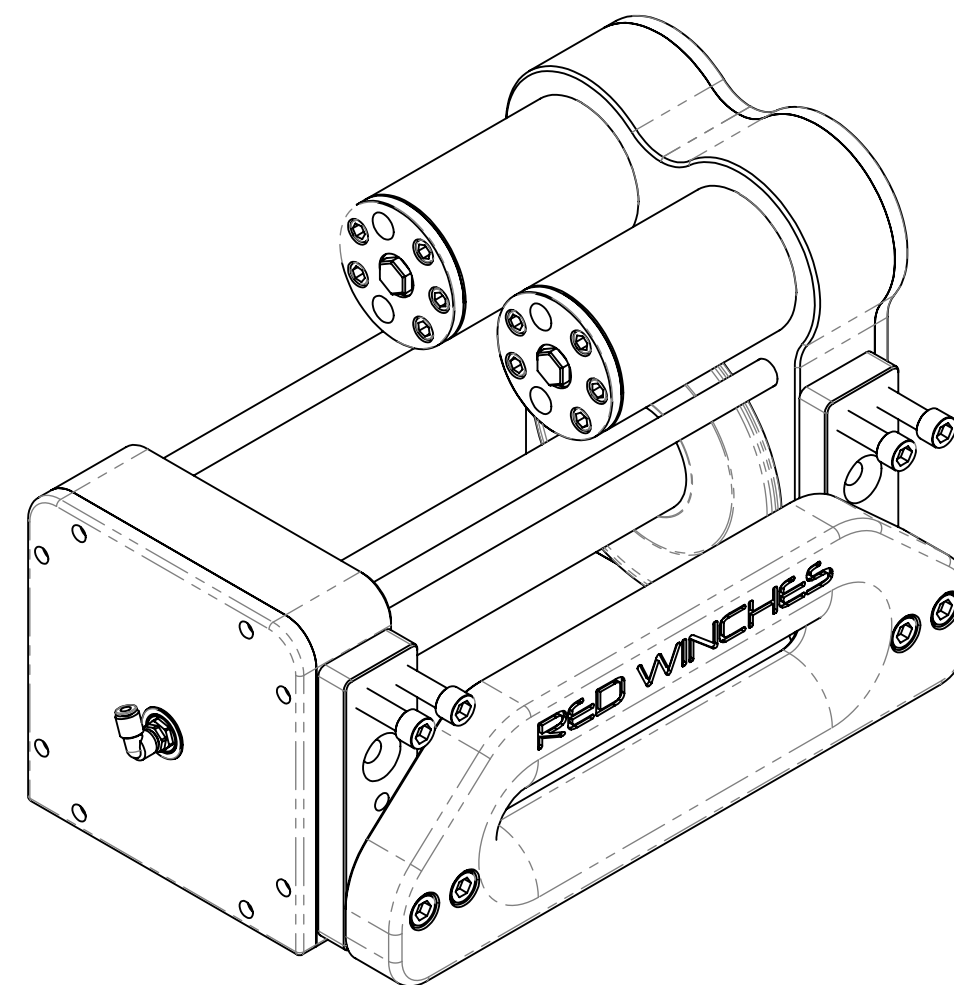
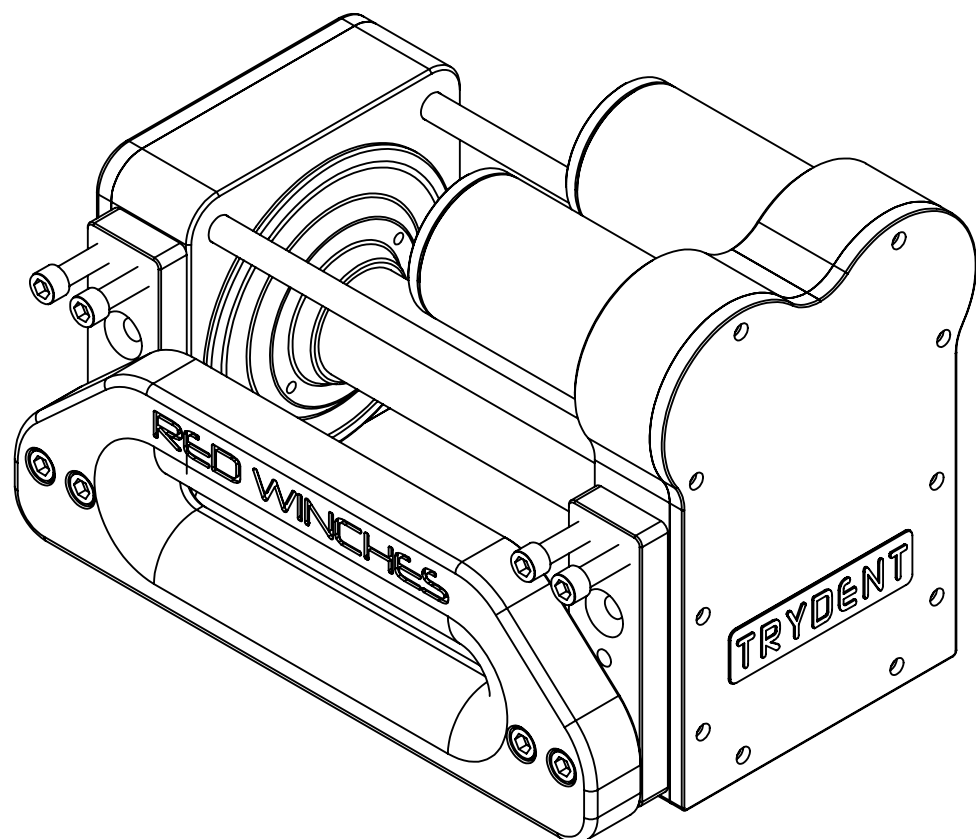




