes to a lower total cost of ownership.

# Every stage of the palm oil milling process can benefit

## A crude palm oil mill






In order to obtain palm oil, the oil palm fruit goes through a series of complex processes known as palm oil milling. As shown in the diagram, some of these stages include milling, sterilizing, threshing, decantering, purifying etc.

SKF offers solutions for every stage of the palm oil milling process.

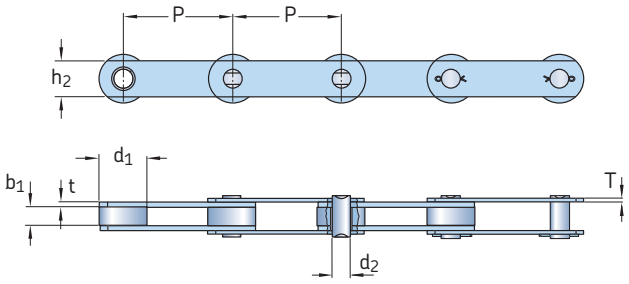
# SKF Palm oil conveyor chains

Palm oil mills are faced with a number of challenges, some of which directly affect the conveyor systems such as:

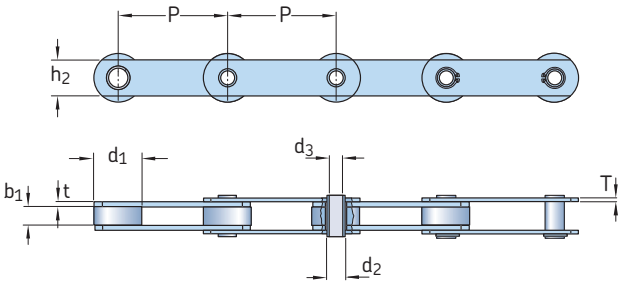
- Product input creates high shock loads
- High level of dust and dirt contamination
- Sterilization process creates heat and humidity
- Wash-down processes remove lubrication

To support you in overcoming these challenges, the SKF series of palm oil conveyor chains is specially designed to stand up to the harsh environments in these applications.

## Solid pin




## Hollow pin




### Solid pin

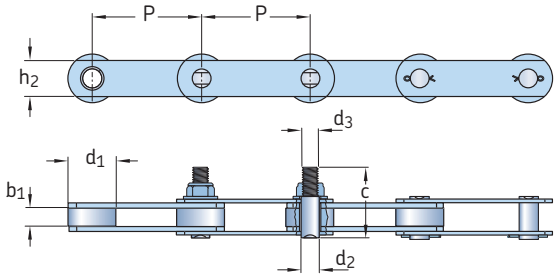
| Roller diameter | Pitch | | Ultimate tensile strength | | Inside width | Plate depth | Plate thickness | | Pin | Mass | SKF chain reference |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_1$ | P | | $Q_{min}$ | | $b_1$ | $h_2$ | t | T | $d_2$ | | |
| mm | inch | mm | kN | lbf | mm | mm | mm | mm | mm | kg/m | – |
| **47.5** | 4 | 101.6 | 100 | 22 000 | 19 | 40 | 5.0 | 4.0 | 19.0 | 6.5 | **PHC POZ100-4INCH** |
| | 4 | 101.6 | 130 | 30 000 | 19 | 40 | 5.0 | 4.0 | 19.0 | 6.5 | **PHC POZ100-4INCHXT** |
| **66.7** | 4 | 101.6 | 160 | 36 000 | 26 | 50 | 7.0 | 5.0 | 26.9 | 14.2 | **PHC POZ160-4INCH** |
| | 4 | 101.6 | 200 | 45 000 | 26 | 50 | 7.0 | 5.0 | 26.9 | 14.2 | **PHC POZ160-4INCHXT** |
| | 6 | 152.4 | 160 | 36 000 | 26 | 50 | 7.0 | 5.0 | 26.9 | 11.3 | **PHC POZ160-6INCH** |
| | 6 | 152.4 | 200 | 45 000 | 26 | 50 | 7.0 | 5.0 | 26.9 | 11.3 | **PHC POZ160-6INCHXT** |
| | 6 | 152.4 | 240 | 55 000 | 26 | 50 | 9.0 | 8.0 | 26.9 | 12.1 | **PHC POZ240-6INCH** |
| **88.9** | 6 | 152.4 | 300 | 68 000 | 38 | 60 | 10.0 | 8.0 | 32.0 | 24.2 | **PHC POZ300-6INCH** |
| | 6 | 152.4 | 380 | 86 000 | 38 | 60 | 10.0 | 8.0 | 32.0 | 24.2 | **PHC POZ300-6INCHXT** |

