

Program Outline Industrial Disc Brakes

 VME BRAKE ENGINEERING
SWEDEN

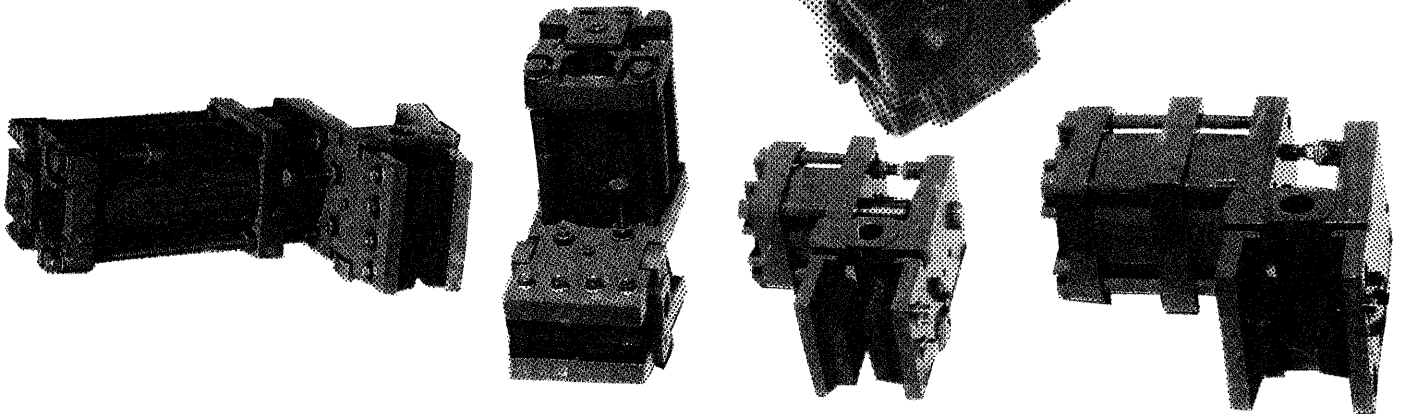
*Pneumatic
Hydraulic
Spring Applied
Hand Operated*

RANGE of APPLICATIONS

*Cold rolling mills, coilers
Sheet metal processing equipment
Wire drawing and cable making
Tension Control: Strip steel, wire, cable,
paper, plastic foil
Sawing mills, wood working machines
Positioning of welding and coil turn tables
Electric gear motor Brake
Transmission brake: Stopping and parking
of forestry machines, off-road vehicles
Cable winch brake; Cable laying ship
Rail and slide bar brake; Linear stopping,
holding of carriages and slide assemblies
Brake test benches for evaluation of
vehicle transmissions
Valve actuator test benches for nuclear
power plants*

MANUFACTURED BRAKE TYPES

*Pneumatically or Hydraulically applied
Spring applied /
Pneumatically or Hydraulically released
Hand operated / Spring applied
Special brake designs*

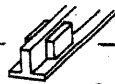


Rotary



Linear Motion Control

VME BRAKE ENGINEERING



since 1983

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*Designer + Manufacturer of Brake
Calipers for stationary and mobile
machinery operating in a tough
industrial environment*

CONTENTS

*Pneumatic
Spring Applied/Pneumatically Released
Combined Pneumatic/Spring Applied
Hydraulic
Spring Applied/Hydraulically Released
Combined Hydraulic/Spring Applied
Hand Operated/Spring Applied
Accessories
Application*

