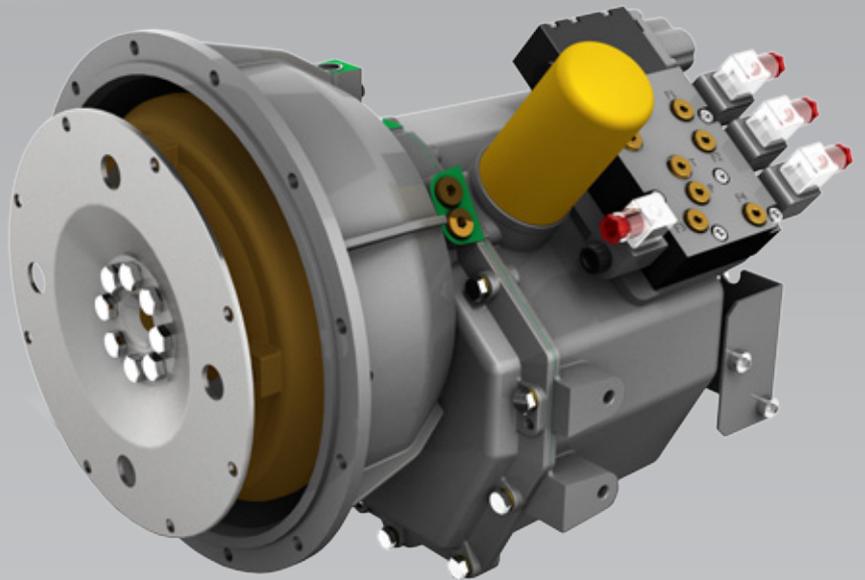


TRANSFLUID



TRANSFLUID

trasmissioni industriali



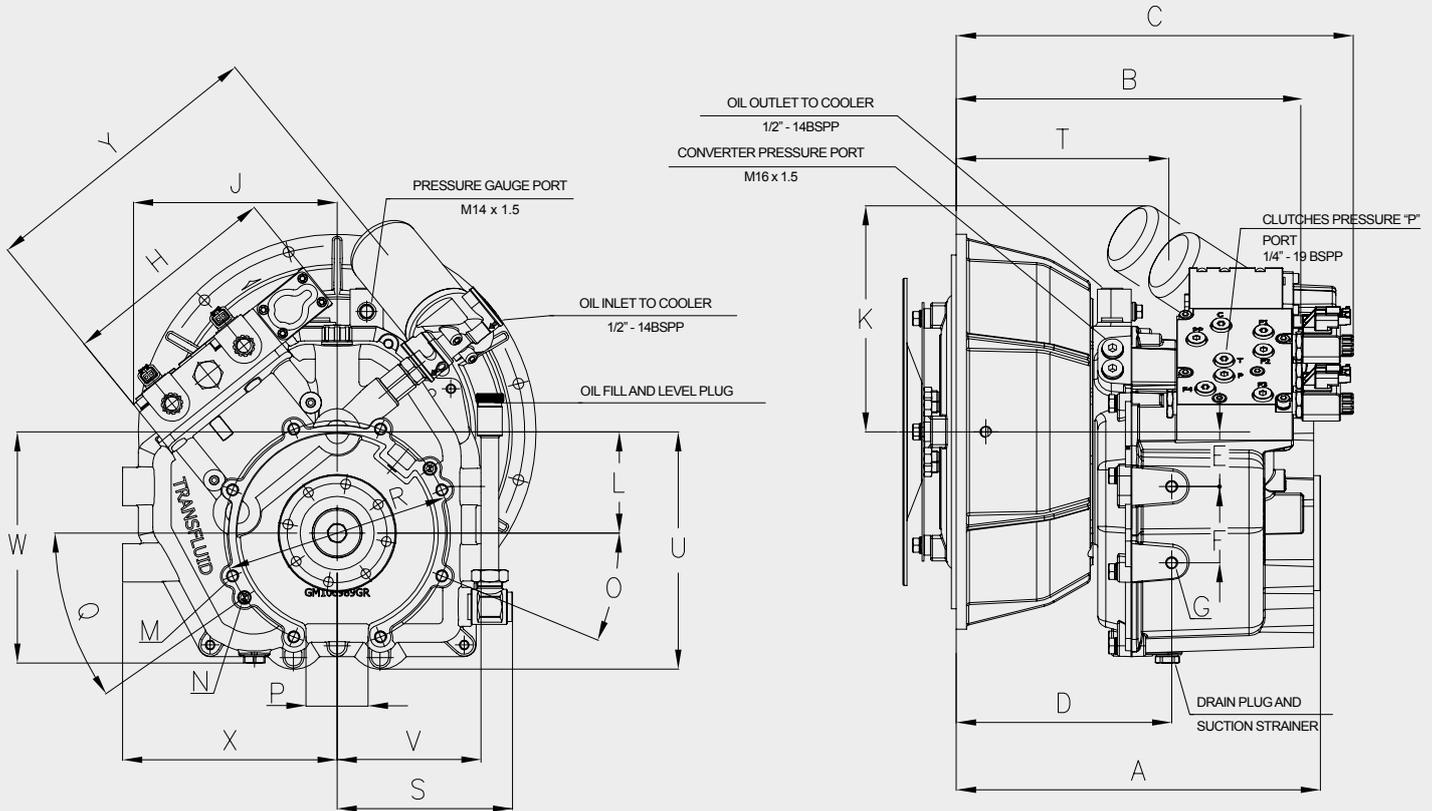
drive with us

POWER SHIFT TRANSMISSIONS

REVERMATIC 11-700 power shift with torque converter

The **REVERMATIC** is a Power shuttle transmission specifically designed for industrial applications requiring quick directional reversing and smooth clutch engagement.