### Hollow pin

| Roller diameter | Pitch | | Ultimate tensile strength | | Inside width | Plate depth | Plate thickness | | Pin | Hollow pin diameter | Mass | SKF chain reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_1$ | P | | $Q_{min}$ | | $b_1$ | $h_2$ | t | T | $d_2$ | $d_3$ | | |
| mm | inch | mm | kN | lbf | mm | mm | mm | mm | mm | mm | kg/m | – |
| **47.5** | 4 | 101.6 | 60 | 13 000 | 19 | 40 | 5.0 | 4.0 | 19.0 | 13.2 | 5.9 | **PHC POZC60-4INCH** |
| | 4 | 101.6 | 120 | 27 000 | 19 | 40 | 5.0 | 4.0 | 19.0 | 13.2 | 5.9 | **PHC POZC60-4INCHXT** |
| **66.7** | 4 | 101.6 | 150 | 34 000 | 26 | 50 | 7.0 | 5.0 | 26.9 | 20.2 | 12.7 | **PHC POZC150-4INCH** |
| | 4 | 101.6 | 190 | 43 000 | 26 | 50 | 7.0 | 5.0 | 26.9 | 20.2 | 12.7 | **PHC POZC150-4INCHXT** |
| | 6 | 152.4 | 150 | 34 000 | 26 | 50 | 7.0 | 5.0 | 26.9 | 20.2 | 10.4 | **PHC POZC150-6INCH** |
| | 6 | 152.4 | 190 | 43 000 | 26 | 50 | 7.0 | 5.0 | 26.9 | 20.2 | 10.4 | **PHC POZC150-6INCHXT** |
| | 6 | 152.4 | 220 | 50 000 | 26 | 50 | 7.5 | 5.5 | 26.9 | 19.4 | 11.2 | **PHC POZC220-6INCH** |
| **88.9** | 6 | 152.4 | 300 | 68 000 | 38 | 60 | 10.0 | 8.0 | 32.0 | 22.5 | 23.5 | **PHC POZC300-6INCH** |
| | 6 | 152.4 | 380 | 86 000 | 38 | 60 | 10.0 | 8.0 | 32.0 | 22.5 | 23.5 | **PHC POZC300-6INCHXT** |

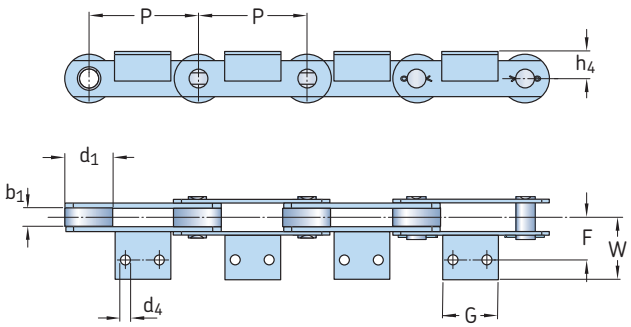
## Attachment chains

With the fitting of extended pins at set spacings, chain performance with scrapers is optimized. SKF palm oil chains ensure that the scraper bars, even under shock and load, do not damage the side plates.

