

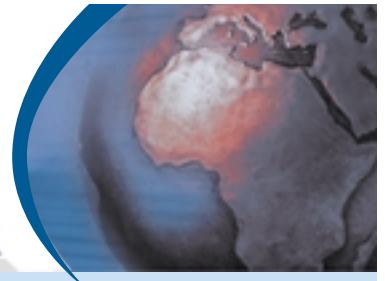
PUTTING TECHNOLOGY TO WORK....

WORLDWIDE!



Commercial Shearing (Pty) Ltd

**THE WORLDWIDE
PROGRAM OF VALVES
ISO 9001**



An Insight into Valve Technology

CLEAN ROOM ASSEMBLY AND TEST

A major investment has been made in a clean-room assembly and test environment.

Components are cleaned prior to entering the totally enclosed clean-room. The air-conditioned clean-room is maintained with a small positive air pressure to prevent ingress of contamination during component transfer. Assembly stations are ergonomically designed for maximum efficiency.

Assembled valves are transferred within the clean-room to the test area which houses 12 test rigs. Automatic test cycles are used.

Every single assembly undergoes a complete and rigorous test cycle to ensure design performance standards are achieved.

ENGINEERING DESIGN

Good design is the starting point. Commercial has a totally dedicated design team concentrating all their efforts on control valve technology.

Modern computer assisted design tools are used including CAD and PC based capability in F.M.E.A. and component design.

ENGINEERING DEVELOPMENT

To refine the design and tailor the valve to optimise performance in the application, Commercial has made a large investment in its development centre. The centre has two development rigs totalling 415 BHP and environmental test cabinets to simulate hostile operating conditions. The centre is large enough to accommodate customers' machines for installation trials and in-house performance measurement.

In addition advanced experimental research projects are carried out to validate new design concepts.

THE MANUFACTURING PROCESS

A large investment has been made in computer controlled purpose designed machinery. To ensure precision and consistency the process is organised around permanently set manufacturing cells.



The honing of spool bores and grinding of spools is so well controlled that matching of components has been virtually eliminated between processes.

A Kanban system controls throughput and end of process inventory to give just-in-time production.

QUALITY ASSURANCE

Our factory has been accredited to ISO 9001 standard since 1991 and we are equally proud of the many world class customers who have also given us first class quality rating. Process controls are introduced at all stages in the manufacturing process and include computer assisted SPC systems.

In addition regular quality audits are carried out including complete audit strip of finished product. Supplier quality assurance is formalised to extend the quality process through the supply chain. Zero defects are the objective. A large investment has been made in total quality management (T.Q.M.) All employees have been trained in total quality and the concept has been embodied in the complete management process.

MCD20 and MCD50 Series



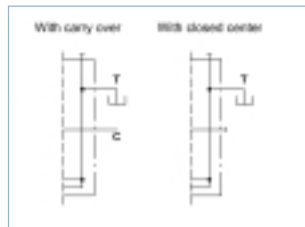
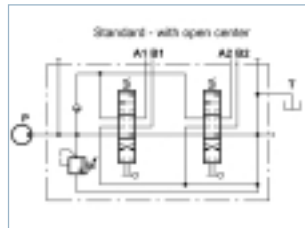
Monoblock Directional Control Valve

Features

- MCD20 and MCD50 Series are monoblock directional control valves with parallel circuits. The standard valve comes with an adjustable main relief valve and a check valve. The carry over circuit, spool types, spool controls, and other options are available.
- The compact casting is made of high strength cast iron. The spools are made of hardened and tempered steel.

