Hydraulic cylinders for tillers

First, the main types

1. Piston hydraulic cylinder

Structure: composed of cylinder body, piston, piston rod, seals, etc., divided into single piston rod and double piston rod two kinds.

Features: two-way movement: both ends of the inlet and outlet ports can be through the pressure oil or return oil, to realize the push and pull two-way movement (double-action cylinder).

Difference in thrust and speed: the effective area of the left and right chambers of the single rod piston cylinder is not equal, resulting in asymmetric thrust and speed, suitable for scenarios requiring different directions of force.

Differential connection: By passing oil through both chambers at the same time, the area difference is utilized to realize rapid movement, suitable for the scenarios that need rapid in and out.

Application: Widely used in rotary tiller lifting, angle adjustment, etc., to meet the needs of different plowing depths and working postures.

2. Plunger hydraulic cylinder

Structure: single-acting type, the plunger moves in one direction only by hydraulic pressure, and the return stroke requires external force or self-weight.

Features: Long stroke capability: the plunger is not in contact with the cylinder liner, and the cylinder liner is simple to process and suitable for long stroke design.

Vertical application is preferred: the plunger tends to sag when placed horizontally, resulting in unilateral wear of the seal, vertical installation is more stable.

Application: Suitable for vertical lifting and lowering of rotary tillers or specific mechanisms requiring long strokes.

3. Telescopic Hydraulic Cylinder

Structure: Multi-stage piston set with pistons extended in sequence from large to small and retracted in sequence from small to large.

Characteristics: Long stroke and compact structure: realizes long working stroke and short retracted length to save space.

Torque output: rotor oscillation driven by blades, suitable for rotary or oscillating type of action.

Application: used for rotary plow multi-stage adjustment mechanism, such as plowing depth segment control or folding implements.

4. Oscillating hydraulic cylinder

Structure: output torque and realize reciprocating oscillation, divided into single blade and double blade form.

Characteristics: torque output: through the blade to drive the rotor swing, suitable for rotating or swinging type action.

Compact structure: small volume, large output torque, suitable for space-constrained occasions.

Application: rotary tiller lateral swing mechanism or angle fine-tuning system.

Second, technical features of hydraulic cylinders for tillers.

1. High reliability: hydraulic transmission without mechanical connection, reducing friction

and wear, long life and low failure rate.

2. High load capacity: it can withstand huge loads and adapt to the rotary tiller's working requirements in hard soil or under heavy loads.

3. Smooth movement: fluid characteristics make the movement free of shock and vibration, ensuring the stability of rotary tiller operation.

4. High-precision control: through adjusting pressure and flow rate, it can realize precise control of position and speed to meet different farming requirements.

5. Strong environmental adaptability: it can work in high temperature, low temperature, humidity, corrosion and other harsh environments, adapting to the complex conditions in the field.

Third, Application Scenarios

1. tiller lifting: piston or telescopic hydraulic cylinder controls the whole tiller lifting and adjusting the plowing depth.

2. Angle Adjustment: Swing hydraulic cylinder can realize lateral swing or tilt angle adjustment of the tiller to optimize the plowing effect.

3. Folding mechanism: the telescopic hydraulic cylinder drives the tiller to fold, which is convenient for transportation and storage.

4. Differential control: single rod piston cylinder differential connection realizes fast forwarding and retreating, which improves the working efficiency.

Fourth, selection suggestions

1. According to the stroke requirements:

Short stroke, two-way force requirements: choose single rod hydraulic cylinder.

Long stroke, space constraints: choose telescopic hydraulic cylinder.

Vertical lifting, long stroke: choose piston hydraulic cylinder (need to be installed vertically).

2. According to the movement mode selection:

Linear reciprocating motion: piston or plunger type.

Oscillating or rotary motion: oscillating hydraulic cylinder.

3. According to the load and precision selection:

High load, high precision: selection of high-pressure hydraulic cylinder (pressure $\geqslant$ 21MPa).

Medium and low pressure, general precision: selection of low-pressure hydraulic cylinder (pressure 7-14MPa).

Hydraulic tiller for sale

Hydraulic tiller attachment