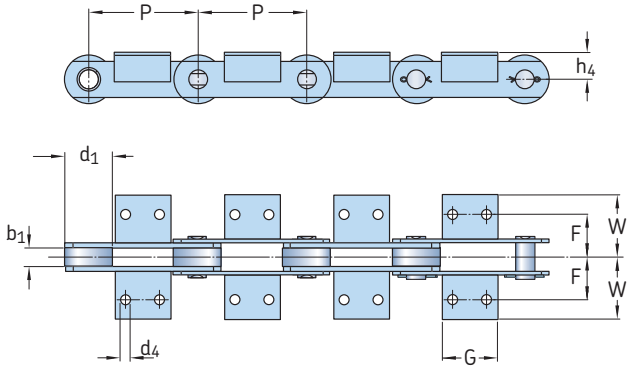



| Roller diameter | Pitch | | Ultimate tensile strength | | Inside width | Plate depth | Pin/Bore | Thread diameter | Pin | Length | Mass | SKF chain reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_1$ | P | | $Q_{min}$ | | $b_1$ | $h_2$ | $d_2$ | $d_3$ | | c | | |
| mm | inch | mm | kN | lbf | mm | mm | mm | mm | mm | mm | kg/m | – |
| **47.5** | 4 | 101.6 | 100 | 22 000 | 19 | 40 | 19.0 | M16 | 46.0 | 100.5 | 6.5 | **PHC POZ100-4INCH** |
| | 4 | 101.6 | 130 | 30 000 | 19 | 40 | 19.0 | M16 | 46.0 | 100.5 | 6.5 | **PHC POZ100-4INCHXT** |
| **66.7** | 4 | 101.6 | 160 | 36 000 | 26 | 50 | 26.9 | M24 | 46.0 | 115.5 | 14.2 | **PHC POZ160-4INCH** |
| | 4 | 101.6 | 200 | 45 000 | 26 | 50 | 26.9 | M24 | 46.0 | 115.5 | 14.2 | **PHC POZ160-4INCHXT** |
| | 6 | 152.4 | 160 | 36 000 | 26 | 50 | 26.9 | M24 | 46.0 | 115.5 | 11.3 | **PHC POZ160-6INCH** |
| | 6 | 152.4 | 200 | 45 000 | 26 | 50 | 26.9 | M24 | 46.0 | 115.5 | 11.3 | **PHC POZ160-6INCHXT** |
| | 6 | 152.4 | 240 | 55 000 | 26 | 50 | 26.9 | M24 | 26.9 | 125.5 | 12.1 | **PHC POZ240-6INCH** |
| **88.9** | 6 | 152.4 | 300 | 68 000 | 38 | 60 | 32.0 | M24 | 50.0 | 144.0 | 24.2 | **PHC POZ300-6INCH** |
| | 6 | 152.4 | 380 | 86 000 | 38 | 60 | 32.0 | M24 | 50.0 | 144.0 | 24.2 | **PHC POZ300-6INCHXT** |

# Attachment chains




A-2 attachment




K-2 attachment

| Roller diameter | Pitch | | Ultimate tensile strength | | Inside width | Attachment dimensions | | | | | | SKF chain reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_1$ | P | | $Q_{min}$ | | $b_1$ | G | | $d_4$ | F | W | $h_4$ | |
| mm | inch | mm | kN | lbf | mm | mm | mm | mm | mm | mm | mm | – |
| **47.5** | 4 | 101.6 | 100 | 22 000 | 19 | 56 | 31.8 | 10.5 | 44.5 | 65 | 31.8 | **PHC POZ100-4INCH** |
| | 4 | 101.6 | 130 | 30 000 | 19 | 56 | 31.8 | 10.5 | 44.5 | 65 | 31.8 | **PHC POZ100-4INCHXT** |
| **66.7** | 4 | 101.6 | 160 | 36 000 | 26 | 56 | 31.8 | 12.3 | 44.5 | 65 | 38.0 | **PHC POZ160-4INCH** |
| | 4 | 101.6 | 200 | 45 000 | 26 | 56 | 31.8 | 12.3 | 44.5 | 65 | 38.0 | **PHC POZ160-4INCHXT** |
| | 6 | 152.4 | 160 | 36 000 | 26 | 84 | 57.2 | 12.3 | 44.5 | 77 | 38.0 | **PHC POZ160-6INCH** |
| | 6 | 152.4 | 200 | 45 000 | 26 | 84 | 57.2 | 12.3 | 54.0 | 77 | 38.0 | **PHC POZ160-6INCHXT** |
| | 6 | 152.4 | 240 | 55 000 | 26 | 84 | 57.2 | 12.3 | 54.0 | 77 | 38.0 | **PHC POZ240-6INCH** |
| **88.9** | 6 | 152.4 | 300 | 68 000 | 38 | 70 | 38.1 | 13.7 | 73.0 | 100 | 50.8 | **PHC POZ300-6INCH** |
| | 6 | 152.4 | 380 | 86 000 | 38 | 70 | 38.1 | 13.7 | 73.0 | 100 | 50.8 | **PHC POZ300-6INCHXT** |