RED Winches

TRYDENT - HYDRAULIC TWIN MOTOR WINCH WORKSHOP MANUAL WITH DRAWINGS



This winch is part of a group of winches whose designs have undergone extensive testing. The end user can now enjoy a professional highly engineered high performance hydraulic winch capable of operating in the most demanding of situations. The small compact size combined with its pulling power make it an ideal winch for maximum impact when faced with minimal installation space

- SHEET 1: FRONT COVER**
- SHEET 2: DIMENSIONS**
- SHEET 3: MOTORS & END PLATE REMOVE**
- SHEET 4: DRIVE SHAFT AND FREESPOOL**
- SHEET 5: HYDRAULIC SYSTEM**
- SHEET 6: HYDRAULIC PUMP SYSTEM**
- SHEET 7: LUBRICATION**
- SHEET 8: INSPECTION SHEET**

WINCH
TYPE

TRYDENT

WINCH
DESCRIPTION:

**TWIN MOTOR HYDRAULIC WINCH
AIR FREESPOOL**

Telephone: +44 (0)1460 67744
Email: sales@red-winches.com

RED Winches

www.red-winches.com
ULTIMATE PERFORMANCE WINCH

DRAWING NUMBER:
WORKSHOP MANUAL

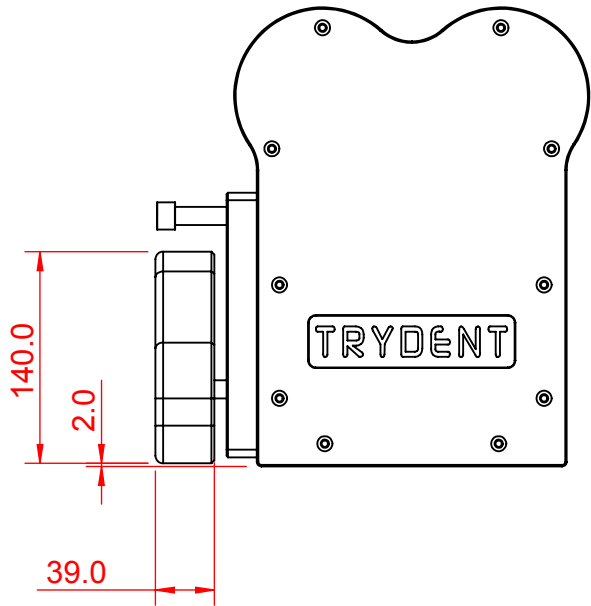
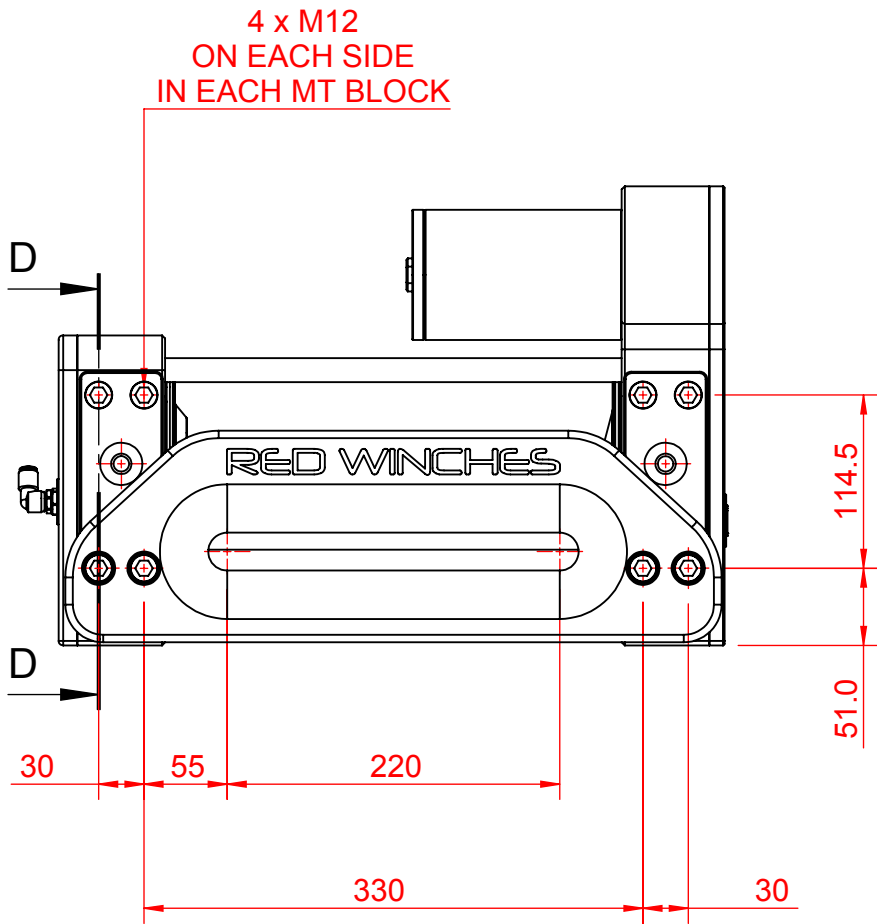
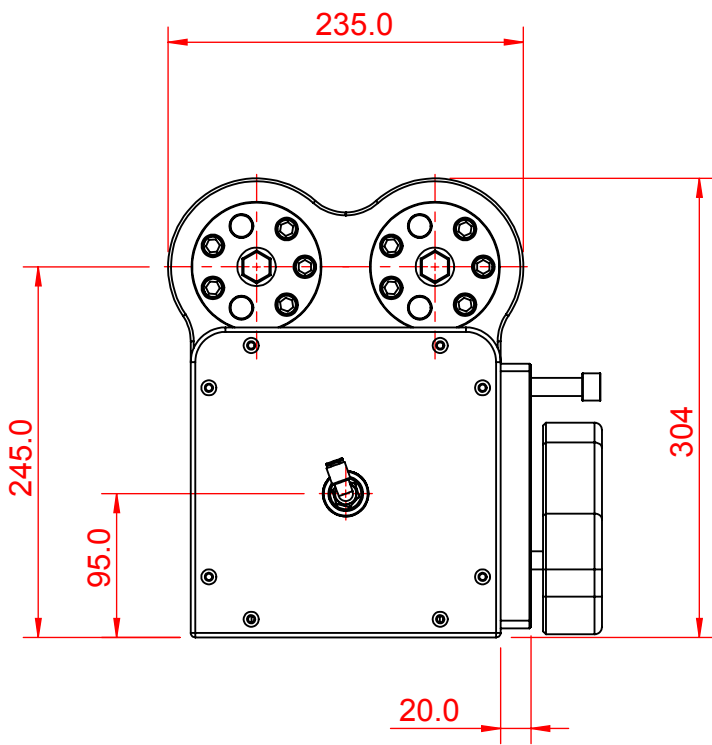
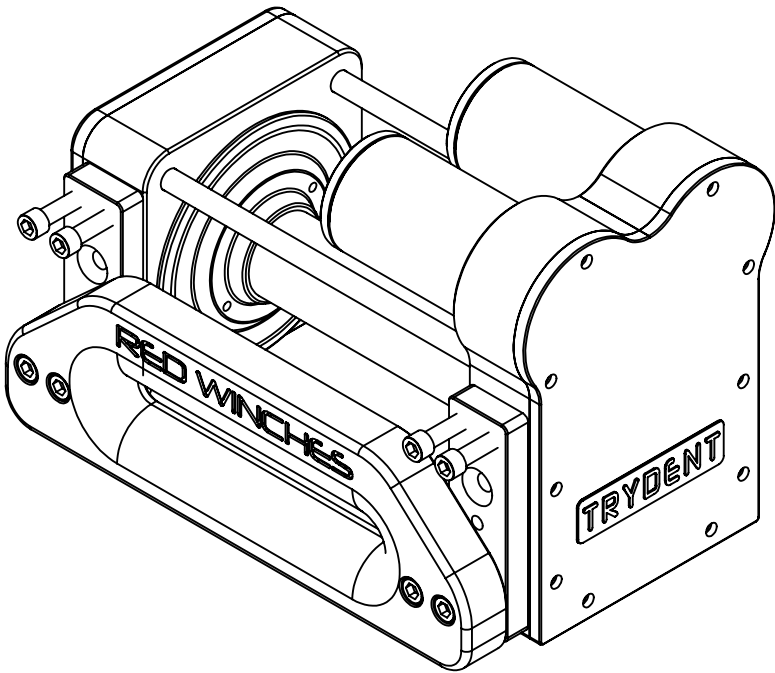
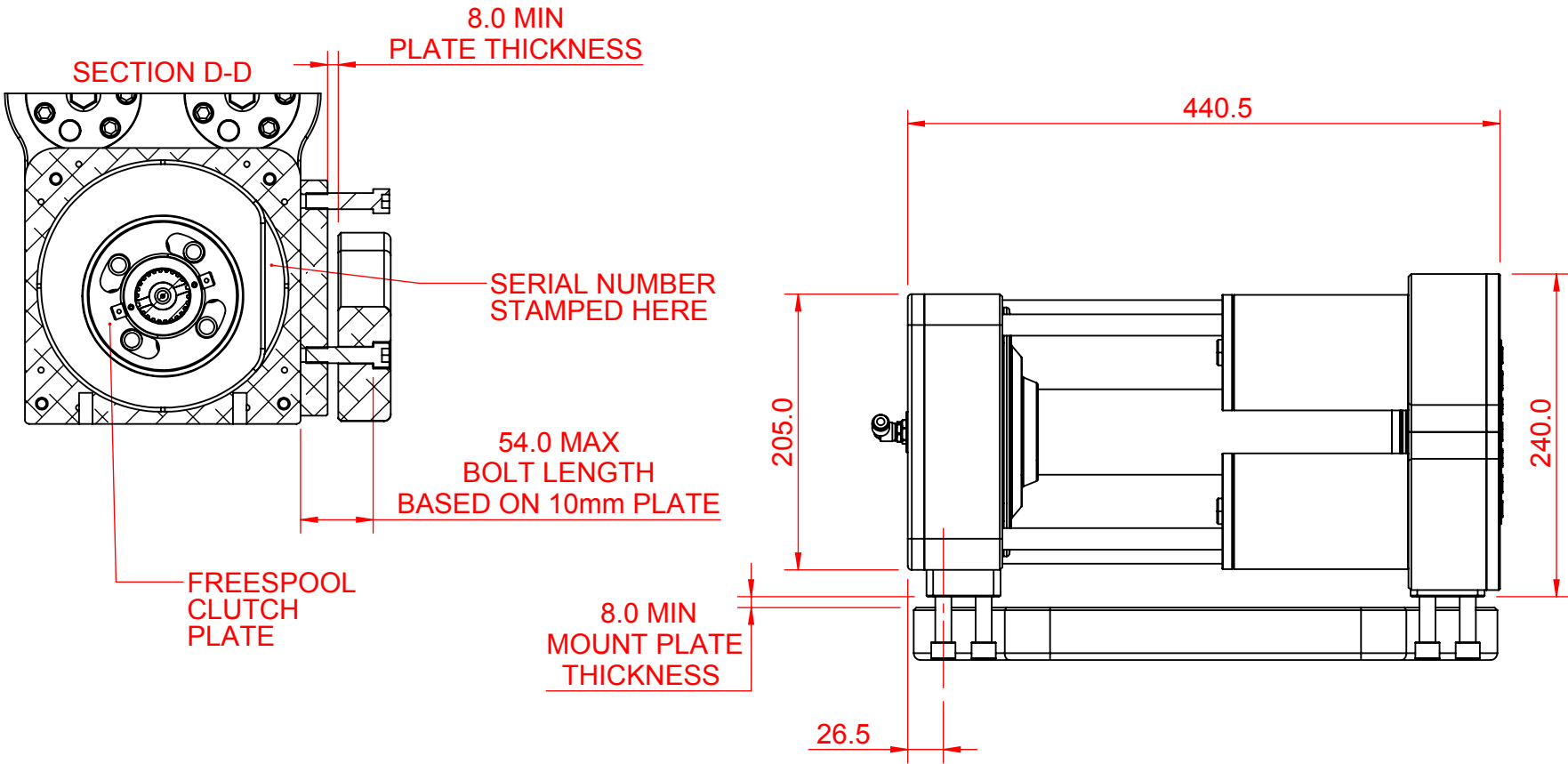
SCALE
1:4