Specifications

	Nominal Flow L/min (USgpm)	Max. Pressure bar (psi)
MCD20	45 (12)	210 (3000)
MCD50	70 (18)	210 (3000)



Ordering Code

MCD20/2 - 140 / D1C / D1C / CO - BSP-TT

Model
MCD20, MCD50

Number of Spool

Relief Valve Setting (bar)
no code - 210 bar
140 - 140 bar

Spool Control
no code or **S** - Spring return to center
D - Detent in three positions

Spool Type
no code or **1** - Double acting, 3 positions with A and B closed in center
A - Single acting on A, 3 positions B plugged
B - Single acting on B, 3 positions A plugged
M - Double acting, 3 positions with A and B to tank in center

Service Valve* (MCD20 only)
no code - Without valve
P - Without valve, but with pre-arranged holes
C - With pilot operated check valves on port A and B

*With Service Valve, the main valve body will come without Port P and T on top and Port A and B can be BSPT 3/8" only, but Port A and B on Check valve can be any threads as specified in Ordering Code.

Optional Port Connection

- no code - Port P and T at side with optional Port P and T plugged on top
- TT** - Port P and T on top with optional Port P and T plugged at side
- SS** - Port P and T at side only with standard 3 mounting holes only

	Port Thread	Thread	Port A-B	Port P-C	Port T
MCD20	no code	BSPT	3/8"	3/8"	3/8"
	T04	BSPT	1/2"	1/2"	1/2"
	BSP	BSP	1/2"	1/2"	1/2"
	SAE	SAE	SAE8	SAE10	SAE10
MCD50	no code	BSPT	1/2"	1/2"	3/4"
	T06	BSPT	3/4"	3/4"	3/4"
	BSP	BSP	3/4"	3/4"	3/4"
	SAE	SAE	SAE10	SAE12	SAE12

Circuit Option

- no code - With open center plug
- CO** - With carry over sleeve
- CC** - With closed center plug

Examples:

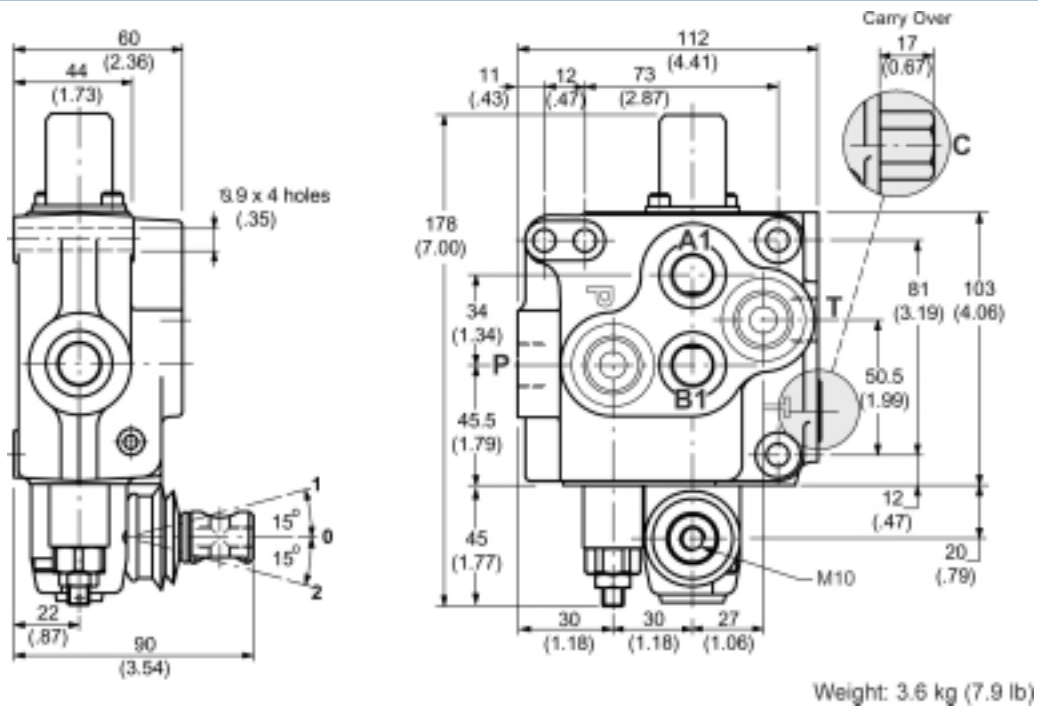
MCD20/1-D = Single spool, double acting, detent in 3 positions, BSPT 3/8"