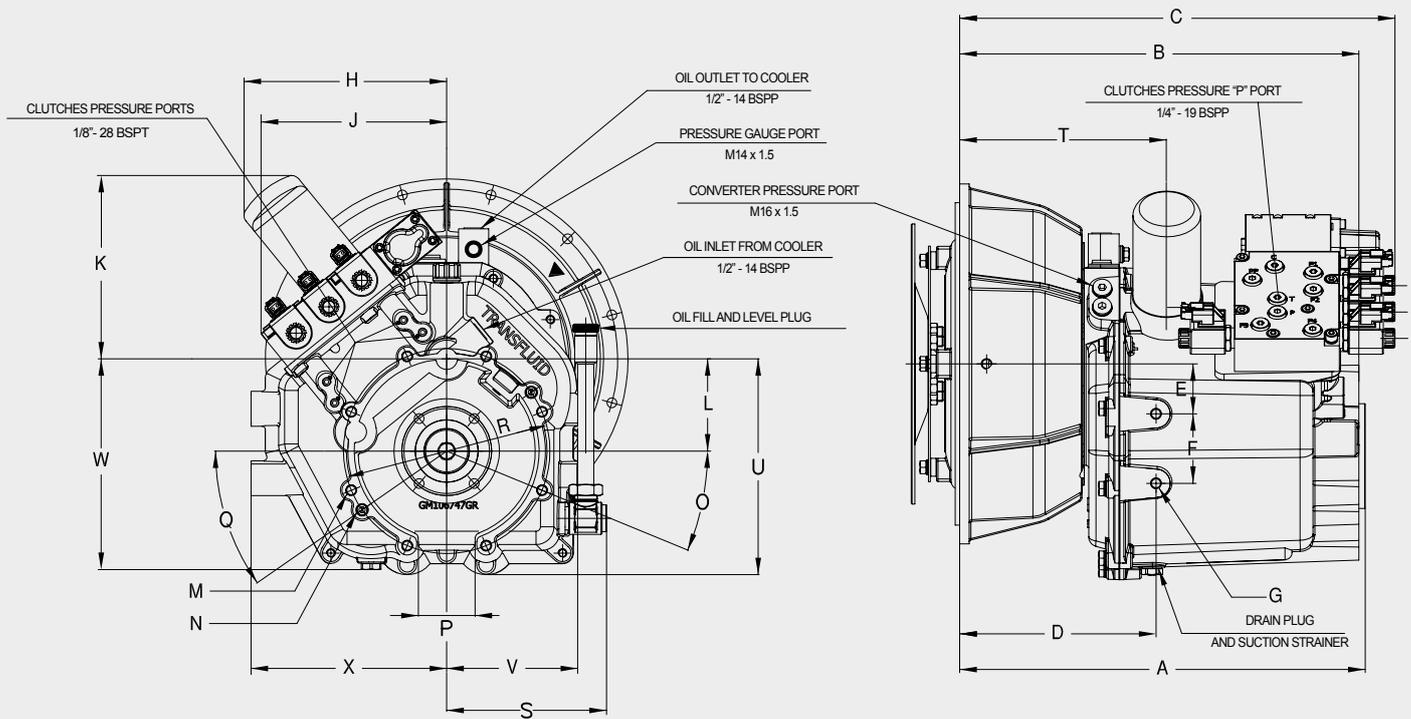
It consists of an hydraulically activated gear unit, the forward and reverse multiple disc clutch assemblies are mounted on the lay shaft and input shaft respectively . They are operated by the hydraulic selector, electrically actuated, with a patented built-in "soft shift" device. The transmission input shaft is connected to engine flywheel through a single stage torque converter which is selected in according to the engine rating and required transmission vehicle performances, thanks to its characteristics it eliminates the mechanical connection between engine and driven machine allowing smooth power transfer.



DIMENSIONS mm (inch)																									
SAE INPUT	FLANGE OUTPUT	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
								dia x depth Nr					dia x depth Nr	dia x depth Nr											
3-10"	DIN 120	369.7	352	403	219	56	78	M12X25	222	207	231	104	M12X21	12X12	22.5°	63	35°	230	178	216	243	146	236.5	218	297
4-10"	SAE 1410	(14.555)	(13.858)	(15.866)	(8.622)	(2.205)	(3071)	(M12x0.98)	(8.74)	(8.15)	(9.094)	(4.094)	(M12x0.83)	(0.472x0.472)	(2.48)			(9.055)	(7.008)	(8.504)	(9.567)	(5.748)	(9.311)	(8.583)	(11.693)

TECHNICAL DATA										
RATIO FWD = REV	WEIGHT w/o oil	OIL QTY.	MAX POWER	MAX TORQUE	MAX SPEED	SOLENOIDS	OPERATING PRESSURE OIL	FILTER	OIL COOLER	MAX OPERATING TEMP.
0.85 : 1 1.04 : 1 1.40 : 1 1.88 : 1 2.25 : 1	102 kg (225 lb)	7 l (1.85 gal)	70 kW (100 hp)	700 Nm (516 lbft)	2800 rpm	12/24 Vdc 27 W	14 bar (203 psi)	25 micron	max 24 kW (32 hp) 3 bar (43 psi) 1.5 l (0.4 gal) /min/100 rpm	100° C (212° F)

The **RANGERMATIC** is a multi-speed power shift transmission available in one, two or three speeds forward and one or two speeds reverse. Designed for industrial applications it provides quick and smooth reversing and easy gear selection on the go. Consisting of a double gear train, actuated by self-contained hydraulic clutches, it connects to the engine through a wide range of hydrodynamic single stage torque converters. The torque converter is selected to optimize the driven machine performances. Additionally it eliminates the mechanical connection between the engine and the driven machine allowing smooth power transfer. The hydraulic clutches are operated by a hydraulic selector, electrically actuated, with built-in a patented "soft shift" device.