REVISION
A

SHT 1
OF 10

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REV.	DATE	DESCRIPTION	SIG
A	25/01/2013	WORKSHOP ISSUE	NJ



UNLESS SPECIFIED	
FASTENER	TORQUE
M6	10 Nm
M8	24 Nm
M10	45 Nm
M12	80 Nm
M16	160 Nm
M20	200 Nm

WARNING:
MOUNTING PLATE THICKNESS IS IMPORTANT
IN SAFE, RELIABLE OPERATION OF THE WINCH
IF THE THICKNESS IS LESS THAN 10mm IT
MAY DAMAGE THE WINCH AND INVALIDATE ANY
WARANTY ON THE WINCH.

WINCH TYPE	TRYDENT	WINCH DESCRIPTION:	TWIN MOTOR HYDRAULIC WINCH AIR FREESPOOL	Telephone: +44 (0)1460 67744 Email: sales@red-winches.com	<div> <div> RED Winches </div> <div> www.red-winches.com ULTIMATE PERFORMANCE WINCH </div> </div> <div> DRAWING NUMBER: WINCH DIMENSIONS </div> <div> SCALE 1:5 </div> <div> REVISION A </div> <div> SHT 2 OF 10 </div>
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Grease Specification:
Castrol Spherol L-EP 2 or BP Energrelse LS-EP 2

**NEVER ASSEMBLE WITH PORTS IN
OPPOSITE DIRECTION BETWEEN EACH
MOTOR OTHERWISE SERIOUS DAMAGE
OCCUR INSIDE THE WINCH**

-WINCH IN

— 80mm MOUNTING HOLES
M12 x 20 DEEP
BOTTOM 4 HOLES USED BY
THE ALUMINIUM FAIRLEAD

BEARING WILL REMAIN IN THE END PLATE

BEARING WILL REMAIN IN THE END PLATE

— DRIVE
GEAR

ALL OVER THE WINCH BUT ESPECIALLY
THE END PLATES ENSURE ALL FASTENERS
ARE TORQUED TO THE CORRECT
VALUES

– TO REMOVE FAIRLEAD LOSEN AND REMOVE
4 x M12 ST/STEEL CAP HEAD SCREWS

TRYDENT

TWIN MOTOR HYDRAULIC WINCH AIR FREESPOOL

RED Winches

DRAWING NUMBER:

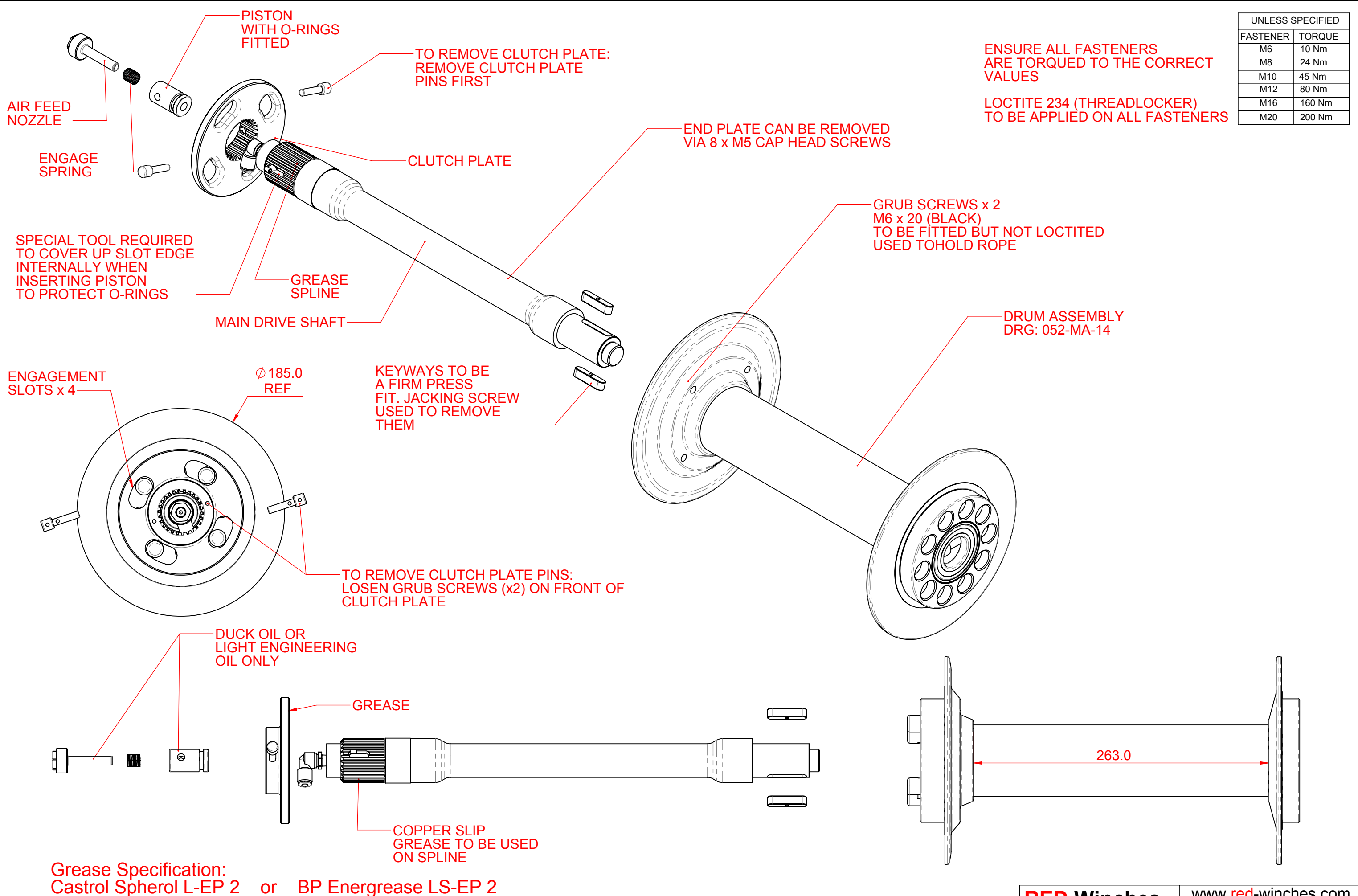
SCALE

REVISION	
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2	
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HT 3

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ENSURE ALL FASTENERS
ARE TORQUED TO THE CORRECT
VALUES

LOCTITE 234 (THREADLOCKER)
TO BE APPLIED ON ALL FASTENERS

UNLESS SPECIFIED	
FASTENER	TORQUE
M6	10 Nm
M8	24 Nm
M10	45 Nm
M12	80 Nm
M16	160 Nm
M20	200 Nm

Grease Specification:
Castrol Spherol L-EP 2 or BP Energrease LS-EP 2

SINGLE OVERCENTRE VALVE (OCV)
WITH INTEGRAL PRESSURE
SENSING VALVE

ADJUSTMENT OF RESTRICTOR
SCREW NEEDS TO BE SET.
IT RESTICTS SPEED OF WINCH DRUM WHEN
VEHICLE IS WINCHING OUT DOWN A HILL

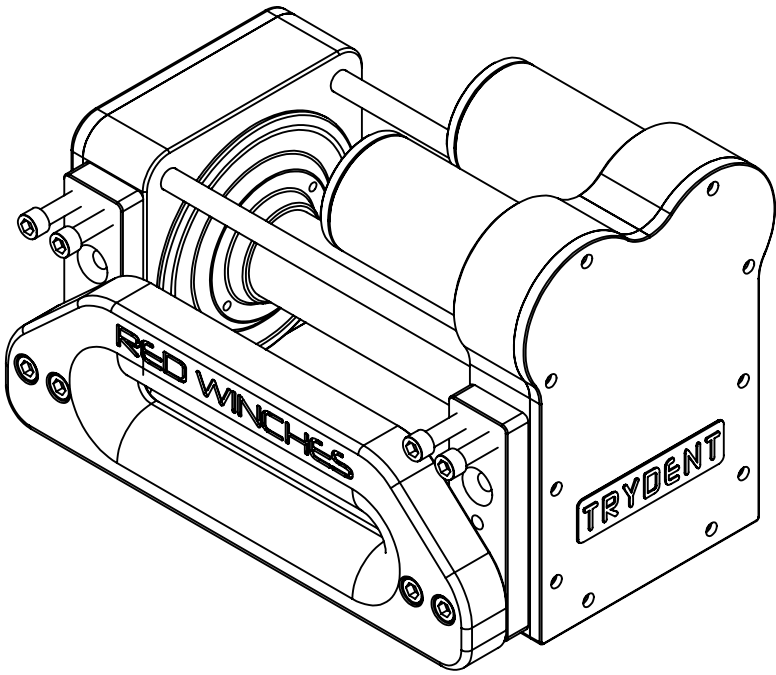
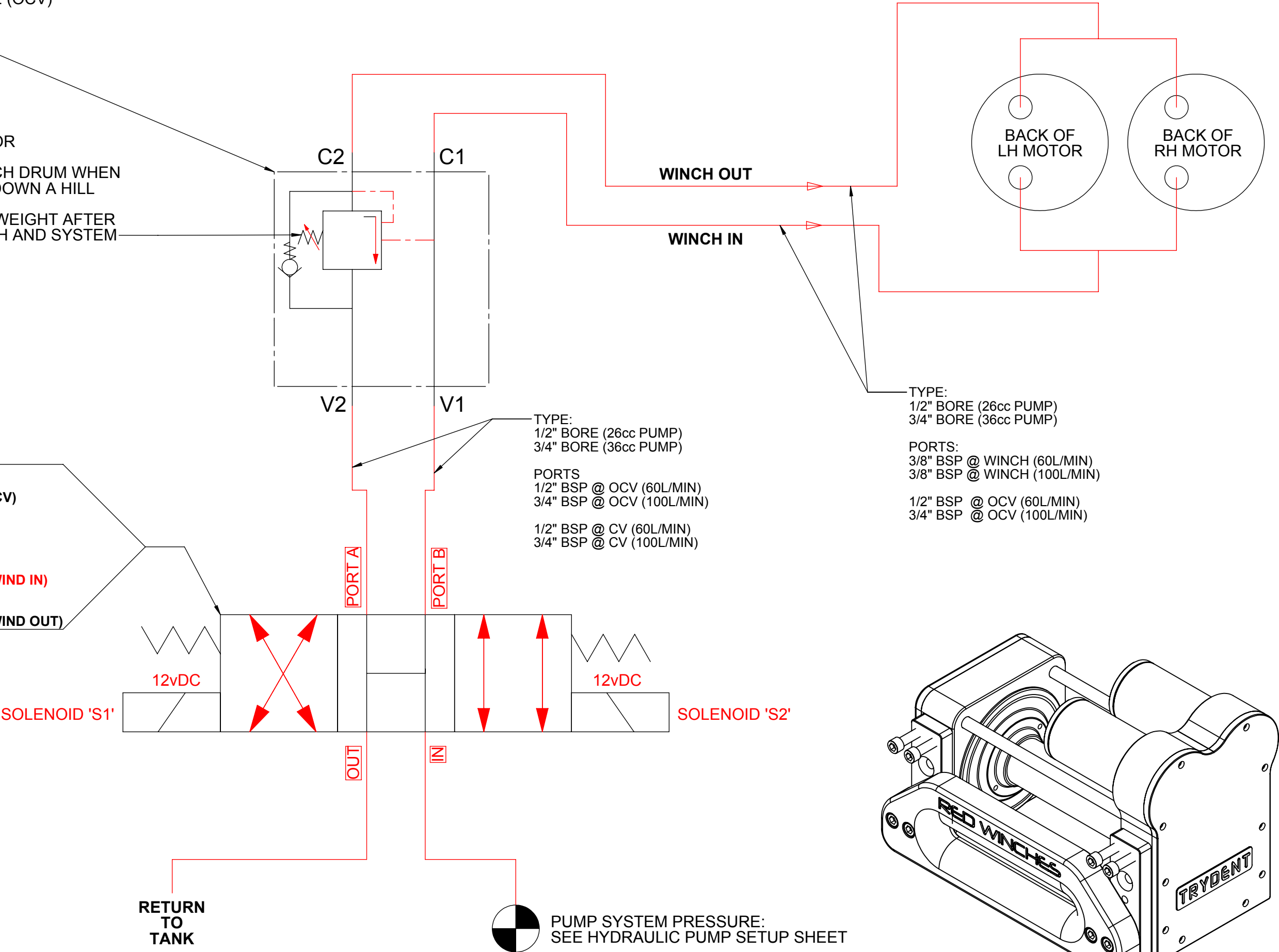
MUST BE SET TO VEHICLES WEIGHT AFTER
INSTALLATION OF THE WICNH AND SYSTEM