MCD20/2-A/B/CO-BSP = Double spool, 1st single acting on A, 2nd spool single acting on B, with carry over, BSP 1/2"

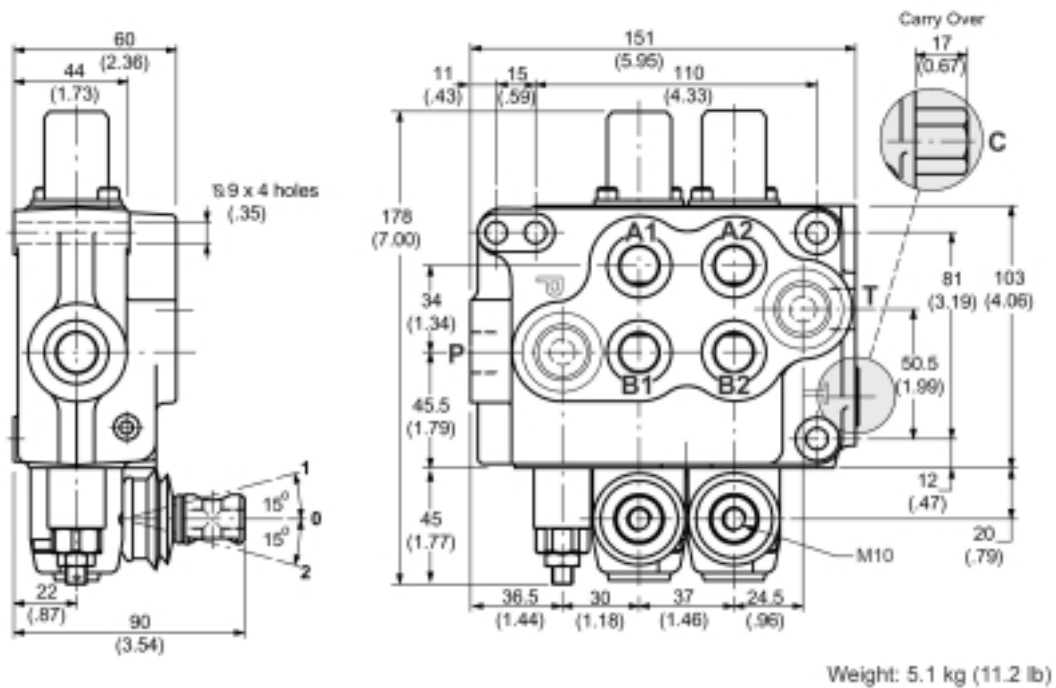


Installation Dimensions

MCD20/1



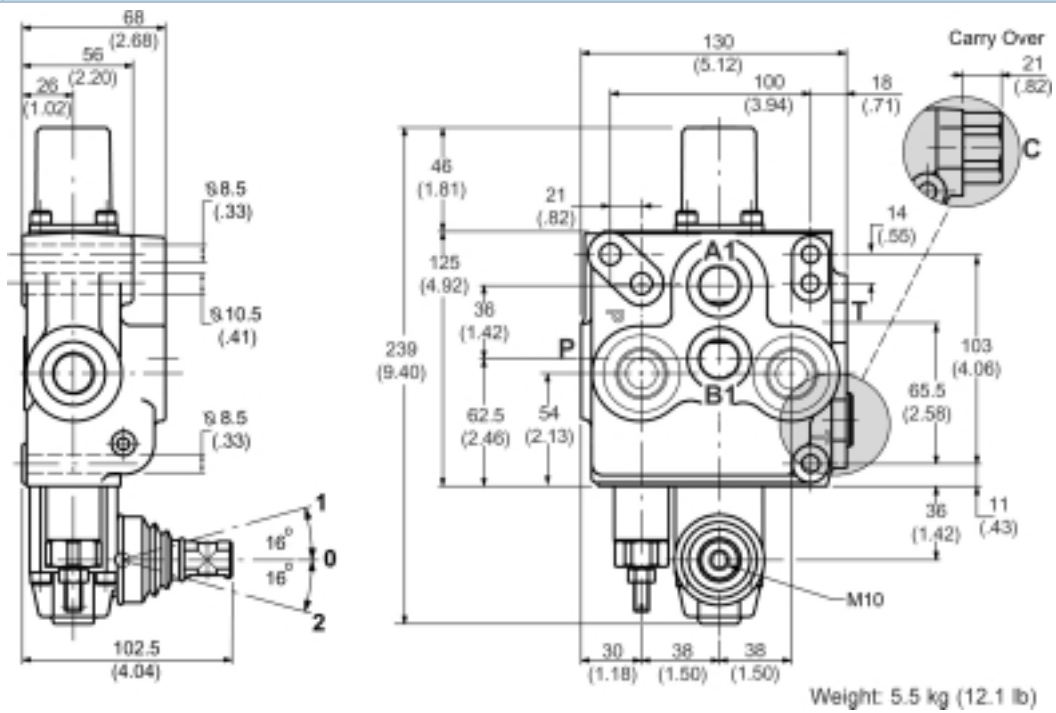
MCD20/2



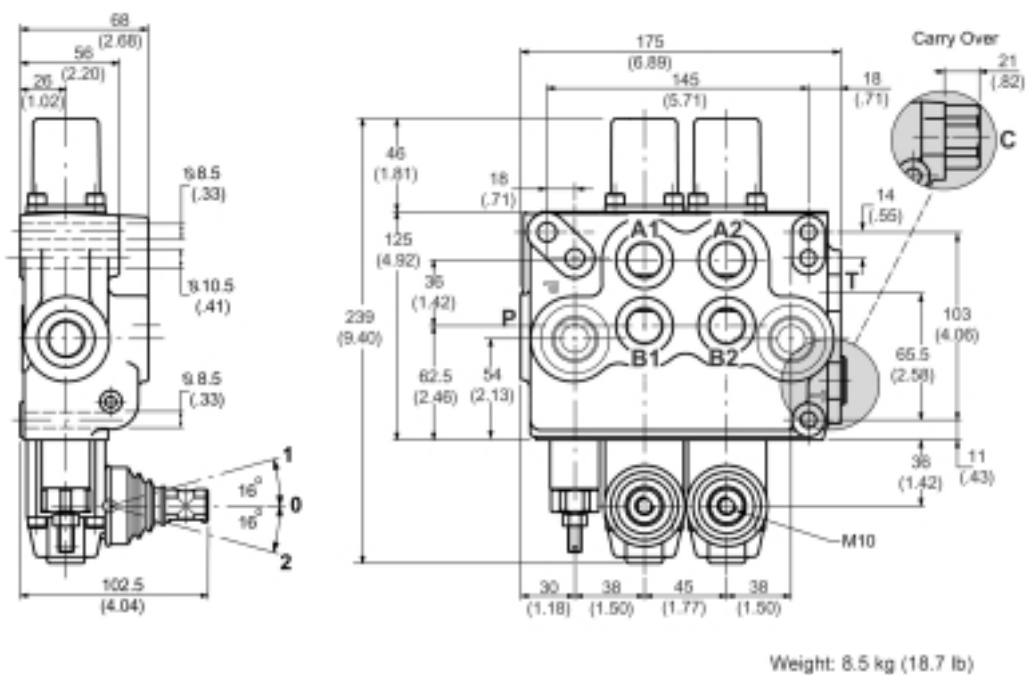


Installation Dimensions

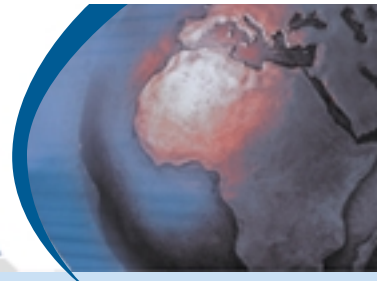
MCD50/1