Product Range

VME Brakes

Brake KeyData & Application

	Data sheet	Brake Key Data		Operating Pressure (bar)	Release/ Hold Off pressure (bar)
		Braking Force (N) Coefficient $\mu=0,4$	Braking Force (N) of friction $\mu=0,28$		
Pneumatic Disc Brakes					
LT 32	2-1078	340 N	240 N	5 bar	
LT 40	2-1078	535 N	375 N	5 bar	
LT 63	LT 63	1.950 N	1.365 N	5 bar	
LT 2x63	LT 63 ref.	3.900 N	2.730 N	5 bar	
LT 2x63 with separate inlets	LT 63 ref.	2x1950 N	2x1.365 N	5 bar	
LT 100	LT 100	5.850 N	4.100 N	5 bar	
LT 2x100	LT 2x100	11.700 N	8.200 N	5 bar	
LT 2x100 with separate inlets	2-5546	2x5.850 N	2x4.100 N	5 bar	
Pneumatic Spring applied FAILSAFE Brakes					
LTF 63	1-1109 ref.	1.160 N	810 N		3,9 bar
		1.620 N	1.130 N		5,2 bar
LTF 100	LTF 100	2.830 N	1.980 N		3,6 bar
LTF 2x100	LTF 2x100	5.590 N			3,1 bar
LTF 4x100	LTF 4x100	9.460 N			5,2 bar
Combined Pneumatic/Spring "TWOSTOPP" Brakes					
LTLF 63	1-1109 ref.	1.950 N	1.365 N	5 bar	
		1.620 N	1.130 N		5,2 bar
LTLF 100	2-5545	5.850 N	4.100 N	5 bar	
		3.620 N	2.520 N		3,6 bar
LTLF 2x100	2-5545	5.850 N	4.100 N	5 bar	
		5.590 N	3.910 N		6,2 bar
Hydraulic Disc Brakes					
LTH 25-63	2-1086	5.200 N	3.680 N	80 bar	
LTH 25-100	2-1087	11.680 N	8.160 N	160 bar	
HT 100	2-5471	62.800 N		100 bar	
HT 100 HD	2-5471	100.480 N		160 bar	
Hydraulic Spring applied FAILSAFE Brakes					
LTHF 63	1-1109 ref.	5.620 N	3.930 N		19,5 bar
		2.640 N	1.850 N		9,5 bar
LTHF 100	LTHF 100	9.180 N			10,5 bar
		5.750 N			6,3 bar
Combined Hydraulic/Spring "TWOSTOPP" Brakes					
LTHF25-HF63	1-1109 ref.	5.200 N	3.680 N	80 bar	
		5.620 N	3.930 N		19,5 bar
LTH25-HF100	1-1093 ref.	11.680 N	8.160 N	160 bar	
		9.180 N	6.430 N		10,5 bar
Handoperated Disc Brakes					
LTMF 18	2-1037	0-130 N	0-90 N	Spring force adjustable by hand knob	
LTMF 18 B	2-1081	0-640 N	0-450 N		

Accessories

Lining wear/Engagement Disengagement switches	2-5520
Application, miscellaneous	
General Brake Data	
Materials and Service Data	
Brake installations	1-5540
Brake Test benches	1-5541
Transmission shaft brake	3-5522
Gear motor brake	3-5521
Brake Selection Questionnaire	

APPLICATION

Calculation of Braking Torque T_b (Nm) at Braking Force (N) and coefficient of friction $\mu=0,4$ or $\mu=0,28$

$$T_b(N) = \frac{F_b(N) \times \text{nom. Disc dia. (mm)} - 60 \text{ (mm)}}{2 \times 1000} * * \text{LT63 brakes series 54 (mm)}$$

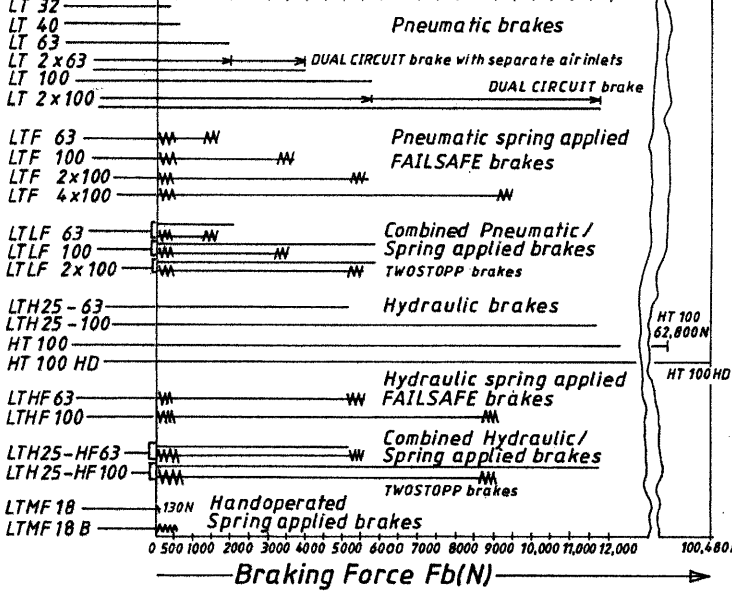
OPERATION

- * Above data for Braking Force, Operating and Hold-Off Pressure are nominal
- * Max. Service Pressure 10 bar for all Air Brakes, except caliper LT2x100 max. 2 x 7 bar
- * Adjustment-free brake spring, except for hand operated spring applied calipers
- * All spring applied brakes are provided with a manual release feature
- * All brake types may be employed outdoors
- * Only one mounting bolt required for assembly
- * Low response pressure with good reproducibility of braking force at negligible stick-slip
- * Prepared, dry and lubrication-free compressed air. Brake piston seal groove not grease at assembly
- * Consult VME Brake Engineering if the rubbing speed exceeds 30 m/sec and at continuous slippage