## Sprockets

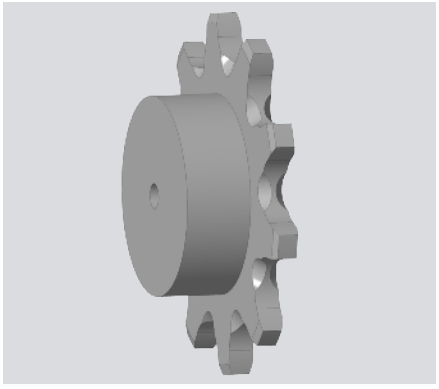
The heavy load demands and harsh environment of the palm oil industry often results in extensive wear of the sprocket. The use of high quality steel sprockets, correctly machined for the application, ensures that operators are able to match chain wear life with that of the sprocket.

- C45 (1045 in AISI standard, S45 in JIS)
- Machined teeth profile - not flame cut – to allow accurate chain action and reduce internal chain stresses
- Hard wearing steel – teeth wear is reduced to keep chain movement smooth and conformed
- Available with hubs on one or two sides – depending on application and space
- Supplied with RSB (rough stock bore) to allow clients to bore to size

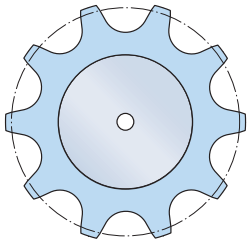
## Mud relief sprocket profile

For applications where the chain is running in or close to bulk material, the roller contact pressure in the tooth of the sprocket can cause the material to compact in the spaces between roller and side plate. This is the most common cause of “sticking roller”, with damage happening to the roller over time.

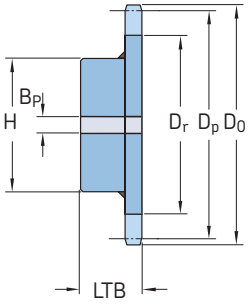
A solution is to use mud relief grooves on the sprocket. These grooves are designed to allow contamination material to be expelled from under the roller during tooth-mesh engagement.