MCD50/2



MCD10 Series



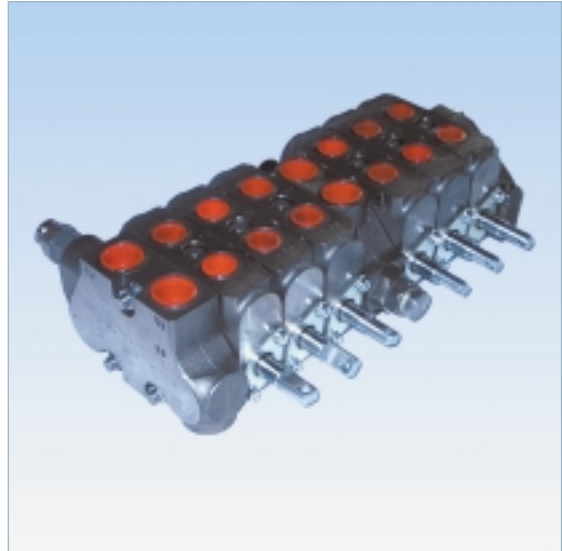
Sectional Directional Control Valve

Features

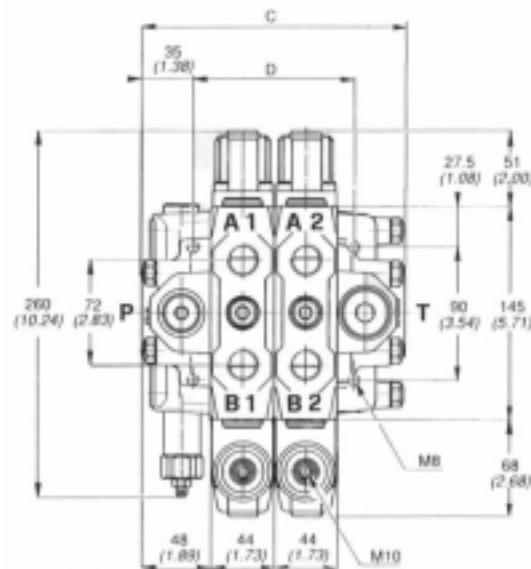
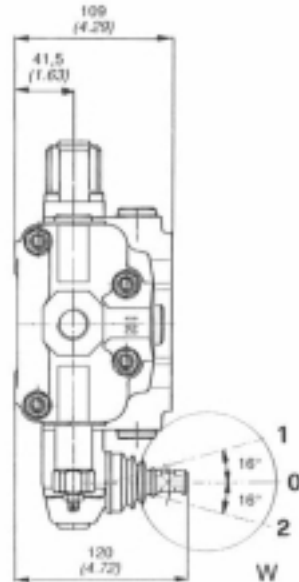
- MCD10 Series are Sectional directional control valves with parallel circuits. The standard valve comes with an adjustable main relief valve and a check valve. High pressure carry over circuit, spool types, spool controls, and other options are available.
- The compact casting is made of high strength cast iron. The spools are made of hardened and tempered steel.

Specifications

Nominal Flow	80 L/min (21 USgpm)
Max. Pressure	210 bar (3000 psi)
Port A-B	BSPT 1/2" or SAE8
Port P	BSPT 1/2" or SAE10
Port T	BSPT 3/4" or SAE10