DIMENSIONS mm (inch)

SAE INPUT	FLANGE OUTPUT	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
								dia x depth Nr					dia x depth Nr	dia x depth Nr										
3-10"	DIN 120	451.7	444.7	485	218.7	56	78	M12x25	229	207	206	103.5	M12x21	12x12	22.5°	63	35°	230	178	230	243	146	237	218
4-10"	SAE 1410	(17.784)	(17.508)	(19.094)	(8.610)	(2.205)	(3.071)	(M12x0.98)	4 (9.016)	(8.150)	(8.110)	(4.075)	(M12x0.83)	8 at 45° (0.472x0.472)	2 at 180°	(2.480)		(9.055)	(7.008)	(9.055)	(9.567)	(5.748)	(9.331)	(8.583)

TECHNICAL DATA

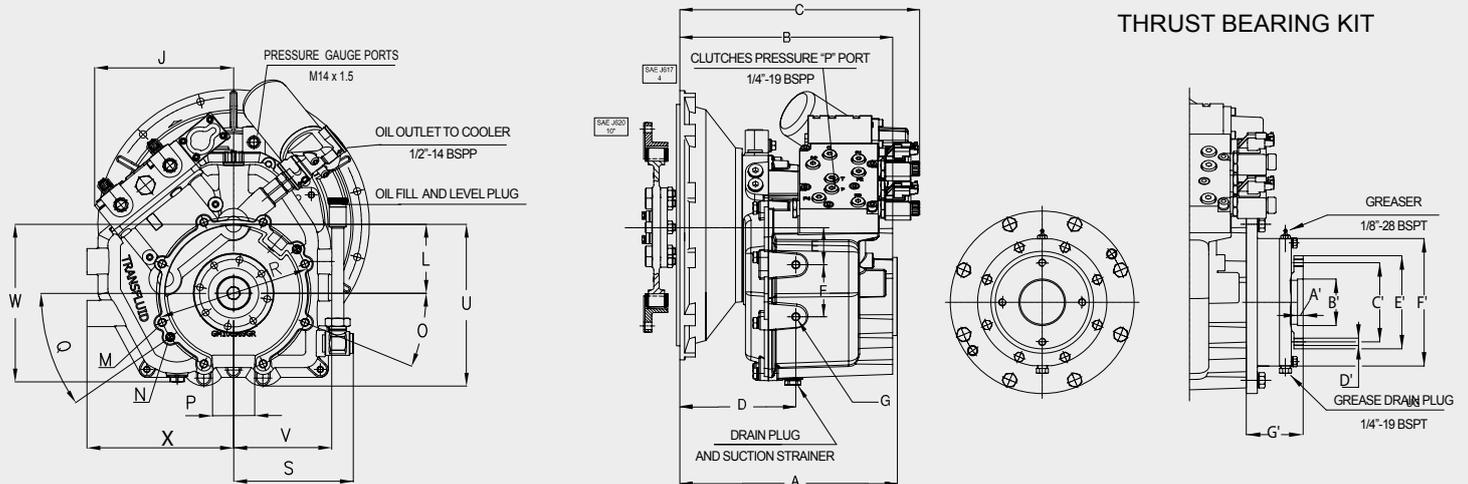
RATIO			WEIGHT w/o oil		
31-700 Version	21-700 Version	22-700 Version	31-700 Version	21-700 Version	22-700 Version
2.75-1.882-0.865 FWD 1.882 REVERSE	2.75-1.882 FWD 1.882-0.865 FWD 1.882 REVERSE	1.882-0.865 FWD 1.882-0.865 REVERSE	123 kg (271 LB)	117 kg (258 LB)	120 kg (265 LB)

TECHNICAL DATA

OIL QTY.	POWER ON ROAD	POWER OFF ROAD	MAX TORQUE	MAX SPEED	SOLENOIDS	OIL OPERATING PRESSURE	FILTER	OIL COOLER	MAX OPERATING TEMP.
8 l (2.11 gal)	95 kW (125 hp)	70 kW (100 hp)	700 Nm (516 lbft)	2800 rpm	12/24 V 27 W	14 bar (203 psi)	25 micron	max 24 kW (32 hp) 3 bar (43 psi) 1.5 l (0.4 gal) /min/100 rpm	100° C (212° F)

REVERMATIC 11-700 RBD SPD11S "PTO" for Revermatic & Rangermatic

REVERMATIC 11-700 RBD: Suitable for industrial applications and as marine transmission when combined with the thrust bearing kit mounted on the output shaft assembly and suitable marine oil cooler. It can be installed on engines with flywheel and flywheel housing according to SAE J 617, J 620 standard. The use of patented built in soft shift device allows smooth shifting from forward to reverse rotation for comfortable docking and manoeuvring. The RBD elastic coupling dampens torsional vibration and compensate for radial and angular misalignments.



