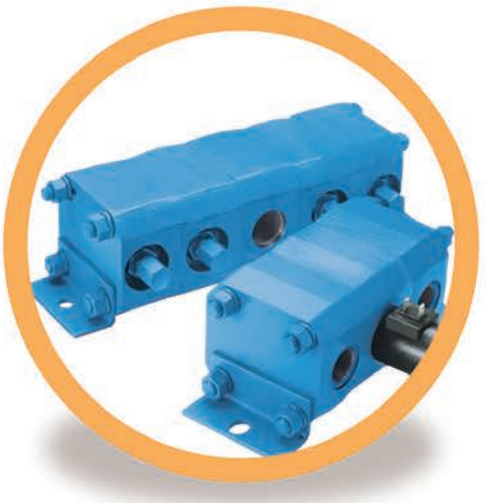
Rotary Geared Flow Dividers

Available in all families from the smallest FD124 right up to the largest FD7500.

FD7500 pictured above

Can divide flow in many varied flow rates and divisions.
Output shafts possible to count RPM.

Rotary geared flow dividers provide many useful functions from a single pump source. Including synchronised operation of multiple cylinders or fluid motors. The flow division is exactly proportional to the displacement of each of the sections, being highly efficient they do not generate heat.
A system relief valve should be used on the inlet.



Sectional reliefs as standard for all sizes and combinations.

Pre-built and stocked locally.

Inlet flows starting at 6lpm on doubles, and up to 212lpm on quads.

PERMCO

Haldex CONCENTRIC
Innovation in Flow Control and Fluid Power

Technical Information

Flow Dividers/Combiners

PERMCO FLOW DIVIDERS

Model Code	Inlet Flow Rate Per Section	Max Pressure	Max Differential Pressure	Optimum RPM Range
FD124 FD197 FD257 FD360	16lpm - 80lpm 38lpm - 128lpm 50lpm - 210lpm 70lpm - 264lpm	241 Bar	172 Bar	1600 - 2000
FD2100 FD5000 FD7500	29lpm - 91lpm 37lpm - 146lpm 80lpm - 282lpm	172 Bar	155 Bar	1200 - 1400

HALDEX FLOW DIVIDERS

Model Code	Inlet Flow Rate Per Section	Max Pressure	Max Differential Pressure	Optimum RPM Range
GC Series				
2 Section 3 Section 4 Section	6lpm - 70lpm 27lpm - 60lpm 16lpm - 140lpm	207 Bar	83 Bar (Refer Catalogue)	2000 - 3500
D Series				
2 Section 4 Section	22lpm - 106lpm 44lpm - 212lpm	207 Bar	83 Bar (Refer Catalogue)	2000 - 4000

TIPS & LIMITAIONS

Introduction

Rotary Gear Flow Dividers are providing efficient, reliable service for a wide variety of applications in agricultural, materials handling, and construction equipment. These hydraulic flow dividers provide many useful functions from a single pump source:

- *Synchronized operation of multiple cylinders or fluid motors.*
- *Proportional division of pump output among several circuits.*
- *Intensified pressure when pressure higher than pump capacity is needed.*

Why Rotary Geared Flow Dividers Instead of Spool-type Dividers?

Connected within the hydraulic circuit, rotary geared flow dividers operate automatically and only when needed. They require no maintenance. In a rotary gear divider, horsepower-in is equal to horsepower-out with very small efficiency losses. Consequently, it does not generate heat. Since the efficiency of the unit is a function of the pressure drop across the section, efficiencies approaching the 98% are not uncommon. This enhances the overall system effectiveness.

Selection

Take care when selecting rotary flow dividers, consider the max system pressures, the max differential pressures from section to section. Keep cylinders loaded as equal as possible & be aware that structural guide frames can influence flow divider performance. Select the displacement to run the RPM in the optimal range, consider flow increase when combining flow, if retracting cylinders.

Differential Relief Valves

Our modular design allows us to add differential relief valves in each in each section of our flow dividers. These valves are not system relief valves. They are commonly used in applications where cylinders must be synchronized. They also serve to protect the flow divider against excessive differential pressure in the divider which could be caused by actuators becoming stalled or restricted.

Application of Rotary Gear Flow Dividers in a Cylinder Circuit

Rotary gear flow dividers are designed to synchronize hydraulic cylinders (bring them to equal stroke length) in one direction only. This needs to be in a direction where the cylinders bottom out (go to the end of their stroke). The synchronizing is accomplished because excess fluid is bled off over the flow divider's internal relief valves to feed the cylinder that is late getting to the end of its stroke. Reversing the direction of the cylinders, the rotary gear flow dividers will act as a combiner. Please note that a combiner does not regulate cylinder speed, so a flow control is required to limit the maximum flow to avoid cavitation.

Installation

Hoses and piping must be clean and free from contamination. No other special requirements are necessary. Flow dividers can be mounted in any position, however try to keep near actuators and use the same size hoses.

Start-Up

The flow divider and lines must be completely filled with oil before starting. It is absolutely necessary to completely fill the flow divider before the start-up (this is fundamental for the first start-up especially). Do not load the flow divider immediately at the maximum pressure and speed, but increase the load gradually at start-up. Especially when the flow divider has a small displacement, do not start the flow divider when the outlet pressure is already at the maximum value.

Drains

The flow dividers may have drain ports that are internally connected together. At least one of these drain ports must be connected to the tank. The installation of the drain plumbing must prevent syphoning.

Fluids

Quality mineral-based hydraulic fluid with the viscosity range of 32-68 cSt and a temperature range of 20C – 65C. New fluid should be filtered to better than 10 micron absolute.