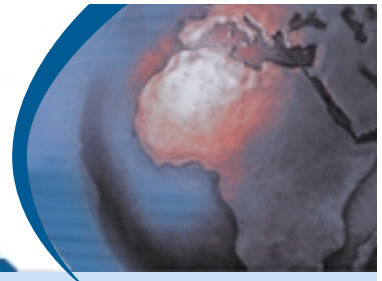
MCD10



	C		D		Weight	
	mm	inch	mm	inch	kg	lb
MCD 10/1	144	5.67	70	2.76	10.2	22.4
MCD 10/2	188	7.40	114	4.49	14.9	32.8
MCD 10/3	232	9.13	158	6.22	19.6	43.1
MCD 10/4	276	10.87	202	7.95	24.3	53.5
MCD 10/5	320	12.60	246	9.69	29.0	63.8

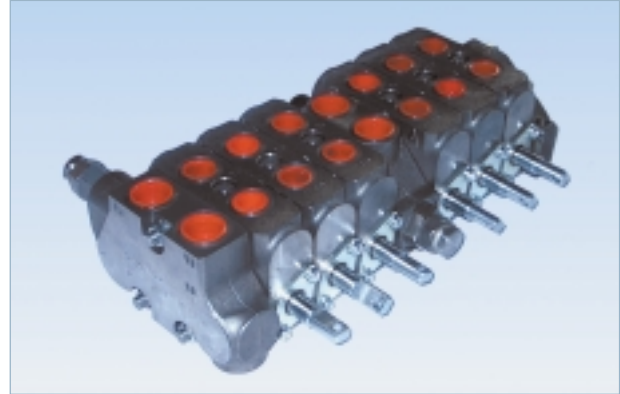
	C		D		Weight	
	mm	inch	mm	inch	kg	lb
MCD 10/6	364	14.33	290	11.42	33.7	74.1
MCD 10/7	408	16.06	334	13.15	38.4	84.5
MCD 10/8	452	17.80	378	14.88	43.1	94.8
MCD 10/9	496	19.53	422	16.61	47.8	105.2
MCD 10/10	540	21.26	466	18.35	52.5	115.5

KA18

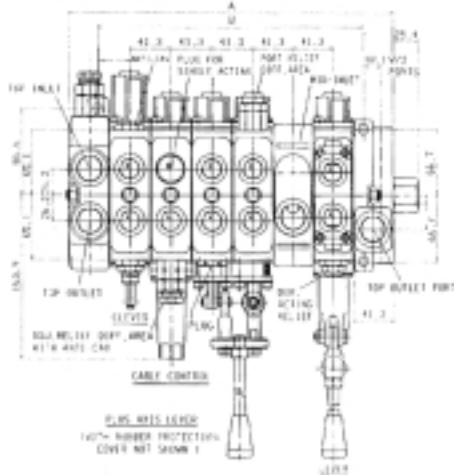


General Description

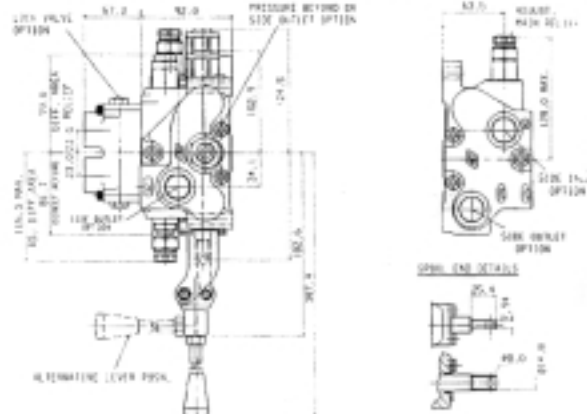
Commercial KA 18 spool type directional control valves for open and closed centre circuits are of sectional design for flexibility of circuit construction. Each section also incorporates a load hold check valve to prevent interaction between services. Up to 9 sections can be banked in right hand and/or left hand and can be tandem, parallel or series circuit.



DIMENSIONAL DATA (mm)



		Number of work sections								
		1	2	3	4	5	6	7	8	9
"A"		123.8	165.1	206.4	247.7	288.9	330.2	371.5	412.8	454.0
"B"		63.5	104.8	146.1	187.3	228.6	269.9	311.2	352.4	393.7



Note: All system protection cartridges are optional.