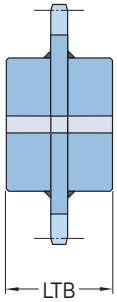
# Sprockets



Long pitch conveyor chain sprockets




Type B




Type C

| Pitch (P) x Roller ($d_1$) | Number of teeth | | | | | | | Length through bore | | SKF sprocket reference |
|---|---|---|---|---|---|---|---|---|---|---|
| $d_1$ | z | $D_r$ | $D_0$ | $D_p$ | $B_P$ | H | B | Type B LTB | Type C LTB | |
| mm | – | mm | mm | mm | mm | mm | mm | mm | mm | – |
| **101.6 × 47.5** | 8 | 217.98 | 289.23 | 265.48 | 25H8 | 127 | 18.0 | 60 | 102 | **PHS POZ47.5-101.6B8MR** |
| | 8 | 217.98 | 289.23 | 265.48 | 25H8 | 127 | 18.0 | 60 | 102 | **PHS POZ47.5-101.6C8MR** |
| | 10 | 281.28 | 352.00 | 328.78 | 25H8 | 145 | 18.0 | 60 | 102 | **PHS POZ47.5-101.6B10MR** |
| | 10 | 281.28 | 352.00 | 328.78 | 25H8 | 145 | 18.0 | 60 | 102 | **PHS POZ47.5-101.6C10MR** |
| | 12 | 345.58 | 416.00 | 392.58 | 25H8 | 145 | 18.0 | 60 | 102 | **PHS POZ47.5-101.6B12MR** |
| | 12 | 345.58 | 416.00 | 392.58 | 25H8 | 145 | 18.0 | 60 | 102 | **PHS POZ47.5-101.6C12MR** |
| | 16 | 473.30 | 544.45 | 520.80 | 25H8 | 160 | 18.0 | 60 | 102 | **PHS POZ47.5-101.6B16MR** |
| | 16 | 473.30 | 544.45 | 520.80 | 25H8 | 160 | 18.0 | 60 | 102 | **PHS POZ47.5-101.6C16MR** |
| **101.6 × 66.7** | 8 | 198.78 | 298.83 | 265.48 | 25H8 | 127 | 24.7 | 60 | 102 | **PHS POZ66.7-101.6B8MR** |
| | 8 | 198.78 | 298.83 | 265.48 | 25H8 | 127 | 24.7 | 60 | 102 | **PHS POZ66.7-101.6C8MR** |
| | 10 | 262.08 | 362.13 | 328.78 | 25H8 | 196 | 24.7 | 90 | 155 | **PHS POZ66.7-101.6B10MR** |
| | 10 | 262.08 | 362.13 | 328.78 | 25H8 | 196 | 24.7 | 90 | 155 | **PHS POZ66.7-101.6C10MR** |
| | 12 | 325.88 | 425.93 | 392.58 | 25H8 | 196 | 24.7 | 120 | 215 | **PHS POZ66.7-101.6B12MR** |
| | 12 | 325.88 | 425.93 | 392.58 | 25H8 | 196 | 24.7 | 120 | 215 | **PHS POZ66.7-101.6C12MR** |
| | 16 | 454.16 | 554.15 | 520.80 | 25H8 | 205 | 24.7 | 205 | 385 | **PHS POZ66.7-101.6B16MR** |
| | 16 | 454.16 | 554.15 | 520.80 | 25H8 | 205 | 24.7 | 205 | 385 | **PHS POZ66.7-101.6C16MR** |
| **152.4 × 66.7** | 8 | 331.52 | 431.57 | 398.22 | 25H8 | 127 | 24.7 | 60 | 102 | **PHS POZ66.7-152.4B8MR** |
| | 8 | 331.52 | 431.57 | 398.22 | 25H8 | 127 | 24.7 | 60 | 102 | **PHS POZ66.7-152.4C8MR** |
| | 10 | 426.47 | 526.52 | 493.18 | 25H8 | 196 | 24.7 | 90 | 155 | **PHS POZ66.7-152.4B10MR** |
| | 10 | 426.47 | 526.52 | 493.18 | 25H8 | 196 | 24.7 | 90 | 155 | **PHS POZ66.7-152.4C10MR** |
| | 12 | 522.17 | 622.22 | 588.82 | 25H8 | 196 | 24.7 | 120 | 215 | **PHS POZ66.7-152.4B12MR** |
| | 12 | 522.17 | 622.22 | 588.82 | 25H8 | 196 | 24.7 | 120 | 215 | **PHS POZ66.7-152.4C12MR** |
| | 16 | 713.73 | 816.50 | 781.18 | 25H8 | 205 | 24.7 | 205 | 385 | **PHS POZ66.7-152.4B16MR** |
| | 16 | 713.73 | 816.50 | 781.18 | 25H8 | 205 | 24.7 | 205 | 385 | **PHS POZ66.7-152.4C16MR** |
| | 21 | 975.75 | 1055.80 | 1022.45 | 25H8 | 205 | 24.7 | 205 | 385 | **PHS POZ66.7-152.4B21MR** |
| | 21 | 975.75 | 1055.80 | 1022.45 | 25H8 | 205 | 24.7 | 205 | 385 | **PHS POZ66.7-152.4C21MR** |

*) Root – tip dimension – as uneven teeth (i.e. from bottom of tooth to diametrically opposite tooth outside diameter)
^) Roller diameters to BS standard: 47.5 mm (1 7/8); 66.9 mm (2 5/8)