Braking Force Selection Chart

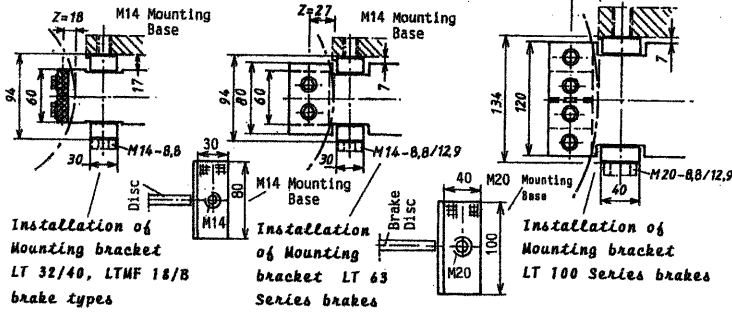
0 500 1000 2000 3000 4000 5000 6000 7000 8000 9000 10,000 11,000 12,000 100,480 N



Disc Brake Range

Calculation of Braking Torque T_b (Nm)

$$T_b(Nm) = \frac{F_b(N) \times \text{nom. Disc dia. (mm)} - 2 \times Z(\text{mm})}{1000 \times 2}$$



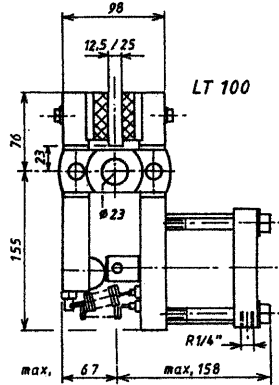
Pneumatic Disc Brake LT 100

EMPLOYMENT: Stopping, Holding, Positioning
Tensioning and Holding Duties
Linear Braking

APPLICATION: Coiling and uncoiling of steel strip. Electric motor drives. Test benches for compliance evaluation of mechanical components. Stopping and holding of industry exhaust fans. Linear braking of rail guided material supply carriages.

BRAKING FORCE: 5.850 (N) - 5 bar
4.100 (N) - 5 bar Low friction linings

INSTALLATION: Data sheet LT100



Pneumatic DUAL CIRCUIT Disc Brake LT 2x63

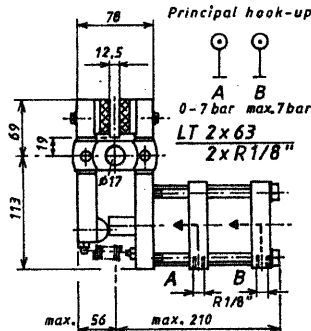
EMPLOYMENT: Combined Continuous Slippage / Emergency Braking

OPERATION: At tensioning duties is the lower brake piston (inlet A) being applied. While the upper brake piston (inlet B) is actuated in case of emergency.

APPLICATION: Coiling and uncoiling of steel strip. Brake test benches

BRAKING FORCE: 1.950 (N) - 5 bar Inlet A
1.950 (N) - 5 bar Inlet B

INSTALLATION: Data sheet LT63 (reference)



Pneumatic Spring Applied FAILSAFE Brake LTF 63

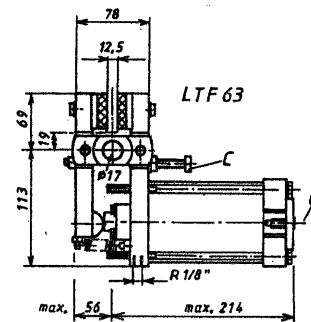
EMPLOYMENT: Emergency Stopping

APPLICATION: Coiler drives
Coil tilting tables

BRAKING FORCE: 1.620 (N) - 0 bar / Release pressure 5,2 bar
1.160 (N) - 0 bar / Release pressure 3,9 bar
810 (N) - 0 bar / Release pressure 3,9 bar
Low friction linings

NOTE: Adjustment-free brake spring
Manual brake release device (C) provided

INSTALLATION: Dwg 1-1109



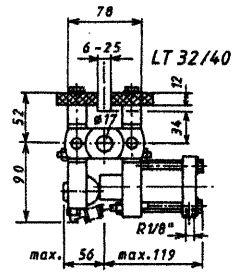
Pneumatic Disc Brake LT 32/40

EMPLOYMENT: Tensioning and Holding Duties

APPLICATION: Coiling and uncoiling of steel strip. Processing of spring wire, speed steel cutting tool wire, resistance wire, razor and saw blade strip.

BRAKING FORCE: 340 / 535 (N) - 5 bar
240 / 375 (N) - 5 bar Low friction linings
170 / 268 (N) - 5 bar Felt linings

INSTALLATION: Dwg 2-1078



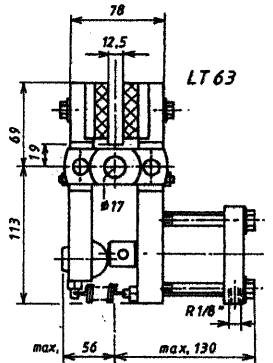
Pneumatic Disc Brake LT 63

EMPLOYMENT: Stopping, Holding, Positioning
Tensioning and Holding Duties
Linear Braking

APPLICATION: Coiling and uncoiling of steel strip. Wire drawing. Cold rolling mills and peripheral equipment. Electric gear motors. Saw mills. Wood working machines. Paper processing. Linear braking of rail born running gears.