TECHNICAL DATA							Max Thrust
A'	B'	C'	D'	E'	F'	G'	14000
7.5 (0.295)	63.5 ^{±0.2} (2.5)	108 ^{±0.2} (4.25 ^{±0.05})	M10x12.5 (M10x0.492)	4	127 (5)	174 (6.85)	

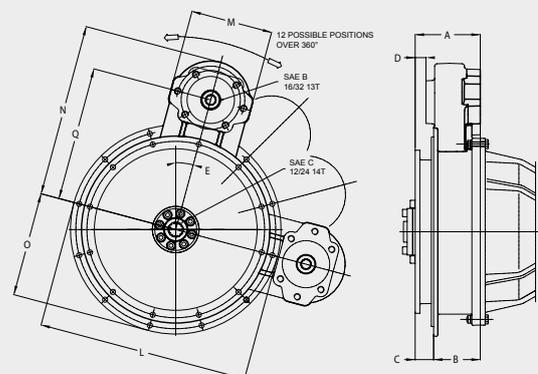
DIMENSIONS mm (inch)

SAE INPUT	FLANGE OUTPUT	A	B	C	D	E	F	G		J	L	M		N		O	P	Q	R	S	U	V	W	X
								dia x depth	Nr			dia x depth	Nr	dia x depth	Nr									
4-10"	DIN 120	323.8	316.8	357	172.8	56	78	M12x25	4	207	103.5	M12x21	8	12x12	2	22.5°	63	35°	230	178	243	146	236.5	218
	SAE 1410	(12.748)	(12.472)	(14.055)	(6.803)	(2.205)	(3.071)	(M12x0.98)		(8.150)	(4.075)	(M12x0.83)	at 45°	(0.472x0.472)	at 180°	(2.480)	(9.055)	(7.008)	(9.567)	(5.748)	(9.311)	(8.583)		

TECHNICAL DATA

RATIO FWD = REV	WEIGHT w/o oil	OIL QTY.	MAX POWER	MAX TORQUE	MAX SPEED	SOLENOIDS	OPERATING PRESSURE OIL	FILTER	OIL COOLER MARINE ⁽¹⁾	MAX OPERATING TEMP.
0.85 : 1 1.04 : 1 1.40 : 1 1.88 : 1 2.25 : 1	85 kg (187 lb)	3 l (0.8 gal)	130 kW (175 hp)	560 Nm (442 lbft)	3500 rpm	12/24 Vdc 27 W	12 bar (174 psi)	25 micron	max 10 kW (13 hp) 3 bar (43 psi) 1.5 l (0.4 gal) /min/100 rpm	100° C (248° F)

⁽¹⁾ For industrial application see pag. 1



SPD11ST: high capacity pump drive installed between the engine flywheel housing and Revermatic or Rangermatic transmission (with torque converter). Compact in length, the SPD11S can be rotated 360° to provide the user the best pump pad position for the application.

DIMENSIONS mm (inch)

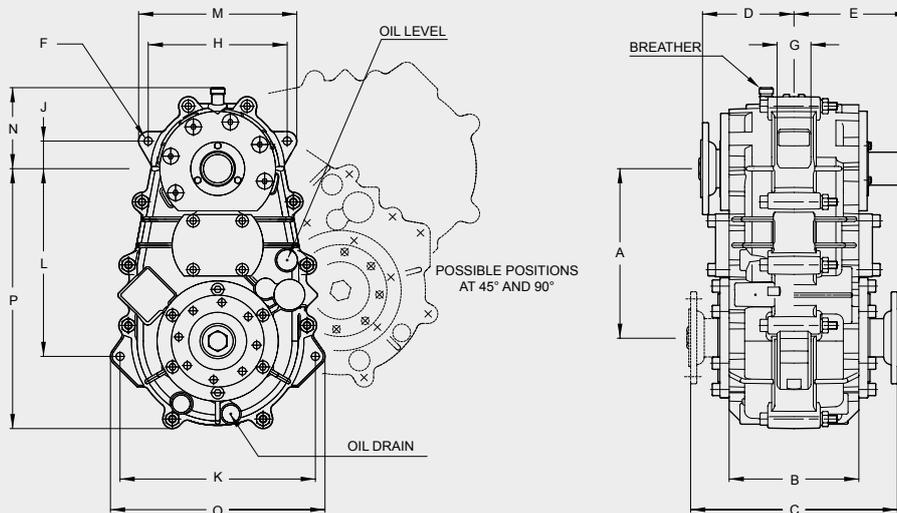
SAE INPUT	SAE OUTPUT FOR TRANSMISSION	A	B	C	D	E	L	M	N	O	Q
3-11"	4-10"	139.6 (5.496)	100 (3.937)	39.6 (1.559)	23.2 (0.913)	15°	451 (17.756)	176.5 (6.949)	374 (14.724)	226 (8.898)	290 (11.417)

TECHNICAL DATA

MAX WEIGHT	MAX INPUT TORQUE	HEAD TORQUE	MAX SPEED	GEAR RATIO
50 kg (110 lb)	860 Nm (634 lbft)	350 Nm (258 lbft)	3000 rpm	0.93