Technical Data

Maximum Pressure	KA18		
Main Relief Valve	320 bar		
Port Relief Valve	350 bar		
Rated Flow:	Nominal 80 l/min		
Pressure Drops:	Taken at 80l/min and in bar		
1 section	3	6	2.6
5 sections	9.2	7	3.2
9 sections	15.5	7.8	4.1
	P to T	P to A & B	A & B to T

SPOOL FUNCTIONS

Double acting, single acting, motor, float, regenerative.

Porting Threads

INLET & OUTLET PORTS

3/4" ODT 3/4" BSP, M27 x 2

SERVICE PORTS

5/8" ODT 1/2" BSP, M22 X 1,5

PORT ACCESSORIES

Available as relief valve, anticavitation or combination of both, in screw or shim adjustable forms. Tamper proof option available. Double acting to single acting change over plug or steel blank.

- Hydraulic or pneumatic pilot.
- Cable operation.
- Manual operation.
- Micro switch adaptation for double/single acting sections.
- Cable or manual operation for operating 2 spools from one lever.

ACTION MECHANISMS

Spring return, 3 position detent, 3 position detent spool in, or out, 2 position detent, 4th position detent for float.

More Valve Products



General Description

The Commercial valve programme contains more products and accessories than has been possible to show in detail in this brochure. Such as:

- Custom designed components
- Valve for high flow
- Add on / integrated valves for pumps
- Accessories

VG 80

A sectional type directional control valve that is rated for operating pressure up to 250 bar with flows up to 450 lpm. This model VG 80 valve is very similar in design to our KA122 and KA202 valves which have proven themselves over the years to offer excellent performance and reliable service. Particular emphasis has been made on extending the metering range as the total spool travel.

INLET / OUTLETS

The combination inlet/outlet casting has a high and a low pressure port on both the top and side faces. The system relief valve is pilot operated and is screw adjustable. Mid-section inlets are offered as a split flow type which separates the flow of more than one pump, a combined flow type which combines the flow of one or more pumps, and a two-position selector type which can be shifted to provide split flow in one position and combined flow in the other. In the combined flow mode, flow from the second pump is directed to all working sections to give 2-speed operation. This feature requires an external line from the selector section to the inlet.

Outlet covers can have high and low pressure ports on both the top and side. Internal coring allows a standard low pressure outlet to be converted to a pressure beyond type by simply replacing a short plug with a longer one. Outlet covers can also contain a relief valve.

ACCESSORIES

- Circuit selector valve.
Solenoid operated – wet pin type 80 l/min at 200 bar,
- Flow control valve spacer. Hand wheel or screw driven adjusted.
- Preferential flow divider. Pumpflow is divided from inlet port upstream, oil is preferred flow split, to requirement. Residual flow is divided downstream.
- Inline flow control valve 210 bar 9 – 45 l/min.
- In line valve flow divider 210 bar 1) 20 – 70 l/min, 2) 45 – 140 l/min.
- In line relief valve 35 – 280 bar 70 l/min.
- Cross line relief valve 35 – 280 bar 70 l/min.



- Diverter valves – 210 bar pressure drop at 45 l/min 8 bar.
- In line check valves 210 bar 1) 45 l/min, 2) 140 l/min.

WORKING SECTIONS

All working sections at 3" wide which allows us to use porting up to 1 – 1/4" split flange or SAE-24. Relief valves with an anti-cavitation checks are available for the work sections.

All work sections have parallel circuitry except for the 4th position float section with tandem circuitry. The float section is available only with a hydraulic remote spool operator.

Spool actuators offered with the parallel sections include:

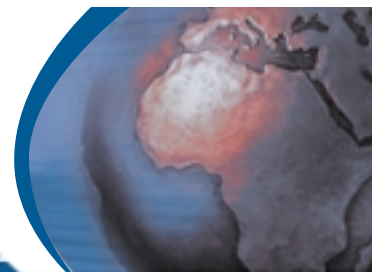
- Manual with spring return to neutral.
- Manual with 3rd-position detent.
- Hydraulic remote with proportional metering.
- Hydraulic remote (on/off).