BRAKING FORCE: 1.950 (N) - 5 bar
1.365 (N) - 5 bar Low friction linings
975 (N) - 5 bar Felt linings

INSTALLATION: Data sheet LT63



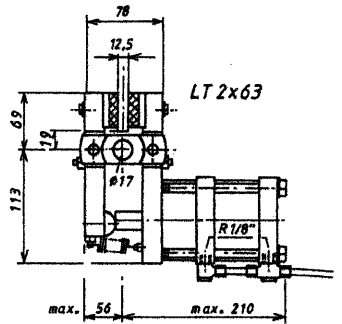
Pneumatic Disc Brake LT 2x63

EMPLOYMENT: Stopping and Holding Duties
Linear Braking

APPLICATION: Circular sawing machines
Saw benches
Wood working machines

BRAKING FORCE: 3.900 (N) - 5 bar

INSTALLATION: Data sheet LT63 (reference)



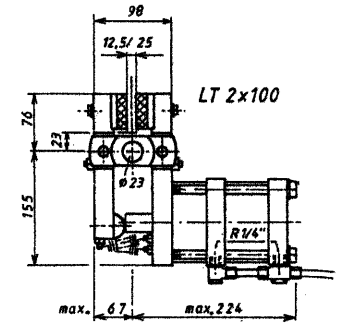
Pneumatic Disc Brake LT 2x100

EMPLOYMENT: Stopping and Holding Duties
Positioning
Linear Braking

APPLICATION: Saw mill log conveyors and feeders. Benches for endurance and performance testing of mechanical components and subassemblies. Electric gear motors and drives.

BRAKING FORCE: 11.700 (N) - 5 bar

INSTALLATION: Data sheet LT2x100



Pneumatic DUAL CIRCUIT Disc Brake LT 2x100

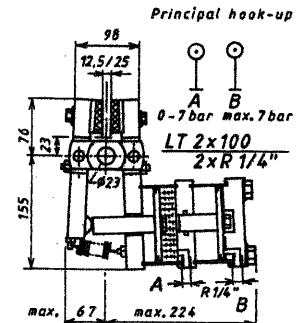
EMPLOYMENT: Combined Continuous Slippage / Emergency Braking

OPERATION: At tensioning duties is the lower brake piston (inlet A) being applied. While the upper brake piston (inlet B) is actuated in case of emergency.

APPLICATION: Coiling and uncoiling of steel strip. Brake test benches

BRAKING FORCE: 5.850 (N) - 5 bar Inlet A
5.850 (N) - 5 bar Inlet B

INSTALLATION: Data sheet LT2x100, dwg 2-5546



Pneumatic Spring Applied FAILSAFE Brake LTF 100

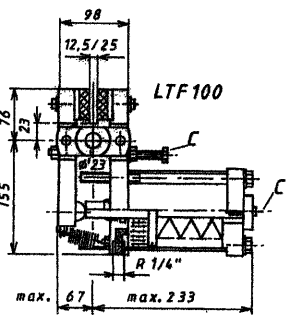
EMPLOYMENT: Emergency Stopping
Repeated Service Braking
Stationary Holding
Linear Braking

APPLICATION: Coiler drives, Peripheral equipment for hot rolling mills. Circular saw for cutting of tubular steel bars. Saw mill frame saw. Unwind stands for rubber fabrics

BRAKING FORCE: 2.830 (N) - 0 bar / Release pressure 3,6 bar

NOTE: Adjustment-free brake spring
Manual brake release device (C) provided

INSTALLATION: Data sheet LTF100



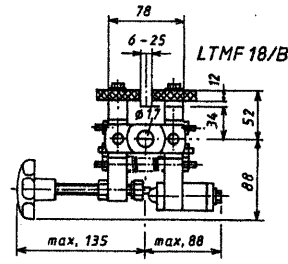
Handoperated Spring Applied Brake LTMF 18/B

EMPLOYMENT: Continuous Slippage Tensioning Duties

APPLICATION: Coiling and uncoiling of steel strip.
Processing of spring wire, speed steel cutting tool wire, resistance wire, razor and saw blade strip.
Unwind stands for fiber cable requiring precise tensioning.