SINGLE SOLENOID OPERATED
DIRECTIONAL CONTROL VALVE (CV)

WHEN DE-ENERGIZED THE VALVE
ALLOWS FLOW OVER ALL PORTS

WHEN COIL 'S1' IS ENERGIZED
FLOW ALLOWED: IN-B & A-OUT (WIND IN)

WHEN COIL 'S2' IS ENERGIZED
FLOW ALLOWED: IN-A & B-OUT (WIND OUT)



RED Winches www.red-winchess.com
ULTIMATE PERFORMANCE WINCH

DRAWING NUMBER: HYDRAULIC SETUP - SINGLE
SCALE: 1:2
REVISION: A
SHT 5 OF 10

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WINCH
TYPE

TRYDENT

WINCH
DESCRIPTION:

**SINGLE SPEED:
EXTRA SOLENOID VALVE METHOD**

Telephone: +44 (0)1460 67744
Email: sales@red-winchess.com

SINGLE OVERCENTRE VALVE (OCV)
WITH INTEGRAL PRESSURE
SENSING VALVE

ADJUSTMENT OF RESTRICTOR
SCREW NEEDS TO BE SET.
IT RESTICTS SPEED OF WINCH DRUM WHEN
VEHICLE IS WINCHING OUT DOWN A HILL

MUST BE SET TO VEHICLES WEIGHT AFTER
INSTALLATION OF THE WICNH AND SYSTEM

HOSE SIZE:
1/2" BORE (26cc PUMP)
3/4" BORE (36cc PUMP)

PORTS
1/2" BSP @ OCV (60L/MIN)
3/4" BSP @ OCV (100L/MIN)

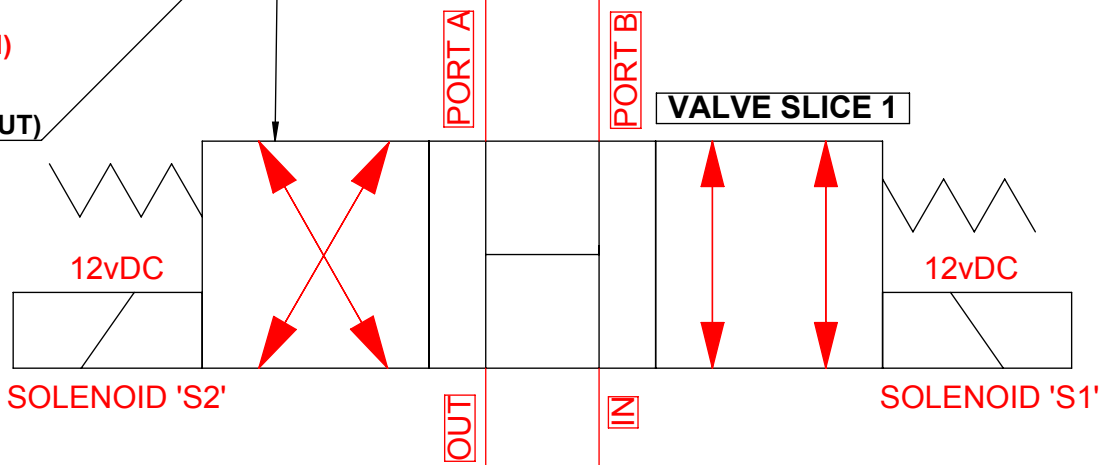
1/2" BSP @ CV (60L/MIN)
3/4" BSP @ CV (100L/MIN)

SINGLE SOLENOID OPERATED
DIRECTIONAL CONTROL VALVE (CV)

WHEN DE-ENERGIZED THE VALVE
ALLOWS FLOW OVER ALL PORTS

WHEN COIL 'S1' IS ENERGIZED
FLOW ALLOWED: IN-B & A-OUT (WIND IN)

WHEN COIL 'S2' IS ENERGIZED
FLOW ALLOWED: IN-A & B-OUT (WIND OUT)



SOLENOID 'S2'

VALVE SLICE 1

SOLENOID 'S1'



PUMP SYSTEM PRESSURE:
SEE HYDRAULIC PUMP SETUP SHEET

RETURN
TO TANK

TWIN SPEED: EXTRA SOLENOID VALVE METHOD

HOSE SIZE:
1/2" BORE (26cc PUMP)
3/4" BORE (36cc PUMP)