INTEGRATED VALVES

Integrated with one heavy duty gear unit a broad variation of flow controls exist such as:

- Priority valve.
- Unloading valves for tandem pumps allow engines used to drive a machine hydraulic system to be downsized while maintaining, or even improving work cycle efficiency. We offer 6 unloader valve configurations to suit a variety of applications. These are: air to load, air to unload, flow sensing, pressure sensing, flow and pressure sensing and pressure sensing with horse power-summation.
- Two speed valves that can be shifted on the fly to either low speed/high torque or high speed/low torque modes. Integrated into double motor.
- A range of integrated pump/valve products designed for power and control of single and double-acting cylinders for dump body trailer products.

Controls



General Description

Commercial offers a wide range of controls tuned to the valves produced including operation by:

- Manual handles.
- Cable controls.
- El. On/off.
- Hydraulic remote.
- El. Hydraulic proportional.

In the space available we can only indicate some of the features and performances, cable controls are single or dual actuators. The remote cable control consists of three basic components.

- Control head.
- Push-Pull cable assembly.
- Valve connection kit.

TEMPERATURE RANGE:

-40°C to +85°C electrical.
-55°C to +125°C electrical.

PILOT FLOW REQUIRED:

0.5 gpm min. per section.

QUIESCENT LEAKAGE (PILOT):

0.2 gpm max. per section.

HYDRAULIC REMOTES: COMMERCIAL OFFERS A FULL LINE OF HYDRAULIC CONTROL PRODUCTS IN TWO SERIES.

JOYSTICK

- With standard ball handle.
- With double-throw electric switch handle.
- With a variety of metering packages.
- With electro-magnetic detent (12Vdc or 24Vdc).

STACKABLE

- With standard ball handle (straight or bent).
- With double-throw electric switch handle.
- With a variety of metering packages.
- With electro-magnetic detent (12Vdc or 24Vdc).

FOOTPEDALS

- With a variety of metering packages.
- With adjustable pedal angle.

TECHNICAL DATA

A. HEAVY DUTY

Maximum Input Pressure	44.8 bar
Maximum Return Line Pressure	3.5 bar
Maximum Control Flow	19 lpm
Viscosity Range	15-280 cSt
Oil Temperature Range	-20°C to + 70°C

Weight

Dual Function	1.8 kg
Single Function	2.3 kg
Foot Pedal (approx.)	3.6 kg
Filtration Required (Minimum)	10 Microns Absolute **
Handle Effort	3.6 - 5 kg

B. MEDIUM / LIGHT DUTY

Input Pressure	30 bar std (100 bar max)
Tank Port Pressure	3 bar max
Flow	15 l/min
Hysteresis	0.9 bar
Temperature Range	-20°C to +80°C
Viscosity Range	2,8 to 80 cSt
Fluid	Mineral oil, phosph. ester
Ports	(BSPP) 1/4"

- Aluminium alloy, explosion proof.
- Full range of metering packages (50 curves).
- Handles with or without electrical switches.
- Spring return, mechanical or electro-magnetic detent option.
- Possibility of detent in any position.

PUTTING TECHNOLOGY TO WORK....

WORLDWIDE!

GEROLOR MOTORS



Displacements 50 - 500 cc/rev

HYDRAULIC FILTERS AND ACCESSORIES



P.T.O TRUCK GEAR PUMP



Displacement 23 - 80 cc/rev
Pressure up to 250 BAR



Commercial Shearing (Pty) Ltd

10 Dartfield Road, Jet Park, Boksburg
P O Box 8366, Elandsfontein, 1406
South Africa

Tel: (011) 397-4264/5/6/7

Fax: (011) 397-3114

e-mail: comshear@global.co.za



Commercial Shearing
Member of
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