BRAKING FORCE: 0-130 (N) / 0-640 (N)
0-90 (N) / 0-450 (N) Low friction linings
0-65 (N) / 0-320 (N) Felt linings

INSTALLATION: Dwg 2-1037 / 2-1087



Combined Pneumatic/ Spring Applied TWOSTOPP Brake LTLF 63

EMPLOYMENT: Proportioned Braking Action with FAILSAFE back-up Feature

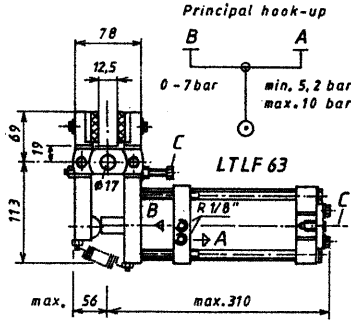
OPERATION: Inlet B > Service brake Proportioned braking to air pressure
Inlet A > Spring brake
In event of air supply line failure, power loss, failsafe parking or stationary holding requirements the spring actuator applies the brake (Exhaust A)

APPLICATION: Coiler drives. Mobile equipment

BRAKING FORCE: 1.950 (N) - 5 bar > Service brake
1.620 (N) - 0 bar > Spring brake
Release pressure 5.2 bar

NOTE: Adjustment-free brake spring
Manual brake release device (C) provided

INSTALLATION: Dwg 1-1109



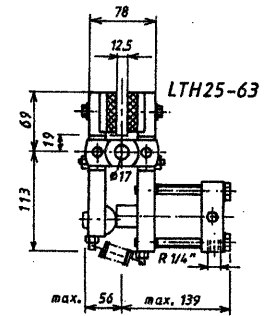
Hydraulic Disc Brake LTH25-63

EMPLOYMENT: Continuous Slippage Tensioning and Holding Duties Positioning, Stationary Holding Linear Braking

APPLICATION: Coiling and uncoiling of steel strip Motor drives. Electric gear motors Coil hoisting and tilting tables

BRAKING FORCE: 5.200 (N) - 80 bar
3.640 (N) - 80 bar Low friction linings

INSTALLATION: Dwg 2-1086



Hydraulic Spring Applied FAILSAFE Brake LTHF 63

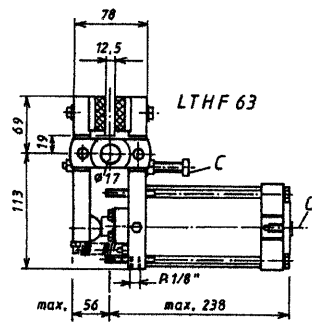
EMPLOYMENT: Emergency Stopping Positioning, Stationary Holding Linear Braking

APPLICATION: Electric gear motors Mobile drilling rigs Construction machinery

BRAKING FORCE: 5.620 (N) - 0 bar / Release pressure 19,5 bar
2.640 (N) - 0 bar / Release pressure 9,5 bar
1.850 (N) - 0 bar / Release pressure 9,5 bar
Low friction linings

NOTE: Adjustment-free brake spring
Manual brake release device (C) provided

INSTALLATION: Dwg 1-1109



Combined Hydraulic/ Spring Applied TWOSTOPP Brake LTH25-HF 63

EMPLOYMENT: Proportioned Braking Action with FAILSAFE back-up Feature

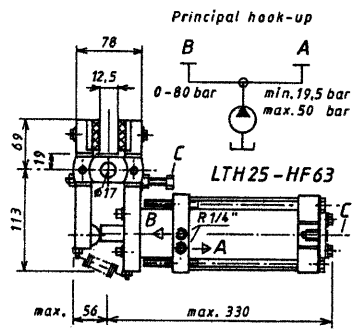
OPERATION: Inlet B > Service brake Proportioned braking to hydraulic input pressure
Inlet A > Spring brake
In event of hydraulic line failure, power loss, failsafe parking or stationary holding requirements the spring actuator applies the brake (Exhaust at A).

APPLICATION: Mobile and stationary equipment requiring proportioned braking action backed-up by failsafe parking or holding duties, e.g. Coiler drives, Fork lift trucks. Construction Machinery

BRAKING FORCE: 5.200 (N) - 80 bar > Service brake
5.620 (N) - 0 bar > Spring brake
Release pressure 19,5 bar

NOTE: Adjustment-free brake spring
Manual brake release device (C) provided

INSTALLATION: Dwg 1-1109



Pneumatic Spring Applied FAILSAFE Brake LTF 2x100/4x100

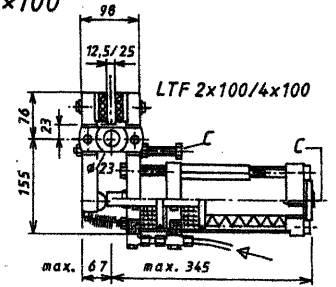
EMPLOYMENT: Emergency Stopping Stationary Holding Linear Braking

APPLICATION: Coiler drives. Peripheral equipment for hot rolling mills, iron and aluminium works. Conveying equipment