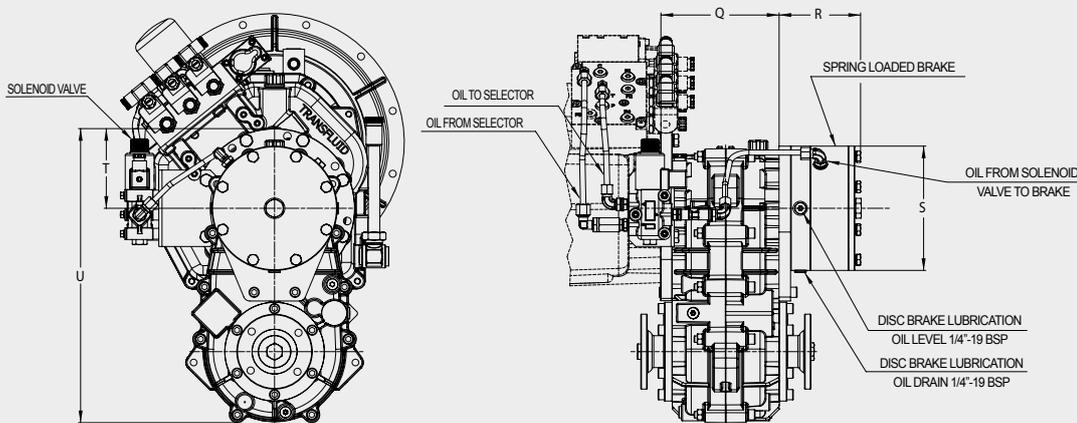
DROP BOX DP280 (w/o differential) PARKING BRAKE SL750 spring loaded

DROP BOX: Can be **flange mounted** or **remote mounted** to Revermatic or Rangermatic. Drop box can be rotated 360° to allow the user the optimal positioning of the output flanges available for 2wd or 4wd. The optional **SL750 PARKING BRAKE** is spring loaded, oil pressure released. It is operated by transmission oil pressure through a dedicated solenoid valve. The SL750 doesn't require a dedicated oil source or specific control, but it can also be operated from an external source. When equipped with the Rangermatic or Revermatic, the SL750 is installed with steel pipes for flange mounting and rubber hoses for remote mounting.

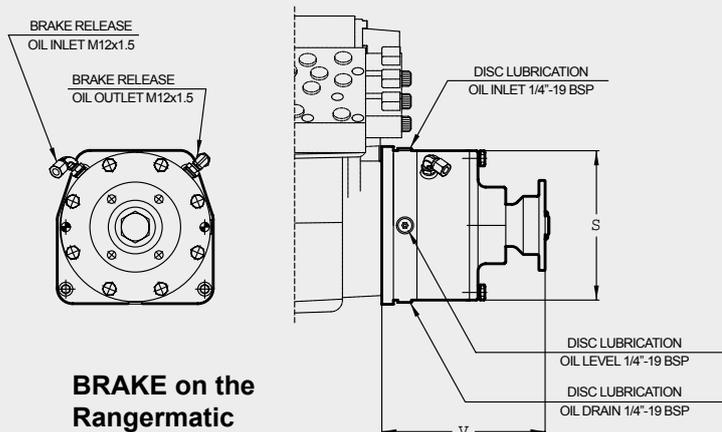


DIMENSIONS mm (inch)																	
FLANGE INPUT	FLANGE OUTPUT	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	
DIN 120 SAE 1410	DIN 120 SAE 1410	225 (8.858)	168 (6.614)	268 (10.551)	120 (4.016)	144.5 (5.689)	10.5 (0.41)	4	68 (1.575)	180 (7.087)	36 (1.417)	253 (9.961)	245 (9.646)	205 (8.071)	107 (4.213)	278 (10.945)	339 (13.346)

TECHNICAL DATA					
WEIGHT w/o oil	OIL QTY.	OUTPUT ROTATION	MAX TORQUE	MAX INPUT SPEED	GEAR RATIO
30 kg (66 lb)	3 l (0.8 gal)	=INPUT	1700 Nm (1480 lbf)	3500 rpm	1.15 or 2.4



BRAKE on the drop box



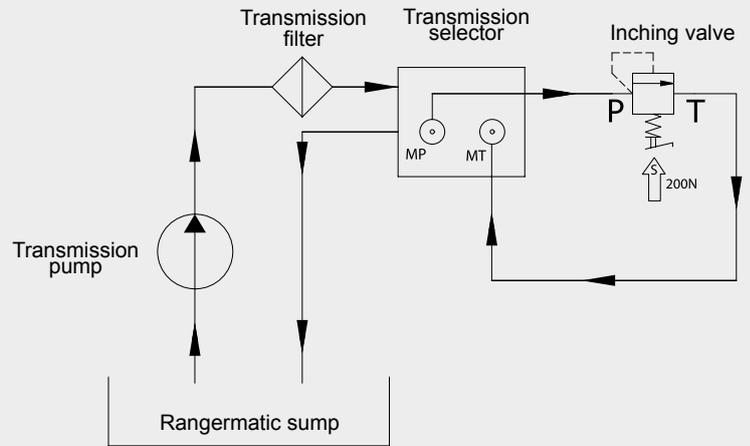
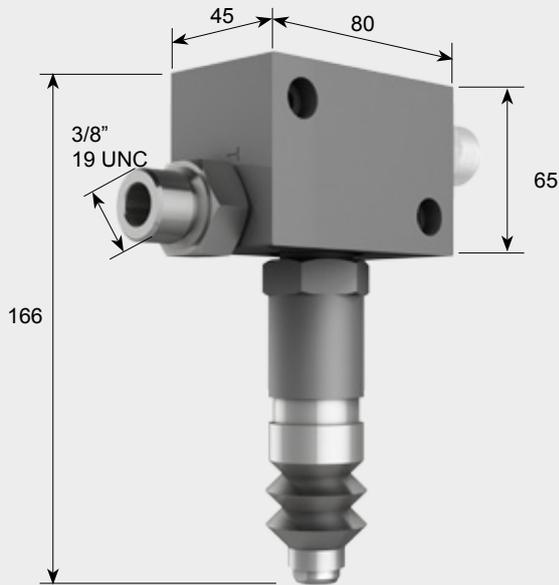
BRAKE on the Rangermatic