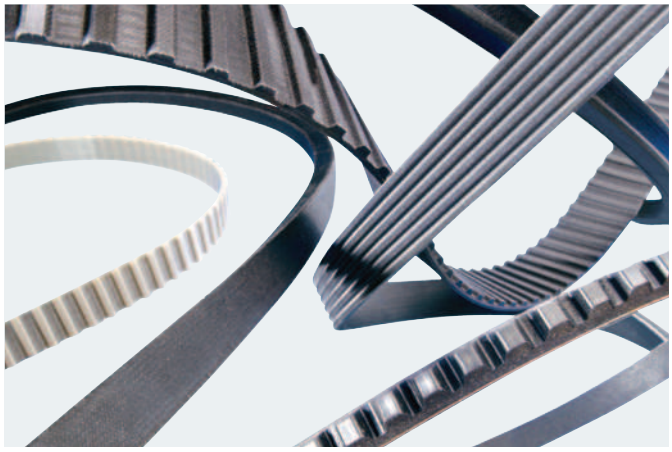
# Power Transmission

Designing your power transmission components, and keeping them running smoothly and profitably, is a complex challenge. To help you improve rotating equipment performance we have an extensive range of products and services, all of which are used in palm oil mills.

These have been used extensively to boost machine efficiency in power transmission applications, backed by more than 100 years of industrial experience and expert knowledge, leading to greater reliability and a faster return on investment, actively contributing to reducing your total cost of ownership.

## SKF Transmission Chains

Many palm oil drives use transmission chain as the drive element. The SKF Transmission Chain range offers high performance, high quality products for all applications. A full range of sprockets to suit is also available.



## SKF V Belts and Pulleys

V belts drives are found in many palm oil mill applications, predominantly in auxiliary equipment. To ensure maximum reliability and performance, our belt assortment is complete with high quality, precisely machined SKF V pulleys. Compared to standard wrapped belts, SKF Xtra Power Belts can deliver up to 40% more power and up to 40% longer application service life.

### Benefits of SKF Xtra Power Belts

- Reduced pulley groove wear due to optimized cover fabric
- Up to 97% drive efficiency
- Oil and heatresistant, antistatic cover
- Smoother running and lower vibration levels
- Good resistance to shock loads

# SKF Shaft Couplings

For large, heavy-duty applications such as those found in palm oil mills, SKF Shaft Couplings provide optimum contact with the shaft, and can accommodate high torque values, reduce power loss and minimize the effects of misalignment.

## Flex tyre coupling

- Maintenance free
- Absorb misalignment
- Absorb shock loads, dampen vibration
- Assemble without moving motor

## Gear coupling

- High performance – for demanding drives
- Steel barrel gear profile – misalignment capable
- Max shaft 660 mm diameter
- Max torque 2 845 kNm

## Taper grid coupling

- High performance – for demanding drives
- Absorb small misalignment
- Absorb shock loads, dampen vibration
- Horizontal or vertical cover designs

## Jaw coupling

- Maintenance free
- Absorb small misalignment
- Absorb shock loads, dampen vibration
- Assemble without moving motor

## Maintenance products

SKF maintenance products help achieve maximum bearing service life, optimize machine performance and improve machine and operator safety. Products include pullers, fitting tools, heaters, instruments, lubricants, lubricators and oil injection equipment.

## Shaft alignment tools

Shaft misalignment in rotating equipment generates loads and vibration that can damage bearings, seals and couplings, and increase energy consumption. SKF shaft alignment tools use advanced technologies to detect and correct shaft misalignment, quickly and easily.

## Basic condition monitoring products

Designed for experts and novices, this basic proactive maintenance equipment helps users spot-check machines and establish trends to identify problems early before they result in costly, unplanned downtime.

Portable data collectors and analyzers

## Portable Data Collectors and analyzers.

The SKF Microlog series of portable data collectors and analyzers can handle all tasks needed to perform predictive maintenance on a range of rotating machinery.

Route-based systems are supported by SKF @ptitude Monitoring Suite software.

**skfptp.com**



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