BRAKING FORCE: 5.590 (N) - 0 bar / Release pressure 3,1 bar
9.460 (N) - 0 bar / Release pressure 5,1 bar

NOTE: Adjustment-free brake spring
Manual brake release device (C) provided

INSTALLATION: Data sheet LTF2x100/LTF4x100



Combined Pneumatic/ Spring Applied TWOSTOPP Brake LTLF 100/2x100

EMPLOYMENT: Proportioned Braking Action with FAILSAFE back-up Feature

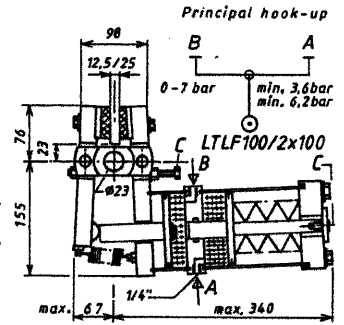
OPERATION: Inlet B > Service brake Proportioned braking to air pressure
Inlet A > Spring brake
In event of air supply line failure, power loss, failsafe parking or stationary holding requirements the spring actuator applies the brake (Exhaust A)

APPLICATION: Cable winders. Power generator units

BRAKING FORCE: 5.850 (N) - 5 bar > Service brake
3.620 (N) - 0 bar > Spring brake
Release pressure 3,6 bar
5.590 (N) - 0 bar > Spring brake
Release pressure 6,2 bar

NOTE: Adjustment-free brake spring
Manual brake release device (C) provided

INSTALLATION: Data sheet 2-5545



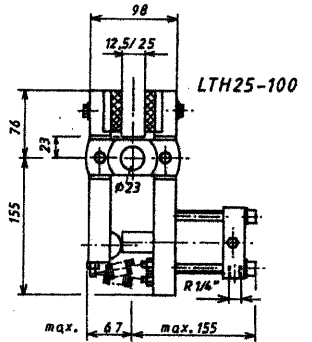
Hydraulic Disc Brake LTH25-100

EMPLOYMENT: Continuous Slippage Tensioning and Holding Duties Positioning, Stationary Holding Linear Braking

APPLICATION: Coiling and uncoiling of steel strip Motor Drives. Electric gear motors Coil hoisting and tilting tables

BRAKING FORCE: 11.680 (N) - 160 bar
8.200 (N) - 160 bar Low friction linings

INSTALLATION: Dwg 2-1087



Hydraulic Spring Applied FAILSAFE Brake LTHF 100

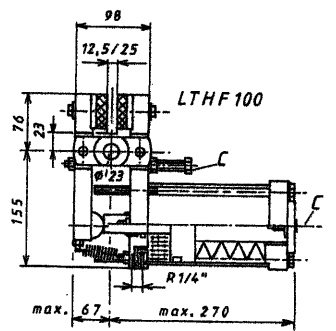
EMPLOYMENT: Emergency Stopping Repeated Service Braking Parking, Stationary Holding Continuous Slippage and Holding Linear Braking

APPLICATION: Transmission brake for forestry tractors, logging equipment Marine cables winches for pay off and holding duties

BRAKING FORCE: 9.180 (N) - 0 bar / Release pressure 10,5 bar

NOTE: Adjustment-free brake spring
Manual brake release device (C) provided

INSTALLATION: Data sheet LTHF100



Combined Hydraulic/ Spring Applied TWOSTOPP Brake LTH25-HF 100

EMPLOYMENT: Proportioned Braking Action with FAILSAFE back-up Feature

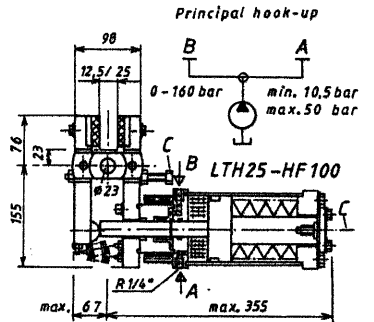
OPERATION: Inlet B > Service brake Proportioned braking to hydraulic input pressure
Inlet A > Spring brake
In event of hydraulic line failure, power loss, failsafe parking or stationary holding requirements the spring actuator applies the brake (Exhaust at A).