DIMENSIONS mm (inch)						
Q	R	S	T	U	V	SOLENOID VALVE
184 (7.244)	127 (5.000)	195 (7.677)	125 (4.921)	461.5 (18.169)	205.5 (8.091)	12/24 V 38 W

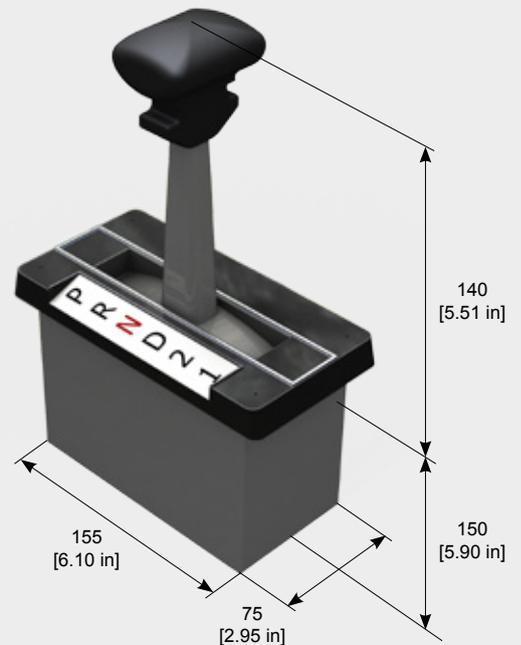
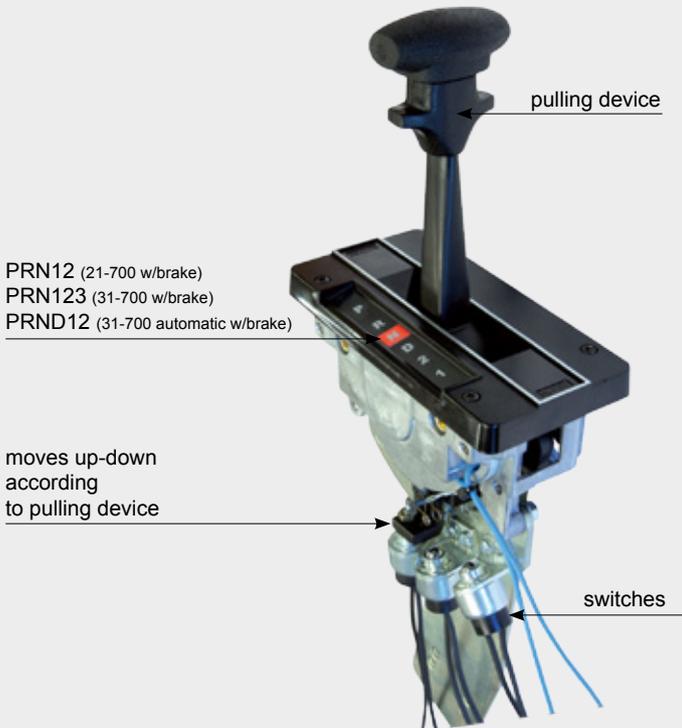
BRAKE Technical data						
WEIGHT w/o oil	OIL QTY.	TRANSMISSION OIL PRESS. SOURCE		EXTERNAL OIL PRESS. SOURCE**		
		STATIC TORQUE	OPERAT. PRESS.	STATIC TORQUE	MIN.OPERAT. PRESSURE	MAX.OPERAT. PRESSURE
18 kg (39.7 lb)	0.65 l (0.17 gal)	590 Nm (435 lbf)	12 bar (174 psi)	1670 Nm (1232 lbf)	23 bar (334 psi)	300 bar (4351 psi)

INCHING CONTROL - Remote mounting SHIFTER

INCHING CONTROL: Designed for quick and easy installation Transfluid's inching control manifold can be installed next to the brake pedal eliminating cables and levers or the most suitable remote location. The connection with transmission is with simple hydraulic hoses.



SHIFTER: Equipped with switches that interface with the solenoids on the transmission, the **Shifter** is designed to integrate the transmission controls with the electrically actuated hydraulic selectors on Rangermatic and Revermatic transmissions. Providing ease of use and quick installation the Shifter contains the required switches to correspond with each available gear of transmission. Additionally in application where the SL750 parking brake is used, the shifter comes equipped with a P(ark) position.



Model	31-700	21-700	22-700
Automatic w/TSC	PRND21	PRND21	/
Manual	PRN123	PRN123	P21N12

TSC: Transmission Shifting Control is a Transfluid's hardware and software original design, specifically made for easy and smooth automatic gear shifting of the three speed Rangermatic transmission. It can be connected to Transfluid's or Customer's shifter. It doesn't need any throttle pedal or engine speed signal; sensors are already integrated inside transmission casing.



Weight	0.4 kg (0.88 lb)	Voltage	12/24 Vdc
Dim. mm (inch)	134.6x153.2x52.2 (5.3"x6.03"x2.05")	Operating Temp.	-30°C+80°C (-22°F+176°F)
		Protection	IP67
Material	30% Glass Polymer	Harness Interface	48 pin
Communication	CAN 2.0B Extended	SAE J1939	

Predictable performance has been achieved by dedicated development of a comprehensive Power Shift Transmission family. All new applications of a Transfluid Power shift transmissions are supported by in-depth performance calculations. Transmission and vehicle performances are known before the machine is placed in the field.