PORTS:
3/8" BSP @ WINCH (60L/MIN)
3/8" BSP @ WINCH (100L/MIN)

1/2" BSP @ OCV (60L/MIN)
3/4" BSP @ OCV (100L/MIN)

WINCH OUT

WINCH IN

BACK OF
LH MOTOR

BACK OF
RH MOTOR

WINCH OUT

WINCH IN

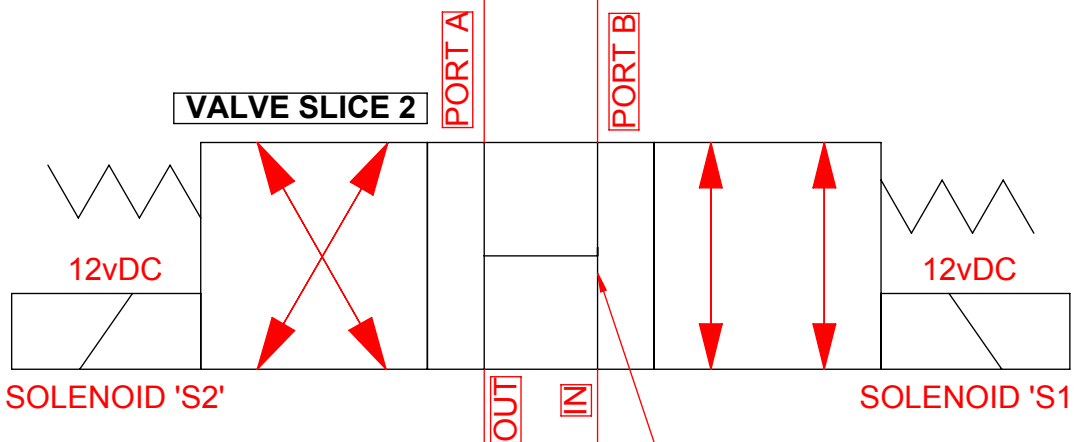
HOW THE SYSTEM WORKS:

FAST WINCHING - 1 MOTOR USED (75cc MOTOR SYSTEM)

- WINCH IN OR OUT ON VALVE SLICE 1 ONLY
- MOTOR 1 GETS ALL FLUID FROM PUMP
- MOTOR 2 GETS NO FLUID FROM PUMP AND
- SPINS FREELY DRIVEN BY MOTOR 1
- OCV VALVE WORKS ON THIS MOTOR

POWERFUL WINCHING - 1 MOTOR USED (150cc MOTOR SYSTEM)

- WINCH IN OR OUT ON VALVE SLICE 1 AND 2 AT THE SAME TIME
- THE 12v SIGNAL NEEDS TO GO TO BOTH VAVES AT THE SAME TIME
- MOTOR 1 AND 2 BOTH GET THE FLUID FROM THE PUMP
- OCV VALVE STIL LONL WORKS ON ONE MOTOR

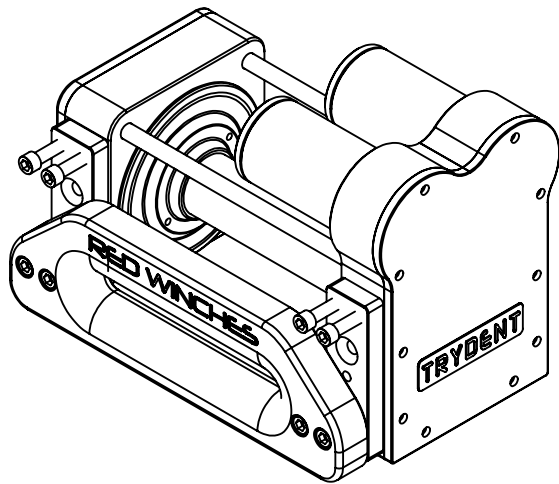


SOLENOID 'S2'

VALVE SLICE 2

SOLENOID 'S1'

OPEN PORT FUNCTION
ONT HE VALVE ALLOWS
MOTOR 2 TO SPIN FREELY
WHEN NOT BEING USED



WINCH
TYPE

TRYDENT

WINCH
DESCRIPTION:

TWIN SPEED:
EXTRA SOLENOID VALVE METHOD

Telephone: +44 (0)1460 67744
Email: sales@red-winches.com

RED Winches

www.red-winches.com
ULTIMATE PERFORMANCE WINCH

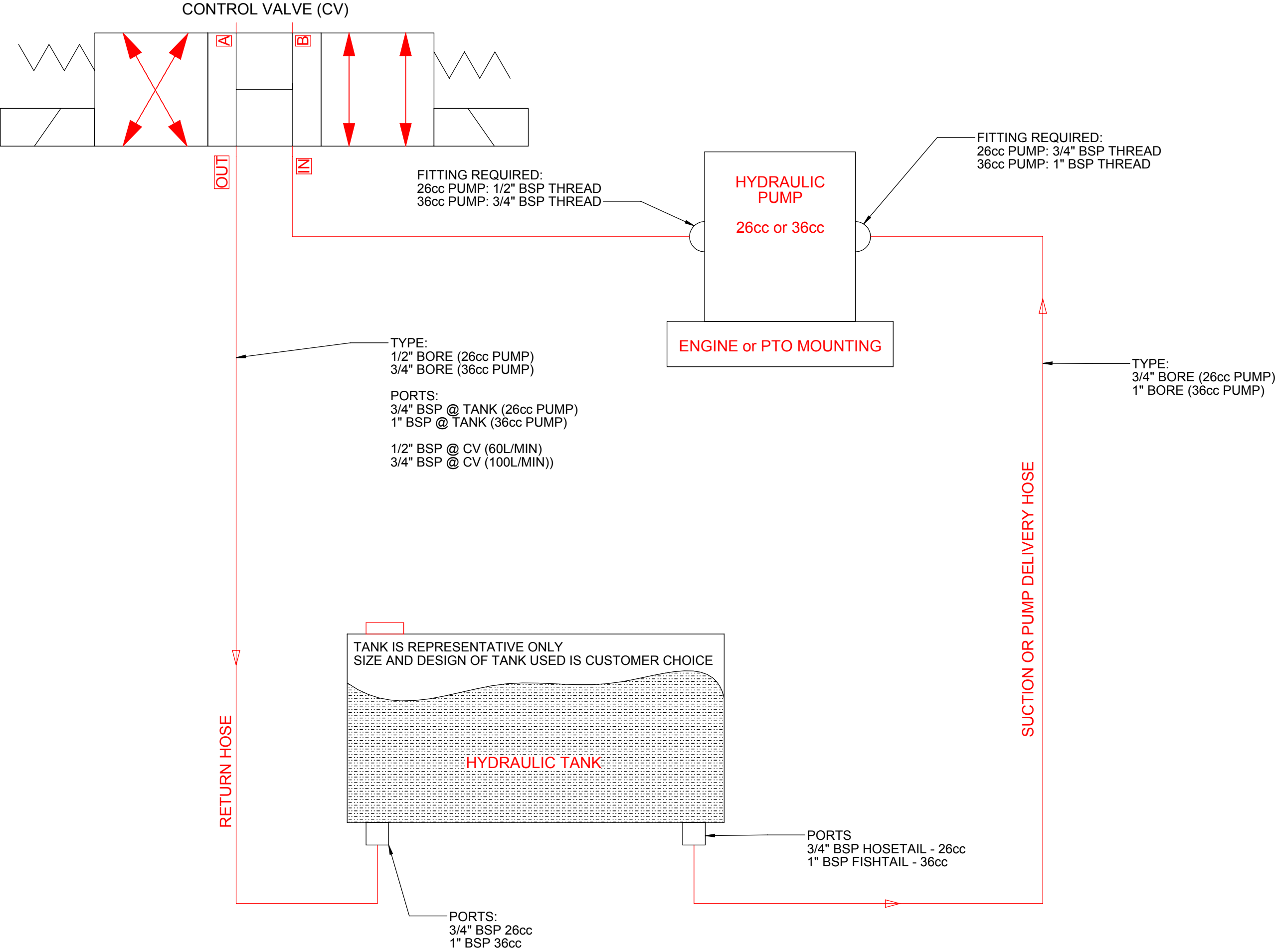
DRAWING NUMBER:
HYDRAULIC SETUP - TWIN SPEED - 1

SCALE
1:1

REVISION
A

SHT 6
OF 10

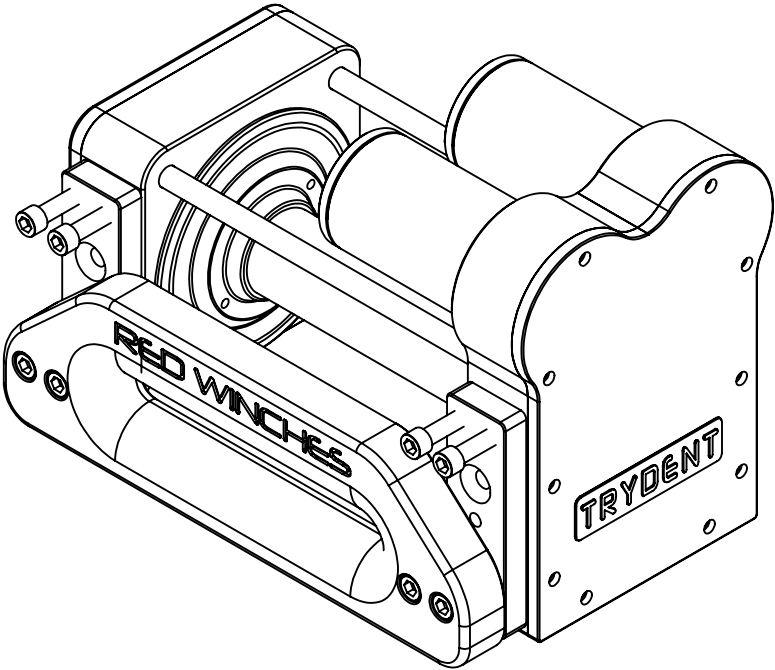
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**Grease Specification:
Castrol Spherol L-EP 2 or BP Energrease LS-EP 2**

The drum bearings must have their seals removed, packed with grease and fitted again after the winch has been used continuously submerged or in fine silt or gritty conditions

DESCRIPTION	COMPLETED YES / NO	NOTES
ALL BOLTS AND SCREWS FITTED CORRECTLY		
ALL BOLTS AND SCREWS (APART FROM THOSE INDICATED) SECURED WITH LOCTITE 234		
ALL BOLTS AND SCREWS FITTED CORRECTLY AND TIGHTENED TO THE CORRECT TORQUE SETTING		
GEARS FULLY GREASED AND MINIMUM OF 1" OF GREASE IN LOWER PART OF GEARBOX CASE		
MOTORS CHECKED FOR HYDRAULIC LEAKS		
FREESPOOL ON DRUM IS FREE AND EASY TO TURN		
AIR FREESPOOL CONNECTION CHECKED FOR LEAKS		
AIR FREESPOOL GREASED ON SPLINE AND DISC. DUCK OIL APPLIED INTERNALLY ON O-RINGS AND PISTON.		
AIR FREESPOOL FUNCTION TESTED AT LEAST 20 TIMES. TO WORK EVERY TIME.		
CORRECT BOLT LENGTHS HAVE BEEN USED ADN ALL MOUNTING HOLES ARE CLEAN AND FREE FROM DIRT		
WINCH POWERED AND TESTED IN BOTH DIRECTIONS. AIR FREESPOOL AND BRAKE SOLENOID CHECKED TO ENSURE CORRECT OPERATION.		



NAME OF ENGINEER BUILT / PERFORMED FIANL CHECKS	SIGNATURE	WINCH SERIAL NUMBER