APPLICATION: Mobile and stationary equipment requiring proportioned braking action backed-up by failsafe parking or holding duties, e.g. Coiler Drives, Logging and Construction Equipment

BRAKING FORCE: 11.680 (N) - 160 bar > Service brake
9.180 (N) - 0 bar > Spring brake
Release pressure 10,5 bar

NOTE: Adjustment-free brake spring
Manual brake release device (C) provided

INSTALLATION: Dwg 1-1093



Hydraulic Disc Brake HT 100/HD

EMPLOYMENT: Service Braking, Stalling Stationary Holding

APPLICATION: Test benches for torque and power performance evaluation of transmissions

BRAKING FORCE: 62.800 (N) - 100 bar HT100
100.480 (N) - 160 bar HT100/HD

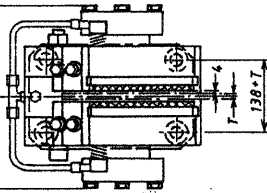
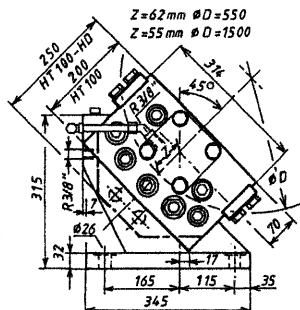
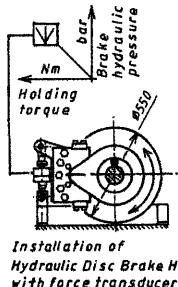
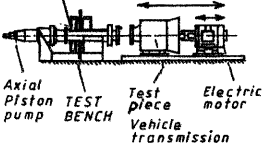
INSTALLATION: Data sheet 2-5471
Dwg 3-5555 Mounting of HT100 Calliper
Dwg 3-5556 Mounting of HT100/HD Halves separately

OPERATIONAL DATA

Max. disc speed 4500 rpm
Slipping torque 200-450 Nm
at speed range 3000-1200 rpm
maintained by adjustable hydraulic piston pump.

Stalling torque of 10.000 Nm by Hydraulic Disc Brake HT100 at 100 bar pressure

Brake HT100



Hydraulic Disc Brake HT100 with mounting bracket acc. to Data Sheet 2-5471

Transmission Test Bench

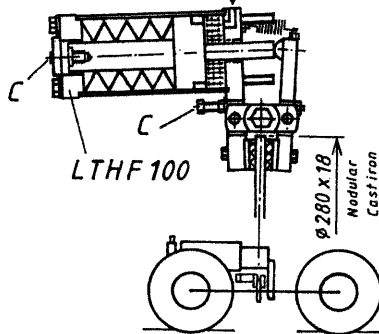
Transmission Brake

EMPLOYMENT: Service and Emergent Braking Parking, Stationary Holding

OPERATIONAL DATA
Braking torque 1010 Nm at 0 bar hydraulic pressure. Nom. release pressure 10,5 bar
Max. operating pressure 50 bar (Inlet B)
Disc Ø 280 mm, max. speed 2800 rpm

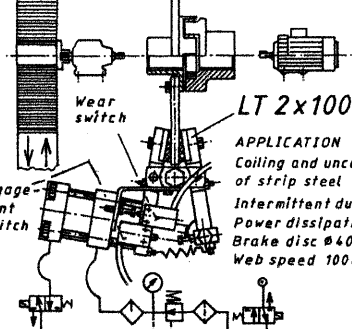
APPLICATION
Auxiliary transmission shaft mounted brake for forestry tractors, logging equipment, fork lift trucks, construction machinery.

NOTE
Adjustment-free brake spring
Manual brake release device (C) provided



Hydraulic Spring Applied FAILSAFE Brake LTHF 100

Strip Steel Processing



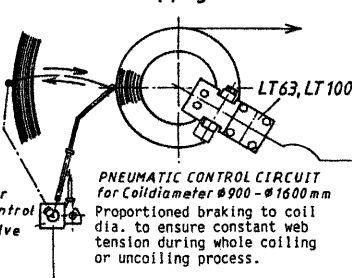
APPLICATION
Coiling and uncoiling of strip steel
Intermittent duty
Power dissipation 4kw
Brake disc Ø400mm
Web speed 100m/min

Dual Circuit Coiler Brake

Combined continuous slippage with emergency stopping capability by applying upper brake piston operated through a separate air supply line.

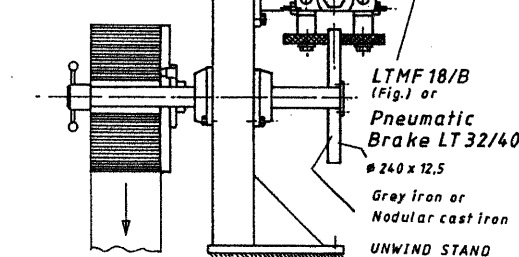
ACCESSORIES: Engage/Disengagement switches
Lining wear monitoring switches

Tension Control Continuous Slippage



APPLICATION: Processing of paper, plastic foils, woven fabrics, spring wire

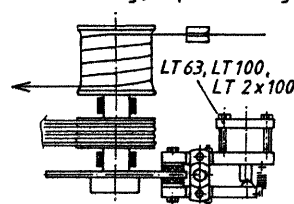
Processing of Wire Saw web strip Fiber cable



Coiling and uncoiling of drilling tool wire, max. wire dia. 5 mm
Saw blade strips, min. cross section 1x1 mm
Max. continuous feeding speed 15 m/min

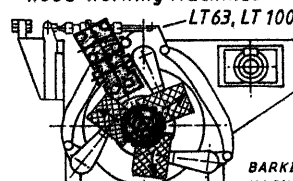
Proportioned braking with capability gradually adjusting to ZERO braking torque for materials requiring precise tension control during the winding process, e.g. fiber cables.
The brake is either furnished with friction material or felt linings.