7. System scheme

For an easy comprehension of the references herewith described please refer to the following scheme of the system:

8. Gross performances of the internal combustion engine

The gross performances of the internal combustion engine are the following:

Relational speed (rpm)	1200	1400	1500	1600	1800	2000	2200	2400
Torque (Nm)	312.9	324.5	327.1	328.6	321.7	311.6	297.7	284.5
Power (kW)	39.3	47.6	51.4	54.7	60.6	65.3	68.9	71.5

9. Final transmission ratio

We define "final transmission ratio" the ratio between the speed of rotation at the front wheels.

Final transmission ratio on front wheels = $P_{fin} = \eta_1 / \eta_2 \times \eta_3 / \eta_4 \times \eta_5 / \eta_6 \times \eta_7 / \eta_8$

Final transmission ratio on rear wheels = $P_{fin} = \eta_1 / \eta_2 \times \eta_3 / \eta_4 \times \eta_5 / \eta_6 \times \eta_7 / \eta_8 \times \eta_9 / \eta_{10}$

Being the vehicle a 2 driving axle vehicle, we have also a second final transmission ratio on rear wheels = $P_{fin} = \eta_1 / \eta_2 \times \eta_3 / \eta_4 \times \eta_5 / \eta_6 \times \eta_7 / \eta_8 \times \eta_9 / \eta_{10} \times \eta_{11} / \eta_{12}$

Final transmission ratio on rear wheels = $P_{fin} = \eta_1 / \eta_2 \times \eta_3 / \eta_4 \times \eta_5 / \eta_6 \times \eta_7 / \eta_8 \times \eta_9 / \eta_{10} \times \eta_{11} / \eta_{12} \times \eta_{13} / \eta_{14}$

where η_1 / η_2 correspond to the value 15.76.

10. Performances of the vehicle

10.1) Speed 18 km/h, vehicle loaded 9979 kg, slope = 0%

INPUT DATA

1 st gear transmission ratio	1.382	Weight of towed vehicles (kg)	0
2 nd gear transmission ratio	0.965	Slope (%)	0
3 rd gear transmission ratio		Rolling resistance of driving vehicle (kg/t)	80.0
4 th gear transmission ratio		Rolling resistance of towed vehicle (kg/t)	80.0
5 th gear transmission ratio		Adhesion factor	0.25
6 th gear transmission ratio		Mechanical efficiency	0.80
Transmission ratio of drop box (rpm inlet / rpm outlet)	1.000	Aerodynamic drag coefficient	0
Total transmission ratio from drop box inlet to wheels	15.760	Front section	0.8
Weight of driving vehicle (kg)	9.979	Make and model of driving wheels	
Part of the weight of driving vehicle acting on driving axle (kg)	9.979	Static radius of driving wheels (m)	0.453
		Rolling radius of driving wheels (m)	0.427
		Rolling circumference of driving wheels (m)	2.937

PERFORMANCES

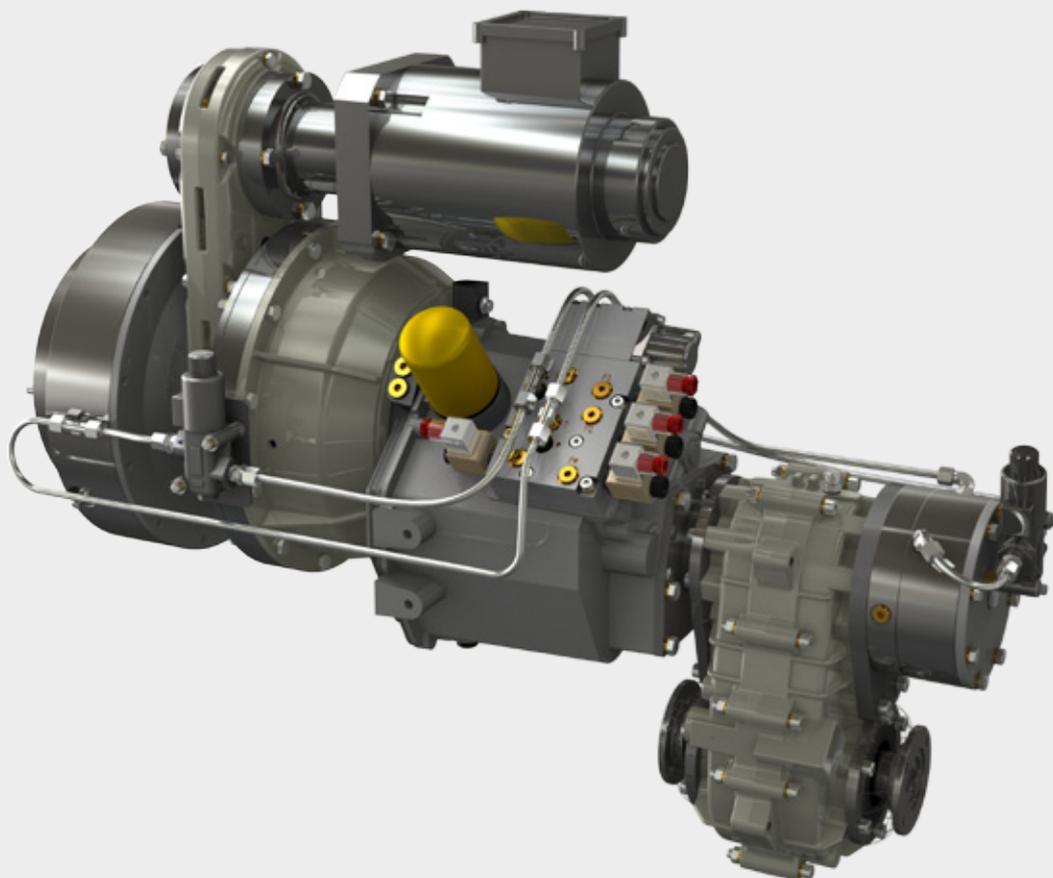
Minimum speed in 1 st gear (km/h)	14.82	Maximum speed in 1 st gear (km/h)	9.2
Maximum speed in 2 nd gear (km/h)	18.59	Maximum speed in 2 nd gear (km/h)	11.7
Maximum speed in 3 rd gear (km/h)		Maximum speed in 3 rd gear (km/h)	19.2
Maximum speed in 4 th gear (km/h)		Maximum speed in 4 th gear (km/h)	29.2
Maximum speed in 5 th gear (km/h)		Maximum speed in 5 th gear (km/h)	43.8
Maximum speed in 6 th gear (km/h)		Maximum speed in 6 th gear (km/h)	66.9
Net maximum tractive effort at stall (speed = 0 km/h) (N)	28.606	Net maximum tractive effort at stall (speed = 0 km/h) (kg)	2.911
Gross maximum tractive effort at stall (speed = 0 km/h) (N)	36.437	Gross maximum tractive effort at stall (speed = 0 km/h) (kg)	3.711