Wire Drawing Cable Making, Rope Braiding



To counterbalance unequally distributed annual coil weights, varying feeding speeds, changing material properties apply pneumatic disc brake.

Saw Mills Wood Working Machines



Braking, Emergency Stopping and Holding Duties on BARKING MACHINES, WOOD CHIPPERS, CIRCULAR SAWS, LOG CONVEYORS

Pneumatic TWOSTOPP Braking System LTLF 100

EMPLOYMENT
Proportional Braking Action with FAILSAFE back-up

APPLICATION
Service brake being applied within speed range 400-0 rpm to reduce run-down time in order to minimize boundary (dry) bearing friction.

OPERATIONAL DATA
Extended caliper width combined service and spring brake applied to generator set flywheel. Proportioned braking to input pressure > Inlet B

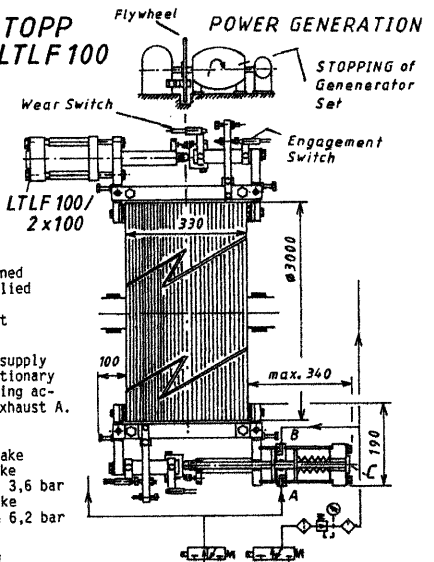
In event of power loss, air supply line failure or failsafe stationary holding requirements the spring actuator applies the brake > Exhaust A.

BRAKING FORCE

5.850 (N) - 5 bar Service brake
3.620 (N) - 0 bar Spring brake
Release pressure 3,6 bar
5.590 (N) - 0 bar Spring brake
Release pressure 6,2 bar

NOTE
Adjustment-free brake spring
Manual brake release device (C) provided

ACCESSORIES
Engage/Disengagement switches
Lining wear monitoring switches



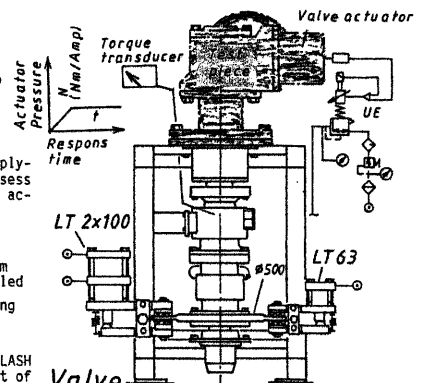
Special Design LTLF 100/ 2x100 Combined Pneumatic / Spring Applied TWOSTOPP Brake

Pneumatic Multiple Disc Brake Braking System

EMPLOYMENT
By gradually and separately applying pneumatic disc brakes to assess valve actuator response time and actuating pressure.

OPERATIONAL DATA
Braking torque range 0-8000 Nm
Disc Ø 500 mm, speed 220-250 rpm
3 off LT2x100 air brakes installed
CLOSED LOOP control incorporating proportional valve operating at 0,5-6 bar, 24 V, I max. 2,2 A

To minimize valve actuator BACKLASH during braking test a low moment of inertia transducer spindle assembly incorporating stationary brakes is provided.

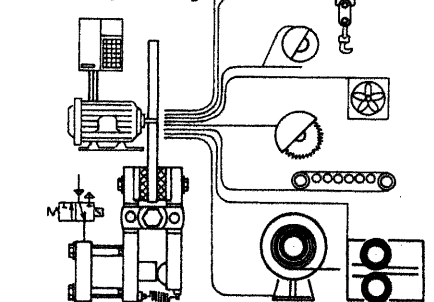


Valve Actuator Test Bench

APPLICATION:
Nuclear Power Stations
Reliability and Performance
Evaluation

Electric Motor Drives

Emergency Stopping
Stationary Holding



LT 63 or LT 100 series pneumatic, hydraulic, spring applied disc brakes

Installation and Application Examples of:

Pneumatic
Hydraulic
Spring Applied
Hand Operated
Caliper Disc Brakes
as well as manufactured
Brake Test Benches

Rotary

Linear Motion Control

since 1983

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