INTERNAL COMBUSTION ENGINE DATA

Engine Speed (rpm)	1200	1400	1500	1600	1800	2000	2200	2400
Torque (Nm)	292.4	302.8	304.7	303.6	297.4	286.0	270.8	256.4

TORQUE CONVERTER PERFORMANCES

speed ratio	input speed (rpm)	output speed (rpm)	input torque (Nm)	output torque (Nm)	eff. (%)	input power (kW)	output power (kW)	power to steel (kW)
1	1200	1200	292.4	292.4	100	35.1	35.1	0.0
0.98	1200	1176	292.4	286.0	98	35.1	34.6	0.5
0.96	1200	1152	292.4	279.2	96	35.1	33.8	1.3
0.94	1200	1128	292.4	272.4	94	35.1	33.0	2.1
0.92	1200	1104	292.4	265.6	92	35.1	32.2	2.9
0.9	1200	1080	292.4	258.8	90	35.1	31.4	3.7
0.88	1200	1056	292.4	252.0	88	35.1	30.6	4.5
0.86	1200	1032	292.4	245.2	86	35.1	29.8	5.3
0.84	1200	1008	292.4	238.4	84	35.1	29.0	6.1
0.82	1200	984	292.4	231.6	82	35.1	28.2	6.9
0.8	1200	960	292.4	224.8	80	35.1	27.4	7.7
0.78	1200	936	292.4	218.0	78	35.1	26.6	8.5
0.76	1200	912	292.4	211.2	76	35.1	25.8	9.3
0.74	1200	888	292.4	204.4	74	35.1	25.0	10.1
0.72	1200	864	292.4	197.6	72	35.1	24.2	10.9
0.7	1200	840	292.4	190.8	70	35.1	23.4	11.7
0.68	1200	816	292.4	184.0	68	35.1	22.6	12.5
0.66	1200	792	292.4	177.2	66	35.1	21.8	13.3
0.64	1200	768	292.4	170.4	64	35.1	21.0	14.1
0.62	1200	744	292.4	163.6	62	35.1	20.2	14.9
0.6	1200	720	292.4	156.8	60	35.1	19.4	15.7
0.58	1200	696	292.4	150.0	58	35.1	18.6	16.5
0.56	1200	672	292.4	143.2	56	35.1	17.8	17.3
0.54	1200	648	292.4	136.4	54	35.1	17.0	18.1
0.52	1200	624	292.4	129.6	52	35.1	16.2	18.9
0.5	1200	600	292.4	122.8	50	35.1	15.4	19.7
0.48	1200	576	292.4	116.0	48	35.1	14.6	20.5
0.46	1200	552	292.4	109.2	46	35.1	13.8	21.3
0.44	1200	528	292.4	102.4	44	35.1	13.0	22.1
0.42	1200	504	292.4	95.6	42	35.1	12.2	22.9
0.4	1200	480	292.4	88.8	40	35.1	11.4	23.7
0.38	1200	456	292.4	82.0	38	35.1	10.6	24.5
0.36	1200	432	292.4	75.2	36	35.1	9.8	25.3
0.34	1200	408	292.4	68.4	34	35.1	9.0	26.1
0.32	1200	384	292.4	61.6	32	35.1	8.2	26.9
0.3	1200	360	292.4	54.8	30	35.1	7.4	27.7
0.28	1200	336	292.4	48.0	28	35.1	6.6	28.5
0.26	1200	312	292.4	41.2	26	35.1	5.8	29.3
0.24	1200	288	292.4	34.4	24	35.1	5.0	30.1
0.22	1200	264	292.4	27.6	22	35.1	4.2	30.9
0.2	1200	240	292.4	20.8	20	35.1	3.4	31.7
0.18	1200	216	292.4	14.0	18	35.1	2.6	32.5
0.16	1200	192	292.4	7.2	16	35.1	1.8	33.3
0.14	1200	168	292.4	0.4	14	35.1	1.0	34.1
0.12	1200	144	292.4	-3.2	12	35.1	0.2	34.9
0.1	1200	120	292.4	-6.4	10	35.1	-0.6	35.7
0.08	1200	96	292.4	-13.2	8	35.1	-1.4	36.5
0.06	1200	72	292.4	-20.0	6	35.1	-2.2	37.3
0.04	1200	48	292.4	-26.8	4	35.1	-3.0	38.1
0.02	1200	24	292.4	-33.6	2	35.1	-3.8	38.9
0.0	1200	0	292.4	-40.4	0	35.1	-4.6	39.7



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